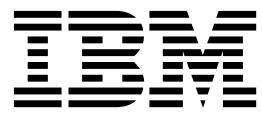


Version 4 Release 2

*IBM DB2 Automation Tool for z/OS  
User's Guide*





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User's Guide*



**Note:**

Before using this information and the product it supports, read the "Notices" topic at the end of this information.

**October 3, 2017 edition**

This edition applies to Version 4 Release 2 of IBM DB2 Automation Tool for z/OS (product number 5655-E37) and to all subsequent releases and modifications until otherwise indicated in new editions.

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## About this information

IBM DB2 Automation Tool for z/OS (also referred to as DB2<sup>®</sup> Automation Tool) automates the running of utilities against a specified set of objects. Database administrators can use DB2 Automation Tool to oversee the most routine database administration tasks, without time-consuming manual interventions.

These topics provide instructions for installing, configuring, and using DB2 Automation Tool.

These topics are designed to help database administrators, system programmers, application programmers, and system operators perform these tasks:

- Plan for the installation of DB2 Automation Tool
- Install and operate DB2 Automation Tool
- Customize your DB2 Automation Tool environment
- Diagnose and recover from DB2 Automation Tool problems
- Design and write applications for DB2 Automation Tool
- Use DB2 Automation Tool with other DB2 products

**Tip:** To find the most current version of this information, always use IBM<sup>®</sup> Knowledge Center, which is updated more frequently than PDF books.



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## Chapter 1. DB2 Automation Tool overview

IBM DB2 Automation Tool for z/OS (also referred to as DB2 Automation Tool) automates the running of utilities against a specified set of objects.

Using DB2 Automation Tool, database administrators can oversee the most routine database administration tasks, without time-consuming manual interventions. With DB2 Automation Tool, you can set up reoccurring utility jobs for conditional and routine DB2 maintenance tasks.

DB2 Automation Tool can help you reduce manual routine tasks and focus on more complex job responsibilities that add more value to your company. It can automate common DB2 maintenance tasks as well as generate JCL for more complex tasks on one or more objects.

If you purchased DB2 Automation Tool as part of the DB2 Utilities Solutions Pack, you can use the DB2 Autonomics Director stored procedures and repository to facilitate automation of ongoing database monitoring and maintenance tasks for your applications. The DB2 Automation Tool Autonomic Console panels contains extended functionality to allow you to set up and control autonomic running of your utilities.

Using an online ISPF interface, you select the objects you want and place them into an object profile. You then select utilities to run and place them into a utility profile. Once you create the object profile and the utility profile, you combine the two into a job profile. When you build the job profile, it produces an z/OS® batch job containing the JCL to execute the utilities. The job that is produced that can be executed immediately or inserted into a job scheduler.

An object profile simply lists the objects you want to be processed. You can include table spaces and indexes in an object profile, or a combination of both. You can use wild cards to include similarly named objects in a profile.

A utility profile contains the name of the utility you want to run, and contains the options for that utility. You can have more than one utility in a profile. For example, if you always want to take image copies before performing a REORG, then you could include both the COPY and REORG in the same profile.

You can optionally include exception profiles in the job profile. An exception profile allows you to select certain conditions under which a utility should be performed. For example, DB2 Automation Tool can generate a REORG utility if a table space has too much embedded fragmented space.

You can use DB2 Automation Tool to add batch builds and utility execution jobs to the DB2 administrative task scheduler. DB2 Automation Tool interfaces with the DB2 administrative task scheduler to create new tasks, update and view existing tasks, delete tasks, and view the status and output of executed tasks.

In addition, DB2 Automation Tool works with DB2 10's autonomic statistics feature, allows you to ensure that statistics are up to date, so that DB2 can effectively optimize queries and so that statistics are not recollected unnecessarily.

---

## What's new in DB2 Automation Tool

This topic summarizes the technical changes for this edition.

New and changed information is indicated by a vertical bar (|) to the left of a change. Editorial changes that have no technical significance are not noted.

### October 3, 2017 edition

The documentation changes for this update are listed in this section.

#### APAR PI48030

Multiple enhancements were added in APAR PI48030 to implement the use of user-generated TEMPLATE DDs, to add a REORG option to turn off tape stacking, and to add a job generation option to specify a static job build data set and member name. The following topics were updated, and messages were added to support these features:

- “Worksheets: Gathering parameter values for DB2 Automation Tool” on page 20
- “Specifying TEMPLATEDD data set, member, and name defaults” on page 101
- “Setting RECOVER options” on page 147
- “Setting DB2 image copy options” on page 182
- “Setting REORG options” on page 205
- “Setting index REORG options” on page 237
- “Setting options for the UNLOAD” on page 502
- “Updating job generation options” on page 346
- “Unloading all rows and columns from a table space” on page 493
- “Unloading selected rows and columns from a table space” on page 495

#### APAR PI34835

Instructions were added for installing and uninstalling the DB2 Automation Tool extension using Unix System Services (USS) and HFS using sample batch jobs. Refer to “Installing the DB2 Automation Tool extension using Unix System Services and HFS” on page 85.

#### APAR PI57775

Support was added for using an alternate or default user ID to run DB2 administrative task scheduler tasks, instead of the DB2 Automation Tool default of the current user ID. The topics “Worksheets: Gathering parameter values for DB2 Automation Tool” on page 20, “Entering job generation defaults and other product parameters” on page 95, and “Accessing the DB2 Admin Scheduler interface” on page 515 were updated.

#### APAR PI57560

DB2 Automation Tool now detects when non-partitioned objects that were explicitly included in an object profile have since been altered to partitioned objects. It allows you to specify how such objects are processed (at the ALL or PART level). The topics “Worksheets: Gathering parameter values for DB2 Automation Tool” on page 20, “Entering job generation defaults and other product parameters” on page 95, and “Overriding job setup options” on page 352 were updated and messages were added for this enhancement.

**APAR PI41501**

THE RUNSTATS Force Rollup keyword default value is now blank. This allows DB2 Automation Tool to use the value of the ZPARM STATROLL value for FORCEROLLUP, if provided. The topic "RUNSTATS options" on page 199 was updated.

**APAR PI35198**

The Generate NPSI Runstats field was added to the REORG TABLESPACE utility profile for DB2 V10 subsystems. The topic "Setting REORG options" on page 205 was updated.

**APAR PI49417**

Support was added for DB2 High Performance Unload (HPU) version 4.3. The following topics were updated: "Worksheets: Gathering parameter values for DB2 Automation Tool" on page 20, "Entering information for using DB2 High Performance Unload with DB2 Automation Tool" on page 101, and Chapter 19, "Generating DB2 High Performance Unload jobs," on page 493. Messages also were added.

**APAR PI83632**

Support was added for DB2 High Performance Unload (HPU) V5.1 and support for DB2 HPU V4.2 was discontinued. The following topics were updated: "Worksheets: Gathering parameter values for DB2 Automation Tool" on page 20, "Entering information for using DB2 High Performance Unload with DB2 Automation Tool" on page 101, and Chapter 19, "Generating DB2 High Performance Unload jobs," on page 493. Messages also were added.

**APAR PI58328**

The Perform LOB Dependency checks field was updated in the topics "Setting RECOVER options" on page 147 and "Setting REORG options" on page 205 to describe the behavior if objects are excluded during exception processing.

**APAR PI85698**

In utility profiles, the utility ID is generated differently when a utility profile is generated via autonomic build. The utility ID field description was updated in the following topics. Also, the documentation was clarified that job profiles that are built autonomically must contain an exception profile.

- "Setting RECOVER options" on page 147
- "Setting DB2 image copy options" on page 182
- "COPYTOCOPY options" on page 198
- "RUNSTATS options" on page 199
- "Setting REORG options" on page 205
- "Setting index REORG options" on page 237
- "QUIESCE options" on page 254
- "MODIFY options" on page 255
- "REPAIR options" on page 259
- "CHECK DATA options" on page 262

**APAR PI73805**

Changes were made to several Autonomic Console panels to allow you to see both active and passive autonomic actions, as well as delete autonomic actions. The following topics were updated:

- "Reviewing maintenance window workload" on page 392

- “Reviewing autonomic actions and symptoms” on page 389
- “Viewing autonomic statistics alerts” on page 539
- “Viewing alerts from autonomic statistics procedures” on page 539

#### **APAR PI81061**

Support for the SORTDEVT and SORTNUM keywords was added to the RUNSTATS utility panels in both utility and exception profiles. The topics “RUNSTATS options” on page 199 and “Update Runstats Options” on page 290 were updated.

#### **APAR PI85584**

You can now generate the SET PROFILE parameter for RUNSTATS for all tables in an object profile. Messages were added to support this enhancement.

#### **Other documentation updates**

- The “Set up your environment prior to customization” on page 16 topic was updated to include Autonomics Director authorization requirements for TSO user IDs that schedule maintenance windows.
- Updated the DB2 version support sentence in the “Set up your environment prior to customization” on page 16 topic to clarify that DB2 Automation Tool is only supported on a DB2 version through end of support (EOS) for that DB2 version.

### **Previous updates**

#### **SC19-4386-00 edition, October 2014**

The following features and changes are included in this edition.

- If you purchased DB2 Automation Tool as part of the DB2 Utilities Solutions Pack, the following features are available:
  - The Autonomic Console option on the main menu contains extended functionality that allows you to set up and control autonomic utility execution. The Autonomic Console works with the DB2 Autonomics Director stored procedures and DB2 repository to facilitate automation of ongoing database monitoring and maintenance tasks for your applications. See Chapter 11, “Running utilities autonomically using the DB2 Autonomics Director,” on page 383. Messages were also added for this feature.
  - A web-based extension to the IBM Management Console allows you to view DB2 Automation Tool object, exception, utility, and job profiles through a web browser. See Chapter 4, “Installing and configuring the DB2 Automation Tool extension for the IBM Management Console,” on page 85.
- The entire topic Chapter 22, “Autonomic statistics using DB2 Automation Tool,” on page 529 was updated due to screen flow changes that are related to the Autonomic Console.
- Event notification profiles can be configured to send notifications by email, text message, or WTO when DB2 Automation Tool job profiles are built in batch. You can configure the profile to send notifications only when the job build returns a specific return code. See Chapter 12, “Configuring and using event notification profiles,” on page 395. Messages were also added for this feature.
- You can create job groups in a job profile. Each job group acts as a separate job profile. You can also define exception rules for accepted and rejected objects in the job profile and can associate an exception profile to a particular utility profile. This allows you to use one job profile to perform a combination of maintenance functions. The topic “Adding job groups” on page 356 was added



and multiple topics in Chapter 10, “Building jobs using job profiles,” on page 345 was updated. Messages were also added for this feature.

- The following changes were made to the REORG utility profile:
  - You can now specify the storage group for a dynamic mapping table index used for an online REORG. See “Setting SHRLEVEL CHANGE options” on page 216.
  - An option was added to ignore a dependency check if a related LOB table space was created using DEFINE NO. See “Setting REORG options” on page 205.
  - You can specify that all partitions of a table space are to be REORGed when more than a specified percentage of partitions of a table space are included in the object profile. See “Setting REORG options” on page 205.
  - The PARALLEL keyword was updated for changes in the manner in which DB2 V11 processes the keyword. See “Setting REORG options” on page 205.
  - The NOSYSREC keyword was updated. See “Setting REORG options” on page 205.
  - The SORTKEYS keyword has been removed, as it is not a valid REORG keyword.
- New exception conditions were added to support SYSLOBSTATS and a new statistics report for SYSLOBSTATS was added. See “SYSLOBSTATS” on page 337.
- The Preview Exception Report option was added to job generation options to enable you to preview the objects that would be triggered by exception processing without generating JCL. See “Updating job generation options” on page 346.
- New best practice sample profiles have been added, enabling you to take advantage of IBM-advised industry trends or new enhancements. For example, IBM might recommend the use of new parameters in place of parameters from a previous release for better performance. Use the best practice sample profiles to leverage technology from new releases of DB2. See “Using the sample profiles” on page 813.
- You can optionally specify a second high level qualifier to be used with utility work data sets. See “Updating job generation options” on page 346.
- When building an UNLOAD utility job, you can save your entered field values for the UNLOAD as defaults for future builds. See “Setting options for the UNLOAD” on page 502.
- The data page display and reporting functionality is deprecated in DB2 Automation Tool V4.2. Although this feature remains in the current version, it will not be enhanced and may be removed in a future release. A note was added to the topics “Deprecated: Data page verification reporting options” on page 142 and Chapter 18, “Deprecated: Using the data page display,” on page 473.
- The disaster recovery feature was removed from DB2 Automation Tool.
- The BACKUP SYSTEM and RESTORE SYSTEM stand-alone utilities were removed from DB2 Automation Tool.
- Message HAAM208I is displayed on the ISPF panels when you cancel an process or activity.
- An incorrect CLIST name was changed in the topic “Skeleton variables” on page 769.
- The partition number was added to Execution Reports panels. See Chapter 15, “Using the execution reports feature,” on page 413.
- Some jobs generated using TEMPLATE utility control statements were changed to remove unnecessary SPACE TRK control statements. These jobs default to

SPACE CYL. Jobs affected are the unload data set for DB2 High Performance Unload; the data sets for image copy and copy during a REORG TABLESPACE; and the SYSREC and SYSPUNCH data sets for REORG TABLESPACE.

- Skeleton HAAREORD was added to the topic “Skeleton variables” on page 769.

#### **Tools Customizer updates:**

The following updates were made to the customization process. For more information, see “Worksheets: Gathering parameter values for DB2 Automation Tool” on page 20

- Customization jobs that run using SQL can now use the group attach name. The jobs include the bind jobs, repository updates, user authorizations to run DB2 Automation Tool through GRANTS, and loading the sample profiles.
- Customization steps were added to the Product Parameters panel (CCQPPRD) to:
  - Free plans and packages.
  - The customization step to create indexes on catalog tables and SYSCOPY was split into two optional steps.
- Customization parameters were added to the DB2 Parameters panel to:
  - Specify a WLM environment for the DB2 Autonomics Director stored procedure
  - Add parameters for event notifications
- Customization parameters and steps were added to the DB2 Parameters panel, the Product Parameters panel, and the LPAR Parameters panel related to configuring the DB2 Autonomics Director and the IBM Management Console for IMS and DB2 for z/OS.
- Instructions were added for creating a WLM environment for use with DB2 Autonomics Director. See “Create an active WLM environment for integration with Autonomics Director” on page 19.

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## **DB2 Automation Tool V4.2 - features and benefits**

DB2 Automation Tool quickly and easily manages reoccurring DB2 utility jobs for conditional and routine maintenance.

DB2 Automation Tool offers several unique and significant features that you can use to manage your DB2 environment.

### **Automates routine maintenance tasks**

DB2 Automation Tool automates regular backup creation, object recovery and other everyday tasks required to maintain data in DB2 for z/OS. Utility job control language (JCL) is generated based on your specified combinations of database objects, DB2 utilities and exception conditions. You can set up conditions in easy-to-use profiles and control when, how or if a utility is run. This frees you to focus on higher-value tasks and allows junior DBAs to become more efficient.

If you purchased DB2 Automation Tool as part of the DB2 Utilities Solutions Pack, you can further automate ongoing database monitoring and maintenance tasks for your applications by using the DB2 Autonomics Director. DB2 Autonomics Director allows you to schedule your utilities to run autonomically in a maintenance window. You define the maintenance window and the priority of the objects that will be run in the window. When you build the job profile, instead of generating

JCL, DB2 Automation Tool generates tasks, called actions, that are stored in a data repository. The Autonomics Director autonomically runs the actions that are in the repository when the maintenance window opens. In addition, you can specify the application objects that are most important and that are to be run first when a maintenance window opens.

DB2 Automation Tool can add batch builds and utility execution jobs to the DB2 administrative task scheduler. You can use DB2 Automation Tool's interface to the DB2 administrative task scheduler to create new tasks, update and view existing tasks, delete tasks, and view the status and output of executed tasks.

In addition, DB2 Automation Tool's interface with DB2 10's autonomic statistics allows you to ensure that statistics are up to date, so that DB2 can effectively optimize queries and so that statistics are not recollected unnecessarily. The autonomic statistics functionality in DB2 Automation Tool provides an interface to DB2's stored procedures, the catalog tables required to use them, and the DB2 administrative task scheduler.

### **Exception processing conserves resources**

DB2 Automation Tool exception processing generates maintenance JCL for only objects that need it. Therefore, maintenance procedures may consume less resources when you use DB2 Automation Tool to automate routine utilities, as you can specify to run jobs only for objects that meet defined criteria. For example, DB2 Automation Tool can generate a REORG utility if a table space has too much embedded fragmented space.

### **User exits allow custom processing**

User exits allow custom processing that can respond to unique environmental conditions for generating jobs. Pre- and post-generation user exits allow greater flexibility when generating utility JCL. You can manipulate the list of objects for which DB2 Automation Tool generates utility JCL. For example, you can influence the order of the objects within a utility, or add a custom post-utility process.

### **DB2 Command Processor**

The DB2 Command Processor allows you to not only execute DB2 commands from within DB2 Automation Tool, but to also view and select from a historical list of commands to execute.

### **Dataset Manager**

Dataset Manager enables you to view, evaluate, and move DB2 data sets. The online displays offer various levels of information about the data sets, from the database level down to the individual extent level. You select the desired data sets to be moved. Data sets can be moved interactively from within TSO/ISPF or by using the provided batch function. Dataset Manager supports all types of data sets including storage group, user-defined, SMS-managed, and non SMS-managed.

### **DB2 Automation Tool V4.2 and other DB2 Tools**

Many DB2 tools provide utilities management features that are not available in DB2 itself or provide enhancements to capabilities built into DB2.

DB2 Automation Tool is only one of several DB2 tools that provide assistance in utilities management:

- DB2 Automation Tool can use utility profiles generated by DB2 Change Accumulation Tool for z/OS. This feature allows you to include DB2 Change Accumulation Tool utilities in a DB2 Automation Tool job profile, just as DB2 utilities can be included.
- DB2 Utilities Enhancement Tool helps you to control your DB2 environment with the ability to transparently cancel active threads and block new threads on DB2 objects.
- DB2 High Performance Unload is a flexible, easy-to-use product that provides a fast and efficient tool to unload and extract data for movement across enterprise systems or for in-place reorganizations.
- DB2 Utilities Suite for z/OS is a comprehensive set of tools for managing all DB2 data maintenance tasks. DB2 Utilities Suite helps you to minimize downtime associated with routine DB2 data maintenance while ensuring the highest degree of data integrity.
- DB2 Storage Management Utility for z/OS is a space management tool that verifies the integrity of DB2 table spaces and index spaces.

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## Utilities management

IBM solutions help IT organizations maximize their investment in DB2 and IMS<sup>™</sup> databases while staying on top of some of today's toughest IT challenges. DB2 tools can help you achieve higher availability and better performance during data maintenance while enhancing the productivity of both database administrators and system programmers.

Underlying the operation of any database management system are the utilities. With the number of database objects growing exponentially, especially when dealing with ERP applications such as SAP, the impact of managing utility jobs, meeting service level agreements, and ensuring recoverability can be overwhelming.

IBM offers DB2 and IMS Tools that assist in the Utilities Management process. For example, in an on-demand world, 24x7 data availability is a key requirement. Reorganization tools from IBM can help with the performance of key functions such as unloading and reloading DB2 and IMS data, without impacting data access.

These and other DB2 and IMS Tools can help you achieve higher availability and better performance during data maintenance while enhancing the productivity of both database administrators and system programmers.

DB2 Automation Tool is part of the IBM DB2 Utilities Solution Pack for z/OS, which combines advanced DB2 tools that enable you to more efficiently execute and manage DB2 utilities. The Utilities Solutions Pack consists of the following tools:

- IBM DB2 Automation Tool for z/OS
- IBM DB2 High Performance Unload for z/OS
- IBM DB2 Sort for z/OS
- IBM DB2 Utilities Enhancement Tool for z/OS

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## Service updates and support information

Service updates and support information for this product, including software fix packs, PTFs, frequently asked questions (FAQs), technical notes, troubleshooting information, and downloads, are available from the web.

To find service updates and support information, see the following website:

[http://www.ibm.com/support/entry/portal/Overview/Software/Information\\_Management/DB2\\_Tools\\_for\\_z~OS](http://www.ibm.com/support/entry/portal/Overview/Software/Information_Management/DB2_Tools_for_z~OS)

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## Product documentation and updates

DB2 Tools information is available at multiple places on the web. You can receive updates to DB2 Tools information automatically by registering with the IBM My Notifications service.

### Information on the web

The DB2 Tools Product Documentation web page provides current product documentation that you can view, print, and download. To locate publications with the most up-to-date information, refer to the following web page:

<http://www.ibm.com/software/data/db2imstools/db2tools-library.html>

You can also access documentation for many DB2 Tools from IBM Knowledge Center:

<http://www.ibm.com/support/knowledgecenter>

Search for a specific DB2 Tool product or browse the **Information Management > DB2 for z/OS family**.

IBM Redbooks® publications that cover DB2 Tools are available from the following web page:

<http://www.redbooks.ibm.com>

The Data Management Tools Solutions website shows how IBM solutions can help IT organizations maximize their investment in DB2 databases while staying ahead of today's top data management challenges:

<http://www.ibm.com/software/data/db2imstools/solutions/index.html>

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To register with the My Notifications service:

1. Go to <http://www.ibm.com/support/mysupport>
2. Enter your IBM ID and password, or create one by clicking **register now**.

3. When the My Notifications page is displayed, click **Subscribe** to select those products that you want to receive information updates about. The DB2 Tools option is located under **Software > Information Management**.
4. Click **Continue** to specify the types of updates that you want to receive.
5. Click **Submit** to save your profile.

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Your feedback is important in helping to provide the most accurate and high-quality information. If you have any comments about this book or any other IBM product documentation, use one of the following options:

- Use the online reader comment form, which is located at <http://www.ibm.com/software/data/rcf/>.
- Send your comments by email to [comments@us.ibm.com](mailto:comments@us.ibm.com). Include the name of the book, the part number of the book, the version of the product that you are using, and, if applicable, the specific location of the text you are commenting on, for example, a page number or table number.

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## Accessibility features

Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, to use a software product successfully.

The major accessibility features in this product enable users to perform the following activities:

- Use assistive technologies such as screen readers and screen magnifier software. Consult the assistive technology documentation for specific information when using it to access z/OS interfaces.
- Customize display attributes such as color, contrast, and font size.
- Operate specific or equivalent features by using only the keyboard. Refer to the following publications for information about accessing ISPF interfaces:
  - *z/OS ISPF User's Guide, Volume 1*
  - *z/OS TSO/E Primer*
  - *z/OS TSO/E User's Guide*

These guides describe how to use the ISPF interface, including the use of keyboard shortcuts or function keys (PF keys), include the default settings for the PF keys, and explain how to modify their functions.

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## Chapter 2. Preparing to customize DB2 Automation Tool

Before you start to customize DB2 Automation Tool for the first time, determine all of the customization values that you need to specify during the customization process, and familiarize yourself with all of the customization tasks.

### Checklist for customization tasks

The following checklist lists and describes each significant customization step. Use this checklist to guide you through the entire customization process.

**Tip:** Print the following checklist and the data set names and parameter values worksheets. Use the worksheets to record your values, and refer to them during the customization process.

Task	Link to detailed instructions	Status
<b>Tools Customizer basics</b>		
Before you begin the customization process, familiarize yourself with Tools Customizer terminology, data sets, and other basic information about Tools Customizer.	"Tools Customizer terminology" on page 763 and "Data sets that Tools Customizer uses during customization" on page 766	
<b>Software requirements</b>		
Verify that your environment meets the minimum software requirements. To install and use DB2 Automation Tool, your environment must be running a supported version of the z/OS operating system and of DB2 for z/OS. Additionally, ensure all maintenance has been applied when performing an upgrade.	"Verify that your environment meets software requirements" on page 16	
<b>SMP/E installation</b>		
Verify that DB2 Automation Tool has been installed correctly. DB2 Automation Tool is installed by using standard SMP/E processing.	"Verify that DB2 Automation Tool has been installed successfully" on page 17	
Verify that Tools Customizer for z/OS has been installed correctly. Tools Customizer for z/OS is installed by using standard SMP/E processing.	"Verify that Tools Customizer has been installed successfully" on page 17	
<b>Security requirements</b>		
Confirm that you have the required authorizations to use DB2 Automation Tool.	"Verify that your environment meets security requirements" on page 17	
<b>Authorize the FEC\$TSOC program</b>		
You must add the program FEC\$TSOC to the AUTHPGM and AUTHTSF sections of member IKJTSO00 in SYS1.PARMLIB.	"Authorize the FEC\$TSOC program" on page 18	
<b>Set the MEMLIMIT parameter</b>		
DB2 Automation Tool requires sufficient storage above the bar.	"Set the MEMLIMIT parameter" on page 18	
<b>Add the IEFACTRT exit to the SMFPRMxx member of SYS1.PARMLIB</b>		
The IEFACTRT exit is required for successful operation of the execution reports facility.	"Add the IEFACTRT exit to the SMFPRMxx member of SYS1.PARMLIB" on page 18	

Task	Link to detailed instructions	Status
<b>Create an active WLM environment for integration with Autonomics Director</b>		
To use DB2 Automation Tool with Autonomics Director, the Autonomics Director stored procedures that are created during customization must be associated with an active Workload Manager (WLM) environment.	"Create an active WLM environment for integration with Autonomics Director" on page 19	
<b>Apply all maintenance before migrating from DB2 Automation Tool V3.1 or V4.1</b>		
If you plan to migrate the DB2 Automation Tool V3.1 or V4.1 repository to use with DB2 Automation Tool V4.2, all current maintenance must be applied to V3.1 or V4.1 before beginning the customization process.	"Apply maintenance before migrating from DB2 Automation Tool V3.1 or V4.1" on page 20	
<b>Restrictions</b>		
Review these restrictions if you are planning to install and use different versions of DB2 Automation Tool on the same LPAR.	"DB2 Automation Tool version compatibility" on page 20	
<b>Gather data set names</b>		
During the customization process, you must specify data set names for Tools Customizer, DB2 Automation Tool, and several other items.	"Worksheets: Gathering required data set names" on page 13	
<b>APF authorization</b>		
APF authorize the following data sets: <ul style="list-style-type: none"> <li>• SHAALOAD</li> <li>• SFECLOAD</li> </ul>	"APF authorizing load libraries" on page 20	
<b>Gather parameter values</b>		
During the customization process, you must specify parameter values for DB2 Automation Tool, for DB2, and for your LPAR.	"Worksheets: Gathering parameter values for DB2 Automation Tool" on page 20	
<b>Customize DB2 Automation Tool</b>		
Start Tools Customizer by running a REXX EXEC from the ISPF Command Shell panel.	"Starting Tools Customizer" on page 55	
Set up Tools Customizer user settings. If you are running Tools Customizer for the first time, you must modify several user settings to suit your environment. Otherwise, if the user settings that you have already established are still appropriate, skip this step.	"Modifying Tools Customizer user settings" on page 56	
Complete the steps in the appropriate customization roadmap based on the type of customization that you are performing.		
<b>Customizing DB2 Automation Tool for the first time</b>  Follow this roadmap if you do not have a customized version of DB2 Automation Tool, and you need to customize it for the first time.	"Roadmap: Customizing DB2 Automation Tool for the first time" on page 61	



Task	Link to detailed instructions	Status
<b>Customizing a different version of DB2 Automation Tool</b>  Follow this roadmap if you previously customized a version of DB2 Automation Tool and you want to use the same parameter values to customize a different version.	“Roadmap: Customizing a new version of DB2 Automation Tool from a previous customization” on page 62	
<b>Recustomizing DB2 Automation Tool</b>  Follow this roadmap if you already customized DB2 Automation Tool but want to change one or more parameter values.	“Roadmap: Recustomizing DB2 Automation Tool” on page 63	
<b>Creating multiple configurations of DB2 Automation Tool</b>		
You can create multiple configurations of DB2 Automation Tool on the same subsystem. For example, you can have a test and a production version of DB2 Automation Tool on the same subsystem. Follow the instructions in the topic to create multiple configurations.	Chapter 5, “Creating multiple configurations of DB2 Automation Tool,” on page 89	

## Worksheets: Gathering required data set names

Identify and record the data set names that will be used during the customization process and make sure that requirements for certain data sets are met.

### Data set names for Tools Customizer

Identify and record the following Tools Customizer data set names:

Data set name	Description	Special requirements	Your data set name
SCCQDENU	Metadata library for Tools Customizer		
SCCQLOAD	Executable load module library for Tools Customizer		
SCCQMENU	ISPF messages for Tools Customizer		
SCCQPENU	ISPF panels for Tools Customizer		
SCCQSAMP	Sample members for Tools Customizer		
SCCQTENU	Table library for Tools Customizer	You must have write access to this data set.	

### Data set names of DB2 Automation Tool

Identify and record the following DB2 Automation Tool data set names. During the customization process, you will enter the following values on panel CCQPPRD.

Data set name	Description	Special requirements	Your data set name
SHAADBRM	DBRM library for DB2 Automation Tool		
SHAALOAD	Executable load module library for DB2 Automation Tool	You must APF authorize this data set.	
SHAAMENU	ISPF messages for DB2 Automation Tool		
SHAAPENU	ISPF panels for DB2 Automation Tool		
SHAASAMP	Sample members for DB2 Automation Tool		
SHAADENU	Metadata library for DB2 Automation Tool		
SHAASLIB	ISPF skeleton library for DB2 Automation Tool		

### Data set names of FEC (common code)

If the FEC (common code) data sets were installed into their own target libraries and not into the DB2 Automation Tool libraries, identify and record the following FEC data set names. During the customization process, you will enter the following values on panel CCQPPRD.

Data set name	Description	Special requirements	Your data set name
SFECDBRM	DBRM library for FEC common code.		
SFECLOAD	Executable load module library for FEC common code.	You must APF authorize this data set.	
SFECMENU	ISPF messages for FEC common code.		
SFECPENU	ISPF panels for FEC common code.		
SFECSAMP	Sample members for FEC common code.		

### Data set names of other libraries

Identify and record the following data set names. During the customization process, you will enter the following values on the Setup panel.

Data set name	Description	Special requirements	Your data set name
Discover output data set	<p>Contains the output that is generated when you run the DB2 Automation Tool Discover EXEC.</p> <p>The DB2 Automation Tool Discover EXEC retrieves the metadata and values for the parameters from a previous customization of DB2 Automation Tool.</p> <p>The default name of the data set is DB2TOOL.CCQ110.DISCOVER. You can change the default value on the Tools Customizer Settings panel or the Discover Customized Product Information panel.</p>	You must have write access to this data set.	
Data store data set	<p>Contains product, LPAR, and DB2 parameter values, and DB2 entry associations. Tools Customizer uses this data set to permanently store all information that is acquired about the product, DB2 subsystems, and LPAR when you customize products on the local LPAR.</p> <p>The default name of the data set is DB2TOOL.CCQ110.DASTASTOR. You can change the default value on the Tools Customizer Settings panel.</p>	You must have write access to this data set.	

Data set name	Description	Special requirements	Your data set name
Product customization Library	<p>Contains the customization jobs that Tools Customizer generates for DB2 Automation Tool.</p> <p>To customize DB2 Automation Tool, submit the members of the data set in the order in which they are displayed on the Finish Product Customization panel. The data set naming convention is:</p> <p><i>hlq.\$LPAR-name\$.xyzvrm</i></p> <p>where:</p> <ul style="list-style-type: none"> <li>• <i>hlq</i> is the value of the Customization library qualifier field on the Tools Customizer Settings panel (CCQPSET)</li> <li>• <i>LPAR-name</i> is the four-character LPAR name</li> <li>• <i>xyzvrm</i> is the three-letter product identifier with the version, release, and modification level</li> </ul> <p>For example, the data set name might be DB2TOOL.PRODUCT.CUST.\$MVS1\$.XYZ420.</p>	You must have write access to this data set.	

## Set up your environment prior to customization

Prior to beginning the customization process, ensure that your environment meets all requirements, that you have installed all prerequisite software, and that you have considered how you want to customize optional features.

### Verify that your environment meets software requirements

DB2 Automation Tool supports the following versions of DB2 for z/OS, until end of support for the given DB2 version::

- DB2 V10
- DB2 Version 11

Additional feature requirements are as follows:

- If you plan to use DB2 Automation Tool with Autonomics Director:
  - DB2 V10 NFM or later is required.

- The TSO user ID that schedules the maintenance window is the user ID that runs all utilities in the maintenance window. Therefore, the user ID that schedules the maintenance window must have the authority to run those utilities on the DB2 objects.
- The TSO user ID that schedules the maintenance window is the user ID that is used to schedule the window via the DB2 administrative task scheduler. Therefore, the user ID that schedules the maintenance window also must have the authority to add scheduled tasks to the DB2 administrative task scheduler.
- If you plan to use DB2 Automation Tool's interface to the DB2 administrative task scheduler:
  - The DB2 subsystems must be configured to enable DB2 administrative task scheduler capabilities.
  - RACF® must be configured to allow PassTickets for the DB2 administrative task scheduler task.
- If you plan to use DB2 Automation Tool's autonomic statistics functionality, the following DB2 stored procedures must also be configured, and users' authorization IDs must have execute authority on them:
  - ADMIN\_UTL\_EXECUTE
  - ADMIN\_UTL\_MONITOR
- If you plan to use DB2 Automation Tool to build utility JCL for image copies of objects on IBM ESS devices, you must have IBM Enterprise Storage Server® devices with Advanced Copy Services, and the DFSSMS system data mover (SDM) API (macro ANTRQST) must be at level 5 or above.
- If you plan to use DB2 Automation Tool to make image copies from DB2 Recovery Expert system level backups (SLBs), you must have DB2 Recovery Expert V2.2 with APAR PM06332 or higher installed on the subsystem.

## **Verify that DB2 Automation Tool has been installed successfully**

See the Program Directory for IBM DB2 Automation Tool for z/OS, GI10-8911-01, for installation instructions.

## **Verify that Tools Customizer has been installed successfully**

Tools Customizer is a component of IBM Tools Base for z/OS (5655-V93), which is available free of charge. Tools Customizer provides a standard approach to customizing IBM DB2 for z/OS Tools.

See the Program Directory for IBM Tools Base for z/OS, GI10-8819-05 for installation instructions.

## **Verify that your environment meets security requirements**

DB2 Automation Tool requires no extra security measures outside of standard DB2 security.

If your site uses ACF2 to restrict TSO command use, you may need to add the TSO commands that DB2 Automation Tool uses to the ACF2 Command Limiting table. The TSO commands that DB2 Automation Tool uses are: HAA\$MAIN, HAA@BULD, and FECDBCX.

## Authorize the FEC\$TSOC program

Add the program FEC\$TSOC to the AUTHPGM and AUTHTSF sections of member IKJTSO00 in SYS1.PARMLIB.

## Set the MEMLIMIT parameter

DB2 Automation Tool utilizes above the bar storage (storage above the 2-gigabyte bar). To control the amount of real and auxiliary storage that an address space can use for memory objects at one time, your site may have established an installation default MEMLIMIT that sets the total number of usable virtual pages above the bar for a single address space. If the default is not sufficient, DB2 Automation Tool cannot be started.

The current default for MEMLIMIT for z/OS V1R10.0 and later is 2G. The default for z/OS versions prior to that is 0, meaning that no address space can use virtual storage above the bar. You should verify that the MEMLIMIT setting for your site is at least 2G for DB2 Automation Tool. This amount is recommended for scalability of a wide range of objects. DB2 Automation Tool only uses as much storage above the bar as it needs, and only as long as it is needed; the storage is released immediately after a job or process is complete.

To set the MEMLIMIT parameter, use one of the following methods:

- Set an installation default on the MEMLIMIT parameter in the SMFPRMxx PARMLIB member.
- Issue the SET SMF or SETSMF command.
- Add either the MEMLIMIT parameter or REGION=0 to the logon procedure TSO JCL or the job JCL.
- Specify MEMLIMIT in a IEFUSI exit routine; if you do so, this MEMLIMIT setting overrides all other MEMLIMIT settings.

The following example shows the MEMLIMIT parameter added to a TSO logon procedure:

```
//TSOPROC EXEC PGM=IKJEFT01,REGION=0M,DYNAMNBR=175,  
// PARM='%LOGINIT',TIME=1440,MEMLIMIT=2G
```

See the IBM z/OS documentation for your version of z/OS for additional information about MEMLIMIT.

## Add the IEFACTRT exit to the SMFPRMxx member of SYS1.PARMLIB

The IEFACTRT exit is required for successful operation of the execution reports facility. If the exit is not currently defined, add the IEFACTRT exit at either the SYS or SUBSYS level to the appropriate JES subsystem in the SMFPRMxx member of your site's SYS1.PARMLIB.

The HAAPROC member checks for IEFACTRT at the SUBSYS.JES level or SYS level upon startup. If the IEFACTRT entry is not found, DB2 Automation Tool job tracking will not work. If the IEFACTRT entry is found, the CSVDYNEX service will dynamically define the exit for DB2 Automation Tool job tracking.

In addition, ensure that type 30 SMF records are included in the SMF record types specified in SMFPRMxx.

## Create an active WLM environment for integration with Autonomics Director

To use DB2 Automation Tool with Autonomics Director, the Autonomics Director stored procedures that are created during customization must be associated with an active Workload Manager (WLM) environment. You can do this by using one of the following methods:

- When customizing DB2 Automation Tool using Tools Customizer, select the Management Console Stored Procedures optional task and run the generated JCL.
- Adapt an existing WLM PROC already active for your DB2 subsystem.

Each DB2 environment (SSID or data sharing group) must have separate PROCs and separate WLM environments.

The WLM PROC must be activated using the WLM panels. This is generally done by a systems programmer. When activating the WLM environment for use with DB2 Automation Tool, the following settings are required:

### Application Environment Name

Enter the WLM ENVIRONMENT parameter in the DDL that defines the stored procedure(s).

### Description

(Optional) Enter a description.

### Subsystem Type

Must be set to DB2.

### Procedure Name

Enter the name of the JCL PROC that defines the address space in which the stored procedure runs.

### Start parameters

Required parameters are:

DB2SSN=*ssid*  
APPLENV=*applenv\_name*

Optional parameter:

NUMTCB=*number*

*applenv\_name* must be the same value that was entered in the **Application Environment Name** field.

NUMTCB can be left unspecified and specified in the JCL PROC. The sample PROC provided handles the NUMTCB parameter in the PROC. If specified on the WLM panel, the panel specification takes precedence over the JCL PROC parameter.

Take into account the following considerations:

- Use the same name for the application environment name and the JCL PROC.
- Adopt a naming convention for the application environment name that includes the SSID as part of the name, such as *ssidxxxx* or *xxxxssid*. For example, for two WLM environments that are associated with Autonomics Director (DYX) on DB2 subsystem ID DB2A, then possible application environment and procedure names might be DB2ADYX1 and DB2ADYX2, respectively.

If you choose to adapt an existing WLM PROC to run the Autonomics Director stored procedures, the PROC must include the DB2 Automation Tool load library, the FEC load library, and the Autonomics Director load library. Additionally, the PROC must have a DD named DB2PARMS that points to the DB2 Automation Tool control file.

### **Apply maintenance before migrating from DB2 Automation Tool V3.1 or V4.1**

If you are upgrading from DB2 Automation Tool V3.1 or V4.1, and you plan to migrate your V3.1 or V4.1 data repository to use with DB2 Automation Tool V4.2, ensure that all current maintenance has been applied to DB2 Automation Tool V3.1 or V4.1 before beginning the customization process.

### **DB2 Automation Tool version compatibility**

**Restriction:** DB2 Automation Tool V3.1 and DB2 Automation Tool V4.2 can be installed on the same LPAR. However, a single TSO user ID cannot run V3.1 and V4.2 at the same time. Unpredictable results may occur.

---

## **APF authorizing load libraries**

Some of the programs in DB2 Automation Tool load libraries must be APF-authorized to run.

### **Procedure**

1. Include the following load libraries as part of your authorized list:
  - SHAALOAD
  - If you installed FEC into a separate library from DB2 Automation Tool, APF authorize the FEC load library (usually, SFECLOAD).
2. Activate the changes at the next IPL, or immediately by issuing the following TSO/E command: `PARMLIB UPDATE(member-name-suffix)`, where *member-name-suffix* is the IKJTSOxx member of SYS1.PARMLIB.

---

## **Worksheets: Gathering parameter values for DB2 Automation Tool**

During the customization process, you need to provide parameter values for DB2 Automation Tool, for DB2, and for your LPAR.

Use the worksheets in this topic to record the appropriate parameter settings for your purposes, and then use these worksheets during the customization process. The worksheets are organized based on the order of the customization panels in the Tools Customizer.

After the customization jobs are generated, they are grouped by the job sequence number. In this topic, the jobs use an 8-character member naming convention that follows the format of *ssjjjdd*, where:

- *ss* is the job sequence number, which is an alphabetic character (A - Z) followed by a numeric character (0 - 9). For example, a job sequence number is A0, A1, ..., Z9.
- *jjjj* is the first four characters of the job name. The product assigns the job name.
- *dd* is a set of two alphanumeric characters (AA - 99) that Tools Customizer assigns to identify a DB2 entry.



For example, the job shown as *ssCF2Add* in this topic might be generated as A4CF2AAA.

## Customization values for the Discover EXEC

### Description

Use the following worksheet to identify and record the customization values for the Tools Customizer Discover EXEC. The values in this worksheet are for extracting information from a product that has already been customized. During the customization process, you will enter these values on panel CCQPDSC.

**Note:** Complete this worksheet only if you are recustomizing a product that has previously been customized by using Tools Customizer.

Parameter	Sample or default value	Your value
<b>Discover EXEC for extracting information from an already customized product</b>		
<b>Discover EXEC library</b> The fully qualified data set name that contains the product Discover EXEC.	The metadata library that you specified on the Specify the Metadata Library panel (CCQPHLQ).	
<b>Discover EXEC name</b> The name of the Discover EXEC.	HAADISC	
<b>Discover output data set</b> The name of the data set for the output from the product Discover EXEC.	The name of the discover output library that you entered on the settings panel.	
<b>Information for Discover EXEC section</b>		
<b>New Automation Tool load library</b> This parameter specifies the new DB2 Automation Tool load library that was installed as part of the SMP/E process.	DB2TOOL.HAA420.SHAALOAD	
<b>New FEC load library</b> This parameter specifies the new FEC load library if FEC was not installed into the same libraries as DB2 Automation Tool.	DB2TOOL.FEC130.SFECLOAD	
<b>Previous control file</b> This parameter specifies the DB2 control file used with the previous version of DB2 Automation Tool.	HAA.DB2.CONTROL	
<b>Configuration ID</b> The DB2 Automation Tool three-character configuration name.	HAA	

Parameter	Sample or default value	Your value
<b>Previous Startup CLIST data set</b> This parameter specifies the data set in which the CLISTs for the previous version of DB2 Automation Tool are located.	DB2TOOL.HAA410.SHAASAMP	
<b>Previous Startup CLIST 2</b> This parameter specifies the name of the second of two startup CLISTs that were configured for the previous version of DB2 Automation Tool.	HAAV41C	

## Product to Customize section

### Description

The parameters that are listed in the Product to Customize section are read-only. They contain information that was provided on other panels, by Tools Customizer, or by the DB2 Automation Tool metadata data set.

Parameter	Discovered?	Source of this value
<b>Product metadata library</b> This value is the library that you specified on the Specify the Product to Customize panel. This field is scrollable. Place your cursor anywhere on the field and press PF11 to view its full contents.	No	This value is specified on the Specify the Product to Customize panel (CCQPHLQ).
<b>LPAR</b> The <b>LPAR</b> field displays the LPAR on which you are customizing DB2 Automation Tool.	No	This value is supplied by Tools Customizer.
<b>Product name</b> This value displays the product that is being customized. In this example, IBM DB2 Automation Tool should be displayed in this field. This field is scrollable. Place your cursor anywhere on the field and press PF11 to view its full contents.	No	This value is provided by the product metadata file.
<b>Version</b> The <b>Version</b> field displays the version, release and maintenance of the product you are customizing in the format <i>Vn.Rn.nn</i> .	No	This value is provided by the product metadata file.
<b>Product customization library</b> This value displays the name of the data set in which the generated library customization jobs will be stored.	No	This value is derived from the user-specified customization library qualifier on Tools Customizer Settings panel (CCQPSET)

## Required parameters section

### Description

The parameters in this section are used by multiple steps of the customization process; refer to the parameter descriptions for details. During the customization process, you will enter these values on panel CCQPPRD.

Parameter	Required?	Discovered?	Default value	Your value
<b>Startup CLIST library</b> This parameter specifies the CLIST library in which to store the newly created DB2 Automation Tool CLISTs. These CLISTs are used to define the ISPF environment and to invoke the DB2 Automation Tool ISPF interface.	Yes	Yes	DB2TOOL.HAA420. CLIST	
<b>Automation Tool load library</b> This parameter specifies the load library for the new release of DB2 Automation Tool. This library can optionally contain the FEC load modules.	Yes	Yes	DB2TOOL.HAA420. SHAALOAD	
<b>Solution Pack load library</b> This parameter specifies the library name for the DB2 Utilities Solution Pack load modules. If the DB2 Utilities Solution Pack (BBY) was not purchased, this value must be left blank.	No	No	None	
<b>Automation Tool panel library</b> This parameter specifies the library for the DB2 Automation Tool panels.	Yes	Yes	DB2TOOL.HAA420. SHAAPENU	
<b>User skeleton library</b> This parameter specifies the skeleton library in which user-defined skeletons are stored. DB2 Automation Tool utilizes user-defined skeletons when the library is defined in the CLIST concatenation.	No	Yes	None	
<b>Automation Tool skeleton library</b> This parameter specifies the DB2 Automation Tool library that contains the product skeletons.	Yes	Yes	DB2TOOL.HAA420. SHAASLIB	
<b>FEC common code load library</b> This parameter specifies the library name for the FEC common code load modules if FEC was installed in a separate library from the DB2 Automation Tool load modules.	No	Yes	None	

Parameter	Required?	Discovered?	Default value	Your value
<b>Control file</b> This parameter specifies the control file that DB2 Automation Tool-specific information will be stored in. This file is a KSDS VSAM file, and can be shared with other DB2 tools.	Yes	No	HAA.DB2. CONTROL	
<b>Configuration ID</b> This parameter identifies the work environment. You can run multiple configurations of DB2 Automation Tool on the same LPAR, DB2 subsystem, or both. All of these configurations can use the same control file. See Chapter 5, "Creating multiple configurations of DB2 Automation Tool," on page 89 for more information.	Yes	No	HAA	
<b>Automation Tool SAMPLIB data set</b> This parameter specifies the DB2 Automation Tool sample library.	Yes	No	DB2TOOL.HAA420. SHAASAMP	
<b>Owner of plans and packages</b> This parameter specifies the owner to be used in the plan and package binds. This is a global value and is used for all DB2 subsystems where a subsystem-specific value is not specified. If all of your DB2 subsystems use the same value, it can be defined once here.	Yes	No	HAAUSER	
<b>Qualifier for repository object names</b> This parameter specifies the qualifier for the DB2 Automation Tool repository objects. This value is used for object names in SQL, binding packages, and in the DDL that creates repository objects. This is a global value and is used for all DB2 subsystems where a subsystem-specific value is not specified. If all of your DB2 subsystems use the same value, it can be defined once here.	Yes	No	DLC	
<b>Automation Tool DBRM library</b> The DB2 Automation Tool library that contains the product-supplied DBRMs. The DBRMs are inputs to the bind process.	Yes	No	DB2TOOL.HAA420. SHAADBRM	
<b>Automation Tool customization package name</b> This parameter specifies a temporary package name that is used during customization.	Yes	No	HAA42TMK	

Parameter	Required?	Discovered?	Default value	Your value
<b>DB2 Autonomics Director load library</b> This parameter specifies the library name for the DB2 Autonomics Director load modules. If the DB2 Autonomics Director is not available, this field must be left blank.	No	No	None	
<b>DB2 Autonomics Director DBRM library</b> This parameter specifies the library name for the DB2 Autonomics Director DBRMs. If the DB2 Autonomics Director is not available, this field must be left blank.	No	No	None	

## Task: Configure the product CLISTs

### Description

This task builds the jobs to configure the startup CLISTs. During the customization process, you enter these values on panel CCQPPRD.

This task is *required*.

### Jobs generated

This task generates the following jobs based on the template that is listed:

Job name	Template	Description
ssV42	HAAV42	Configures and adds startup CLIST 1 to CLIST library.
ssV42C	HAAV42C	Configures and adds startup CLIST 2 to CLIST library.
ssEXECS	HAAEXECS	Adds DB2 Automation Tool required EXECs to CLIST library.

### Required authority

The user ID that configures or updates CLISTS must have write access to the startup CLIST library.

Step or parameter	Required?	Discovered?	Default value	Your value
<b>Configure Startup CLISTs</b> Step to configure the CLISTS.	Yes	–	Selected	
<b>Startup CLIST 1</b> The name of the first startup CLIST.	Yes	No	HAAV42	
<b>Startup CLIST 2</b> The name of the second startup CLIST.	Yes	No	HAAV42C	
<b>Automation Tool message library</b> This parameter specifies the Automation Tool library that contains the product messages.	Yes	Yes	DB2TOOL.HAA420. SHAAMENU	

Step or parameter	Required?	Discovered?	Default value	Your value
<b>FEC message library</b> This parameter specifies the library for the FEC messages. This data set is optional if the FEC modules were installed into the same data set as the DB2 Automation Tool messages.	No	Yes	None	
<b>FEC panel library</b> This parameter specifies the library for the FEC panels. This data set is optional if the FEC modules were installed into the same data set as the DB2 Automation Tool panels.	No	Yes	None	
<b>EMC load libraries</b> This parameter specifies the EMC Symmetrix load library if you plan to use DB2 Automation Tool with DB2 Recovery Expert, and the EMC load library (not the SCF load library) is not in the z/OS LNKLIST.	No	Yes	None	
<b>Copy the CLISTs</b> This step copies the required product CLISTs into the specified data set.	Yes	–	Selected	
<b>FEC SAMPLIB</b> This parameter specifies the FEC sample library where the FECSOC CLIST resides and is only required if FEC was not installed into the same libraries as DB2 Automation Tool	No	No	None	

## Task: Create the control file

### Description

This task creates a new control file. The control file is a required VSAM KSDS used by DB2 Automation Tool to store certain product and DB2 related values. It is not necessary to create a new one if one exists. DB2 Automation Tool can share a control file with other DB2 Tools products that use the same type of control file. During the customization process, you enter these values on panel CCQPPRD.

This task is *optional*.

### Jobs generated

This task generates the following jobs based on the template that is listed:

Job name	Template	Description
ssCNTFL	HAACNTFL	Creates the control file.

### Required authority

The user ID that runs the job to create the control file must have the authority to create the control file data set.

Step or parameter	Required?	Discovered?	Default value	Your value
<b>Create a new control file</b> Step to create the control file.	No	–	Selected	
<b>Volume serial number for control file</b> This parameter specifies the volume serial number to use when creating the control file. If this parameter is left blank, SMS will select the appropriate volume.	No	No	None	

## Task: Update the control file

### Description

This task updates the DB2 Automation Tool control file. During the customization process, you enter these values on panel CCQPPRD.

This task is *required*.

### Jobs generated

This task generates the following jobs based on the template that is listed:

Job name	Template	Description
ssCF2dd	HAACF2A	Updates the control file (SSID-specific parameters).
ssCF1A	HAACF1A	Updates the control file with parameters for DB2 Recovery Expert.
ssCF1B	HAACF1B	Updates the control file with parameters for DB2 High Performance Unload.

### Required authority

The user ID that runs the jobs to update the control file must have write authority to the control file data set.

Step or parameter	Required?	Discovered?	Default value	Your value
<b>SSID-specific information</b> Step to update the control file with SSID-specific parameters.	Yes	–	Selected	
<b>Specify TEMPLATEDD values</b> This step updates the control file with global defaults for TEMPLATEDD values. These values can be overridden in individual utility profiles.	No	--	Not selected	
<b>DB2 Recovery Expert information</b> Specify this step if you want to use DB2 Recovery Expert with DB2 Automation Tool. This step updates the control file with parameters required by DB2 Automation Tool to integrate with DB2 Recovery Expert.	No	--	Not selected	

Step or parameter	Required?	Discovered?	Default value	Your value
<b>DB2 Recovery Expert control file</b> This parameter is applicable only if you plan to use DB2 Recovery Expert with DB2 Automation Tool. If DB2 Recovery Expert has a separate control file from DB2 Automation Tool, specify the name. If this field is left blank, it is assumed that DB2 Recovery Expert uses the same control file as DB2 Automation Tool.	No	Yes	None	
<b>DB2 Recovery Expert load libraries</b> This parameter is applicable only if you plan to use DB2 Recovery Expert with DB2 Automation Tool. Specify the names of the data sets that make up the current load library concatenation for DB2 Recovery Expert.	No	Yes	DB2TOOL.ARY310. SARYLOAD	
<b>DB2 HPU information</b> This step updates the control file with parameters required by DB2 Automation Tool to integrate with IBM DB2 High Performance Unload.	No	--	Not selected	
<b>DB2 HPU load libraries</b> This parameter is applicable only if you use DB2 HPU with DB2 Automation Tool. Specify the names of the data sets that comprise the current load library concatenation for DB2 HPU.	No	Yes	DB2TOOL.HPU510. SHPULOAD	
<b>DB2 HPU ver/rel/mod</b> This parameter specifies the version, release, and modification values of DB2 High Performance Unload. It is required if you plan to use HPU with DB2 Automation Tool.	No	Yes	510	

## Task: DB2 Utilities Solution Pack Setup

### Description

This task prepares DB2 Automation Tool to run in a DB2 Utilities Solution Pack environment. If you have not purchased DB2 Utilities Solution Pack, do not select this task. During the customization process, you select this task on panel CCQPPRD.

This task is *optional*.

### Jobs generated

This task generates the following jobs based on the template that is listed:

Job name	Template	Description
ssUSLdd	HAAUSL	Sets up DB2 Automation Tool for use with DB2 Utilities Solution Pack.



### Required authority

The user ID that runs this job must have SYSADM authority on the DB2 subsystems.

Step or parameter	Required?	Discovered?	Default value	Your value
<b>Register with Autonomics Director</b> This step generates a job that defines DB2 Automation Tool to the DB2 Utilities Solution Pack.	No	--	Not selected	

## Task: Create or update DB2 objects

### Description

This set of tasks creates the DB2 Automation Tool repository objects for your version of DB2. During the customization process, you enter these values on panel CCQPPRD.

The repository jobs determine whether repository objects need to be created or updated based on the version and release of DB2 Automation Tool, and the DB2 version on which DB2 Automation Tool is being installed. Ensure that the mode and levels are correct for each SSID. Run the generated job on the LPAR appropriate for the subsystem.

DDL changes to the DB2 Automation Tool repository are not common. However, missing columns or objects can result in unpredictable behavior if those items are required for functionality. If in doubt, submit the DDL and allow DB2 Automation Tool to update the repository.

This task is *required*.

### Jobs generated

This task generates the following jobs based on the template that is listed:

Job name	Template	Description
<i>ssDELEdd</i>	HAADELE	Drops the DB2 Automation Tool repository.
<i>ssDDLydd</i>	HAADDLY	Creates and updates the DB2 Automation Tool repository in preview mode.
<i>ssDDLXdd</i>	HAADDLX	Creates and updates the DB2 Automation Tool repository in execute mode.
<i>ss#IDCdd</i>	HAA#IDC1	Creates user-managed index files on SYSIBM.SYSCOPY.
<i>ssDDL2dd</i>	HAADDL2	Create optional STOGROUP-defined indexes on SYSIBM.SYSTABLES, SYSIBM.SYSTABSTATS, SYSIBM.SYSTABLES_HIST, SYSIBM.SYSTABSTATS_HIST, and SYSIBM.SYSCOPY.
<i>ss#DCPdd</i>	HAA#DCPY	Copy the DB2 Automation Tool repository.

### Required authority

The user ID that runs these jobs to create DB2 objects must have SYSADM authority on the DB2 subsystems.

Step or parameter	Required?	Discovered?	Default value	Your value
<b>Drop repository</b> This step generates a job to drop all DB2 Automation Tool repository objects. If this step is selected, you must edit the DB2 parameters for each subsystem that you want to drop the repository from and set the Drop Automation Tool repository parameter to Y.  <b>Attention:</b> Submitting the DDL generated by this step will delete all existing profiles and all record of prior usage.	No	–	Not selected	
<b>Preview repository changes</b> This step generates an output file that shows a preview of the DDL that will be run. If you are creating a new repository for this installation of DB2 Automation Tool, the output lists the objects that will be created. If you are updating an existing repository, the output shows you the changes to the objects that will be made when the DDL is run.	Yes	–	Selected	
<b>Execute repository changes</b> This step executes the DDL changes shown in the preview file either to create a new repository or to update an existing repository for the new version of DB2 Automation Tool that is being installed.	Yes	–	Selected	
<b>Create optional user-managed index files</b> This step creates index files for a user managed index on SYSIBM.SYSCOPY.	No	–	Not selected	
<b>Volume serial number for SYSCOPY index</b> Specify the volume of the VSAM data set to be used for the optional SYSCOPY index. Or, leave this field blank and allow SMS to select the volume.	No	No	None	

Step or parameter	Required?	Discovered?	Default value	Your value
<b>Create optional indexes</b> This step creates optional indexes on catalog tables SYSIBM.SYSTABLES, SYSIBM.SYSTABSTATS, SYSIBM.SYSTABLES_HIST, SYSIBM.SYSTABSTATS_HIST, and SYSIBM.SYSCOPY. These indexes speed up access to these tables when performing certain maintenance and utility functions. Adding these indexes enables DB2 to use the additional index to access the tables instead of table space scans.	No	--	Not selected	
<b>Copy Automation Tool repository</b> This step copies an existing DB2 Automation Tool repository for the purpose of creating multiple configurations of DB2 Automation Tool on one SSID. Multiple repositories might be useful for creating a production configuration and a test configuration on the same SSID.	No	–	Not selected	
<b>Qualifier for previous repository object names</b> This parameter specifies the high-level qualifier used for the previous repository when copying from one repository to another. This is a global value and can be used for all DB2 subsystems where a subsystem-specific value is not specified. If all of your DB2 subsystems use the same value, you can set it here and not set it for each subsystem.	No	No	DLC	
<b>From ver/rel/mod</b> This parameter specifies the version, release, and modification numbers of the source tables when copying repository tables.	No	No	410	

## Task: Automation Tool Plans and Packages

### Description

This task binds the plans and packages and required for using DB2 Automation Tool, optionally frees plans and packages before a rebind, and grants execute authority on the plans. During the customization process, you enter these values on panel CCQPPRD.

This task is *required*.

### Jobs generated

This task generates the following jobs based on the template that is listed:

Job name	Template	Description
<i>ssFREEdd</i>	HAAFREE	Frees the plans and packages.
<i>ss#BNDdd</i>	HAA#BND	Binds plans and packages.
<i>ssGRANdd</i>	HAAGRANT	Grants execute authority to use DB2 Automation Tool.

#### Required authority

The user ID that runs the *ssFREEdd*, *ss#BNDdd* and the *ssGRANdd* jobs must have SYSADM authority on the DB2 subsystems.

Step or parameter	Required?	Discovered?	Default value	Your value
<b>FREE</b> This step frees the Automation Tool plans and packages before they are rebound.	No	--	Not selected	
<b>BIND</b> This step binds the plans and packages that are required for this release of DB2 Automation Tool.	Yes	--	Selected	
<b>Grant execute authority</b> This step grants execute authority to the DB2 Automation Tool plans.	Yes	--	Selected	

## Task: Management Console Stored Procedures

#### Description

This task creates and configures the stored procedures required for the Management Console. During the customization process, you enter these values on panel CCQPPRD.

This task is *optional*.

#### Jobs generated

This task generates the following jobs based on the template that is listed:

Job name	Template	Description
<i>ssFRSPdd</i>	HAAFRSP	Frees the packages used by the Management Console stored procedures.
<i>ssDRSPdd</i>	HAADRSP	Drops the Management Console stored procedures.
<i>ssDDLSDd</i>	HAADDLS	Creates the Management Console stored procedures.
<i>ssBNDSdd</i>	HAABND2	Binds the DB2 Automation Tool packages used by the Management Console.
<i>ssWLM1dd</i>	HAAWLM1	Defines and runs the Management Console WLM address space.

#### Required authority

The user ID that runs the *ssFRSPdd*, *ssDRSPdd*, *ssDRSPdd*, *ssDDLSDd*, and the *ssBNDSdd* jobs must have SYSADM authority on the DB2 subsystems.

Step or parameter	Required?	Discovered?	Default value	Your value
<b>Free Management Console packages</b> This step frees the packages used by the Management Console stored procedures.	No	--	Not selected	
<b>Drop Management Console stored procedures</b> This step drops the Management Console stored procedures.	No	--	Not selected	
<b>Create Management Console stored procedures</b> This step creates the stored procedures used in Management Console to display DB2 Automation Tool information.	Yes	--	Selected	
<b>Management Console BIND</b> This step binds the DB2 Automation Tool packages used by Management Console.	Yes	--	Selected	
<b>Create Management Console WLM address space</b> This step creates JCL that can be used to run a WLM address space in which Management Console stored procedures are run.	Yes	--	Selected	

## Task: Job Tracking Started Task

### Description

DB2 Automation Tool uses a started task to track job execution results and to enable the restartability feature for DB2 Automation Tool-generated utility jobs. During the customization process, you enter these values on panel CCQPPRD.

This task is *optional*.

### Jobs generated

This task generates the following jobs based on the template that is listed:

Jobname	Template	Description
ssPROC	HAAPROC	Generates the job tracking started task procedure.
ssPARMS	HAAPARMS	Generates the job tracking started task parameter file.

### Required authority

The user ID that runs the ssPROC and ssPARMS jobs to create the job tracking task procedure and parm file must have write access to the libraries where the started task and started task PARMLIB member will be written.

Step or parameter	Required?	Discovered?	Default value	Your value
<b>Create the job tracking started task</b> This step creates the job tracking started task and its associated parameters.	No	–	Not selected	

## Task: Install the sample profiles

### Description

This task installs sample profiles for use with DB2 Automation Tool. These profiles are optional, but can help you quickly set up job profiles to perform maintenance. During the customization process, you enter these values on panel CCQPPRD.

This task is *optional*.

### Jobs generated

This task generates the following jobs based on the template that is listed:

Jobname	Template	Description
ssLOADdd	HAALOADS	Installs the sample profiles.

### Required authority

The user ID that runs the ssLOADdd job to install the sample profiles must have SYSADM authority on the DB2 subsystems and read access to the DB2 Automation Tool sample library (SHAASAMP).

Step or parameter	Required?	Discovered?	Default value	Your value
<b>Install sample profiles</b> This step creates a batch job that loads the DB2 Automation Tool repository tables with the sample profiles.	No	–	Selected	
<b>Sample profile creator name</b> This parameter specifies the creator name to be used for the sample profiles that are loaded into the DB2 Automation Tool repository tables. This value is required if installing the sample profiles.	No	No	HAAUSER	
<b>Sample profile update option</b> This parameter specifies the update option that is assigned to the sample profiles. The following values are valid: <ul style="list-style-type: none"> <li>• U - any user can view, update, or export the profile</li> <li>• V - Only the profile creator can update the profile, but any user can view or export it</li> <li>• N - Only the profile creator can view, update, or export the profile</li> </ul>	No	No	V	

## Task: Add Automation Tool to the DB2 Admin Launchpad

### Description

This task customizes the EXEC that, when executed, adds DB2 Automation Tool to the DB2 Administration Tool Launchpad. During the customization process, you enter these values on panel CCQPPRD.

This task is *optional*.

### Jobs generated

This task generates the following jobs based on the template that is listed:

Jobname	Template	Description
ssADBI	HAAADBI	Creates the ssADBI EXEC that, when run, adds DB2 Automation Tool to the DB2 Administration Tool Launchpad.

### Required authority

The user ID that runs ssADBI job must have write access to the DB2 Automation Tool CLIST library and must have the required authorities to modify the DB2 Administration Tool Launchpad.

Step or parameter	Required?	Discovered?	Default value	Your value
<b>Create the REXX to add Automation Tool to the Launchpad</b> This step creates the REXX exec and stores it in the CLIST library. It then runs the REXX EXEC to add DB2 Automation Tool to the Launchpad.	No	–	Selected	
<b>DB2 Administration Tool high-level qualifier</b> This parameter specifies the high-level qualifier of the DB2 Administration Tool data sets.	No	No	ADBHILVL	
<b>ADBDMTI EXEC data set</b> This parameter specifies the data set that contains the DB2 Admin Tool ADBDMT EXEC.	No	No	ADBHILVL. SADBEXEC	
<b>DB2 Admin version</b> This parameter specifies the version of DB2 Administration Tool that is installed at your site.	No	No	10	

## DB2 Parameters section

### Description

This section contains DB2 parameters. During the customization process, you enter these values on panel CCQPDB2.

Parameter	Required?	Discovered?	Default value	Your value
<b>Group attach name</b> If a subsystem is the member of a data sharing group, this parameter indicates the group attach name.	No	No	None	

Parameter	Required?	Discovered?	Default value	Your value
<b>General DB2 Information - common</b>				
<b>Mode</b> This parameter indicates the mode in which the DB2 subsystem is running. The following values are valid: <ul style="list-style-type: none"> <li>• CM is conversion mode on all listed DB2 versions except DB2 10.</li> <li>• CM8 is conversion mode from DB2 V8 on DB2 10.</li> <li>• CM9 is conversion mode from DB2 Version 9.1 on DB2 10.</li> <li>• NFM is new-function mode on all listed DB2 versions.</li> </ul>	Yes	No	NFM	
<b>Level number</b> This parameter indicates the version, release, and modification level of the DB2 subsystem. The following values are valid: <ul style="list-style-type: none"> <li>• 101 is valid only for modes CM8, CM9 or NFM.</li> <li>• 111 is valid only for modes CM or NFM.</li> </ul>	Yes	No	None	
<b>DB2 Libraries - common</b>				
<b>Load library</b> The names of the data sets that make up the current load library concatenation for DB2. The load library usually consists of a subsystem-specific DSNEXIT library, the base DSNEXIT library for the current DB2 version, and the base DSNLOAD library for the current DB2 version.	Yes	Yes	DSN.SDSNLOAD	
<b>Run library</b> This parameter indicates the data set name of the DB2 run library where DSN1TIAD is located.	Yes	No	DSN.RUNLIB.LOAD	
<b>Exit library</b> This parameter indicates the names of the data sets that make up the current DB2 exit library concatenation for DB2.	Yes	Yes	DSN.SDSNEXIT	
<b>Bootstrap data set</b> This parameter indicates the names of the DB2 bootstrap data sets.	Yes	Yes	DSN.SDSNBSDS	
<b>DB2 Buffer Pools - common</b>				



Parameter	Required?	Discovered?	Default value	Your value
<b>Name of the 4 KB bufferpool</b> This parameter indicates the name of the 4 KB buffer pool to be used for customization. The value must be 8 characters or fewer.	Yes	No	BP0	
<b>Name of the 16 KB bufferpool</b> This parameter indicates the name of the 16 KB buffer pool to be used for customization. The value must be 8 characters or fewer.	Yes	No	BP16K0	
<b>Name of the 32 KB bufferpool</b> This parameter indicates the name of the 32 KB buffer pool to be used for customization. The value must be 8 characters or fewer.	Yes	No	BP32K	
<b>DB2 Utilities - common</b>				
<b>SYSAFF for DB2 utilities</b> This parameter indicates the SYSAFF job parameter to use for running DB2 batch utility jobs. The value must be 8 characters or fewer.	No	No	None	
<b>Plan name for the DSNTIAD utility</b> This parameter indicates the plan name for the DSNTIAD utility. The value must be 8 characters or fewer.	Yes	No	DSNTIAD	
<b>DB2 Tools Objects - common</b>				
<b>Storage group name</b> This parameter indicates the name of the storage group that will be used for creating DB2 objects for customization. The value must be 128 characters or fewer.	Yes	No	SYSDEFLT	
<b>SQL authorization ID</b> The SQL authorization ID that will be used to create DB2 objects.	No	No	None	
<b>Automation Tool DB2 Parameters</b>				
<b>SQL authorization ID for GRANT</b> The name of the SQLID used in SET CURRENT SQLID statements for the job that issues GRANT EXECUTE for DB2 Automation Tool plans. This value overrides SQL authorization ID (but only for the job that issues GRANT EXECUTE on the plans).	No	No	None	

Parameter	Required?	Discovered?	Default value	Your value
<b>Repository table space 4KB buffer pool</b> This parameter indicates the name of the 4 KB buffer pool to be used for DB2 Automation Tool repository table spaces. If left blank, the value in the <b>Name of the 4 KB buffer pool</b> field is used.	No	No	None	
<b>Repository index 4KB buffer pool</b> This parameter indicates the name of the 4 KB buffer pool to be used for DB2 Automation Tool repository index spaces. If left blank, the value in the <b>Name of the 4 KB bufferpool</b> field is used.	No	No	None	
<b>Storage group name for table spaces</b> The name of the storage group that will be used for creating DB2 Automation Tool table spaces. If blank, the value in the <b>Storage group name</b> field is used.	No	No	None	
<b>Storage group name for index spaces</b> The name of the storage group that will be used for creating DB2 Automation Tool index spaces. If blank, the value in the <b>Storage group name</b> field is used.	No	No	None	
<b>Owner of Automation Tool plans and packages</b> This parameter is the BIND owner for plan and package binds. This value is subsystem-specific. If specified, it overrides the global value specified in the product parameters.	Yes	No	None	
<b>Schema for repository object names</b> This parameter identifies the schema used for the Automation Tool repository table names. This value is used when repository objects are created, altered, referenced in SQL, or bound into packages. This value is subsystem-specific and is optional. If specified, this value overrides the global qualifier specified in the product parameters.	No	No	None	

Parameter	Required?	Discovered?	Default value	Your value
<b>Model DSN for GDG base</b> If your site is managed by SMS, and you are required to include a model DSCB in your JCL, specify a model DSCB name. The GDG base must already exist. This parameter is optional if your data sets are managed by SMS. If you provide the base name, DB2 Automation Tool will use it.	No	Yes	None	
<b>DB2 ZPARMs member</b> The ZPARM load module member name for this specific DB2 subsystem. This module typically resides in the DB2 SDSNEXIT library.	Yes	Yes	DSNZPARM	
<b>Plan for online navigation</b> The name of the plan that includes most DB2 Automation Tool functions, except for the job building function and the data page display function.	Yes	Yes	HAAP4201	
<b>Plan for building jobs</b> The name of the plan that includes the function for building DB2 Automation Tool jobs.	Yes	Yes	HAAP4202	
<b>Plan for Data Page Display in browse mode</b> The name of the plan that includes the data page display browse function.	Yes	Yes	HAAP4203	
<b>Plan for Data Page Display in edit mode</b> The name of the plan that includes the data page display edit function.	Yes	Yes	HAAP4204	
<b>Database for repository objects</b> The database name for DB2 Automation Tool repository objects.	Yes	No	DLADB	
<b>Default WLM environment</b> The WLM environment is required only if no valid default WLM environment has been set up. If specified, it is used for a DB2 Automation Tool native SQL stored procedure.	No	No	None	
<b>Table space PRIQTY</b> This value is the primary quantity (PRIQTY) value used to create DB2 Automation Tool table spaces.	Yes	No	200	

Parameter	Required?	Discovered?	Default value	Your value
<b>Table space SECQTY</b> This value is the secondary quantity (SECQTY) value used to create DB2 Automation Tool table spaces.	Yes	No	200	
<b>Index space PRIQTY</b> This value is the primary quantity (PRIQTY) value used to create DB2 Automation Tool indexes.	Yes	No	100	
<b>Index space SECQTY</b> This value is the secondary quantity (SECQTY) value used to create DB2 Automation Tool indexes.	Yes	No	100	
<b>Drop Automation Tool repository</b> This parameter is only displayed if the Drop repository step on the Product Parameters panel (CCQPPRD) is selected. If this parameter is set to Y, a job is generated that contains DDL to drop the repository from that subsystem. If set to N, then a no-op (IEFBR14) job is generated.  <b>Attention:</b> Submitting the DDL generated by this step will delete all existing profiles and all record of prior usage.	No	No	N	
<b>Automation Tool User Exits</b>				
<b>User exits with SQL</b> The names of the user exits that contain SQL and that must be bound into packages.	No	No	None	
<b>User exit package list</b> The package list name for any user exits that are used at this site.	No	No	None	
<b>Automation Tool Shared Profile Packages</b>				
<b>Catalog history package list</b> The name of the catalog history package list (PKLIST). This package stores RUNSTATS statistics in the DB2 catalog.	Yes	Yes	HAAC420C	
<b>Shadow catalog package list</b> The name of the shadow catalog package list (PKLIST). This package stores RUNSTATS statistics in the shadow history tables.	Yes	Yes	HAAC420S	

Parameter	Required?	Discovered?	Default value	Your value
<b>Repository package list</b> The package list name for most DB2 Automation Tool functions. This includes maintaining RUNSTATS statistics in DB2 Automation Tool.	Yes	Yes	HAAC420	
<b>Automation Tool Shared Profile Devices</b>				
<b>Work file device type</b> The default work file unit device to be used in generated jobs. Sample values are SYSDA and DISK.	Yes	Yes	SYSALLDA	
<b>Sort work file device type</b> The sort work file unit device to be used when utility JCL is generated. Sample values are SYSDA and DISK.	Yes	Yes	SYSALLDA	
<b>Automation Tool Shared Profile Build Message DD Names</b>				
<b>Build informational DD</b> The DDNAME to be used for informational messages when a job is built. All generated xxxBnnnI messages will be written to this DD.	Yes	Yes	HAAERROR	
<b>Build warning DD</b> The DDNAME to be used for warning messages when a job is built. All generated xxxBnnnW messages will be written to this DD.	Yes	Yes	HAAERROR	
<b>Build error DD</b> The DDNAME to be used for error messages when a job is built. All generated xxxBnnnE messages will be written to this DD.	Yes	Yes	HAAERROR	
<b>Automation Tool Shared Profile Miscellaneous</b>				
<b>Job tracking subsystem name</b> The name of the job tracking task subsystem that will track jobs for this DB2 subsystem. The job tracking task's subsystem name is defined in the SUBSYS parameter of the job tracking task's HAAPARMS member.	No	Yes	None	

Parameter	Required?	Discovered?	Default value	Your value
<b>Max primary space allocation</b> The maximum amount of space that can be allocated for a primary allocation. You can specify up to 999999 tracks, cylinders, or megabytes. The value that you specify will be converted to cylinders when the job is built. This value affects primary space allocation for image copy DDs and temporary DDs that are used in REORGs, and it also affects utility jobs that are built with TEMPLATE syntax.	Yes	Yes	999999	
<b>Size unit for max primary space allocation</b> The unit for the primary space allocation. Valid values are T for tracks, C for cylinders, and M for megabytes.	Yes	Yes	M	
<b>Secondary allocation percentage</b> The amount of space that can be allocated for a secondary allocation. This value is expressed as a percentage of primary allocation. This value affects secondary space allocation for image copy DDs and temporary DDs that are used in REORGs, and it also affects utility jobs that are built with TEMPLATE syntax. Valid values are 1 - 999.	Yes	Yes	050	
<b>Utility region size</b> The default REGION size, in megabytes, to be used when generating utility JCL. The region size is set on the job step and the value is used for all job steps. If you include a REGION parameter in your job card, the job card REGION parameter overrides the REGION parameter on the EXEC statement.	Yes	Yes	1024	
<b>DB2 fetch buffer size</b> The size of the DB2 fetch buffer in MB. The fetch buffer is used for the DB2 V8 multi-row fetch capability and can improve SQL performance. Valid values are 1 - 2047 MB.	Yes	Yes	0004	
<b>Parallel MVS™ catalog locates</b> The number of parallel processing tasks to be created when doing MVS catalog LOCATE operations. Valid values are 1 - 99.	Yes	Yes	10	

Parameter	Required?	Discovered?	Default value	Your value
<b>Terminate utility if an abend occurs</b> This parameter indicates whether to terminate a utility if an abend occurs when the utility is run. This value can be changed after configuration by using option 0 on the DB2 Automation Tool main menu.	Yes	Yes	N	
<b>Generate STEPLIB DDs</b> This parameter indicates whether STEPLIB DDs are to be included in the JCL. If you specify N, STEPLIB DDs are not included. When N is specified, the DB2 product libraries must be contained in the LNKLST set.	Yes	Yes	Y	
<b>Gen image copy DSNs in GMT</b> This parameter indicates whether to use Greenwich Mean Time (GMT) or local time when image copy data set names are created. Valid values are Y (Greenwich Mean Time) and N (the local time). If you want date and time variables in templates to be resolved at job run time rather than job build time, specify Y.	Yes	Yes	Y	
<b>Indexes of DEFINE NO table spaces</b> This parameter indicates whether to include indexes when exploding a table space that was defined with DEFINE NO and does not yet exist. Even though the table space does not exist, if the index exists, this setting allows DB2 Automation Tool to process the index.	Yes	No	N	
<b>Enable administrative task scheduler support</b> This parameter indicates whether to enable DB2 Automation Tool support for DB2 administrative task scheduler. This support is available only if the DB2 administrative task scheduler is installed.	Yes	Yes	N	

Parameter	Required?	Discovered?	Default value	Your value
<b>Administrative task scheduler max history</b> The number of task executions that DB2 Automation Tool retrieves from the DB2 administrative task scheduler when a task execution status list is viewed. DB2 Automation Tool uses this value only to determine how many task executions to retrieve. It does not define the Maximum history parameter to the DB2 administrative task scheduler. This parameter is used only if the DB2 administrative task scheduler product is installed and enabled.	Yes	Yes	0010	
<b>Administrative task scheduler userid</b> A user ID that is used when scheduling a DB2 administrative task scheduler task. This value is only applicable when Enable administrative task scheduler is set to Y. The value can be a TSO user ID or DFLTUID. DFLTUID tells the DB2 administrative task scheduler to use its default user ID. Any user ID that is entered here, including the default user ID, must have at least MONITOR1 privileges.	No	No	None	
<b>Altered object adjustment</b> Specify how to process objects that were defined in an object profile as non-partitioned, but have since been altered to be partitioned objects. This value is required. Valid values are A (all) and P (partitioned).	No	No	None	
<b>Segment size for repository table spaces</b> The segment size (number of pages per segment) for the DB2 Automation Tool repository segmented table spaces. Valid values are multiples of 4 in the range of 4 - 64.	Yes	No	4	
<b>Event notifications</b> This value controls whether a user is notified when a selected event occurs. Valid values are Y and N (yes and no). Selected events include when a batch job build begins and when a batch job build ends. This value is required.	Yes	No	N	



Parameter	Required?	Discovered?	Default value	Your value
<b>Sysout Class for SMTP output</b> This value is defined as part of the JES set up on the LPAR for this subsystem ID. Ask your systems programmer for a valid value for your site. This value is ignored unless <b>Event notifications</b> events is set to Y.	Yes	No	A	
<b>Z/OS Host Name</b> This parameter is a JES node (system name). This is the JES name of the LPAR for the current subsystem ID. This name can be located in any job log, or ask your systems programmer. This value is ignored unless <b>Event notifications</b> is set to Y.	Yes	No	JESNODE	
<b>SMTP task name</b> This parameter is the SMTP task name used for sending and receiving event notification email notifications. This value is ignored unless <b>Event notifications</b> is set to Y.	Yes	No	SMPTTASK	
<b>Automation Tool Shared Profile Sort Parameters</b>				
<b>Primary sort work space</b> This parameter indicates an override amount for the calculated primary sort work space, specified in cylinders.	No	Yes	None	
<b>Secondary sort work space</b> This parameter indicates an override amount for the calculated secondary sort work space, specified in cylinders.	No	Yes	None	
<b>Number of sort work DDs</b> This parameter indicates an override amount for the calculated number of sort work DD statements.	No	Yes	None	
<b>Automation Tool Stored Procedure Parameters</b>				
<b>Management Console package list</b> This parameter specifies the name of the Management Console package list. This value is required when Management Console is used.	No	No	MCCOLL1	

Parameter	Required?	Discovered?	Default value	Your value
<b>Management Console PROC member</b> This parameter specifies two values for the Management Console stored procedures. It is the PROC name and the data set member name of the JCL PROC that runs the address space for the Management Console stored procedures.	No	No	WLMPROC	
<b>Management Console WLM environment</b> This parameter specifies the WLM environment name for the Management Console stored procedures. The environment name is defined to WLM in WLM panels. It is defined to DB2 in the stored procedure definition (DDL). If this parameter is not specified, the WLM PROC name is used for the WLM environment name. Leaving this parameter unspecified is recommended.	No	No	None	
<b>Management Console WLM NUMTCB</b> This parameter specifies the maximum number of concurrent stored procedures that can be active at one time in the Management Console WLM address space. This parameter is required when the Management Console stored procedures are used.	No	No	8	
<b>Image copy TEMPLATEDD Parameters</b>				
<b>Image copy TEMPLATEDD data set</b> This parameter specifies the TEMPLATEDD data set used for global image copy TEMPLATEDD values. It must be a PDS.	No	No	None	
<b>Image copy TEMPLATEDD member name</b> This parameter specifies the member where the TEMPLATEDD values for image copy are defined.	No	No	None	
<b>LP TEMPLATEDD member name</b> This parameter specifies the name of the TEMPLATE statement within the image copy member where the template information for the local primary copy data set is defined. This value immediately follows the TEMPLATE keyword. See the DB2 Utility Guide and Reference for TEMPLATE syntax information.	No	No	None	

Parameter	Required?	Discovered?	Default value	Your value
<b>LB TEMPLATEDD member name</b> This parameter specifies the name of the TEMPLATE statement within the image copy member where the template information for the local backup copy data set is defined. This value immediately follows the TEMPLATE keyword. See the DB2 Utility Guide and Reference for TEMPLATE syntax information.	No	No	None	
<b>RP TEMPLATEDD member name</b> This parameter specifies the name of the TEMPLATE statement within the image copy member where the template information for the remote primary copy data set is defined. This value immediately follows the TEMPLATE keyword. See the DB2 Utility Guide and Reference for TEMPLATE syntax information.	No	No	None	
<b>RB TEMPLATEDD member name</b> This parameter specifies the name of the TEMPLATE statement within the image copy member where the template information for the remote backup copy data set is defined. This value immediately follows the TEMPLATE keyword. See the DB2 Utility Guide and Reference for TEMPLATE syntax information.	No	No	None	
<b>FlashCopy® TEMPLATEDD member name</b> This parameter specifies the name of the TEMPLATE statement within the image copy member where the template information for the FlashCopy data set is defined. This value immediately follows the TEMPLATE keyword. See the DB2 Utility Guide and Reference for TEMPLATE syntax information.	No	No	None	
<b>COPYTOCOPY TEMPLATEDD Parameters</b>				
<b>COPYTOCOPY TEMPLATEDD data set</b> This parameter specifies the TEMPLATEDD data set used for global COPYTOCOPY TEMPLATEDD values. It must be a PDS.	No	No	None	
<b>COPYTOCOPY TEMPLATEDD member name</b> This parameter specifies the member where the TEMPLATEDD values for COPYTOCOPY are defined.	No	No	None	

Parameter	Required?	Discovered?	Default value	Your value
<b>LP TEMPLATEDD member name</b> This parameter specifies the name of the TEMPLATE statement within the COPYTOCOPY member where the template information for the local primary COPYTOCOPY data set is defined. This value immediately follows the TEMPLATE keyword. See the DB2 Utility Guide and Reference for TEMPLATE syntax information.	No	No	None	
<b>LB TEMPLATEDD member name</b> This parameter specifies the name of the TEMPLATE statement within the COPYTOCOPY member where the template information for the local backup COPYTOCOPY data set is defined. This value immediately follows the TEMPLATE keyword. See the DB2 Utility Guide and Reference for TEMPLATE syntax information.	No	No	None	
<b>RP TEMPLATEDD member name</b> This parameter specifies the name of the TEMPLATE statement within the COPYTOCOPY member where the template information for the remote primary COPYTOCOPY data set is defined. This value immediately follows the TEMPLATE keyword. See the DB2 Utility Guide and Reference for TEMPLATE syntax information.	No	No	None	
<b>RB TEMPLATEDD member name</b> This parameter specifies the name of the TEMPLATE statement within the COPYTOCOPY member where the template information for the remote backup COPYTOCOPY data set is defined. This value immediately follows the TEMPLATE keyword. See the DB2 Utility Guide and Reference for TEMPLATE syntax information.	No	No	None	
<b>REORG TABLESPACE TEMPLATEDD Parameters</b>				
<b>REORG TABLESPACE TEMPLATEDD data set</b> This parameter specifies the TEMPLATEDD data set used for global REORG TABLESPACE TEMPLATEDD values. It must be a PDS.	No	No	None	

Parameter	Required?	Discovered?	Default value	Your value
<b>REORG TABLESPACE TEMPLATEDD member name</b> This parameter specifies the member where the TEMPLATEDD values for REORG TABLESPACE are defined.	No	No	None	
<b>LP TEMPLATEDD member name</b> This parameter specifies the name of the TEMPLATE statement within the REORG TABLESPACE member where the template information for the local primary copy data set is defined. This value immediately follows the TEMPLATE keyword. See the DB2 Utility Guide and Reference for TEMPLATE syntax information.	No	No	None	
<b>LB TEMPLATEDD member name</b> This parameter specifies the name of the TEMPLATE statement within the REORG TABLESPACE member where the template information for the local backup copy data set is defined. This value immediately follows the TEMPLATE keyword. See the DB2 Utility Guide and Reference for TEMPLATE syntax information.	No	No	None	
<b>RP TEMPLATEDD member name</b> This parameter specifies the name of the TEMPLATE statement within the REORG TABLESPACE member where the template information for the remote primary copy data set is defined. This value immediately follows the TEMPLATE keyword. See the DB2 Utility Guide and Reference for TEMPLATE syntax information.	No	No	None	
<b>RB TEMPLATEDD member name</b> This parameter specifies the name of the TEMPLATE statement within the REORG TABLESPACE member where the template information for the remote backup copy data set is defined. This value immediately follows the TEMPLATE keyword. See the DB2 Utility Guide and Reference for TEMPLATE syntax information.	No	No	None	

Parameter	Required?	Discovered?	Default value	Your value
<b>DISCARD TEMPLATEDD member name</b> This parameter specifies the name of the TEMPLATE statement within the REORG TABLESPACE member where the template information for the discard data set is defined. This value immediately follows the TEMPLATE keyword. See the DB2 Utility Guide and Reference for TEMPLATE syntax information.	No	No	None	
<b>SYSPUNCH TEMPLATEDD member name</b> This parameter specifies the name of the TEMPLATE statement within the REORG TABLESPACE member where the template information for the SYSPUNCH data set is defined. This value immediately follows the TEMPLATE keyword. See the DB2 Utility Guide and Reference for TEMPLATE syntax information.	No	No	None	
<b>SYSREC TEMPLATEDD member name</b> This parameter specifies the name of the TEMPLATE statement within the REORG TABLESPACE member where the template information for the SYSREC data set is defined. This value immediately follows the TEMPLATE keyword. See the DB2 Utility Guide and Reference for TEMPLATE syntax information.	No	No	None	
<b>FlashCopy TEMPLATEDD member name</b> This parameter specifies the name of the TEMPLATE statement within the REORG TABLESPACE member where the template information for the FlashCopy data set is defined. This value immediately follows the TEMPLATE keyword. See the DB2 Utility Guide and Reference for TEMPLATE syntax information.	No	No	None	
<b>REORG INDEX TEMPLATEDD Parameters</b>				
<b>REORG INDEX TEMPLATEDD data set</b> This parameter specifies the TEMPLATEDD data set used for global REORG INDEX TEMPLATEDD values. It must be a PDS.	No	No	None	
<b>REORG INDEX TEMPLATEDD member name</b> This parameter specifies the member where the TEMPLATEDD values for REORG INDEX are defined.	No	No	None	

Parameter	Required?	Discovered?	Default value	Your value
<b>FlashCopy TEMPLATEDD member name</b> This parameter specifies the name of the TEMPLATE statement within the REORG INDEX member where the template information for the FlashCopy data set is defined. This value immediately follows the TEMPLATE keyword. See the DB2 Utility Guide and Reference for TEMPLATE syntax information.	No	No	None	
<b>REBUILD INDEX TEMPLATEDD Parameters</b>				
<b>REBUILD INDEX TEMPLATEDD data set</b> This parameter specifies the TEMPLATEDD data set used for global REBUILD INDEX TEMPLATEDD values. It must be a PDS.	No	No	None	
<b>REBUILD INDEX TEMPLATEDD member name</b> This parameter specifies the member where the TEMPLATEDD values for REBUILD INDEX are defined.	No	No	None	
<b>FlashCopy TEMPLATEDD member name</b> This parameter specifies the name of the TEMPLATE statement within the REBUILD INDEX member where the template information for the FlashCopy data set is defined. This value immediately follows the TEMPLATE keyword. See the DB2 Utility Guide and Reference for TEMPLATE syntax information.	No	No	None	

## LPAR Parameters section

### Description

This section contains LPAR parameters. All parameters are required. During the customization process, you will enter these values on panel CCQPLPR.

Parameter	Required?	Discovered?	Default value	Your value
<b>Job Entry Subsystem (JES)</b>				
<b>JES version</b> The version of the job entry system (JES) that is installed on the LPAR.	Yes	No	3	
<b>ISPF Libraries</b>				
<b>Message library</b> The data set name of the ISPF message library.	Yes	Yes	ISP.SISPMENU	
<b>ISPF table input library</b> The data set name of the ISPF table input library.	Yes	Yes	ISP.SISPTENU	

Parameter	Required?	Discovered?	Default value	Your value
<b>Language Environment® Libraries</b>				
<b>Load library</b> The data set name of the Language Environment load library.	Yes	Yes	CEE.SCEELLIB	
<b>Automation Tool LPAR Parameters</b>				
<b>Automation Tool PROCLIB</b> This parameter specifies the data set name where you want to store JCL procedures (PROCS) used with DB2 Automation Tool. This data set is used for the job tracking started task and the Management Console stored procedures.	No	No	HAA.PROCLIB	
<b>Job tracking started task PROC member</b> This parameter specifies the member name of the job tracking started task. The member name can be the same name as the job tracking started task ID.	No	No	HAAPROC	
<b>Job tracking started task Parms data set</b> This parameter specifies the data set where the job tracking started task parameters are located. The data set can be sequential or a PDS. If it is a PDS, the member name must be included in parentheses.	No	No	HAA.PARMLIB (HAAPARM)	
<b>Job tracking started task ID</b> This parameter specifies the name of the job tracking started task. Use a unique name for each job tracking task that will run on the LPAR. To prevent confusion, specify a name other than the name of a DB2 subsystem. <b>Tip:</b> This parameter can be the same as the job tracking started task PROC member name.	No	No	HAAT	



Parameter	Required?	Discovered?	Default value	Your value
<b>Job tracking started task AUTHID</b> This parameter specifies the authorization ID of the job tracking started task and will be used to connect to DB2 when saving data to the repository. This ID must be a valid RACF user that can insert and update rows in the job tracking tables. This user ID cannot be a RACF GROUP name, but must be at the RACF USER level. You can use RACF STARTED class profiles that specify a RACF user and group name to assign to the started task. If you use RACF STARTED class profiles that specify a RACF user and group name, do not specify this parameter.	No	No	DB2USER	

---

## DB2 version migration and fallback

When a DB2 subsystem that is being used with DB2 Automation Tool is migrated to a later version, or must be reverted to a prior version, follow these steps.

After your subsystem has been migrated to a later version of DB2, you can port your repository statistics to the new subsystem. For example, you can port the statistics repository from a DB2 V9 subsystem to a DB2 V10 subsystem. Information about migration is also provided in this topic.

### DB2 version migration and fallback instructions

These steps must be performed when a DB2 subsystem that has been customized for use with DB2 Automation Tool is migrated to a later DB2 version, or must be reverted to a previous DB2 version.

#### About this task

For member names described in this procedure, *ss* is a job sequence number and *dd* is a set of alphanumeric characters assigned by Tools Customizer. Refer to “Worksheets: Gathering required data set names” on page 13 for additional information.

#### Procedure

1. Start Tools Customizer.
2. Run the Discover command to ensure that the Tools Customizer datastore is up to date.
3. For each DB2 subsystem that has been customized:
  - a. On the Customizer Workplace panel, edit the DB2 entry.
  - b. On the DB2 Parameters panel, change the Mode and Level number fields to the new DB2 mode and level. Change other DB2 specific fields, such as library or BSDS names, as required. Save and exit the DB2 Parameters panel.

- c. On the Customizer Workplace panel, regenerate the customization jobs for the subsystem.
- d. Submit the SSID-specific update control file job (member name *ssCF2dd*).
- e. For DB2 migrations only, submit jobs to update the repository (member name *ssDD\*dd*). Skip this step for fallback.
- f. For fallback only, submit the job to free previously bound plans and packages from the fallback subsystem (member name *ssFREEdd*).
- g. Submit the bind job (member name *ss#BNDdd*).

## Porting repository statistics from one DB2 subsystem to another

You can use the HAARSTAT job that is provided in SHAASAMP to unload DB2 Automation Tool repository RUNSTATS statistics from one DB2 subsystem and load another DB2 subsystem with the statistics.

### About this task

You can also use this job to migrate statistics between DB2 versions; for example, you can migrate the statistics repository from a DB2 V9 subsystem to a DB2 V10 subsystem.

### Procedure

Edit and run the HAARSTAT sample job; the instructions are contained in the member. Information about the number of unloaded repository RUNSTATS statistics rows is displayed during the unload phase. Information is also provided about the number of RUNSTATS statistics rows that are loaded during the load phase.

---

## Sequence when customizing DB2 Automation Tool as part of the DB2 Utilities Solutions Pack

When DB2 Automation Tool is installed and configured as part of the DB2 Utilities Solutions Pack, customization must be done in the correct order to enable the Autonomics Director and Management Console extension functionality that is available with the pack. Follow the customization order as described in this topic.

Run Tools Customizer and customize in the following order:

1. Perform customization using the SDYXDENU metadata library for each DB2 subsystem on which you are installing DB2 Automation Tool. This process configures the Autonomics Director.
2. Perform customization using the SBYDENU metadata library. This process allows you to select the Solution Pack products to install. On the Select the Components to Customize panel (CCQPSEC), select **DB2 Automation Tool for z/OS** (as well as any other products that you want to customize).
3. When you press Enter, the SHAADENU metadata library is selected for customization. You can then begin customization of DB2 Automation Tool.

---

## Starting and preparing Tools Customizer for use

Use the provided REXX EXEC to start Tools Customizer. The first time that you use Tools Customizer, you must modify the settings that Tools Customizer uses to customize DB2 Automation Tool.

## Starting Tools Customizer

Start Tools Customizer by running a REXX EXEC from the ISPF Command Shell panel.

### Before you begin

Tools Customizer must be SMP/E installed. You must know the high-level qualifier of where the Tools Customizer libraries reside. The high-level qualifier is considered to be all the segments of the data set name except the lowest-level qualifier, which is SCCQEXEC.

**Attention:** Ensure that Tools Customizer load libraries are not APF authorized. APF authorizing Tools Customizer libraries results in an abend.

### About this task

To run the REXX EXEC, you must either change the placeholder in the EXEC for the high-level qualifier of the Tools Customizer EXEC library or pass the high-level qualifier as a parameter when you run the EXEC. The REXX EXEC is in the CCQTCZ member of the EXEC library.

### Procedure

1. Optional: Change the placeholder for the high-level qualifier in the REXX EXEC:
  - a. Find the EXEC library data set for Tools Customizer. The name of the data set is *high\_level\_qualifier.SCCQEXEC*.
  - b. Edit data set member CCQTCZ and replace the <TCZ HLQ> string with the high-level qualifier of the EXEC library data set. For example, if the name of the Tools Customizer EXEC library is CCQTCZ.USABSAND.SCCQEXEC, replace <TCZ HLQ> with CCQTCZ.USABSAND.

You have to change the placeholder for the high-level qualifier only once. When you run the REXX EXEC, you do not have to pass the high-level qualifier as a parameter.

2. Run the REXX EXEC (CCQTCZ):
  - a. From the ISPF Primary Option Menu, select option 6. The ISPF Command Shell panel is displayed.
  - b. Specify the EX command to run the REXX EXEC. For example, if the Tools Customizer EXEC library is CCQTCZ.USABSAND.SCCQEXEC and you changed the placeholder for the high-level qualifier in the REXX EXEC, specify:

```
EX 'CCQTCZ.USABSAND.SCCQEXEC(CCQTCZ)'
```

If you did not change the placeholder for the high-level qualifier in the REXX EXEC, specify:

```
EX 'CCQTCZ.USABSAND.SCCQEXEC(CCQTCZ)' 'CCQTCZ.USABSAND'
```

You can also specify a trace data set name and a user profile when you run the REXX EXEC.

- The default trace data set name is *USERID.CCQ.TRACE*. To specify a different trace data set name, append the trace data set name to the command. For example, to specify a trace data set name of CCQTCZ.MYTRACE, enter:

```
EX 'CCQTCZ.USABSAND.SCCQEXEC(CCQTCZ)' 'CCQTCZ.USABSAND, CCQTCZ.MYTRACE'
```

- To specify a user profile other than your own, append the user profile name to the command. For example, to specify a user profile of SHRPROF, enter:

```
CCQTCZ.USABSAND.SCCQEXEC(CCQTCZ)' 'CCQTCZ.USABSAND, ,CCQTCZ.SHRPROF'
```

Tools Customizer will use the settings from the specified profile. This profile will be updated when you exit Tools Customizer, but your own profile will remain unchanged.

## Results

The IBM Customizer Tools for z/OS main menu panel is displayed.

## What to do next

If you are running Tools Customizer for the first time, you must modify the Tools Customizer user settings. If you have already set the Tools Customizer user settings, either customize or recustomize DB2 Automation Tool.

## Modifying Tools Customizer user settings

Before you can customize DB2 Automation Tool with Tools Customizer, you must review the settings that Tools Customizer uses. You might have to change the default values to suit your environment. In most cases, you can change the Tools Customizer values at any time. For example, after you have customized DB2 Automation Tool and are customizing a different product or solution pack, you might have to change the settings.

## Procedure

1. On the IBM Tools Customizer for z/OS main panel (CCQPHME), specify option 0, **User settings for Tools Customizer**. The Tools Customizer Settings panel (CCQPSET) is displayed, as shown in the following figure:

```
CCQPSET          Tools Customizer Settings          14:03:51
Command ==>>
Enter the settings for customizing a product or press End to save and exit.

Commands: SAVE  OPTIONS

Product Customization Settings

*Customization library qualifier . . DB2TOOL.PRODUCT.CUST
  Volume serial . . . . .
*Use DB2 group attach . . . . . YES (YES/NO)

Tools Customizer Library Settings

*Metadata library . . . . . DB2TOOL.CCQ110.SCCQDENU
*Discover output data set . DB2TOOL.CCQ110.DISCOVER
  Volume serial . . . . .
*Data store data set . . . DB2TOOL.CCQ110.DATAST01
  Volume serial . . . . .

User Job Card Settings for Customization Jobs

==>> //          JOB (ACCOUNT),'NAME',
```

Figure 1. The Tools Customizer Settings panel (CCQPSET)

**Note:** An asterisk next to a field indicates that the field is required.

2. Review the values for the following required fields. Use the default value or specify your own value. You must have appropriate READ and WRITE access to the data sets that are specified.

#### Customization library qualifier

The high-level qualifier that is used as the prefix for the customization library. The customization library is a data set in which the generated jobs to customize DB2 Automation Tool are stored. WRITE access to this qualifier is required.

For each product to be customized, the first value that is specified for the qualifier is always used, even if you change it after you have generated the customization jobs. For example, if you customize a product and then specify a new qualifier for recustomization, although the new qualifier is saved and displayed, the original value is used.

To maintain multiple instances of Tools Customizer, specify a unique customization library qualifier for each instance of Tools Customizer. Data set names that exceed 42 characters must be enclosed in single quotation marks (').

#### Volume serial

The volume name in which the customization library will reside. If you don't specify a volume name, it will be assigned by the system.

#### Use DB2 group attach

Determines the value that is used in the CONNECT statements in the generated customization jobs. Specify YES for data sharing environments, which causes the group attach name to be used. Specifying NO, in most cases, causes the SSID to be used in the DB2 CONNECT statement.

**Important:** This field has no effect when you are customizing a product on a DB2 subsystem that is not a member of a data sharing group. In this case, the DB2 subsystem ID (SSID) is always used in the CONNECT statements in the generated customization jobs.

When you are customizing a product on a DB2 subsystem that is a member of a data sharing group, how the DB2 subsystem is defined and the value of the **Use DB2 group attach** field determines the value that is used in the CONNECT statements in the generated jobs. The following table shows whether the SSID or the group attach name is used:

*Table 1. The effect of the value of the **Use DB2 group attach** field in a data sharing environment*

DB2 subsystem definition	Value of the Use DB2 group attach field	Value that is used in the CONNECT statements
The DB2 subsystem is defined with an SSID.	Yes	Group attach name
	No	SSID <sup>1</sup>
The DB2 subsystem is not defined with an SSID.	Yes or No	Group attach name

**Note 1:** If you generate jobs for multiple DB2 subsystems that are defined with an SSID and belong to the same data sharing group, the SSID of the first DB2 subsystem that is selected is used.

For example, assume that on the Customizer Workplace panel, you generated jobs for the following DB2 subsystems:

- DB2C, which is a stand-alone DB2 subsystem
- DB2A, which is a DB2 subsystem that is a member of data sharing group DSG1
- A DB2 subsystem that was not defined with an SSID that is a member of data sharing group DSGA

The following figure shows how these DB2 entries might be listed on the Customizer Workplace panel:

```

Associated DB2 Entries and Parameter Status
Line commands: G - Generate jobs  E - Edit  B - Browse  C - Copy  R - Remove
Cmd SSID GrpAttch Lvl Mode User ID Date      Status      Message
DB2C  --          910 NFM  SYSADM  2010/11/09 Ready to Customize
DB2A  DSG1        910 NFM  SYSADM  2010/11/09 Ready to Customize
--    DSGA        910 NFM  SYSADM  2010/11/09 Ready to Customize
----- End of DB2 entries -----

```

The following table shows which values are used in the CONNECT statements in the generated jobs, based on the value of the **Use DB2 group attach** field.

*Table 2. Value that is used in the CONNECT statements in the generated jobs*

SSID	GrpAttch	Value of the Use DB2 group attach field	Value that is used in the CONNECT statements
DB2C	--	Yes	SSID
		No	SSID
DB2A	DSG1	Yes	Group attach name
		No	SSID
--	DSGA	Yes	Group attach name
		No	Group attach name

### Tools Customizer metadata library

The name of the data set that contains the metadata that is used to display the DB2 and LPAR parameters. The parameters that are displayed on the LPAR Parameters panel and the DB2 Parameters panel depend on the parameters that you define and the tasks and steps that you select on the Product Parameters panel for the product that you are customizing. For example, the DB2 parameters that are required, based on the selected tasks and steps, are displayed on the DB2 Parameters panel, and you can edit them. If they are not required, they are not displayed. Read access to this data set is required. Data set names that exceed 42 characters must be enclosed in single quotation marks (').

### Discover output data set

The name of the data set in which the output from the DB2 Automation Tool Discover EXEC is stored. Each product has its own Discover EXEC. The Discover EXEC retrieves the product, LPAR, and DB2 parameters from a previously customized product. Write access to this data set is required. Data set names that exceed 42 characters must be enclosed in single quotation marks (').

### **Volume serial**

The volume name in which the discover output data set will reside. If you don't specify a volume name, it will be assigned by the system.

### **Data store data set**

The name of the data set where Tools Customizer stores information about product, LPAR, and DB2 parameter values. Information about which products are associated with which DB2 entries (DB2 subsystems, DB2 group attach names, and DB2 data sharing members) is also stored in this data set. Data set names that exceed 42 characters must be enclosed in single quotation marks (''). The specified data store data set can be used with only one invocation of Tools Customizer at a time. Data set names that exceed 42 characters must be enclosed in single quotation marks ('').

### **Volume serial**

The volume name in which the data store data set will reside. If you don't specify a volume name, it will be assigned by the system.

### **User job card settings for customization jobs**

The job card information to be inserted into the generated jobs for customizing a product. The default value is the job statement information from the ISPF Batch Selection panel.

The first line of the job card automatically begins with the following information:

```
//          JOB
```

where characters 3 - 10 are reserved by Tools Customizer for the job name and includes a blank space after JOB. This name cannot be edited. Information that you specify on the first line of the job card cannot exceed 57 characters. This character limit includes a continuation character. All other lines of the job card cannot exceed 72 characters.

3. Press End to save and exit. If the Discover output data set and the data store data set that you specified do not exist, Tools Customizer creates them.

**Important:** If the ISPF sessions unexpectedly ends before you exit Tools Customizer, the fields on the Tools Customizer Settings panel (CCQPSET) will be repopulated with default values, and you will be required to review them or specify new values again.

## **Results**

The values are saved, and the IBM Tools Customizer for z/OS main menu panel (CCQPHME) is displayed again.

## **What to do next**

You are ready to customize or recustomize DB2 Automation Tool or to change parameter settings.





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## Chapter 3. Customizing DB2 Automation Tool

Using Tools Customizer to customize DB2 Automation Tool consists of identifying the product to customize; defining any required DB2 Automation Tool, LPAR, and DB2 parameters; generating the customization jobs; and submitting the jobs.

Customization roadmaps describe the steps that you must complete to customize DB2 Automation Tool. Separate roadmaps are provided for the three most common types of customizations.

Use the following table to determine which roadmap corresponds to your environment.

*Table 3. Customization roadmaps*

Environment description	Roadmap
You do not have a customized version of DB2 Automation Tool, and you need to customize it for the first time.	"Roadmap: Customizing DB2 Automation Tool for the first time"
You have already customized a version of DB2 Automation Tool, and you want to use the same parameter values to customize a different version.	"Roadmap: Customizing a new version of DB2 Automation Tool from a previous customization" on page 62
You have a customized version of of DB2 Automation Tool, but you want to change one or more parameter values.	"Roadmap: Recustomizing DB2 Automation Tool" on page 63

---

### Roadmap: Customizing DB2 Automation Tool for the first time

This roadmap lists and describes the steps that are required to customize DB2 Automation Tool for the first time.

If you are customizing a previous version of DB2 Automation Tool, see "Roadmap: Customizing a new version of DB2 Automation Tool from a previous customization" on page 62.

Before you complete these steps, ensure that the following prerequisites have been met:

- All of the product customization steps that must be done before Tools Customizer is started are complete.
- The LPAR ISPF libraries that are required to submit the jobs are known.
- Tools Customizer is started.
- The Tools Customizer settings have been reviewed or modified, and saved.

Complete the steps in the following table to customize DB2 Automation Tool for the first time.

*Table 4. Steps for customizing DB2 Automation Tool for the first time*

Step	Description	Instructions
1	Specify the product metadata library for the product that you want to customize. The name of this library is <i>hlq.SHAADENU</i> .	"Specifying the metadata library for the product to customize" on page 64
2	Create new DB2 entries and associate them with DB2 Automation Tool.	"Creating and associating DB2 entries" on page 68
3	Define the required parameters.	"Defining parameters" on page 70
4	Generate the customization jobs for the product or for the DB2 entries on which DB2 Automation Tool is ready to be customized.	"Generating customization jobs" on page 76
5	Submit the generated customization jobs.	"Submitting customization jobs" on page 77

The following table lists some of the common administrative tasks that you might need to do during the customization process.

*Table 5. Administrative tasks*

Description	Instructions
Browse the different types of parameters.	"Browsing parameters" on page 79
Copy an existing DB2 entry to the list of DB2 entries on which DB2 Automation Tool can be customized.	"Copying DB2 entries" on page 79
Remove one or more DB2 entries from the associated list.	"Removing DB2 entries" on page 81
Delete one or more DB2 entries from the master list.	"Deleting DB2 entries" on page 81
Display a list of customization jobs that have been previously generated.	"Displaying customization jobs" on page 82
Maintain the customization jobs in the customization library.	"Maintaining customization jobs" on page 82

## Roadmap: Customizing a new version of DB2 Automation Tool from a previous customization

This roadmap lists and describes the steps for customizing a new version of DB2 Automation Tool based on the existing customization values of a previous version of the same product.

Use this roadmap even if the previous version of DB2 Automation Tool was not customized by using Tools Customizer.

Before you complete these steps, ensure that the following prerequisites have been met:

- All of the product customization steps that must be done before Tools Customizer is started are complete.
- Tools Customizer is started.
- The Tools Customizer settings have been reviewed or modified, and saved.

Complete the steps in the following table to customize a new version of DB2 Automation Tool from a previous customization.

*Table 6. Steps for customizing a new version of DB2 Automation Tool from a previous customization*

Step	Description	Instructions
1	Specify the product metadata library for the product that you want to customize. The name of this library is <i>hlq.SHAADENU</i> .	"Specifying the metadata library for the product to customize" on page 64
2	Use the DB2 Automation Tool Discover EXEC to discover information about the version of DB2 Automation Tool that you previously customized manually.	"Discovering DB2 Automation Tool information automatically" on page 66
3	Define the required parameters.	"Defining parameters" on page 70
4	Generate the customization jobs for the product or for the DB2 entries on which DB2 Automation Tool is ready to be customized.	"Generating customization jobs" on page 76
5	Submit the generated customization jobs.	"Submitting customization jobs" on page 77

The following table lists some of the common administrative tasks that you might need to do during the customization process.

*Table 7. Administrative tasks*

Description	Instructions
Browse the different types of parameters.	"Browsing parameters" on page 79
Copy an existing DB2 entry to the list of DB2 entries on which DB2 Automation Tool can be customized.	"Copying DB2 entries" on page 79
Remove one or more DB2 entries from the associated list.	"Removing DB2 entries" on page 81
Delete one or more DB2 entries from the master list.	"Deleting DB2 entries" on page 81
Display a list of customization jobs that have been previously generated.	"Displaying customization jobs" on page 82
Maintain the customization jobs in the customization library.	"Maintaining customization jobs" on page 82

## Roadmap: Recustomizing DB2 Automation Tool

This roadmap lists and describes the steps to change parameter values and regenerate customization jobs for DB2 Automation Tool after you have customized it for the first time.

The new customization jobs will replace the customization jobs that were previously generated and stored in the customization library. Part of the recustomization process includes selecting or deselecting optional tasks or steps, changing the definitions of parameters that have already been defined, or both. Use the method in this roadmap instead of deleting customization jobs from the customization library.

Before you complete these steps, ensure that the following prerequisites have been met:

- All of the product customization steps that must be done before Tools Customizer is started are complete.
- Tools Customizer is started.

Complete the steps in the following table to recustomize DB2 Automation Tool.

*Table 8. Required steps for recustomizing DB2 Automation Tool*

Step	Description	Instructions
1	Specify the product metadata library for the product that you want to recustomize. The name of this library is <i>hlq.SHAADENU</i> .	"Specifying the metadata library for the product to customize"
2	Edit the specific tasks, steps, or parameters that need to be changed.	<ul style="list-style-type: none"><li>• "Defining DB2 Automation Tool parameters" on page 70</li><li>• "Defining LPAR parameters" on page 72</li><li>• "Defining DB2 parameters" on page 74</li></ul>
3	Generate the customization jobs for the product or for the DB2 entries on which DB2 Automation Tool is ready to be customized.	"Generating customization jobs" on page 76
4	Submit the new generated customization jobs.	"Submitting customization jobs" on page 77

The following table lists some of the common administrative tasks that you might need to do during the customization process.

*Table 9. Administrative tasks*

Description	Instructions
Browse the different types of parameters.	"Browsing parameters" on page 79
Copy an existing DB2 entry to the list of DB2 entries on which DB2 Automation Tool can be customized.	"Copying DB2 entries" on page 79
Remove one or more DB2 entries from the associated list.	"Removing DB2 entries" on page 81
Delete one or more DB2 entries from the master list.	"Deleting DB2 entries" on page 81
Display a list of customization jobs that have been previously generated.	"Displaying customization jobs" on page 82
Maintain the customization jobs in the customization library.	"Maintaining customization jobs" on page 82

## Specifying the metadata library for the product to customize

You must specify a metadata library for the product that you want to customize.

## About this task

The product metadata library contains the information that determines which tasks, steps, and parameters are required to customize DB2 Automation Tool. This information controls what is displayed on the Product Parameters panel, the LPAR Parameters panel, and the DB2 Parameters panel.

After DB2 Automation Tool has been SMP/E installed, the default name of the product metadata library is *high\_level\_qualifier*.SHAADENU, where *high\_level\_qualifier* is all of the segments of the data set name except the lowest-level qualifier.

## Procedure

1. Specify option 1 on the Tools Customizer for z/OS panel. The Specify the Product or Pack Metadata Library panel is displayed. This panel contains a list of the product metadata libraries that you specified most recently. If you are using Tools Customizer for the first time, this list is empty, as shown in the following figure:

```
CCQPHLQ          Specify the Product or Pack Metadata Library      15:12:22
Command ==>>>                                     Scroll ==>> CSR
```

Type the name of the metadata library for the product or the pack in the Metadata library field, or select the library in the list of previous libraries and press Enter to populate the field. Press Enter to continue.

The default name of the metadata library after the product or pack has been SMP/E installed is <hlq>.SxxxDENU, where <hlq> is the high-level qualifier for the product or the pack, and xxx is the three-character prefix for the product or the pack.

Product or pack metadata library . HAA.ALIAS.SHAADENU

Name	Version	Metadata Library
------	---------	------------------

=>		
=>		
=>		
=>		

Figure 2. The Specify the Metadata Library panel

2. Use one of the following methods to specify the product metadata library:
  - Type the name of a fully qualified partitioned data set (PDS) or an extended partitioned data set (PDSE) in the **Product or pack metadata library** field. Double quotation marks (") cannot be used around the name. Single quotation marks (') can be used but are not required. If you are customizing DB2 Automation Tool for the first time, you must use this method.
  - Place the cursor in any column of the Recent Metadata Libraries list, and press Enter to populate **Product or pack metadata library** field. Press Enter again to select product or pack for customization.

## Results

If you are customizing DB2 Automation Tool for the first time, the Run Discover EXEC panel is displayed. Otherwise, the Customizer Workplace panel is displayed.

## What to do next

- Complete the steps that correspond to your environment:

### **Customizing DB2 Automation Tool for the first time**

Do not run the DB2 Automation Tool Discover EXEC. Press End. The Customizer Workplace panel is displayed. If your environment requires associated DB2 entries, ensure that they are created and associated. If your environment does not require associated DB2 entries, skip this step, and edit DB2 Automation Tool parameters.

### **Customizing DB2 Automation Tool from a previous or current customization**

Press Enter to run the DB2 Automation Tool Discover EXEC. The Discover Customized Product Information panel is displayed. Specify the required information for running the EXEC.

---

## **Discovering DB2 Automation Tool information automatically**

You can use the DB2 Automation Tool Discover EXEC to discover information from a previous or current customization of DB2 Automation Tool.

### **About this task**

**Tip:** Using the DB2 Automation Tool Discover EXEC to discover information from a previous or current customization saves time and reduces errors that can occur when parameters are specified manually.

DB2 Automation Tool provides the Discover EXEC that you will run. Therefore, the information that can be discovered depends on DB2 Automation Tool.

Parameter values that are discovered and parameter values that are specified manually are saved in the data store. If parameter values for the product that you want to customize exist in the data store, Tools Customizer issues a warning before existing values are replaced.

### **Procedure**

1. On the Customizer Workplace panel, issue the DISCOVER command. If you chose to run the DB2 Automation Tool Discover EXEC on the pop-up panel after you specified the product to customize, skip this step.

**Tip:** You can run any Tools Customizer primary command by using either of the following methods:

- Place the cursor on the name of the primary command, and press Enter.
- Type the primary command name in the command line, and press Enter.

The Discover Customized Product Information panel is displayed, as shown in the following figure:

```

CCQPDSC          Discover Customized Product Information          12:36:27
Command ==>      Scroll ==> CSR

For the product you are customizing, the Discover EXEC retrieves product
information from an already customized product. Specify the required
information. To save your information and run the Discover EXEC, issue the RUN
command. To save your information and stay on this panel, issue the SAVE
command. To verify the syntax of your information without saving it, press
Enter. To save and exit, press End.

Commands: RUN  SAVE

Product to Customize
  Product metadata library . : HAA.ALIAS.SHAADENU      > LPAR . . : RS22
  Product name . . . . . : IBM DB2 Automation Tool > Version . : 4.2.0

More:      +
Discover EXEC for Extracting Information from an Already Customized product
Discover EXEC library . . . HAA.ALIAS.SHAADENU
Discover EXEC name . . . . : HAADISC
Discover output data set . . HAA.TCZ.DISCOVER

Information for Discover EXEC
New Automation Tool load library . . . . . DB2TOOL.HAA420.SHAALOAD      >

```

Figure 3. The Discover Customized Product Information panel

2. Either accept the default values for the following input fields that Tools Customizer generates, or replace the default values with your own values:

**Discover EXEC library**

The fully qualified data set name that contains the DB2 Automation Tool Discover EXEC.

**Discover EXEC name**

The name of the DB2 Automation Tool Discover EXEC.

**Discover output data set**

The fully qualified data set where output from the DB2 Automation Tool Discover EXEC is stored.

3. Either accept or change the default values in the **Information for Discover EXEC** fields. These fields are generated by DB2 Automation Tool. They show the information that is required to run the DB2 Automation Tool Discover EXEC.
4. Issue the RUN command to run the DB2 Automation Tool Discover EXEC. Alternatively, save your information without running the DB2 Automation Tool Discover EXEC by issuing the SAVE command. If you issue the RUN command to run the DB2 Automation Tool Discover EXEC, the parameter information is discovered for DB2 Automation Tool, and the Customizer Workplace panel is displayed.

## Results

The discovered parameter values for DB2 Automation Tool replace any existing values.

## What to do next

The next step depends on your environment:

- If DB2 entries were not discovered, or if you need to customize DB2 Automation Tool on new DB2 entries, create and associate the entries.

- If DB2 entries were discovered and you want to customize DB2 Automation Tool on only these entries, define the parameters.

**Related tasks:**

“Creating and associating DB2 entries”

You can create new DB2 entries and associate them with DB2 Automation Tool.

“Defining parameters” on page 70

To customize DB2 Automation Tool, you must define DB2 Automation Tool parameters, LPAR parameters, and DB2 parameters, if your customization requires DB2 entries.

---

## Creating and associating DB2 entries

You can create new DB2 entries and associate them with DB2 Automation Tool.

### About this task

The list of associated DB2 entries is on the Customizer Workplace panel.

### Procedure

1. Issue the ASSOCIATE command on the Customizer Workplace panel. The Associate DB2 Entry for Product panel is displayed, as shown in the following figure:

```

CCQPDAD                      Associate DB2 Entry for Product                      16:36:42
Command ==>                      Scroll ==> PAGE

Select any of the following DB2 entries to add them to the Customizer
Workplace panel. You use the Customizer Workplace panel to choose the DB2
subsystems, data sharing members, and group attach names on which to
customize the product.

Commands: CREATE - Create new DB2 entries

DB2 Entries
Line commands: A - Associate  C - Copy  D - Delete
Cmd SSID GrpAttach
*      *
----- End of DB2 entries -----

```

*Figure 4. The Associate DB2 Entry for Product panel*

2. Create DB2 entries. If you need to associate DB2 entries that are already in the master list, skip this step and go to step 3.
  - a. Issue the CREATE command to create one DB2 entry, or issue CREATE *nn* to create multiple DB2 entries, where *nn* is the number of new entries to be created. The Create DB2 Entries panel is displayed, as shown in the following figure:



```

CCQPCDB                                Create DB2 Entries                                Row 1 of 1
Command ==>                               Scroll ==> PAGE

Specify the SSID, the group attach name, or both in the appropriate columns
for each new DB2 entry and press Enter. To create additional entries, issue
the Inn line command, where nn is the number of entries to be inserted, and
press Enter. To cancel, press End.

New DB2 Entries
  Line commands: I - Insert into list   R - Remove from list
  Cmd  SSID  GrpAttch  Message
----- End of DB2 entries -----

```

Figure 5. The Create DB2 Entries panel

- b. In the appropriate columns, specify a DB2 subsystem ID, DB2 group attach name, or DB2 data sharing member name for the DB2 entry that you want to create, and press Enter. Valid values are 1 - 4 characters. You can use symbolic characters. You cannot use blanks.

**Tips:**

- To insert multiple DB2 entries, specify the *Inn* line command, where *nn* is the number of DB2 entries to be inserted.
- You will define specific parameters for these new DB2 entries, such as parameters that define a subsystem as primary, on the DB2 Parameters panel. This panel is displayed after you select these new DB2 entries and issue the line command to generate the jobs, after you issue the primary command to generate the jobs for all associated DB2 entries, or when you manually edit the DB2 parameters.

The Associate DB2 Entry for Product panel is displayed, and the new DB2 entry is displayed in the master list, as shown in the following figure:

```

CCQPDAD                                Associate DB2 Entry for Product                Row 1 to 3 of 3
Command ==>                               Scroll ==> CSR

Select any of the following DB2 entries to add them to the Customizer
Workplace panel. You use the Customizer Workplace panel to choose the DB2
subsystems, data sharing members, and group attach names on which to
customize the product.

Commands: CREATE - Create new DB2 entries

DB2 Entries
  Line commands: A - Associate  C - Copy  D - Delete
  Cmd  SSID  GrpAttch
    *      *
    DBAA  --
    DBAB  --
    DBAC  --
----- End of DB2 entries -----

```

Figure 6. Associate DB2 Entry for Product panel

- c. Repeat steps b and c for each DB2 entry that you want to create.
  - d. When you have created all the DB2 entries, associate them with DB2 Automation Tool, or press End to display the Customizer Workplace panel.
3. Associate DB2 entries.
    - a. Specify A against one or more DB2 entries in the master list, and press Enter to associate them with DB2 Automation Tool.

## Results

The Customizer Workplace panel is displayed with the associated DB2 entries displayed in the associated list.

## What to do next

Define the parameters.

### Related concepts:

“Tools Customizer terminology” on page 763

Tools Customizer uses several unique terms that you should be familiar with before you begin to use Tools Customizer.

---

## Defining parameters

To customize DB2 Automation Tool, you must define DB2 Automation Tool parameters, LPAR parameters, and DB2 parameters, if your customization requires DB2 entries.

### About this task

You must define the DB2 Automation Tool parameters first for the following reasons:

- If you ran the DB2 Automation Tool Discover EXEC, you must review the values that were discovered.
- If you select optional tasks and steps on the Product Parameters panel that affect the DB2 entry on which you will customize DB2 Automation Tool, additional parameters might be displayed on the DB2 Parameters panel.
- If other steps must be completed in a specific sequence, customization notes on the Product Parameters panel will display the correct sequence.

## Defining DB2 Automation Tool parameters

DB2 Automation Tool parameters are specific to DB2 Automation Tool.

### About this task

If you ran the DB2 Automation Tool Discover EXEC, you must review the parameters that were discovered.

### Procedure

1. Specify E next to the **Product parameters** field on the Customizer Workplace panel, and press Enter. The Product Parameters panel is displayed, as shown in the following figure. If other steps must be completed in a specific sequence before you define the DB2 Automation Tool parameters, a note labeled **Important** will display the correct sequence on this panel.

```

CCQPPRD                      Product Parameters                      12:48:57
Command ==>                  Scroll ==> CSR

Complete the following tasks to customize the products. The required tasks,
required steps within a required or selected task, and required parameters
are preceded by an asterisk (*). Ensure that values are specified for the
required parameters. Press End to save and exit.

Commands: SAVE  VERIFYOFF
Line Commands: / - Select

Product to Customize
  Product metadata library . : HAA.ALIAS.SHAADENU      > LPAR . . : RS22
  Product name . . . . . : IBM DB2 Automation Too > Version . : 4.2.0

Product customization library .: HAA.CUSTOMLIB.$RS22$.HAA420
                                                    More:      +

IMPORTANT:
- If you edited the parameters on this panel before you edited the DB2
  parameters, some of the parameters on this panel might have moved from
  their original sections to the Required Parameters section. To avoid this
  situation, create and edit the DB2 entries before you edit the parameters
  on this panel. After you select or change tasks and steps on this panel,
  review the DB2 parameters, if necessary.

Required parameters
Startup CLIST library . . . . . DB2TOOL.HAA420.CLIST      >
Automation Tool load library . . . . . HAA.V420.SHAALOAD  >
Automation Tool panel library . . . . . DB2TOOL.HAA420.SHAAPENU >
User skeleton library . . . . . >
Automation Tool skeleton library . . . . . DB2TOOL.HAA420.SHAASLIB >

```

Figure 7. The Product Parameters panel

You can use the following primary commands on this panel:

**SAVE** Saves the specified product or component parameter values.

#### **VERIFY / VERIFYOFF**

Use the VERIFY and VERIFYOFF commands to turn on and off parameter verification of product or component parameters. Before you can generate customization jobs, you must verify that all required parameters are set to a valid value. The product or component parameter status of Verify Values on the Customize Workplace panel indicates that the values have not been verified.

Enter these commands either by typing them in the command field and pressing Enter or by positioning the cursor on the command and pressing Enter. When VERIFY is active, VERIFYOFF is displayed so that you can toggle between the two states. By default, verification is turned on when you display the DB2 Parameters panel, and the verification state is reset to VERIFY every time you exit the Customization Workplace panel by pressing PF3.

Turning verification off is useful when you need to exit the panel before you have entered all of the required parameters, but you want to save the parameters that you have specified. When you disable verification, it is disabled only for the Product or Component Parameters Values panel.

2. Select any required tasks and steps, and specify values for any parameters. After you select a task or step with a slash (/), put the cursor in the selected field and press Enter. If tasks, steps, and parameters are required, they are preselected with a slash (/). Otherwise, they are not preselected.

All of the required parameters have default values, which you can either accept or change.

**Tips:**

- In the command line, specify the KEYS command, and map EXPAND to one of the function keys.
  - For a detailed description of all input fields, put the cursor in the field, and press F1 or the key that is mapped to Help.
  - The following elements apply to specific fields:
    - **Add** is displayed when parameters can have multiple values but currently have only one value. To specify multiple values in these fields, place the cursor on **Add**, and press Enter. Use the displayed panel to add or delete additional values.
    - **List** is displayed when the complete list of valid values for the fields is too long to be displayed on the panel. To see the complete list of values, place the cursor on **List**, and press F1 or the key that is mapped to Help.
    - **More** is displayed when input fields contains multiple values. To see all of the values in the field, place the cursor on **More**, and press Enter.
3. Optional: Select other tasks and steps with a slash (/) and press Enter to activate the input fields. Either accept or change the default values that are displayed.
  4. Press End to save your changes and exit, or issue the SAVE command to save your changes and stay on the Product Parameters panel.

## Results

The Customizer Workplace panel is displayed, and the status of the product parameters is Ready to Customize.

## What to do next

If the status of other parameters on the Customizer Workplace panel is Incomplete, Verify Values, or Discovered, edit these parameters.

**Related tasks:**

“Defining LPAR parameters”

LPAR parameters are parameters on the local LPAR that are required to customize DB2 Automation Tool.

“Defining DB2 parameters” on page 74

DB2 parameters are parameters for a DB2 entry.

## Defining LPAR parameters

LPAR parameters are parameters on the local LPAR that are required to customize DB2 Automation Tool.

### Procedure

1. Specify E next to the **LPAR parameters** field, and press Enter. The LPAR Parameters panel is displayed, as shown in the following figure:

CCQPLPR	LPAR Parameters	12:53:39
Command ==>		Scroll ==> CSR
Enter values for all of the LPAR parameters. Press End to save and exit.		
Commands: SAVE - Save parameter values		
Product to Customize		
Product metadata library . . :	HAA.ALIAS.SHAADENU	> LPAR . . : RS22
Product name . . . . . :	IBM DB2 Automation Too	> Version . . : 4.2.0
	More:	+
Job Entry Subsystem (JES)		
JES version . . . . . :	3	
ISPF Libraries		
Message library . . . . . :	ISP.SISPMENU	> Add...
ISPF table input library . . . . . :	ISP.SISPTENU	> Add...
Automation Tool LPAR Parameters		
Job tracking started task PROC data set .	HAA.PROCLIB	>
Job tracking started task PROC member .	HAAPROC	
Job tracking started task Parms data set .	HAA.PARMLIB(HAAPARM)	>

Figure 8. The LPAR Parameters panel

You can use the following primary commands on this panel:

**SAVE** Saves the specified product or component parameter values.

**VERIFY / VERIFYOFF**

Use the VERIFY and VERIFYOFF commands to turn on and off parameter verification of LPAR parameters. Before you can generate customization jobs, you must verify that all required parameters are set to a valid value. The LPAR parameter status of Verify Values on the Customize Workplace panel indicates that the values have not been verified.

Enter these commands either by typing them in the command field and pressing Enter or by positioning the cursor on the command and pressing Enter. When VERIFY is active, VERIFYOFF is displayed so that you can toggle between the two states. By default, verification is turned on when you display the LPAR Parameters panel, and the verification state is reset to VERIFY every time you exit the Customization Workplace panel by pressing PF3.

Turning verification off is useful when you need to exit the panel before you have entered all of the required parameters, but you want to save the parameters that you have specified. When you disable verification, it is disabled only for the LPAR Parameters Values panel.

2. Specify values for all required parameters that are displayed. Many parameters have default values, which you can either accept or change.

**Tips:**

- In the command line, specify the KEYS command, and map EXPAND to one of the function keys.
- For a detailed description of all input fields, put the cursor in the field, and press F1 or the key that is mapped to Help.
- The following elements apply to specific fields:

- **Add** is displayed when parameters can have multiple values but currently have only one value. To specify multiple values in these fields, place the cursor on **Add**, and press Enter. Use the displayed panel to add or delete additional values.
- **List** is displayed when the complete list of valid values for the fields is too long to be displayed on the panel. To see the complete list of values, place the cursor on **List**, and press F1 or the key that is mapped to Help.
- **More** is displayed when input fields contains multiple values. To see all of the values in the field, place the cursor on **More**, and press Enter.

The following LPAR parameters can contain 1 - 64 values:

- LPAR macro library
  - Message library
  - Panel library
  - Skeleton library
  - ISPF table input library
  - ISPF user profile library
  - File tailoring output library
  - Link list library
  - Command procedures library
  - Macro library
  - Link-edit library
  - Load library
  - Started task library name
3. Press End to save your changes and exit, or issue the SAVE command to save your changes and stay on the same panel.

## Results

The Customizer Workplace panel is displayed, and the status of the LPAR parameters is Ready to Customize.

## What to do next

If the status of other parameters on the Customizer Workplace panel is Incomplete, Verify Values, or Discovered, edit these parameters.

### Related tasks:

“Defining DB2 Automation Tool parameters” on page 70

DB2 Automation Tool parameters are specific to DB2 Automation Tool.

“Defining DB2 parameters”

DB2 parameters are parameters for a DB2 entry.

## Defining DB2 parameters

DB2 parameters are parameters for a DB2 entry.

### About this task

If you did not run the DB2 Automation Tool Discover EXEC, you must create and associate one or more DB2 entries before you can define the DB2 parameters. For more information, see “Creating and associating DB2 entries” on page 68.

## Procedure

1. Specify E next to one or more DB2 entries in the associated list, which is in the Associated DB2 Entries and Parameter Status section on the Customizer Workplace panel, and press Enter. The DB2 Parameters panel is displayed, as shown in the following figure:

CCQPDDB2

DB2 Parameters

12:55:27

Command ==>

Scroll ==> CSR

Enter values for all of the DB2 parameters. Press End to save and exit.

Commands: SAVE - Save parameter values

Product to Customize

Product metadata library . . .	HAA.ALIAS.SHAADENU	> LPAR . . .	RS22
Product name . . . . .	IBM DB2 Automation Too	> Version . . .	4.2.0

More: +

DB2 subsystem ID . . . . . : DEB1

Group attach name . . . . .

General DB2 Information - common

Mode . . . . .	NFM (CM, CM8, CM9, NFM)
Level number . . . . .	111 (101, 111)

DB2 Libraries - common

Load library . . . . .	DSN.SDSNLOAD	> Add...
Run library . . . . .	DSN.RUNLIB.LOAD	> Add...
Exit library . . . . .	DSN.SDSNEXIT	> Add...

Figure 9. The DB2 Parameters panel

You can use the following primary commands on this panel:

**SAVE** Saves the specified product or component parameter values.

### VERIFY / VERIFYOFF

Use the VERIFY and VERIFYOFF commands to turn on and off parameter verification of DB2 parameters. Before you can generate customization jobs, you must verify that all required parameters are set to a valid value. The DB2 parameter status of Verify Values on the Customize Workplace panel indicates that the values have not been verified.

Enter these commands either by typing them in the command field and pressing Enter or by positioning the cursor on the command and pressing Enter. When VERIFY is active, VERIFYOFF is displayed so that you can toggle between the two states. By default, verification is turned on when you display the DB2 Parameters panel, and the verification state is reset to VERIFY every time you exit the Customization Workplace panel by pressing PF3.

Turning verification off is useful when you need to exit the panel before you have entered all of the required parameters, but you want to save the parameters that you have specified. When you disable verification, it is disabled only for the DB2 Parameters Values panel.

2. Specify values for all parameters that are displayed.

### Tips:

- In the command line, specify the KEYS command, and map EXPAND to one of the function keys.

- For a detailed description of all input fields, put the cursor in the field, and press F1 or the key that is mapped to Help.
- The following elements apply to specific fields:
  - **Add** is displayed when parameters can have multiple values but currently have only one value. To specify multiple values in these fields, place the cursor on **Add**, and press Enter. Use the displayed panel to add or delete additional values.
  - **List** is displayed when the complete list of valid values for the fields is too long to be displayed on the panel. To see the complete list of values, place the cursor on **List**, and press F1 or the key that is mapped to Help.
  - **More** is displayed when input fields contains multiple values. To see all of the values in the field, place the cursor on **More**, and press Enter.

Many parameters have default values, which you can either accept or change.

3. Press End to save your changes and exit, or issue the SAVE command to save your changes and stay on the same panel.

## Results

The status of the DB2 entries that you selected on the Customizer Workplace panel is Ready to Customize.

## What to do next

If the status of other parameters on the Customizer Workplace panel is Incomplete, Verify Values, or Discovered, edit these parameters.

### Related tasks:

“Defining DB2 Automation Tool parameters” on page 70

DB2 Automation Tool parameters are specific to DB2 Automation Tool.

“Defining LPAR parameters” on page 72

LPAR parameters are parameters on the local LPAR that are required to customize DB2 Automation Tool.

---

## Generating customization jobs

To generate customization jobs for DB2 Automation Tool and any associated DB2 entries, issue the GENERATEALL command, or select one or more DB2 entries on which to customize DB2 Automation Tool.

## Procedure

Generate the customization jobs by using one of the following methods.

- If you want to generate customization jobs at the product level and for any associated DB2 entries, issue the GENERATEALL command, and press Enter.
- If you want to generate customization jobs for specific DB2 entries, select the DB2 entries by specifying the G line command against them, and press Enter. The available DB2 entries are in the associated list in the Associated DB2 Entries and Parameter Status section.

**Important:** Regenerating customization jobs will replace any existing jobs, including jobs that you might have manually modified after they were generated.



## Results

If the status is Incomplete or Discovered for DB2 Automation Tool parameters, LPAR parameters, or DB2 parameters, Tools Customizer automatically starts an editing session for the types of parameters that are required. The session continues until the panel for each type of required parameter has been displayed.

## What to do next

If an automatic editing session is started, accept the displayed parameter values or define values for the required types of parameters, select optional parameters, tasks, or steps for your environment, and save the parameter values. Otherwise, the customization jobs are generated, and you can submit them.

**Tip:** If the customization jobs are generated, but you are not ready to submit them, you can see them later by issuing the JOBLIST command on the Customizer Workplace panel. The JOBLIST command displays the Finish Product Customization panel, which you can use to submit the jobs.

---

## Submitting customization jobs

Submit the customization jobs to customize DB2 Automation Tool.

### Before you begin

Ensure that the correct jobs are generated.

### About this task

The following figure shows part of the Finish Product Customization panel. The table on this panel shows the customization jobs that are generated by Tools Customizer. They are grouped by job sequence number.

```
CCQPCST                      Finish Product Customization          Row 1 to 6 of 20
Command ==>                  Scroll ==> CSR

For a first-time customization, submit the jobs in the members in the order
in which they apply to the DB2 entries. Otherwise, submit only the necessary
jobs that were generated after changes were made. To submit jobs, browse
the members and issue the TSO SUBMIT command.

Product to Customize
  Product metadata library . : HAA.ALIAS.SHAADENU      > LPAR . . : RS22
  Product name . . . . . : IBM DB2 Automation Tool    > Version . : 4.2.0

Line Commands: E - Edit  B - Browse

  Product customization library .: HAA.CUSTOMLIB.$RS22$.HAA420

Cmd Member  SSID GrpAttch Template Date      Description
-----
A0V42      --  --      HAAV42  2014/05/29  Configures Startup CLIST 1
A1V42C     --  --      HAAV42C 2014/05/29  Configures Startup CLIST 2
A2EXECS    --  --      HAAEXECS 2014/05/29  Copies the CLISTs
A3CNTFL    --  --      HAACNTFL 2014/05/29  Creates control file
A4CF2AAA   DB02 --      HAACF2A  2014/05/29  Update Control File SSID specif
A6CF1A     --  --      HAACF1A  2014/05/29  Update Control File RE
```

Figure 10. The Finish Product Customization panel

The member-naming conventions depend on whether the customization jobs are for DB2 entries, and LPAR, or the product.

The New filed indicates if the job member is newly created/updated. It is either YES or NO. YES indicates the job member is newly created or updated, and it needs to be submitted for customization. NO indicates the job member is not newly created/updated, it does not need to be submitted for customization.

#### **Customization jobs for DB2 entries**

The members use the following naming convention:

*<job\_sequence\_number><job\_ID><DB2\_entry\_ID>*

where

##### ***job\_sequence\_number***

Two alphanumeric characters, A0 - Z9, that Tools Customizer assigns to a customization job. The number for the first template in the sequence is A0, the number for the second template is A1, and so on.

##### ***job\_ID***

Characters 4 - 7 of the template name, if the template name contains five or more characters. Otherwise, only character 4 is used. DB2 Automation Tool assigns the template name.

##### ***DB2\_entry\_ID***

Two alphanumeric characters, AA - 99, that Tools Customizer assigns to a DB2 entry.

For example, the XYZBNDD*DB2\_entry\_ID\_1* and XYZBNDD*DB2\_entry\_ID\_2* jobs are generated from the XYZBNDGR template, and the XYZ4*DB2\_entry\_ID\_1* and XYZ4*DB2\_entry\_ID\_2* jobs are generated from the XYZ4 template. If the jobs are generated on two DB2 entries, the following member names are listed sequentially: A0BNDGAA, A0BNDGAB, A14AA, A14AB.

#### **Customization jobs for an LPAR or the product**

The members use the following naming convention:

*<job\_sequence\_number><job\_ID>*

where

##### ***job\_sequence\_number***

Two alphanumeric characters, A0 - Z9, that Tools Customizer assigns to a customization job. The number for the first template in the sequence is A0, the number for the second template is A1, and so on.

##### ***job\_ID***

Characters 4 - 8 of the template name, if the template name contains five or more characters. Otherwise, only character 4 is used. For example, for the XYZMAKE template, the job ID is MAKE. For the XYZM template, the job ID is M. DB2 Automation Tool assigns the template name, and it is displayed in the Template column.

For example, the XYZBNDGR job is generated from the XYZBNDGR template, and the XYZ4 job is generated from the XYZ4 template. The following member names are listed sequentially: A0BNDGR, A14.

## Procedure

1. Submit the generated customization jobs by following the process that you use in your environment or by using the following method:
  - a. Specify B or E against a customization job or the product customization library, and press Enter. An ISPF browsing or editing session is started.
  - b. Browse the customization job or each member in the library to ensure that the information is correct.
  - c. Run the TSO SUBMIT command.
2. Press End.

## Results

DB2 Automation Tool is customized, and the Customizer Workplace panel is displayed. The status is Customized for the DB2 entries on which DB2 Automation Tool was customized.

## What to do next

You can generate more customization jobs for other DB2 entries, view a list of customization jobs that you previously generated, or recustomize DB2 Automation Tool.

---

## Browsing parameters

You can browse the product or component parameters, the LPAR parameters, and the DB2 parameters in read-only mode.

## Procedure

1. On the Customizer Workplace panel, specify B next to the **Product parameters** field, the **LPAR parameters** field, or the DB2 entry that you want to browse, and press Enter. The panel that corresponds to your specification is displayed.
2. Press End to exit.

---

## Copying DB2 entries

You can copy associated and not associated DB2 entries to other DB2 entries or to new DB2 entries.

## About this task

Go to the step that applies to your environment:

- To copy an associated DB2 entry to another associated DB2 entry or to an entry that is not associated, go to step 1.
- To copy an associated DB2 entry to a new entry, go to step 2.
- To copy a DB2 entry that is not associated to a new entry, go to step 3.

## Procedure

1. To copy an associated DB2 entry to another associated DB2 entry or to an entry that is not associated, complete the following steps:
  - a. Specify C against a DB2 entry in the associated list of DB2 entries on the Customizer Workplace panel, and press Enter. The Copy Associated DB2 Entry panel is displayed.

- b. Select one or more DB2 entries to which information will be copied by specifying the / line command, and press Enter. The Associated column indicates whether the DB2 entry is associated.

**Tip:** To copy information into all of the DB2 Entries in the list, issue the SELECTALL primary command, and press Enter.  
The Copy DB2 Parameter Values panel is displayed.

- c. Specify an option for copying common and product-specific DB2 parameter values. Common DB2 parameter values apply to all DB2 entries for all products that you have customized by using Tools Customizer. Product-specific DB2 parameter values apply only to the product that you are currently customizing.
  - To copy the common DB2 parameter values and the product-specific DB2 parameter values, specify option 1, and press Enter.
  - To copy only the product-specified DB2 parameter values, specify option 2, and press Enter.

In some cases, the DB2 parameter values might contain the DB2 subsystem ID as an isolated qualifier in data set names. For example, in the DB01.DB01TEST.DB01.SANLLOAD, data set name, the DB01 subsystem ID is isolated in the first and third qualifiers but is not isolated in the second qualifier. When the DB2 subsystem ID is an isolated qualifier in data set names, the Change DB2 Subsystem ID in DB2 Parameter Values panel is displayed. Otherwise, the Customizer Workplace panel is displayed.

- d. If the Change DB2 Subsystem ID in DB2 Parameter Values panel is displayed, specify an option for changing the subsystem IDs. Otherwise, skip this step.
  - To change the subsystem ID in isolated qualifiers in data set names, specify option 1, and press Enter.
  - To use the same subsystem ID in all values, specify option 2, and press Enter.

The Customizer Workplace panel is displayed with the copied associated entry in the list.

2. To copy an associated DB2 entry to a new entry, complete the following steps:
  - a. Specify C against a DB2 entry in the associated list of DB2 entries on the Customizer Workplace panel, and press Enter. The Copy Associated DB2 Entry panel is displayed.
  - b. Issue the CREATE command. The Create DB2 Entries panel is displayed.
  - c. Specify the SSID, the group attach name, or both in the appropriate columns for each new DB2 entry, and press Enter.

**Tip:** To add rows for additional entries, specify the *Inn* line command, where *nn* is the number of entries to be created, and press Enter.  
The Copy Associated DB2 Entry panel is displayed with the new entries in the list. The new entries are preselected.

- d. Press Enter to complete the copy process. The Customizer Workplace panel is displayed with the copied entries in the list.
3. To copy a DB2 entry that is not associated to a new entry, complete the following steps:
  - a. Issue the ASSOCIATE command on the Customizer Workplace panel. The Associate DB2 Entry for Product panel is displayed.

- b. Select one or more DB2 entries by specifying the / line command, and press Enter. The Copy a DB2 Entry panel is displayed.
- c. Specify the SSID, the group attach name, or both in the appropriate columns for the new DB2 entry, and press Enter. The Associate DB2 Entry for product panel is displayed with the copied entry in the list.
- d. If you want to associate the copied entry, specify A against it, and press Enter. The Customizer Workplace panel is displayed with the copied entries in the list.

## What to do next

Edit any of the parameters or generate the jobs.

### Related concepts:

“Tools Customizer terminology” on page 763

Tools Customizer uses several unique terms that you should be familiar with before you begin to use Tools Customizer.

---

## Removing DB2 entries

You can remove DB2 entries from the associated list.

### About this task

When you remove DB2 entries from the associated list, any customization jobs for the entries are removed from the list of jobs on the Finish Product Customization panel, and they are deleted.

### Procedure

On the Customizer Workplace panel, specify R next to one or more DB2 entries that you want to remove, and press Enter. The selected DB2 entries are removed from the associated list and added to the master list on the Associate DB2 Entry for Product panel, and the customization jobs are deleted.

### Related concepts:

“Tools Customizer terminology” on page 763

Tools Customizer uses several unique terms that you should be familiar with before you begin to use Tools Customizer.

---

## Deleting DB2 entries

You can delete DB2 entries from the master list.

### About this task

When you delete DB2 entries from the master list, any associations and all customization jobs for products that are customized on the entries will be deleted.

### Procedure

1. On the Customizer Workplace panel, issue the ASSOCIATE command. The Associate DB2 Entry for Product panel is displayed.
2. Specify D next to one or more DB2 entries that you want to delete, and press Enter. If the entry is associated with any products, the Delete Associated DB2 Entry panel for the first DB2 entry that you selected is displayed. Otherwise, the Delete DB2 Entry panel is displayed.

3. To delete the DB2 entries, press Enter. If the DB2 entries are associated with any products in the table on the Delete Associated DB2 Entry panel, any associations and all customization jobs for the products that are customized on it are deleted. Otherwise, only the DB2 entries are deleted. If you selected multiple DB2 entries to delete, the next DB2 entry that you selected is displayed on either the Delete Associated DB2 Entry panel or the Delete DB2 Entry panel. Otherwise, the Associate DB2 Entry for Product panel is displayed.

### **What to do next**

If you selected multiple DB2 entries to delete, repeat step 3 until all selected entries are deleted. Then, continue the customization process.

---

## **Displaying customization jobs**

You can view a list of the members that contain the customization jobs before or after you submit the jobs.

### **About this task**

The customization jobs that you generate for one DB2 entry are also displayed when you customize DB2 Automation Tool for another DB2 entry later.

### **Procedure**

On the Customizer Workplace panel, issue the JOBLIST command. The Finish Product Customization panel is displayed. This panel shows the list of jobs that you have previously generated. They are grouped by job sequence number. Use this panel to browse or edit the generated jobs before you submit them.

---

## **Maintaining customization jobs**

Instead of deleting customization jobs outside of Tools Customizer, you can maintain the correct jobs for DB2 Automation Tool by completing the steps for recustomization.

### **About this task**

You cannot delete or rename customization jobs from the customization library by starting an ISPF browse or edit session from the Finish Product Customization panel. If you try to delete customization jobs by using this method, the CCQC034S message is issued. If you try to rename customization jobs, the CCQC035S message is issued.

If you delete or rename customization jobs from the customization library by using ISPF outside of Tools Customizer, Tools Customizer will not recognize that the jobs were deleted, and the Finish Product Customization panel will still display them. If you browse or edit jobs that were deleted from the library outside of Tools Customizer, the CCQC027S message is issued.

### **Procedure**

To maintain the correct customization jobs in the customization library, complete the steps for recustomization.

---

## Using Tools Customizer in a multiple-LPAR environment

Currently, Tools Customizer supports only the local LPAR; however, you can propagate customizations to additional LPARs by using either of two different methods.

### About this task

In a multiple-LPAR environment, Tools Customizer identifies the LPAR to which you are logged on. Tools Customizer uses this LPAR name for several different parameter settings, one of which is the data store. When you use the data store during the customization of DB2 Automation Tool that is on a different LPAR, Tools Customizer issues message CCQD586S, which indicates that the product has already been customized based on values from the data store on the first LPAR. This message is issued to prevent the data store from becoming corrupted.

This behavior occurs in the following conditions:

- Tools Customizer is installed on a DASD device that is shared by multiple LPARs.
- After a product is customized by using Tools Customizer, the data store is copied to another LPAR.

### Procedure

To customize products running against a DB2 subsystem on an LPAR where Tools Customizer is not installed, consider using one of the following methods:

#### Install one instance of Tools Customizer on one LPAR

If you intend to reuse the customization values for all the instances of your products on all LPARs, use this method.

1. Associate all the DB2 entries in this one instance of Tools Customizer. The LPARs on which the DB2 subsystems reside do not matter.
2. Generate the customization jobs for each DB2 entry.
3. Copy the generated customization jobs to the LPAR to run against the specific DB2 entries. Some LPAR-specific edits might be required. You can make these edits in the customized jobs that you copied. Note that this situation is one of the few situations where you might need to make manual changes to the jobs that are customized by Tools Customizer.

#### Install one instance of Tools Customizer on each LPAR

If you do not want to reuse previous customization values and you want to start new customizations, use this method.

**Important:** This method will likely not be the preferred approach for most organizations because most organizations tend to use similar or identical customization values for each product instance on all LPARs.





---

## Chapter 4. Installing and configuring the DB2 Automation Tool extension for the IBM Management Console

DB2 Automation Tool provides a web-based extension to the IBM Management Console that allows you to view object, exception, utility, and job profiles through a web browser. This extension to the Management Console is shipped with the DB2 Automation Tool software. You must then install it using IBM Installation Manager and configure it using Management Console's Configuration menu.

---

### Installing the DB2 Automation Tool extension

To install the DB2 Automation Tool extension, you must transfer the extension package from the SHAABIN library to an accessible location and install it using the IBM Installation Manager.

#### Before you begin

The DB2 Automation Tool extension requires that you purchase DB2 Automation Tool as part of the DB2 Utilities Solutions Pack.

Before installing the DB2 Automation Tool extension for the Management Console:

- DB2 Automation Tool must be installed by using SMP/E.
- Tools Customizer configuration must be complete for the DB2 Utilities Solutions Pack and DB2 Automation Tool.

#### Procedure

1. After DB2 Automation Tool installation via SMP/E, the SHAABIN library contains a member (in binary format) called HAA\$REP0. This member is the repository file package that the IBM Installation Manager uses to install the extension. Transfer the member using FTP to a location that can be accessed by IBM Installation Manager. The package is saved as a .zip file; it is not necessary to unzip the file.
2. Using the IBM Installation Manager, install the DB2 Automation Tool package. If you need help, refer to the documentation for IBM Installation Manager.

---

### Installing the DB2 Automation Tool extension using Unix System Services and HFS

Three batch jobs are provided in the SHAASAMP library to help you install (and uninstall) the DB2 Automation Tool extension using Unix System Services (USS) and HFS.

#### Before you begin

The DB2 Automation Tool extension requires that you purchase DB2 Automation Tool as part of the DB2 Utilities Solutions Pack.

Before installing the DB2 Automation Tool extension for the IBM Management Console for IMS and DB2 for z/OS:

- DB2 Automation Tool must be installed by using SMP/E.

- Tools Customizer configuration must be complete for the DB2 Utilities Solutions Pack and DB2 Automation Tool.

### About this task

To install or uninstall the DB2 Automation Tool extension using Unix System Services and HFS, you can customize and run the following batch jobs provided in SHAASAMP:

- HAAZCOPY allocates and mounts a new ZFS or HFS file system to be used for the Management Console product repositories, and then copies the DB2 Automation Tool extension repository file (located in SHAABIN(HAA\$REP0)) into the file system.
- HAAZINS installs the DB2 Automation Tool extension into the Management Console using IBM Installation Manager.
- HAAZUNI uninstalls the DB2 Automation Tool extension using IBM Installation Manager.

**Important:** The user ID that is used to run these jobs must have UID(0) access or have READ access to the BPX.SUPERUSER facility class.

### Procedure

1. After DB2 Automation Tool installation via SMP/E, modify the JCL in member HAAZCOPY in the SHAASAMP library to meet your requirements. This job allocates the required file system. Refer to the detailed comments provided in the member for instructions.
2. Submit the HAAZCOPY job.
3. Modify the JCL in member HAAZINS in the SHAASAMP library to meet your requirements. This job installs the DB2 Automation Tool extension into the Management Console using IBM Installation Manager. Refer to the detailed comments provided in the member for instructions.
4. Submit the HAAZINZ job.

### What to do next

If you want to uninstall the DB2 Automation Tool extension from the Management Console, modify the JCL in member HAAZUNI to meet your requirements and submit the job. Refer to the comments provided in the member for instructions.

---

## Configuring the DB2 Automation Tool extension

Once the extension has been installed using the IBM Installation Manager, you must start the Management Console and configure the extension.

### Before you begin

This procedure assumes the following:

- The Management Console is already installed. You will add the DB2 Automation Tool extension.
- You will create a new environment in Management Console for the DB2 Automation Tool extension.

### Procedure

1. Start the Management Console.

2. On the menu bar, click **Configuration>Environments**. The Configuration tab is displayed, which opens with a new environment by default.
3. In the Components section, add a new component by clicking the plus sign and selecting **DB2 for z/OS**.
4. In the DB2 for z/OS pane, complete the fields as required. Click the ? next to a field for help.
5. To add the extension, complete the fields in the Automation Tool settings section. All fields are required. Click the ? next to a field for help.
6. Click the **Validate** button.
7. On the Authenticate with Host Server window, either select credentials from the **Credentials** drop-down or enter a new set of credentials. The user ID and password credentials are used to log in to the z/OS system.
8. Click **OK**.
9. When the validation completes, click **Add**. The component is listed in the Components section, and a connection is established to the z/OS system.
10. In the DB2 for z/OS pane, click **Discover**. This process discovers information about supported DB2 objects and, if the subsystem is a member of a data sharing group, data sharing group and member information.
11. When the discover process completes, click **Save** (located under the **Discover** button).
12. In the Environment section, enter a name for this environment.
13. Click **Save**.

## What to do next

You can view DB2 Automation Tool profiles by clicking **Autonomics>DB2**. If requested, provide your credentials to log in to the z/OS system. Once you have connected to the z/OS system, you can view the DB2 Automation Tool object, utility, exception, and job profiles by clicking the appropriate button on the left side of the web interface.



---

## Chapter 5. Creating multiple configurations of DB2 Automation Tool

DB2 Automation Tool V4.2 allows multiple configurations of itself to be installed on the same subsystem. Each configuration has its own CLIST, data repository, and set of plans and packages. The configurations share the same set of DB2 Automation Tool execution libraries; each configuration is identifiable by a three-character user indicator in the CLIST. This allows an installation to, for example, have a test version of DB2 Automation Tool in the same subsystem as a production version.

### About this task

If multiple configurations are desired, you must completely customize one configuration using IBM Tools Customizer and then repeat the customization process using Tools Customizer for each subsequent configuration. Each configuration must have a unique HAA configuration value as specified on the Tools Customizer Product Parameters panel; this value becomes the user indicator parameter (USERIND) in the product CLISTs.

The following procedure illustrates the process for two configurations.

### Procedure

1. Make a separate copy of the product metadata data set (*hilevel*.SHAADENU) for each configuration that will be created. For product configuration number 1, create a copy of the product metadata data set; for example, it could be named DB2TOOL.PRD.CFG01.SHAADENU. For product configuration number 2, create a copy of the product metadata data set called (for example) DB2TOOL.PRD.CFG02.SHAADENU.
2. Customize product configuration number 1:
  - a. Start Tools Customizer.
  - b. On the Tools Customizer main menu, select Option 0 (Settings) and enter the desired customization library qualifier. This value should be different for each configuration. For example, it could be called DB2TOOL.PRD.CFG01, following the naming convention in this example. Save and exit.
  - c. On the Tools Customizer main menu, select option 1.
  - d. On the Specify the Product to Customize panel, enter DB2TOOL.PRD.CFG01.SHAADENU in the Product metadata library field.
  - e. If you want to discover information from a previous installation of DB2 Automation Tool, run Discover. The HAA configuration value will be input as a Discover parameter. If you do not run Discover, the HAA configuration value defaults to "HAA".
  - f. On the Product Parameters panel, take note of the HAA configuration value for this configuration. Subsequent configurations will require a different value.
  - g. Generate customized jobs against each SSID. Tools Customizer will generate the jobs in DB2TOOL.PRD.CFG01.\$*par*\$.HAA420.
3. Customize product configuration number 2:
  - a. Navigate to the Tools Customizer main menu (CCQPHME).

- b. On the Tools Customizer main menu, select option 0 (Settings) and enter a different customization library qualifier; for example, DB2TOOL.PRD.CFG02 (continuing the example naming convention). Save and exit.
- c. On the Tools Customizer main menu, select option 1.
- d. On Specify the Product to Customize panel, enter the data set name for the second configuration's copy of the metadata, DB2TOOL.PRD.CFG02.SHAADENU, in the Product metadata library field.
- e. If you want to discover information from a previous installation of DB2 Automation Tool, run Discover. The HAA configuration value will be input as a Discover parameter. If you do not run Discover, the HAA configuration value defaults to "HAA".
- f. On the Product Parameters panel, ensure that the HAA configuration value is different from the configuration value specified in product configuration number 1.
- g. Generate customized jobs against each SSID. Tools Customizer will generate the jobs in DB2TOOL.PRD.CFG02.\$*par*\$.HAA420.

## What to do next

You can repeat this procedure for as many configurations as you required. Each configuration must have its own set of metadata files and a unique HAA configuration value.

---

## Chapter 6. Getting started with DB2 Automation Tool

This topic contains information on launching DB2 Automation Tool and provides a basic orientation for the product.

---

### Starting DB2 Automation Tool

Start DB2 Automation Tool by running the HAAV42 CLIST.

When the CLIST is executed, the DB2 Automation Tool main menu is displayed, as shown in the following figure:

```
AUTOTOOL V4R2 --- IBM DB2 Automation Tool for z/OS    --- 2014/07/29 10:33:08
Option ==>
-----
Options: 0 - Setup                                8 - Dataset Manager
          1 - Object Profiles                      9 - Data Page Display
          2 - Utility Profiles                    10 - Event Notifications
          3 - Exception Profiles                  11 - Stand Alone Utilities
          4 - Job Profiles                        12 - DB2 Admin Scheduler
          5 - Quick Build                         13 - Autonomic Console
          6 - Execution Reports                   X - Exit
          7 - DB2 Command Processor

-----
DB2 Subsystem ID: SS01          (1-4 Character Subsystem ID or ? for list)
Current SQLID:                 User: TWUSRA - Configuration ID: W42
-----
```

Figure 11. DB2 Automation Tool main menu

### DB2 Automation Tool main menu options

The following options can be accessed from the DB2 Automation Tool for z/OS main menu:

**Setup** Customize setup parameters for DB2 Automation Tool.

**Object Profiles**

Select the objects you want to be processed.

**Utility Profiles**

Select the utilities you want to execute and set options for the utilities.

**Exception Profiles**

Specify conditions under which the utilities will execute.

**Job Profiles**

Put the objects, utilities, and exceptions together into jobs, and build jobs.

**Quick Build**

Perform a quick build of a job.

**Execution Reports**

Track job profiles and execution results.

**DB2 Command Processor**

Use the DB2 Command Processor.

**Dataset Manager**

Use the Dataset Manager facility to view and move DB2 data sets.

**Data Page Display**

(Deprecated) Display and edit table space and index pages.

**Event Notifications**

Set up job and autonomic notifications by email, text, or WTO.

**Stand Alone Utilities**

Create utility JCL for stand-alone utilities such as UNLOAD and DB2 High Performance Unload.

**DB2 Admin Scheduler**

Add DB2 Automation Tool utility execution jobs and batch builds to the DB2 administrative task scheduler.

**Autonomic Console**

Configure and control autonomic running of utilities and statistics.

X Exit DB2 Automation Tool.

---

## The SSID selection function

On the DB2 Automation Tool main menu and the System Parameters panels, you can enter a ? in the SSID field to get a list of valid DB2 subsystems that exist in the active DB2 control data set.

To access this panel, enter a ? in the SSID field and press Enter. The SSID Selection panel is displayed, as shown in the following figure:

```

FECSLST ----- SSID Selection ----- 2008/06/27 10:58:59
Option ==> Scroll ==> CSR

Select with S line command or just place cursor and press ENTER; To Exit: PF3
-----
Row 1 of 7

Cmd SSID Status
A8D Active
CMD9 Active
SS01 Active
A71Q Inactive
C88R Inactive
CRC8 Active
AW71 Active
***** Bottom of Data *****

```

*Figure 12. SSID Selection panel*

This panel lists all DB2 subsystems that have been defined in the DB2 control data set, which is configured in the System Parameters section of DB2 Automation Tool setup. Next to each SSID is the subsystem's current status. To select a subsystem, type S next to the SSID and press Enter. To cancel, press PF3.



---

## DB2 Automation Tool setup options

Customization of DB2 Automation Tool is primarily accomplished with IBM Tools Customizer. However, you might want to change options after customization. The Setup option on the DB2 Automation Tool main menu can be used to configure some features and functions.

On the DB2 Automation Tool main menu, type 0 and press Enter to access the System Parameters panel. The following provides a description of the parameters on the System Parameters panel.

### Current User Ind

This field displays the user indicator that is specified in the CLIST used to start DB2 Automation Tool. The system parameters that you enter on this screen and the other setup screens are specific to this configuration of DB2 Automation Tool. You cannot change this field; it is set when the DB2 Automation Tool CLIST is started.

### Model DSN for GDG Base Model

If your site is not SMS-managed, and you are required to include a model DSCB in your JCL, enter a model DSCB name here. The model DSCB must exist. This field is optional if your data sets are SMS managed; DB2 Automation Tool uses the model DSCB if provided. You can provide a different model DSCB for each subsystem you configure.

### DB2 Control Dataset

This field displays the name of the DB2 control data set. You cannot change this field.

### DB2 Subsystem ID

Enter the DB2 subsystem identifier (SSID) for the subsystem you want to configure. To get a list of available subsystems, enter ? and press Enter.

## Configuration options

On the System Parameters panel, enter one of the following values in the **Command** field.

- 1 Configures options specific to a particular DB2 subsystem, including ZPARMs, BSDS, and load library information.
- 2 Configures DB2 plan names for DB2 Automation Tool.
- 3 Configures job generation options and other information specific to DB2 Automation Tool.
- 4 Configures options to make image copies from DB2 Recovery Expert system level backups.
- 5 Configures options for generating DB2 High Performance Unload jobs.

The topics that follow provide additional information about each of these options.

## Entering ZPARM, BSDS, and load library information

This topic describes how to enter ZPARM, BSDS, and load library information for a DB2 subsystem.

### Procedure

1. To update information particular to a subsystem, type 1 in the Command line on the System Parameters panel and press Enter. The Update Parameters for

DB2 Subsystem *ssid* panel is displayed, where you can enter the subsystem parameters. The following provides a description of each parameter.

**DB2 ZPARMs Member**

Enter the eight-character load module member name generated for this DB2 subsystem.

**DB2 Bootstrap DSN #01 and #02**

Enter the fully qualified data set names of the bootstrap data sets for this DB2 subsystem.

**DB2 Loadlib1 through Loadlib5**

Enter the names of the data sets that comprise the current load library concatenation for DB2. This concatenation is usually a subsystem-specific DSNEXIT library, the base DSNEXIT library for the current DB2 version, and the base DSNLOAD library for the current DB2 version. If necessary, two extra library spaces are provided.

2. Press Enter, then PF3 to exit this panel and return to the System Parameters panel.

## Entering DB2 Automation Tool specific information

This topic describes how to enter specific configuration settings for DB2 Automation Tool.

### About this task

Type 2 in the Command line on the System Parameters panel and press Enter. The Update Parameters for DB2 Subsystem *ssid* panel is displayed. Enter DB2 Automation Tool-specific parameters on this panel. The following provides a description of each parameter.

**Plan names**

Enter the four plan names for DB2 Automation Tool. These must be the same plan names that you specified in the bind members for the subsystem.

The plans are listed as follows:

- Plan #1: Allows users to use most DB2 Automation Tool functions, except for job building and the data page display function.
- Plan #2: Allows users to build DB2 Automation Tool jobs.
- Plan #3: Allows users to browse the data page display function.
- Plan #4: Allows users to edit data pages with the data page function.

**Example:**

If the plans and packages were bound in the bind step as follows:

```

BIND PLAN  (HAA420S1)          -
PKLIST    (HAA420R.*          -
          HAA420C.*          -
          HAA420S.*          -
          )                   -
.
.
.
BIND PLAN  (HAA420S2)          -
PKLIST    (HAA420R.*          -
          HAA420C.*          -
          HAA420S.*          -
          )                   -
.
.
```

```

.
BIND PLAN (HAA420S3) -
PKLIST (HAA420R.* -
) -
.
.
BIND PLAN (HAA420S4) -
PKLIST (HAA420R.* -
) -

```

Then the plan names should be entered on the screen as shown in the following figure:

```

AUTOTOOL V4R2 Update Parameters for DB2 Subsystem SS01 2017/09/15 14:29:58
Command ==>

Current User Ind: HAA

Enter or Update Specific DB2 Parameters

Plan 1 Name HAA420S1
Plan 2 Name HAA420S2
Plan 3 Name HAA420S3
Plan 4 Name HAA420S4

```

*Figure 13. Example of correct entry of plan names on Update Parameters for DB2 Subsystem panel*

Press Enter, then PF3 to exit the panel.

## Entering job generation defaults and other product parameters

This topic describes how to enter job generation defaults and other product parameters required for DB2 Automation Tool.

### Procedure

1. Type 3 in the Command line on the System Parameters panel and press Enter. The Shared Profile Parameters for *ssid* panel is displayed, as shown in the following figure:

```

AUTOTOOL V4R2 ---- Shared Profile Parameters for SS01 --- 2017/09/15 14:38:02
Command ==> Scroll ==> CSR
More: +
Enter or Update Specific Shared Profile Support Parameters User Ind: HAA
Catalog/History PackageList . . HAAV420C
Shadow Catalog PackageList . . HAAV420S
Repository PackageList . . . . HAAV420
Work File Unit Device . . . . SYSDA (SYSDA, DISK, etc.)
Sort Work File Unit Device . . SYSDA (SYSDA, DISK, etc.)
Build Informational Message DD HAAINFO (8 character name)
Build Warning Message DD HAAWARN (8 character name)
Build Error Message DD HAAERROR (8 character name)
Job Tracking Started Task Name ST42 (Automation Tool Tracking STC name)
Max Primary Space Allocation 999999 (1-999999) T (Trks/Cyls/Mbytes)
Secondary Allocation Percent 010 (1-999) % of Primary Allocation
Utility REGION Size . . . . . 0008 (0-2047) M (Megabytes)
DB2 Fetch Buffer Size . . . . . 0004 (1-256) M (Megabytes)
Parallel MVS Catalog Locates 25 (1-99)
Terminate Utility if an ABEND N (Y/N)
Generate STEPLIB DDs . . . . . Y (Y/N)
Gen Image Copy DSNs in GMT . . Y (Y/N)
Explode IXs with DEFINE NO TSs N (Y/N)

```

Figure 14. Update Parameters for DB2 Subsystem screen: DB2 Shared Profile Support parameters

These Shared Profile Support-specific parameters set defaults when building DB2 Automation Tool jobs. Some of these values can be overridden a per job basis using a field on the Job Generation Options panel.

2. Enter the DB2 Shared Profile Support-specific parameters in this screen. The following provides a description of each parameter.

#### Catalog/History PackageList

Enter the package list name for the DB2 catalog and the DB2 catalog history tables. This must be the same package list as specified for the DB2 catalog and the DB2 catalog history tables in the bind job. For example, if plans and packages were bound as follows:

```

BIND PACKAGE (HAA420C) -
  MEMBER (HAA#EDAY) -
.
.
BIND PACKAGE (HAA420C) -
  MEMBER (HAA#ERSI) -
.
.
BIND PLAN (HAA420S1) -
  PKLIST (HAA420R.* -
         HAA420C.* -
         HAA420S.* -

```

Then this field should be entered as follows:

```
Catalog/History PackageList ==> HAA420C
```

#### Shadow Catalog PackageList

(optional) Enter the package list name for a DB2 shadow catalog, if you are using a shadow catalog. This must be the same package list as specified for the DB2 shadow catalog in the bind job. For example, if plans and packages were bound as follows:

```

BIND PACKAGE (HAA420S) -
  MEMBER (HAA#ERSH) -
.
.

```

```

      BIND PACKAGE (HAA420S) -
        MEMBER (HAA#ERTI) -
      .
      .
      BIND PLAN   (HAA420S1)           -
        PKLIST   (HAA420R.*           -
                  HAA420C.*           -
                  HAA420S.*           -

```

Then this field should be entered as follows:

Shadow Catalog PackageList ==> HAA420S

### Repository PackageList

(optional) Enter the package list name for the DB2 Automation Tool modules, including the DB2 shared profile support repository. This must be the same package list as specified in the bind job. For example, if plans and packages were bound as follows:

```

      BIND PACKAGE (HAA420R) -
        MEMBER (HAA#CL8) -
      .
      .
      BIND PACKAGE (HAA420R) -
        MEMBER (HAA#ERSI) -
      .
      .
      BIND PLAN   (HAA420S1)           -
        PKLIST   (HAA420R.*           -
                  HAA420C.*           -
                  HAA420S.*           -

```

Then this field should be entered as follows:

Repository PackageList ==> HAA420R

### Work File Unit Device

Enter the default work file unit device that will be used when generating utility JCL. Valid values are any tape or esoteric unit.

### Sort Work File Unit Device

Enter the default device type for sort work data sets. Valid values are any tape or esoteric unit.

### Build *message\_type* Message DD

Use these fields to route DB2 Automation Tool batch build processing messages to one, two, or three unique DDs based on the type of the build message generated. You can specify the same DD for all message types, give unique DDs to each message type, or give unique names to two of the three message types.

#### Build Informational Message DD

Enter the DD name to be used for informational messages. All generated HAABnnnI messages will be written to this DD.

#### Build Warning Message DD

Enter the DD name to be used for warning messages. All generated HAABnnnW messages will be written to this DD.

#### Build Error Message DD

Enter the DD name to be used for error messages. All generated HAABnnnE messages will be written to this DD.

**Job Tracking Started Task Name**

(Optional) Enter the name of the job tracking task that will gather information for this DB2 subsystem. The job tracking task name is defined in the SUBSYS parameter of the task's HAAPARMS member.

**Max Primary Space Allocation**

Enter the maximum amount of space that can be allocated for a primary allocation. You can specify up to 999999 tracks, cylinders, or megabytes. The value you enter may be converted when the job is built using the following criteria:

- For image copies with templates, the value is converted to cylinders and used in the template with the MAXPRIME keyword; DB2 requires that the MAXPRIME value be expressed in cylinders in a template.
- For image copies without templates, the value is converted to tracks and that value is used in the DD statement.
- For work files (such as SYSREC, SYSUT1, and SORTOUT), the value is converted to cylinders and that value is used in the DD statement.
- For reallocation, it is converted to kilobytes and that value is used in the DB2 ALTER SQL.

**Secondary Allocation Percent**

Enter the amount of space that can be allocated for a secondary allocation. This value is expressed as a percentage of primary allocation. Enter a value from 1 to 999 . This value affects secondary space allocation for image copy DDs and temporary DDs used in REORGs, and also affects utility jobs built with TEMPLATE syntax.

**Utility REGION Size**

Enter the default REGION size (in megabytes) to be used on the EXEC statement of each job step. This value is used for all job steps. If you include a REGION parameter in your job card, the job card REGION parameter overrides the region parameter on the EXEC statement.

**DB2 Fetch Buffer size**

Specify the size of the DB2 fetch buffer. The fetch buffer is used for the DB2 V8 multi-row fetch capability and can improve SQL performance. Valid values are 1 to 2047 megabytes.

**Parallel MVS Catalog Locates**

Enter the number of parallel MVS catalog locate tasks that can be initiated.

**Terminate Utility if an ABEND**

Specify Y to instruct DB2 Automation Tool to terminate utilities if an abend occurs during execution. The utility is stopped using the TERM UTILITY command.

**Note:** The TERM UTILITY command is not issued for the RECOVER utility.

**Generate STEPLIB DDs**

This field specifies whether STEPLIB DDs will be included the JCL. If you specify N, no STEPLIB DDs are included. When this option is selected, the DB2 Automation Tool libraries (HAA and FEC libraries) must be contained in the LNKLIST set. If you specify Y, STEPLIB DDs

are included in the JCL. The DDs include HAA and FEC libraries and the subsystem DB2 load libraries specified in the DB2 Automation Tool setup screen.

#### **Gen Image Copy DSNs in GMT**

This field allows you to specify how DB2 Automation Tool treats time values when creating image copy data set names. If you set the field to Y, the GMT (Greenwich Mean Time) is used. If you specify N (the default), the local time is used.

**Note:** If you want date and time variables in templates to be resolved at job run time rather than job build time, set this field to Y.

#### **Explode IXs with DEFINE NO TSs**

Indicate how to treat indexes that are exploded from the table space when the table space was created with DEFINE NO. The VSAM data set for the table space does not exist. Valid values are Y to process these types of indexes and N to not process these types of indexes. Specify Y to process exploded indexes that are created with DEFER NO and DEFINE YES. In this case, the VSAM data set for the index does exist.

#### **Event Notifications**

Enter Y to enable email, text, or SMS notifications when selected events occur.

#### **Sysout Class**

If you enabled event notifications, specify the SYSOUT class that was defined as part of the JES setup. Check with your systems programmer for the valid value for your site.

#### **Hostname**

If you enabled event notifications, specify the JES node system name; this can be located in any job log, or check with your systems programmer.

#### **SMTP task name**

If you enabled event notifications, specify the task name to be used for sending and receiving emails.

#### **Enable Admin Scheduler Support**

Enter Y to enable utility execution jobs and batch builds to be scheduled for execution by the DB2 administrative task scheduler. The DB2 administrative task scheduler must be installed and configured for this option to be meaningful.

#### **Admin Scheduler Max History**

This field is only applicable if Enable Admin Scheduler Support = Y. Specify the number of executions that DB2 Automation Tool retrieves from the DB2 administrative task scheduler when viewing a task execution status list. DB2 Automation Tool only uses this value to determine how many task executions to retrieve from the DB2 administrative task scheduler; it does not define the Maximum History parameter to the DB2 administrative task scheduler.

#### **Admin Scheduler user ID**

This field is only applicable if Enable Admin Scheduler Support = Y. If specified, this value defines the task user ID to be used when new tasks are scheduled. This can either be an alternate user ID, or default user ID (DFLTUID). If this field is left blank, the task user ID will be set to either the value in the Current SQLID field on the DB2 Automation

Tool Main Menu, or the current TSO user ID. Any user ID that is entered here, including the default user ID, must have at least MONITOR1 privileges.

#### Altered Object Adjustment

Indicate how to treat non-wildcarded objects in object profiles that were altered after the object profile was created. Non-partitioned objects that are now partitioned objects can be processed either at the A (All) level or at the P (Part) level.

#### Primary Sort Work Space | Secondary Sort Work Space | Number of Sort Work DDs

These three fields are optional. Enter values to override the DB2 Automation Tool-calculated amount of sort work data sets and the number of SORTWKnn DD statements. Enter primary and secondary sort work spaces values in cylinders.

3. Press Enter, then PF3 to exit the screen.

## Entering information for using DB2 Recovery Expert with DB2 Automation Tool

This portion of the configuration allows you to specify settings for the DB2 Recovery Expert image copy utility.

### Procedure

1. Type 4 in the Command line on the System Parameters panel and press Enter. The Recovery Expert Parms panel is displayed, as shown in the following figure:

```
AUTOTOOL V4R2 ----- Recovery Expert Parms ---- 2011/08/31 22:00:55
Command ==>
-----
Recovery Expert Information:

Control File . . . . . BRSRTE.WRK022X.CONTROL
RE Loadlib1 . . . . . BRSRTE.WRK022X.LOADLIB
RE Loadlib2 . . . . .
RE Loadlib3 . . . . .
RE Loadlib4 . . . . .
RE Loadlib5 . . . . .
```

Figure 15. Recovery Expert Parms panel

2. Enter the DB2 Recovery Expert-specific parameters on this panel. These options apply to all subsystems that have DB2 Recovery Expert installed; they only need to be entered once. The following provides a description of each parameter.

#### Control File

(optional) If DB2 Recovery Expert has a separate control file from DB2 Automation Tool, enter it here. If a separate control file is used, all DB2 Automation Tool users must have read access to it. If this field is left blank, it is assumed that Recovery Expert uses the same control file as DB2 Automation Tool.

#### RE Loadlibx

Enter the names of the data sets that comprise the current load library concatenation for DB2 Recovery Expert.

3. Press Enter, then PF3 to exit the screen.



## What to do next

Users of the Recovery Expert image copy utility must be able to access DB2 Recovery Expert data sets. You should ensure potential users of the product have read access to the following:

- DB2 Recovery Expert load libraries
- DB2 Recovery Expert PARMLIB library
- DB2 Recovery Expert VSAM repository
- The DB2 Recovery Expert control file, if Recovery Expert uses a separate control file from DB2 Automation Tool

Refer to the DB2 Recovery Expert user guide for more information about these data sets.

## Entering information for using DB2 High Performance Unload with DB2 Automation Tool

Use this portion of the configuration to specify DB2 High Performance Unload (DB2 HPU) settings for use with DB2 Automation Tool.

### Procedure

1. Enter 5 in the Command line on the System Parameters panel and press Enter. The HPU Utility Parms panel is displayed, as shown in the following figure:

```
AUTOTOOL V4R2 ----- HPU Utility Parms ----- 2017/09/28 16:50:18
Command ==>
-----
HPU Utility Information:

HPU Loadlib1 . . . . . VENDOR.INZ51.SINZLINK
HPU Loadlib2 . . . . .
HPU Loadlib3 . . . . .
HPU Version . . . . . 510 (430, 510)
```

Figure 16. HPU Utility Parms panel

2. Enter the DB2 HPU-specific parameters on this panel. These parameters apply to all subsystems that have DB2 HPU installed. The following list describes the parameters on this panel.

#### HPU Loadlibx

Enter the names of the data sets that comprise the current load library concatenation for DB2 HPU.

#### HPU Version

Enter the version of DB2 HPU that is installed on the system.

**Note:** DB2 Automation Tool supports DB2 HPU V5.1 and V4.3.

3. Press Enter, then PF3 to exit the screen.

## Specifying TEMPLATEDD data set, member, and name defaults

Use this portion of the configuration to specify default TEMPLATEDD data sets, member names, and template names. This information is used to create TEMPLATEDD control statements that define data set naming conventions and allocation parameters for some DB2 utilities.

## Before you begin

Before specifying these defaults, the template data sets and members must exist and must contain control statements that follow DB2 syntax rules for the TEMPLATE utility control statement.

## About this task

If you specify values in these fields, template data set names that are created by DB2 Automation Tool in the utility profiles are ignored, and the template DDs that are provided using these panels are used. However, if a template DD data set, member, and name are included in a utility profile, the utility profile template DDs override the values that are set in the defaults.

## Procedure

1. Enter 6 in the Command line on the System Parameters panel and press Enter. The Template DSN Parameters panel is displayed, as shown in the following figure:

```
AUTOTOOL V4R2 ----- Template DSN Parameters for SS01 ----- 2015/10/15 09:30:16
Command ==>                                                    Scroll ==> CSR

Enter or update data set names, member names, and template names to specify
the template library to be used for each Utility, and IC type.

More:      +

Image Copy
Data set name . . . . . PDUSR.TEMP.DSN
Member name . . . . . TEMP1
LP Template Name . . . . . ICLP      Select N (Yes/No)
LB Template Name . . . . .          Select N (Yes/No)
RP Template Name . . . . .          Select N (Yes/No)
RB Template Name . . . . .          Select N (Yes/No)
FlashCopy Template Name          Select N (Yes/No)

Copy to Copy
Data set name . . . . .
Member name . . . . .
LP Template Name . . . . .          Select N (Yes/No)
LB Template Name . . . . .          Select N (Yes/No)
RP Template Name . . . . .          Select N (Yes/No)
RB Template Name . . . . .          Select N (Yes/No)
```

Figure 17. Template DSN Parameters panel

2. For each listed utility, enter default template DDs as follows:
  - a. Specify the template data set name in the **Data set name** field.
  - b. Specify the template member name in the **Member name** field.
  - c. Use one of the following methods to provide the template name:
    - Enter the template name for the listed data set type in the **Template Name** field.
    - Or, select a template name using the following steps:
      - 1) Enter Y in the corresponding Select field and press Enter.
      - 2) On the TEMPLATEDD Name Selection panel, enter S next to the template name and press Enter. The template name is transferred to the **Template Name** header field.
      - 3) Press PF3. The Template DSN Parameters panel is displayed. The template name is inserted in the **Template Name** field and a message confirms the template name selection.

3. Press PF3 to exit the panel.

## **Configuring for data sharing**

If you are using data sharing and you want DB2 Automation Tool to connect to DB2 via the group attach name, configure these screens as described in this topic.

### **Procedure**

1. Enter the group attach name in the DB2 Subsystem ID field on the System Parameters panel.
2. On the Update Parameters for DB2 Subsystem panel, use one of the data sharing group member's library information for the ZPARM, BSDS, and load library information.



---

## Chapter 7. Creating object profiles

Object profiles contain customizable, reusable lists of DB2 objects. You can group related objects into one profile, such as all objects for a particular application.

An object profile includes the objects on which you want to run utilities. An object profile also can specify the objects that you want the utilities to ignore. You can select one or more of the following objects to include in an object profile:

- Entire databases
- Entire table spaces
- Select partitions of a table space
- Entire indexes
- Select partitions of an index
- Table spaces, index spaces, or both on a particular volume or volumes

You can use wildcards to select similarly named or created objects. In addition, you can define custom SQL to retrieve the objects by using search conditions in a WHERE clause.

Later, you link object profiles with utility profiles and (optionally) exception profiles to create a job profile.

---

### Creating an object profile

Creating an object profile involves defining the profile and then selecting the objects to be included in the profile.

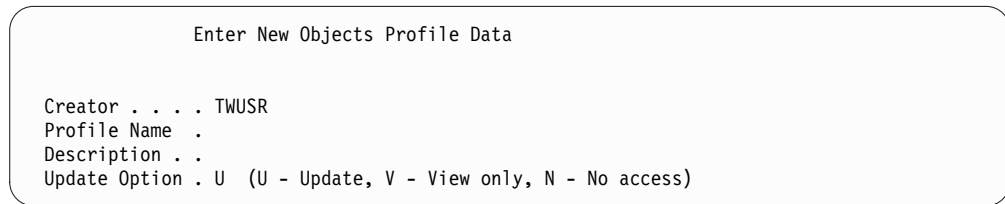
#### Procedure

1. On the DB2 Automation Tool main menu, enter 1 in the **Option** field and press Enter.
2. Specify selection criteria in the **Profile Like** and **Creator Like** fields and press Enter. If profiles exist that meet your selection criteria, they are listed on the Objects Profile Display, as shown in following figure:

```
AUTOTOOL V4R2  ----- Objects Profile Display -----  2017/09/15  14:55:50
Option  ==>                                           Scroll ==>  CSR
-----
Line Commands: C - Create  D - Delete  E - Export  I - Import
                Q - Quick   V - View    U - Update  J - Jobs    R - Rename
Profile Like   TWUSR                                           DB2 Subsystem: SS01
Creator Like   TWUSR*                                           Row 1 of 2      >
-----
Cmd  Name                               Creator  Updt
TWUSR DAH OBJECTS                        TWUSR    U
TWUSR ONE SPACE                          TWUSR    U
***** Bottom of Data *****
```

Figure 18. Objects Profile display

3. On the Objects Profile Display, enter C in the **Cmd** field and press Enter. The window that is shown in the following figure is displayed:



```
Enter New Objects Profile Data

Creator . . . . TWUSR
Profile Name .
Description .
Update Option . U (U - Update, V - View only, N - No access)
```

Figure 19. Enter New Objects Profile Data window

4. Enter the profile creator, a profile description, and the profile update option in the fields on the window. The **Creator** field contains your user ID, but can be modified.
5. After you complete these fields, press Enter. The window that is shown in the following figure is displayed. This window is used to specify whether to add table spaces, indexes, or both to the object profile.



```
Add Objects to the Object Profile

Add Tablespaces . . N (Yes/No)

Add Indexes . . . . N (Yes/No)

Add Volumes . . . . N (Yes/No)
```

Figure 20. Specifying objects to add to the profile

## What to do next

- To add table spaces, refer to “Adding table spaces.” Use this option to include table spaces and to include all indexes for a table space.
- To add indexes, refer to “Adding indexes” on page 117. Use this option to include indexes selectively.
- To add table spaces or index spaces from specific volumes, refer to “Adding spaces on specific volumes” on page 120.

**Note:** If you enter Y in more than one field, the screens to add the objects are displayed in succession.

---

## Adding table spaces

There are several ways to specify how table spaces are included in an object profile. You can specify table spaces by database, table space or creator name, with or without wild cards. You can use custom SQL to specify other criteria to select the table spaces. Other options allow you to include all indexes on the table spaces, include clone tables only, or include referentially related table spaces.

## Procedure

On the Add Objects to the Objects Profile window, enter Y in the **Add Tablespaces** field and press Enter. The Enter Tablespaces Like to Display window is displayed, as shown in the following figure:

Enter Tablespaces Like to Display		
Database Like. . *	Wildcard	N (Yes/No)
Tablespace Like. *	Exclude	I (E - Exclude, I - Include)
Creator Like . . *	>	
Process Dependent Indexes . . . . . N (Yes/No)		
Process Referentially Dependent Tablespaces . N (Y - Yes, N - No, B - Build time Expansion, R - Run time Expansion)		
Process Cloned Tables . . . . . N (Yes/No)		
Advanced SQL . . . . N (Yes/No)	Update SQL	N (Yes/No)

Figure 21. Enter Tablespaces Like to Display window

## What to do next

Use the Enter Tablespaces Like to Display window to select the spaces that you want to include or exclude. See the following topics for more information:

- “Adding table spaces from a list”
- “Adding table spaces from a list with advanced SQL” on page 108
- “Adding table spaces at job build time by using the Wildcard field” on page 111
- “Using advanced SQL with the Wildcard field to add table spaces at job build time” on page 112
- “Adding indexes on a table space” on page 115
- “Processing dependent indexes” on page 115
- “Processing referentially related table spaces” on page 116
- “Processing clone tables” on page 117

## Adding table spaces from a list

To generate a list of table spaces from which to select for inclusion in the object profile, follow these steps.

### Procedure

1. Enter a database, table space, or creator name or mask in the appropriate fields on the Enter Tablespaces Like to Display window, but leave N in the **Wildcard** field, as shown in the following figure:

Enter Tablespaces Like to Display		
Database Like. . *	Wildcard	N (Yes/No)
Tablespace Like. *	Exclude	I (E - Exclude, I - Include)
Creator Like . . pd*	>	
Process Dependent Indexes . . . . . N (Yes/No)		
Process Referentially Dependent Tablespaces . N (Y - Yes, N - No, B - Build time Expansion, R - Run time Expansion)		
Process Cloned Tables . . . . . N (Yes/No)		
Advanced SQL . . . . N (Yes/No)	Update SQL	N (Yes/No)

Figure 22. Adding table spaces from a list

**Note:** The **Creator Like** field allows up to 128 bytes. To scroll this field, place the cursor in the field and use the PF11 key to scroll right and the PF10 key to scroll left.

2. Press Enter to continue. The Include Tablespace Selection panel is displayed. This panel lists the table spaces that match your selection criteria. It also provides columns of detailed information about each table space. Scroll right to see all the columns.
3. To select a table space, enter S in the **Cmd** field next to the space and press Enter. A message is displayed indicating that the space is added to the profile.

## What to do next

To review and add indexes that are related to a table space, enter I next to the table space and press Enter. Refer to “Adding indexes” on page 117.

When you are finished adding table spaces and indexes, press PF3 until the Update Object Profile Display is displayed. For more information, see “Updating object profiles by using the Update Object Profile Display” on page 124.

## Adding table spaces from a list with advanced SQL

You can refine the list of table spaces to be included by providing an advanced SQL statement with a customized WHERE clause. Any valid WHERE clause that selects table spaces to be included can be specified.

### About this task

Advanced SQL works with the criteria that you specify in the Database Like, Tablespace Like, and Creator Like fields on the Enter Tablespaces Like to Display window; the criteria is combined with the SQL statement to select the table spaces.

Selecting table spaces from a list requires setting the **Wildcard** field to N on the Enter Tablespaces Like to Display window. When Wildcard is set to N, the advanced SQL is used to build the list of table spaces from which to select. After you choose the spaces, the advanced SQL is discarded and not saved in the object profile.

### Procedure

1. On the Enter Tablespace Like to Display window, enter a database, table space, or creator name or mask in the appropriate fields and enter N in the **Wildcard** field.

**Note:** The **Creator Like** field allows up to 128 bytes. To scroll this field, place the cursor in the field and use the PF11 key to scroll right and the PF10 key to scroll left.

2. Enter Y in the **Advanced SQL** field and Y in the **Update SQL** field, as shown in the following figure.



```

Enter Tablespaces Like to Display

Database Like. . *      Wildcard  N (Yes/No)
Tablespace Like. *      Exclude   I (E - Exclude, I - Include)
Creator Like . . PD*    >

Process Dependent Indexes . . . . . N (Yes/No)
Process Referentially Dependent Tablespaces . N (Y - Yes, N - No,
                                                B - Build time Expansion,
                                                R - Run time Expansion)
Process Cloned Tables . . . . . N (Yes/No)
Advanced SQL . . . . y (Yes/No)   Update SQL y (Yes/No)

```

Figure 23. Specifying advanced SQL

3. Press Enter. The Object Selection Advanced SQL panel is displayed, as shown in following figure:

```

AUTOTOOL V4R2  ----  Object Selection Advanced SQL  --- 2013/07/31  10:56:14
Option ==>                                           Scroll ==> CSR
                                                    DB2 Subsystem: SS01

-----
Commands: Execute - Test Sql  Import - Import from dataset
Line Commands: C - Copy  D - Delete  I - Insert  M - Move  R - Repeat
               T - Table/Column Lookup
-----

Cmd  SQL

***** Bottom of Data *****

```

Figure 24. Object Selection Advanced SQL panel

4. Enter your SQL statement in the SQL input area. You can enter any SQL statement that meets these requirements:
  - It must be a SELECT statement that specifies the following columns:
    - The first column is required and must represent a database name.
    - The second column is required and must represent a table space name.
    - The third column is optional, but if present must represent a partition number.
  - The FROM clause must be specified after the SELECT statement.
  - Use any WHERE clause criteria that identifies the objects to be included in the object profile.

You can optionally enter the T line command to look up table names and their columns on the subsystem. This command invokes the Table Selection panel, which you can use to generate a list of tables on this subsystem and find columns names associated with the tables.

The following panel shows a sample valid advanced SQL statement:

```

AUTOTOOL V4R2 ---- Object Selection Advanced SQL --- 2013/07/31 18:59:37
Option ==> Scroll ==> CSR
DB2 Subsystem: SS01

-----
Commands: Execute - Test Sql Import - Import from dataset
Line Commands: C - Copy D - Delete I - Insert M - Move R - Repeat
               T - Table/Column Lookup
-----

Cmd SQL
  SELECT D.NAME,S.NAME
  FROM SYSIBM.SYSDATABASE D, SYSIBM.SYSTABLESPACE S
  WHERE D.IMPLICIT = 'Y' AND S.IMPLICIT = 'Y' AND D.NAME = S.DBNAME
***** Bottom of Data *****

```

Figure 25. Sample advanced SQL statement

5. To verify that the results of the SQL select statement are as expected, enter EXECUTE in the **Option** field and press Enter. The SQL statement is run and the results of the SELECT are listed on the Advanced SQL Test Facility panel, a portion of which is shown in the following figure:

```

AUTOTOOL V4R2 ----- Advanced SQL Test Facility ----- 2013/08/09 16:21:12
Option ==> Scroll ==> CSR

DB2 Subsystem: SS01
Row 1 of 530 +>

-----
Dbname  Tsname  Part Creator  Dbid  Obid  Psid Bpool  Lockrule  Pagesize
DSN04828 A2345678 1 PDUSR      584   1    2 BP0    R          4
DSN04829 A2345678 1 PDUSR      585   1    2 BP0    R          4
DSN04830 A2345678 1 PDUSR      586   1    2 BP0    R          4
DSN04831 A2345678 1 PDUSR      587   1    2 BP0    R          4

```

Figure 26. Advanced SQL Test Facility panel with SQL statement results

This panel shows the results of the SQL SELECT statement execution. The data on the panel is read only.

**Note:** The EXECUTE command runs the SQL statement without consideration for the Database Like, Tablespace Like, and Creator Like criteria that you specified on the Enter Tablespace Like to Display window.

6. When you are satisfied with the results of the SELECT statement, press PF3 on the Object Selection Advanced SQL panel.

**Note:** Because the **Wild card** field was set to N on the Enter Tablespace Like to Display window, the SQL statement is not saved when you exit the Object Selection Advanced SQL panel.

The Include Tablespace Selection panel is displayed. This panel shows the results of the combined SQL SELECT statement and the Database Like, Tablespace Like, and Creator Like criteria that you specified on the Enter Tablespace Like to Display window. The following figure shows a portion of the results:

```

AUTOTOOL V4R2 ---- Include Tablespace Selection ---- 2013/08/09 16:21:54
Option ==> Scroll ==> CSR
-----
Line Commands: S - Select I - Indexes E - Edit R - Report V - Validate
Row 1 of 302 +>
Database Like * DB2 Subsystem: SS01
Tablespace Like *
Creator Like PD* >
-----
Cmd Dbname Tsname Part Creator Dbid Obid Psid Bpool Lockrule
DSN00018 T1HP0344 ALL PDUSR2 413 1 2 BP0 R
DSN00018 T1HP0344 1 PDUSR2 413 1 2 BP0 R
DSN00020 POLICYRI ALL PDDAB 415 1 2 BP0 R
DSN00020 POLICYRI 1 PDDAB 415 1 2 BP0 R
DSN00073 POLICYRI ALL PDDAB 504 1 2 BP0 R
DSN00073 POLICYRI 1 PDDAB 504 1 2 BP0 R
DSN00074 HISTRPOL ALL PDDAB 505 1 2 BP0 R
DSN00074 HISTRPOL 1 PDDAB 505 1 2 BP0 R
DSN00309 TIMETEST ALL PDDAB 749 1 2 BP0 R
DSN00309 TIMETEST 1 PDDAB 749 1 2 BP0 R
DSN00357 TEST2RIN ALL PDDAB 812 1 2 BP0 R
DSN00357 TEST2RIN 1 PDDAB 812 1 2 BP0 R
DSN00706 TSZ ALL PDILVE 457 1 2 BP0 R
DSN00706 TSZ 1 PDILVE 457 1 2 BP0 R
DSN00739 TSZ ALL PDKUZNA 1228 1 2 BP0 R
DSN00739 TSZ 1 PDKUZNA 1228 1 2 BP0 R
DSN01128 STAFF ALL PDERMA 1701 1 2 BP0 R
DSN01128 STAFF 1 PDERMA 1701 1 2 BP0 R
DSN01341 LEVWSUTM 0 PDKUZNA 1922 4 5 BP0 A

```

Figure 27. Include Tablespace Selection panel

- On the Include Tablespace Selection panel, select the table spaces that you want to include in the object profile.

## What to do next

To review and add indexes that are related to a table space, enter I next to the table space and press Enter. Refer to “Adding indexes” on page 117.

When you are finished adding table spaces and indexes, press PF3 until the Update Object Profile Display is displayed. For more information, see “Updating object profiles by using the Update Object Profile Display” on page 124.

## Adding table spaces at job build time by using the Wildcard field

If you have an application that frequently adds or removes table spaces, you can use the **Wildcard** field to allow DB2 Automation Tool to resolve the object list at job build time. You can use this feature to avoid manually modifying the object profile whenever your application adds an object.

### About this task

The **Wildcard** field works with the search criteria that you specify in the **Database Like**, **Tablespace Like**, and **Creator Like** fields on the Enter Tablespace Like to Display window. If you set **Wildcard** to Y, the criteria is evaluated at build time.

### Procedure

- On the Enter Tablespace Like to Display window, enter a database, table space, or creator name or mask in the appropriate fields and enter Y in the **Wildcard**

field, as showing in the following figure:

Enter Tablespaces Like to Display

Database Like. . \* Wildcard Y (Yes/No)  
Tablespace Like. \* Exclude I (E - Exclude, I - Include)  
Creator Like . . PD\* >  
  
Process Dependent Indexes . . . . . N (Yes/No)  
Process Referentially Dependent Tablespaces . N (Y - Yes, N - No,  
B - Build time Expansion,  
R - Run time Expansion)  
Process Cloned Tables . . . . . N (Yes/No)  
Advanced SQL . . . . N (Yes/No) Update SQL N (Yes/No)

Figure 28. Adding table spaces at build time by using the Wildcard field

- Press Enter to continue. The window that is shown in the following figure is displayed.

Choose Partition Method

Utilities can run against each partition or it can run against all partitions. When HAA explodes wild card table and index spaces, which method would you like partitioned spaces exploded?  
  
Explode A (A - All, P - Partitioned)

Figure 29. Specifying partition processing for spaces

Specify how table space partitions are processed. To handle all partitions (for example, equivalent to a REORG TABLESPACE), enter A in the **Explode** field. To individually process each partition (for example, equivalent to REORG TABLESPACE PART n), enter P in the **Explode** field.

- Press Enter. The specified spaces are added to the Update Object Profile Display and a Y is entered in the Wildcard column.

## What to do next

On the Update Object Profile Display, you can enter the EXPLDDE primary command or the E line command to review the expanded list of all table spaces and index spaces currently included in the profile. For more information, see “Updating object profiles by using the Update Object Profile Display” on page 124.

## Using advanced SQL with the Wildcard field to add table spaces at job build time

If you have an application that frequently adds or removes table spaces, you can use the **Wildcard** field in conjunction with advanced SQL to allow DB2 Automation Tool to resolve the object list at job build time. You can use this feature to avoid manually modifying the object profile whenever your application adds an object.

### About this task

Advanced SQL works with the criteria that you specify in the Database Like, Tablespace Like, and Creator Like fields on the Enter Tablespaces Like to Display

window; the criteria is combined with the SQL statement. When you set **Wildcard** to Y, the combined advanced SQL and the search criteria is evaluated at build time to select the table spaces.

In addition, when the **Wildcard** field is set to Y, the advanced SQL is saved with the object profile and used at build time to generate the object list.

## Procedure

1. On the Enter Tablespace Like to Display window, enter a database, table space, or creator name or mask in the appropriate fields and enter Y in the **Wildcard** field.

**Note:** The **Creator Like** field allows up to 128 bytes. To scroll this field, place the cursor in the field and use the PF11 key to scroll right and the PF10 key to scroll left.

2. Enter Y in the **Advanced SQL** field and Y in the **Update SQL** fields, as showing in the following figure:

```

Enter Tablespaces Like to Display

Database Like. . *      Wildcard   Y (Yes/No)
Tablespace Like. *      Exclude    I (E - Exclude, I - Include)
Creator Like . . PD*    >

Process Dependent Indexes . . . . . N (Yes/No)
Process Referentially Dependent Tablespaces . N (Y - Yes, N - No,
                                                B - Build time Expansion,
                                                R - Run time Expansion)
Process Cloned Tables . . . . . N (Yes/No)
Advanced SQL . . . . Y (Yes/No)    Update SQL Y (Yes/No)

```

Figure 30. Adding table spaces at job build time

3. Press Enter. The Object Selection Advanced SQL panel is displayed, as shown in following figure:

```

AUTOTOOL V4R2  ---- Object Selection Advanced SQL  --- 2013/07/31  10:56:14
Option ==>                                           Scroll ==> CSR
                                                DB2 Subsystem: SS01

-----
Commands: Execute - Test Sql  Import - Import from dataset
Line Commands: C - Copy  D - Delete  I - Insert  M - Move  R - Repeat
               T - Table/Column Lookup
-----
Cmd  SQL

***** Bottom of Data *****

```

Figure 31. Object Selection Advanced SQL panel

4. Enter your SQL statement in the SQL input area. You can enter any SQL statement that meets these requirements:
  - It must be a SELECT statement that specifies the following columns:
    - The first column is required and must represent a database name.
    - The second column is required and must represent a table space name.

- The third column is optional, but if present must represent a partition number.
- The FROM clause must be specified after the SELECT statement.
- Use any WHERE clause criteria that identifies the objects to be included in the object profile.

You can optionally enter the T line command to look up table names and their columns on the subsystem. This command invokes the Table Selection panel, which you can use to generate a list of tables on this subsystem and find column names associated with the tables.

The following panel shows a sample valid advanced SQL statement:

```

AUTOTOOL V4R2  ---- Object Selection Advanced SQL  --- 2013/07/31 18:59:37
Option ==>                                     Scroll ==> CSR
                                                DB2 Subsystem: SS01

-----
Commands: Execute - Test Sql Import - Import from dataset
Line Commands: C - Copy D - Delete I - Insert M - Move R - Repeat
               T - Table/Column Lookup
-----
Cmd  SQL
     SELECT D.NAME,S.NAME
     FROM SYSIBM.SYSDATABASE D, SYSIBM.SYSTABLESPACE S
     WHERE D.IMPLICIT = 'Y' AND S.IMPLICIT = 'Y' AND D.NAME = S.DBNAME
***** Bottom of Data *****

```

Figure 32. Sample advanced SQL statement

5. To verify that the results of the SQL select statement are as expected, enter EXECUTE in the **Option** field and press Enter. The SQL statement is run and the results of the SELECT are listed on the Advanced SQL Test Facility panel, a portion of which is shown in the following figure:

```

AUTOTOOL V4R2  ----- Advanced SQL Test Facility ----- 2013/08/01 12:28:31
Option ==>                                     Scroll ==> CSR
                                                DB2 Subsystem: SS01
                                                Row 1 of 529      +>
-----
Dbname  Tsname  Part Creator  Dbid  Obid  Psid Bpool  Lockrule  Pagesize
DSN04828 A2345678 1 PDUSR    584   1    2 BP0    R         4
DSN04829 A2345678 1 PDUSR    585   1    2 BP0    R         4
DSN04830 A2345678 1 PDUSR    586   1    2 BP0    R         4
DSN04831 A2345678 1 PDUSR    587   1    2 BP0    R         4
DSN04722 AAAR0002 1 PDUS1    766   1    2 BP0    R         4
DSN03865 ABESS   1 PDUS1A  4973   1    2 BP0    R         4
DSN04379 ACDRC   1 PDUS1B  575   1    2 BP0    R         4
DSN04168 APP1    1 PDUS1BZ 5345   1    2 BP0    R         4
DSN03346 APPLICAN 1 PDUS1BZ 4414   1    2 BP0    R         4
DSN03774 APPLICAN 1 PDUS1BZ 4877   1    2 BP0    R         4
DSN03425 ARYRINLI 1 QYXTEST 4494   1    2 BP0    R         4
DSN03425 ARYRINLI 2 QYXTEST 4494   1    2 BP0    R         4

```

Figure 33. Advanced SQL Test Facility

This panel shows the results of the SQL SELECT statement execution. The data on the panel is read only.

**Note:** The EXECUTE command runs the SQL statement without consideration for the Database Like, Tablespace Like, and Creator Like criteria that you specified on the Enter Tablespaces Like to Display window.

- When you are satisfied with the results of the SELECT statement, press PF3 on the Object Selection Advanced SQL panel. The window that is shown in the following figure is displayed.

Choose Partition Method

Utilities can run against each partition or it can run against all partitions. When HAA explodes wild card table and index spaces, which method would you like partitioned spaces exploded?

Explode A (A - All, P - Partitioned)

Figure 34. Specifying partition processing for spaces

Specify how table space partitions are processed. To handle all partitions (for example, equivalent to a REORG TABLESPACE), enter A in the **Explode** field. To individually process each partition (for example, equivalent to REORG TABLESPACE PART n), enter P in the **Explode** field.

- Press Enter. The specified spaces are added to the Update Object Profile Display and a Y is entered in the Wildcard column.

## What to do next

You can enter the EXPLDDE primary command or the E line command to see the expanded list of all table spaces and index spaces currently included in the profile.

## Adding indexes on a table space

To select indexes on a table space, use the I line command next to a table space on the Include Tablespace Selection panel.

### Procedure

- On the Include Tablespace Selection panel, enter I next to a table space and press Enter. The Include Index Selection panel is displayed, as shown in the following figure:

AUTOTOOL V4R2 ----- Include Index Selection ----- 2011/08/31 18:13:12  
Option ==> Scroll ==> CSR

---

Line Commands: S - Select Index E - Edit Row 1 of 1 >  
Database Like \* DB2 Subsystem: SS01  
Index Like \* >  
Creator Like TW\* >

---

Cmd	Name	Creator	Part	Tbname	Tbcreator
	DAHIX	TWUSR	0	DAHTB	TWUSR

\*\*\*\*\* Bottom of Data \*\*\*\*\*

Figure 35. Include Index Selection panel

- Enter S next to the index to select it for inclusion in the profile and press Enter. A message is displayed indicating that the index was added to the profile.

## Processing dependent indexes

You can automatically process all indexes that are related to a table space by using the **Process Dependent Indexes** field.

### About this task

1. If Process Dependent Indexes is set to N, and the object profile is used with a RECOVER utility, indexes that are related to the recovered table spaces will be placed in REBUILD PENDING status by DB2 after the recovery.
2. If you specify to process dependent indexes and you request both a REORG TABLESPACE and a REORG INDEX in the same job profile, a REORG INDEX step is not generated for the dependent indexes. These indexes are automatically reorganized by the REORG TABLESPACE utility and do not need to be processed in a separate step.

### Procedure

1. To process dependent indexes, do one of the following:
  - On the Enter Tablespaces Like to Display window, enter Y in the **Process Dependent Indexes** field.
  - On the Update Object Profile Display, when viewing objects already included in the profile, enter Y in the **Process IX** column for the selected objects.
2. On the Update Object Profile Display, you can view the indexes that are included in the profile by using the EXPLODE primary or line command.

## Processing referentially related table spaces

DB2 Automation Tool provides the ability to include all table spaces related via referential integrity. This allows a utility to maintain referential constraints by executing all referentially related objects at the same time.

### About this task

Some job steps cannot use LISTDEFS for object determination. These include the job registration step for the job tracking task; START and STOP DATABASE commands; DB2 Automation Tool utilities such as reallocation and data page verification; and any IBM utility or command that does not support LISTDEFS, such as REPAIR. If RI spaces are to be processed and job generation options specify LISTDEFS, the job steps that cannot use LISTDEFS must determine the RI structure at job build time. If the RI structure changes between job build and job execution time, the object lists may not be consistent between steps.

### Procedure

1. To process referentially related objects, do one of the following:
  - On the Enter Tablespaces Like to Display window, enter one of the following values in the **Process Referentially Dependent Tablespaces** field.

<b>Y</b>	Specifying Y processes the table space and all its referentially dependent table spaces. The RI will be expanded depending on the value of the LISTDEF job option. With LISTDEFS off, the RI will be expanded at build time. If LISTDEFS are selected, the RI will be expanded at utility execution time via LISTDEF RI keyword.
<b>B</b>	Specifying B forces RI to be expanded at build time regardless of the LISTDEF option.
<b>R</b>	Specifying R forces RI to be expanded at utility execution time. LISTDEFS are required with this option.
<b>N</b>	Specifying N does not process referentially related table spaces.



- On the Update Object Profile Display, when viewing objects already included in the profile, enter Y, B, R or N in the **Process RI** column for the selected objects. Refer to the previous step for a description of these values.
- 2. On the Update Object Profile Display, you can view the objects that are included in the profile by using the EXPLODE primary or line command.

## Processing clone tables

DB2 Automation Tool can automatically process clone tables that are related to a table spaces. When you specify to process clone objects, only the clone objects are included in the object profile.

### About this task

DB2 Version 9.1 introduced clone tables. The clone table has the same structure as the base table, exists in the same table space, and is used to hold a copy of the base table. All related objects are cloned as well, such as indexes and before triggers. In addition, data can be exchanged between a base table and clone table by using SQL statements. In DB2 Automation Tool, when you specify to process clone objects, only the clone objects are included in the object profile. If you want to also process the base object, you must separately include the base object with the **Process Clone** column set to N.

### Procedure

1. On the Enter Tablespaces Like to Display window, enter Y in the **Process Cloned Tables** field.
2. Follow one of these steps, depending upon how you are selecting table spaces:
  - If you are selecting table spaces from a list, the Include Tablespace Selection panel is displayed. Enter S next to a clone table and press Enter. A message is displayed to confirm that the table space is added.
  - If you are selecting table spaces by using the **Wildcard** field, the clone table spaces are automatically included in the object profile.
3. On the Update Object Profile Display, you can view the clone objects that are included in the profile by using the EXPLODE primary or line command. You can also change the value in the Process Clone column.

---

## Adding indexes

You can include indexes selectively in an object profile, or you can use wild cards to add indexes at job build time. You can include indexes by database name, creator name, or index name, with or without wild cards.

### Procedure

On the Add Objects to the Objects Profile window, enter Y in the **Add Indexes** field and press Enter. The window that is shown in the following figure is displayed:

Enter Indexes Like to Display									
Database	Like	*							
Creator	Like	TW*							>
Index	Like	*							>
Wildcard	N	(Yes/No)	Exclude	I	(E - Exclude, I - Include)				
Process Cloned Indexes	N	(Yes/No)							

Figure 36. Enter Indexes Like to Display window

## What to do next

Use the Enter Indexes Like to Display window to select the indexes that you want to include or exclude. For more information, see the following topics:

- “Adding indexes from a list”
- “Using the Wildcard field to add indexes at job build time” on page 119
- “Processing cloned indexes” on page 120

## Adding indexes from a list

You can select indexes from a list when you are adding them to an object profile.

### Procedure

1. On the Enter Indexes Like to Display window, enter a database name, index creator, or index name or mask in the appropriate fields and enter N in the **Wildcard** field, as shown in the following figure:

Enter Indexes Like to Display									
Database	Like	*							
Creator	Like	tw*							>
Index	Like	*							>
Wildcard	N	(Yes/No)	Exclude	I	(E - Exclude, I - Include)				
Process Cloned Indexes	N	(Yes/No)							

Figure 37. Adding indexes from a list

- Note:** The Creator Like and Index Like fields allow up to 128 bytes. To scroll a field, place the cursor in the field and use the PF11 key to scroll right and the PF10 key to scroll left.
2. Press Enter to continue. The Index Selection panel is displayed. This panel lists the indexes that match your selection criteria and provides columns of detailed information about each index. Scroll right to see all the columns.
  3. To select an index, enter S in the **Cmd** field next to the index. A message is displayed, indicating that the index was added to the profile.
  4. When you finish adding indexes, press PF3. The Update Object Profile Display, which is shown in the following figure, is displayed:

```

AUTOTOOL V4R2 ---- Update Object Profile Display --- 2011/08/31 20:29:22
Option ==> Scroll ==> CSR

-----
Commands: Explode - View all objects.
Line Commands: A - Add D - Delete E - Explode U - Update R - Repeat
Creator: TWUSR Profile: HAA V41 OBJECTS User: TWUSR
Description: DB2 Subsystem: SS01
Share Option U (U - Update, V - View, N - No) Row 1 of 1 >
-----

          Wild ---- Process --- Inc/ IX DB Name/ IX Crtr/ IX Name/
Cmd Type Card IX RI Clone Util Exc TS Crtr DB Name TS Name
IX N N N N N INC TWUSR DAHIX
***** Bottom of Data *****

```

Figure 38. Index added to Update Object Profile Display

By default, the indexes are listed in the order added to the object profile. You can use the EXPLODE primary or line command to see an expanded list of all table spaces and index spaces included in the profile. Scroll right to see all the columns.

## Using the Wildcard field to add indexes at job build time

If you have an application that frequently adds or removes indexes, you can use the **Wildcard** field to allow DB2 Automation Tool to resolve the object list at job build time. You can use this feature to avoid manually modifying the object profile whenever your application adds an index.

### About this task

The **Wildcard** field works with the search criteria that you specify in the **Database Like**, **Creator Like**, and **Index Like** fields on the Enter Indexes Like to Display window. If you set **Wildcard** to Y, the criteria is evaluated at build time.

### Procedure

1. On the Enter Indexes Like to Display window, enter a database, index creator, or index name or mask in the appropriate fields, and enter Y in the **Wildcard** field. Refer to the following example:

```

Enter Indexes Like to Display

Database Like *
Creator Like TW* >
Index Like * >
Wildcard y (Yes/No) Exclude I (E - Exclude, I - Include)

Process Cloned Indexes N (Yes/No)

```

Figure 39. Selecting indexes using wild cards

**Note:** The Creator Like and Index Like fields allow up to 128 bytes. To scroll a field, place the cursor in the field and use the PF11 key to scroll right and the PF10 key to scroll left.

2. Press Enter. The window shown in the following figure is displayed:

Choose Partition Method

Utilities can run against each partition or it can run against all partitions. When HAA explodes wild card table and index spaces, which method would you like partitioned spaces exploded?

Explode A (A - All, P - Partitioned)

Figure 40. Specifying partition processing for indexes

Specify how partitions are processed. To handle all partitions (equivalent to a REORG INDEX), enter A in the **Explode** field. To have each partition processed individually (equivalent to REORG INDEX PART n), enter P in the **Explode** field.

3. Press Enter. The specified indexes are added to the Update Object Profile Display and a Y is entered in the Wildcard column.

## What to do next

On the Update Object Profile Display, you can enter the EXPLD primary command or the E line command to review the expanded list of all table spaces and index spaces currently included in the profile. For more information, see “Updating object profiles by using the Update Object Profile Display” on page 124.

## Processing cloned indexes

DB2 Automation Tool can automatically process cloned indexes related to a table spaces. When you specify to process cloned indexes, only the cloned indexes are included in the object profile.

### About this task

DB2 Version 9.1 introduced clone tables. The clone table has the same structure as the base table, exists in the same table space, and is used to hold a copy of the base table. Indexes and all other related objects are cloned as well.

In DB2 Automation Tool, when you specify to process cloned indexes, **ONLY** the cloned indexes are included in the object profile. If you want to also process the base indexes, you must separately include the base index with the Process Clones field set to N.

### Procedure

To process only cloned indexes, when selecting indexes to display, enter Y in the Process Cloned Indexes field on the Enter Indexes Like to Display window, or enter Y in the Process IX field on the Update Object Profile Display.

---

## Adding spaces on specific volumes

When selecting table spaces or indexes, you can include or exclude the spaces on specific volumes. You can select all the spaces on entire volumes, or use wild cards to add all the spaces on multiple volumes to an object profile at job build time.

### Procedure

On the Add Objects to the Objects Profile window, enter Y in the **Add Volumes** field and press Enter. The window that is shown in the following figure is

displayed:

Enter Volumes Like to Display			
Volume	Like	D*	Wildcard N (Yes/No)
			Exclude I (E - Exclude, I - Include)
Process Objects	A	(A - All, T - TS Only, I - IX Only)	

Figure 41. Enter Volumes Like to Display window

## What to do next

Use the Enter Volumes Like to Display window to select the table spaces or indexes that you want to include or exclude from specific volumes. For more information, see the following topics:

- “Adding spaces on specific volumes from a list”
- “Adding spaces on specific volumes at job build time by using the Wildcard field” on page 122

## Adding spaces on specific volumes from a list

When you are adding spaces to an object profile, you can select the spaces from a list of spaces on a specific volume or volumes.

### Procedure

1. On the Enter Volumes Like to Display window, enter a volume name or mask in the appropriate field and enter N in the **Wildcard** field, as shown in the following figure:

Enter Volumes Like to Display			
Volume	Like	dbb*	Wildcard n (Yes/No)
			Exclude I (E - Exclude, I - Include)
Process Objects	A	(A - All, T - TS Only, I - IX Only)	

Figure 42. Adding spaces from a list of volumes

2. In the **Process Objects** field, enter A to include both table spaces and index spaces, enter T to include only table spaces, or enter I to include only indexes.
3. Press Enter. The Include Volume Selection panel is displayed. This panel lists the volumes that match your selection criteria. It also provides columns of detailed information about each volume. Scroll right to see all the columns.
4. Optional: On the Include Volume Selection panel, you can individually select table spaces and indexes on the volume by using the T and I line commands. When you use these commands, the Tablespace Selection or the Index Selection panel is displayed, where you can browse and select the objects from a list.
5. To select all the spaces on a volume, enter S in the **Cmd** field next to the volume. The window that is shown in the following figure is displayed:

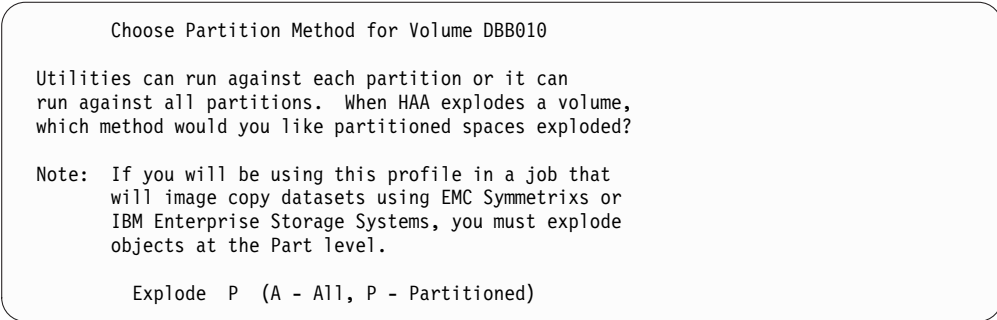


Figure 43. Specifying partition processing

- On this window, specify how partitions are processed for spaces on the volume. To handle all partitions (for example, equivalent to a REORG TABLESPACE|INDEX), enter A in the **Explode** field. To have each partition processed individually (for example, equivalent to REORG TABLESPACE|INDEX PART n), enter P in the **Explode** field.
- Press Enter. A message is displayed indicated that the spaces from the volume have been added to the profile.
- When you finish adding spaces on a volume, press PF3. The Update Object Profile Display, which is shown in the following figure, is displayed:

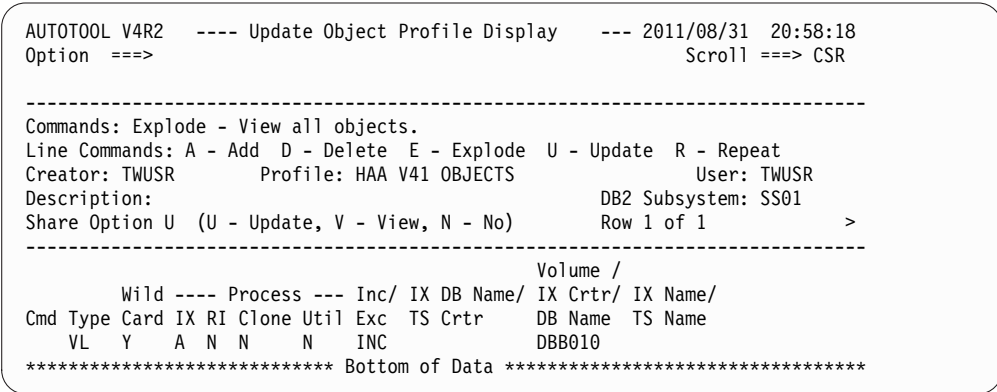


Figure 44. Update Object Profile Display

By default, the volumes are listed in the order added to the object profile. You can use the EXPLODE primary or line command to see an expanded list of all table spaces and index spaces included in the profile. Scroll right to see all the columns.

The value in the Process Index column indicates the type of objects to be processed. An A in this column means that both table spaces and indexes on the volume are included. A T indicates that only table spaces on the volume are included. An I indicates that only indexes are included. You can change the value on this screen.

### Adding spaces on specific volumes at job build time by using the Wildcard field

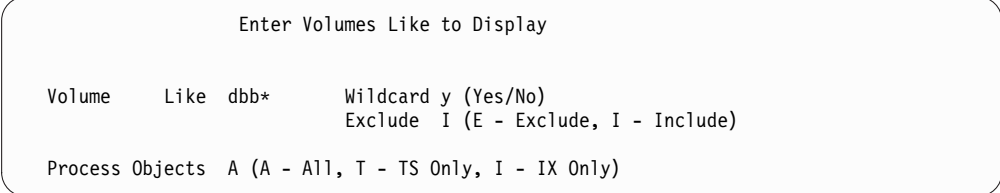
If you have an application that frequently adds or removes table spaces, you can use the **Wildcard** field to allow DB2 Automation Tool to resolve the object list at job build time.

## About this task

You can use this feature to avoid manually modifying the object profile whenever your application adds an object. If you set **Wildcard** to Y, the volume search criteria is evaluated at build time to select the table spaces.

## Procedure

1. On the Enter Volumes Like to Display window, enter a volume name or mask in the appropriate field. Enter Y in the **Wildcard** field, as shown in the following figure:



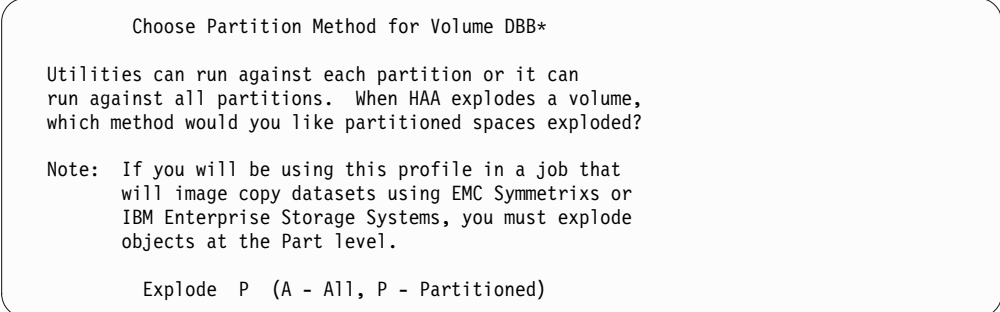
Enter Volumes Like to Display

Volume      Like dbb\*      Wildcard y (Yes/No)  
Exclude I (E - Exclude, I - Include)

Process Objects A (A - All, T - TS Only, I - IX Only)

Figure 45. Adding spaces from a volume by using the Wildcard field

2. In the **Process Objects** field, enter A to include both table spaces and index spaces, enter T to include only table spaces, or enter I to include only indexes.
3. Press Enter to continue. The window that is shown in the following figure is displayed:



Choose Partition Method for Volume DBB\*

Utilities can run against each partition or it can run against all partitions. When HAA explodes a volume, which method would you like partitioned spaces exploded?

Note: If you will be using this profile in a job that will image copy datasets using EMC Symmetrix or IBM Enterprise Storage Systems, you must explode objects at the Part level.

Explode P (A - All, P - Partitioned)

Figure 46. Specifying partition processing

4. On this window, specify how partitions are processed for spaces on the volume. To handle all partitions (for example, equivalent to a REORG TABLESPACE|INDEX), enter A in the **Explode** field. To have each partition processed individually (for example, equivalent to REORG TABLESPACE|INDEX PART n), enter P in the **Explode** field.
5. Press Enter. The Update Object Profile Display is displayed, as shown in the following figure:

```

AUTOTOOL V4R2  ---- Update Object Profile Display  --- 2011/08/31 21:04:41
Option ==>                                           Scroll ==> CSR

-----
Commands: Explode - View all objects.
Line Commands: A - Add D - Delete E - Explode U - Update R - Repeat
Creator: TWUSR      Profile: HAA V41 OBJECTS      User: TWUSR
Description:
Share Option U (U - Update, V - View, N - No)      DB2 Subsystem: SS01
Row 1 of 1 >
-----

          Wild ---- Process --- Inc/ IX DB Name/ Volume /
Cmd Type Card IX RI Clone Util Exc TS Crtr  DB Name TS Name
          VL  Y  A  N  N  N  INC          DBB*
***** Bottom of Data *****

```

Figure 47. Update Object Profile Display

By default, the volumes are listed in the order added to the object profile. You can use the EXPLODE primary or line command to see an expanded list of all table spaces and index spaces included in the profile.

The value in the Process IX column indicates the type of objects to be processed. An A in this column means that both table spaces and indexes on the volume are included. A T indicates that only table spaces on the volume are included. An I indicates that only indexes are included. You can change the value on this panel.

## Updating object profiles by using the Update Object Profile Display

Use the Update Object Profile Display to view and modify the list of objects that are included in the profile. From this panel, you can add or delete objects and view an exploded list of table spaces and index spaces included in the profile. You can also set object-specific utility options from this panel.

### Procedure

1. When you finish selecting table spaces and index spaces for your object profile, press PF3. The Update Object Profile Display, which is shown in the following figure, is displayed:

```

AUTOTOOL V4R2  ---- Update Object Profile Display  --- 2011/08/31 18:00:37
Option ==>                                           Scroll ==> CSR

-----
Commands: Explode - View all objects.
Line Commands: A - Add D - Delete E - Explode U - Update R - Repeat
Creator: TWUSR      Profile: HAA V41 OBJECTS      User: TWUSR
Description:
Share Option U (U - Update, V - View, N - No)      DB2 Subsystem: SS01
Row 1 of 1 >
-----

          Wild ---- Process --- Inc/ IX DB Name/ Volume /
Cmd Type Card IX RI Clone Util Exc TS Crtr  DB Name TS Name
          TS  N  N  N  N  N  INC PDRICK  ABPHASHD ABPHASHS
***** Bottom of Data *****

```

Figure 48. Update Object Profile Display

2. Use this panel to review and refine the list of objects included in the profile. The selected spaces are listed in a single line on the panel. By default, the spaces are listed in the order added to the object profile. You can use the EXPLODE primary or line command to see an expanded list of all table spaces and index spaces included in the profile; see “Using the EXPLODE command” on page 135



on page 135. Scroll right to see all the columns. The following provides column descriptions for the Update Object Profile Display.

**Type** The object type, TS for table space or IX for index.

**Wild Card**

If the objects were selected by using wild cards, this column contains Y. Otherwise, this column contains N.

**Process IX**

For table space selections, this column contains Y if all associated indexes are included in the profile. For volume selections, an A in this column means that both table spaces and indexes on the volume are included. A T indicates that only table spaces on the volume are included. An I indicates that only indexes are included. This value is initially set when objects are added to the profile, but you can change the value on this panel.

**Process RI**

This column indicates whether the listed objects' referentially dependent table spaces are processed. Y in this column processes the table space and all its referentially dependent table spaces. An N processes only the table space. This option is set when you add table spaces or indexes to the object profile, but can be modified on this panel. For more information about how RI spaces are processed, see "Processing referentially related table spaces" on page 116.

**Process Clone**

(DB2 Version 9.1 or later only) This column indicates whether the listed object's clone tables or indexes are to be processed. Y in this column processes only the clone object; an N processes only the base object. This option is set when you add table spaces or indexes to the object profile, but can be modified on this panel. The Process Clone option is not available for objects that are selected by volume.

**Process Util**

This column indicates whether object-specific options are set for the selected table spaces or index spaces. Y in this column indicates that object-specific options are set. N indicates that no object-specific options are set. To set options for the listed option, enter U in this field. To view the options that are set, enter V in this field.

**Include/Exclude**

Indicates whether the objects are included (INC) or excluded (EXC).

**IX DB Name/TS Creator**

For table spaces, the table space creator. For indexes, the index's database name. Blank for volume selections.

**Volume/IX Crtr/DB Name**

If the objects were selected by volume, this column contains the volume name or mask. For table spaces, this column contains the database name or mask. For indexes, this column contains the index creator name or mask.

**IX Name/TS Name**

For table spaces, this column contains the table space name or mask. For indexes, this column contains the index name or mask.

- Part** This column contains the partition number to be included, ALL if all partitions of the object are to be included, or 0 if a nonpartitioned space.
- Last Updated**  
The timestamp and user ID of the user who added or last updated the object detail line.
- SQL** If advanced SQL was used to select objects in the profile, and if **Wild Card** is set to Y, the first 256 bytes of the SQL is displayed to uniquely identify the objects.

---

## Specifying object-specific utility options

A limited utility interface is provided in object profiles to allow specification of certain object-specific utility options. Using this interface, you can define index and column level options specific to a particular object.

Object-specific utility options allow you to specify settings for particular columns or column groups in an index or table. RUNSTATS and REBUILD INDEX options that are set in a DB2 Automation Tool utility profile cannot specify index and table column-level statistics because the column information is not available to the utility profile.

Options on the RUNSTATS and REBUILD INDEX utility option panels that conflict with these object-specific options are only used when no object-specific options are defined.

If these options conflict with LISTDEFS, LISTDEFS are turned off for those objects and a build warning message is issued.

**Note:** The object-specific utility options do not include RUNSTATS INDEX with the TABLESPACE option. RUNSTATS INDEX supports the KEYCARD and HISTOGRAM options for INDEX, but not TABLESPACE.

During the build process, the object-level statistics are merged with the utility options. The result is the inclusion of one or more index-specific control cards for the following keywords:

```
INDEX name KEYCARD FREQVAL NUMCOLS nnn COUNT nnn MOST|LEAST|BOTH
        HISTOGRAM NUMCOLS nnn NUMQUANTILES nnn
TABLE name SAMPLE nnnn COLUMN () COLGROUP (column)
        FREQVAL COUNT nnn MOST|BOTH|LEAST HISTOGRAM NUMQUANTILES nnn
REBUILD INDEX name
        STATISTICS FREQVAL NUMCOLS nnn COUNT nnn HISTOGRAM NUMCOLS nnn NUMQUANTILES nnn
```

## Accessing object-specific utility options

After you select the objects to include in the profile, update the object-specific utility options on the Update Object Profile Display by entering U in the **Process Util** field, as shown in the following figure:

```

                                Volume /
      Wild ---- Process --- Inc/ IX DB Name/ IX Crtr/ IX Name/
Cmd Type Card IX RI Clone Util Exc TS Crtr  DB Name TS Name
TS      N   N   N   N   u   INC PDUSER    DBTEST01 DBTESTTH
***** Bottom of Data *****

```

Figure 49. Updating object-specific utility options on the Update Object Profile Display

If the **Process Util** field contains Y, the utility settings have already been configured. You can change them by entering U in the field and pressing Enter.

The Object-Specific Utility Options panel is displayed, as shown in the following figure:

```

AUTOTOOL V4R2 ----- Object-Specific Utility Options ----- 2013/04/09 09:30:23
Option  ==>

      Creator: TWUSRA      Profile: DB2 V11      User: TWUSR
      Description:                DB2 Subsystem: SS01

                                Include      Update
                                Options      Options
Runstats Index Column Statistics . . . . . N (Yes/No) N (Yes/No)
Runstats Table Column Statistics . . . . . N (Yes/No) N (Yes/No)
Rebuild Index Column Statistics . . . . . N (Yes/No) N (Yes/No)

```

Figure 50. Object-Specific Utility Options panel

To set object-specific utility options, first select the utility by entering Y in the **Include Options** field. Then, enter Y in the utility's **Update Options** field.

To clear the selection of an object-specify utility option, enter N in the utility option's **Include Options** field.

## Specifying RUNSTATS INDEX and REBUILD INDEX column statistics

These options allow for multiple column-level statistics per index for RUNSTATS and REBUILD INDEX utilities.

### About this task

RUNSTATS index column statistics and REBUILD INDEX column statistics are specified by using the same procedure and the same panels. The RUNSTATS index panels are shown in this procedure as examples.

### Procedure

1. On the Object-Specific Utility Options panel, enter Y in the **Include Options** and **Update Options** fields for Runstats Index Column Statistics or Rebuild Index Column Statistics and press Enter. The Runstats Index Column Statistics or the Rebuild Index Column Statistics panel is displayed.

```
AUTOTOOL V4R2 ---- Runstats Index Column Statistics --- 2013/04/09 21:15:2
Option ==> Scroll ==> CSR
Line Commands: V - View U - Update
-----
Creator: TWUSR      Profile: HAA V41 OBJECTS      User: TWUSR
                  DB2 Subsystem: SS01
Description:                               Row 1 of 1
-----
Cmd  Name          Creator Part  Keycard  Stats
    DAHIX          TWUSR   0    N        Defined
                                0
***** Bottom of Data *****
```

Figure 51. Runstats Index Column Statistics panel

The columns on this panel are described as follows:

**Name** The index name.

**Creator**  
The index creator.

**Part** The index partition number; 0 if non-partitioned.

**Keycard**  
(DB2 V9 and earlier) Enter Y in this field to specify the KEYCARD option of RUNSTATS to collect cardinality statistics. For DB2 V10 and later, KEYCARD is automatically built into RUNSTATS INDEX utility.

**Stats Defined**  
This field contains the number of stats that are defined for the index.

2. Select the index for which you want to define column statistics by entering U in the **Cmd** field next to the index. Press Enter. The Runstats Utility Column Statistics panel or the Rebuild Utility Column Statistics panel is displayed.
3. A C is displayed in the **Cmd** field; press Enter to create statistics. The Runstats Column Statistics Create window or the Rebuild Column Statistics window is displayed.
4. Enter Y next to the **Define FREQVAL Statistics** field or the **Define HISTOGRAM Statistics** field. Press Enter.
  - For FREQVAL statistics, the **Runstats Freqval Options** panel or the **Rebuild Freqval Options** panel is displayed.

```
AUTOTOOL V4R2 ----- Runstats Freqval Options ----- 2011/08/31 21:17:08
Option ==> Scroll ==> CSR

Creator: TWUSR      Name: HAA V41 OBJECTS      User: TWUSR
Description:                               DB2 Subsystem: SS01

Index: TWUSR.DAHIX
Index Partition: 0
Index Columns: 1

Freqval Numcols . . . . . 1      (Number)
Freqval Count . . . . . 10      (Number)
Freqval Occurrence. . . . . M      (M - Most, L - Least, B - Both)
```

Figure 52. Setting FREQVAL statistics on the Runstats Freqval Options panel

The following values can be defined on this panel:

**Freqval Numcols**  
Enter the number of columns in the index for which RUNSTATS is to

collect frequently occurring values. This value can be a number between 1 and the number of indexed columns.

#### **Freqval Count**

Enter the number of frequently occurring values that are to be collected from the specified key columns.

#### **Freqval Occurrence**

(Valid only for RUNSTATS index column statistics) Enter M to specify that the most frequently occurring values for the specified set of key columns are to be collected. Enter L to specify that the least frequently occurring values for the specified set of key columns are to be collected. Enter B to specify that both most and least frequently occurring values are to be collected.

- For HISTOGRAM statistics, the Runstats Histogram Options panel or the Rebuild Histogram Options panel is displayed.

```
AUTOTOOL V4R2 ----- Runstats Histogram Options ----- 2011/08/31 21:17:48
Option ==> Scroll ==> CSR

Creator: TWUSR      Name: HAA V41 OBJECTS      User: TWUSR
Description:                DB2 Subsystem: SS01

Index: TWUSR.DAHIX
Index Partition: 0
Index Columns: 1

Histogram Numcols . . . . . 1 (Number)
Histogram Numquantiles. . . 100 (Number)
```

*Figure 53. Setting HISTOGRAM statistics on the Runstats Histogram Options panel*

The following values can be defined on this panel:

#### **Histogram Numcols**

Enter the number of columns in the index for which RUNSTATS is to collect histogram statistics. This value can be a number between 1 and the number of indexed columns.

#### **Histogram Numquantiles**

Enter how many quantiles that the utility is to collect. The integer value must be equal to or greater than one. The number of quantiles that you specify must not exceed the total number of distinct values in the specified key columns. The maximum number of quantiles is 100.

5. Press PF3 when you are finished defining statistics. The Runstats Utility Column Statistics panel or the Rebuild Utility Column Statistics panel is displayed. The statistics definitions are listed on this panel.

```

AUTOTOOL V4R2  --- Runstats Utility Column Statistics --- 2011/08/31 21:18:4
Option ===> Scroll ===> CSR
Line Commands: V - View C - Create D - Delete U - Update
-----
Creator: TWUSR      Profile: HAA V41 OBJECTS      User: TWUSR
Description:      DB2 Subsystem: SS01
Index: TWUSR.DAHIX
Index Partition: 0
Index Columns: 1      Row 1 of 2
-----
Cmd  Statistic Definition
    FREQVAL  NUMCOLS    1 COUNT      10 MOST
    HISTOGRAM NUMCOLS    1 NUMQUANTILES 100
***** Bottom of Data *****

```

Figure 54. Statistics definitions on the Runstats Utility Column Statistics panel

## What to do next

To create more statistic definitions, enter C in the **Cmd** field. You can also update, delete, or view statistics definitions by using the appropriate line commands.

## Specifying RUNSTATS TABLE column statistics

This option allows for multiple column-level statistics per table.

### Procedure

1. On the Object-Specific Utility Options panel, enter Y in the **Include Options** and **Update Options** fields for Runstats Table Column Statistics and press Enter. The Runstats Table Column Statistics panel is displayed.

```

AUTOTOOL V4R2  ---- Runstats Table Column Statistics --- 2011/08/31 21:21:2
Option ===> Scroll ===> CSR
Line Commands: V - View U - Update
-----
Creator: TWUSR      Profile: HAA V41 OBJECTS      User: TWUSR
Description:      DB2 Subsystem: SS01
Row 1 of 1
-----
Cmd  Name      Creator  Include Sample Stats
    DAHTB      TWUSR    N        0
***** Bottom of Data *****

```

Figure 55. Setting table column statistics

The columns on this panel are as follows:

**Name** The table name.

**Creator**  
The table creator.

**Include Sample**  
Enter U in this field to enter sample specifications for the RUNSTATS statistics.

**Stats Defined**  
This field contains the number of statistics that are defined for the table.

2. Select the table for which you want to define column statistics by entering U in the **Cmd** field next to the table. Press Enter. The Runstats Table Column Statistics panel is displayed.

3. A C is displayed in the **Cmd** field; press Enter to create statistics. The **Runstats Table Create** window is displayed.
4. In the **Column Statistic Type** field, enter C to specify a column list or enter G to specify a column group. Press Enter.
  - For the column list, the **Runstats Table Column Statistics** panel is displayed, as shown in the following figure:

```

AUTOTOOL V4R2  ---- Runstats Table Column Statistics --- 2011/08/31  21:22:49
Option  ==>                                           Scroll ==> CSR
Line Commands: S - Select  U - Unselect
-----
Creator: TWUSR      Profile: HAA V41 OBJECTS              User: TWUSR
Description:                               DB2 Subsystem: SS01
Table: TWUSR.DAHTB                                     >
                                                    Row 1 of 4
-----
Cmd Sel Column                                Type      Length  Scale
EMP                                     DECIMAL    5        0
LAST_                                  CHAR       20        0
FIRS                                   CHAR       10        0
DEPT                                  DECIMAL    2        0
***** Bottom of Data *****

```

Figure 56. Setting table column statistics on the Runstats Table Column Statistics panel

Select the columns that you want to collect statistics on by entering S in the **Cmd** field next to the column name. Press PF3 when finished.

- For the column group, the Runstats Column Group Options panel is displayed.

```

AUTOTOOL V4R2  ----- Runstats Column Group Options ----- 2011/08/31  21:23:34
Option  ==>                                           Scroll ==> CSR
-----
Creator: TWUSR      Name: HAA V41 OBJECTS              User: TWUSR
Description:                               DB2 Subsystem: SS01
Table: TWUSR.DAHTB                                     >
Freqval Count . . . . . 1      (Number)
Freqval Occurrence . . . . . M  (M - Most, L - Least, B - Both)
Histogram Numquantiles . . . 100 (Number)
                                                    Row 1 of 4
-----
Seq Column                                Type      Length  Scale
EMP                                     DECIMAL    5        0
LAST_                                  CHAR       20        0
FIRS                                   CHAR       10        0
DEPT                                  DECIMAL    2        0
***** Bottom of Data *****

```

Figure 57. Setting column group options

Specify the column group for which statistics are collected by entering a numeric value in the **Seq** column. To clear a column, remove the numeric from the columns. Specify the statistics values, as follows:

#### Freqval Count

Enter the number of frequently occurring values that are to be collected from the specified key columns.

#### Freqval Occurrence

Enter M to specify that the most frequently occurring values for the specified set of key columns are to be collected. Enter L to specify that the least frequently occurring values for the specified set of key

columns are to be collected. Enter B to specify that both most and least frequently occurring values are to be collected.

### Histogram Numquantiles

Enter how many quantiles that the utility is to collect. The integer value must be equal to or greater than one. The number of quantiles that you specify must not exceed the total number of distinct values in the specified key columns. The maximum number of quantiles is 100.

The columns on this panel are as follows:

**Seq** If the column was selected for the group, this column contains the number of the column in the group. You can enter a numeric value to select a column and specify its order in the group.

### Column

Displays the column name.

**Type** Displays the type of column.

### Length

Displays the column length.

**Scale** Displays the column scale, if any.

5. Press PF3 when you are finished defining statistics. The Runstats Table Column Statistics panel is displayed. The statistics definitions are listed on this panel, as shown in the following figure:

```

AUTOTOOL V4R2  ---- Runstats Table Column Statistics --- 2011/08/31 21:24:25
Option ==> Scroll ==> CSR
Line Commands: V - View C - Create D - Delete U - Update
-----
Creator: TWUSR      Profile: HAA V41 OBJECTS      User: TWUSR
Description:      DB2 Subsystem: SS01
Table: TWUSR.DAHTB
                                     Row 1 of 2      >
-----
Cmd  Colgroup  Columns      Statistic Definition
COLUMN  EMP_
COLGROUP  EMP_,LAST      FREQVAL COUNT      1 MOST  HIST
***** Bottom of Data *****

```

Figure 58. Statistics definitions on the Runstats Table Column Statistics panel

6. Press PF3. The Runstats Table Column Statistics panel is displayed.
7. Enter Y in the **Include Sample** field and press Enter. The Update Runstats Sample Specification window is displayed.

```

Update Runstats Sample Specification

Sample      . . . . .      (Percent)
Table Sample . . . . .      (Auto, 0.01 - 100.00)
Repeatable  . . . . .      (Number)

```

Figure 59. Updating sampling options

8. Enter the sampling options for the table space.

### Sample

Enter the percentage of rows to sample when non-indexed column statistics are collected.



**TableSample**

(DB2 10 and above) Indicate how statistics are collected on a sample of data pages from the table. Unless the optional REPEATABLE clause is specified, each execution results in different sample of the table. This option is only valid on non-LOB, single-table table spaces. When AUTO is specified, RUNSTATS determines the sampling rate that is based on the size of the table. A value in the range of 0.01 - 100.00 represents a sampling percentage.

**Repeatable**

(DB2 10 and above) If you want repeated executions of RUNSTATS to return the same sample, enter a positive integer that represents a seed value in determining sampling.

Press Enter when you are finished.

**What to do next**

To create more statistic definitions, enter C in the **Cmd** field. You can also update, delete, or view statistics definitions by using the appropriate line commands.

---

**Updating an object profile**

You can update an object profile at any time to add or delete objects from the profile, or to change some of the processing options associated with the objects.

**Procedure**

1. On the DB2 Automation Tool main menu, enter 1 in the **Option** field and press Enter.
2. Specify selection criteria and press Enter.
3. On the Objects Profile Display, enter U in the **Cmd** field next to the profile you want to update and press Enter.

**Note:** If you update a profile created under a previous version of DB2 Automation Tool, the Profile Conversion Warning window is displayed. Refer to “Updating a profile from a previous version of DB2 Automation Tool” on page 405 for information about converting profiles.

4. On the Update Object Profile Display, use line commands to add or delete objects. You can also modify the values in the **Process** fields.
5. To update object-specific utility settings, enter U in the **Process Util** field and press Enter. The Object-Specific Utility Options panel is displayed. For more information, see “Specifying object-specific utility options” on page 126.

**Adding objects**

You can add objects to the object profile by using the A line command on the Update Objects Profile Display.

**Procedure**

To add objects, enter A in any **Cmd** field and press Enter. The window that is shown in the following figure is displayed:

Add Objects to the Object Profile		
Add Tablespaces	N	(Y - Yes, N - No)
Add Indexes	N	(Y - Yes, N - No)
Add Volumes	N	(Y - Yes, N - No)
Press ENTER to process or PF3 to Cancel		

Figure 60. Adding objects

Use this window to specify whether to add table spaces, indexes, or spaces on a particular volume. Enter Y in the appropriate field and press Enter.

**Note:** You can enter Y in more than one field; the screens to add the objects are displayed in succession.

## Deleting objects

You can delete objects from the object profile by using the D line command on the Update Objects Profile Display.

### Procedure

1. To delete objects, enter D in the **Cmd** field next to the object detail line you want to delete and press Enter. The Confirm deletion window is displayed, as shown in the following figure:

Confirm deletion	
Are you sure you want to delete this object?	
Delete . . Y	(Yes/No)

Figure 61. Confirm deletion window

2. To delete the object, enter Y in the **Delete** field and press Enter. A message is displayed, confirming that the objects were deleted from the profile.

## Using the R(epeat) line command

You can use the R line command on the Update Objects Profile Display to copy object criteria to the object selection window.

### About this task

When you enter R next to an object, the object criteria from the selected line is entered in the Enter Tablespaces/Indexes Like to Display panel, which is displayed after you press Enter. You can then modify the object selection criteria to choose more objects.

**Note:** An object or objects cannot be duplicated in an object profile.

### Procedure

1. Enter R next to an object and press Enter. The Enter Tablespaces/Indexes Like to Display window is displayed. The object information from the line you selected is entered in the object fields.
2. Do one of the following to refine the list of objects:
  - Modify the object information to change selection criteria.

- Leave the object information as is.

In either case, press Enter to get a list of objects that meet the selection criteria.

---

## Using the EXPLODE command

The EXPLODE command can be used on the Update Object Profile Display to generate a list of all the objects that meet the profile specifications and that would be included when a job is built using the object profile.

This command offers an easy way to see the list of objects that meet wild cards, include/exclude, and index processing specifications.

For example, if you use wildcarding to include objects, the EXPLODE command will show all items that match the wildcarding at the time the EXPLODE command was issued. If objects were excluded in the profile, these objects will not appear in the exploded list. Also, if indexes associated with an object or objects were to be processed, each index is listed on the exploded list.

The results of the EXPLODE command contain only objects that would be processed in the build. If an object does not appear on the list, it might be because an underlying VSAM file does not exist, or an object might be a temporary or work object.

When you view the exploded list, you can select one or more objects to exclude from the profile.

Note that the EXPLODE command does not work for objects that were originally excluded from the profile -- in other words, those objects that have EXC in the Include/Exclude column.

## EXPLODE command as a line command

When you enter E next to an object(s) line in the object profile and press Enter, all items that meet the wildcarding and the index processing selections are listed in the Explode Object Profile Display.

The following figure shows the Explode Object Profile Display:

```

HAA$OPRE V4R2 ----- Explode Object Profile Display ----- 2017/09/18 14:44:33
Option ==> Scroll ==> CSR
-----
Line Commands: S - Select to Exclude
Creator: TWUSR Profile: TEST User: TWUSR

DB2 Subsystem: SS01 Row 1 of 25 +>
-----

```

Cmd	Type	Card	Wild	IX	RI	Clone	Util	Exc	TS	Crtr	IX DB Name/	Volume /	IX Crtr/	IX Name/
											DB Name	DB Name	TS Name	TS Name
TS	N	N	N	N	N	N	N	EXC	PDUSRA	LDCDB	ACTGRP	ACTGRP		
TS	N	N	N	N	N	N	N	EXC	LDC	LDCDB	ACTI1FWB	ACTI1FWB		
TS	N	N	N	N	N	N	N	EXC	PDUSRA	LDCDB	ACTOUT	ACTOUT		
TS	N	N	N	N	N	N	N	EXC	PDUSRA	LDCDB	ACTSTMT	ACTSTMT		
TS	N	N	N	N	N	N	N	EXC	PDUSRA	LDCDB	ARCHIV11	ARCHIV11		
TS	N	N	N	N	N	N	N	EXC	PDUSRA	LDCDB	LDCLP11	LDCLP11		
TS	N	N	N	N	N	N	N	EXC	PDUSRB	LDCDB	LDCTS	LDCTS		
TS	N	N	N	N	N	N	N	EXC	PDUSRA	LDCDB	LDCUTS11	LDCUTS11		
TS	N	N	N	N	N	N	N	EXC	PDUSRA	LDCDB	DRCOPY11	DRCOPY11		
TS	N	N	N	N	N	N	N	EXC	PDUSRA	LDCDB	ETRIGS31	ETRIGS31		
TS	N	N	N	N	N	N	N	EXC	PDUSRA	LDCDB	EVALS	EVALS		

Figure 62. Explode Object Profile Display

On the Explode Object Profile Display, you can use the S line command to exclude an object from the profile.

When you return to the Update Object Profile Display, any objects that you excluded now are listed individually and contain EXC in the Include/Exclude column to indicate they are excluded.

### EXPLODE as a primary command

When you enter EXPLODE in the Option line, all items in the profile are listed individually.

The following figure shows a sample list of objects that are selected to be included in a profile:

```


```

Cmd	Type	Card	Wild	IX	RI	Clone	Util	Exc	TS	Crtr	IX DB Name/	Volume /	IX Crtr/	IX Name/
											DB Name	DB Name	TS Name	TS Name
TS	Y	N	N	N	N	N	N	INC	PDUSRA*	*	*			
TS	Y	N	N	N	N	N	N	INC	PDUSRB*	DBGPPART	*			

```

***** Bottom of Data *****

```

Figure 63. Object list before EXPLODE command

If you use the EXPLODE command in the Option line, the objects would appear as shown in the following figure:

```

AUTOTOOL V4R2 ----- Explode Object Profile Display ----- 2017/09/18 14:51:14
Option ==> Scroll ==> CSR
-----
Line Commands: S - Select to Exclude
Creator: TWUSR Profile: TEST User: TWUSR

DB2 Subsystem: SS01 Row 1 of 4 >
-----
          Wild ---- Process --- Inc/ IX DB Name/ Volume /
Cmd Type Card IX RI Clone Util Exc TS Crtr DB Name TS Name
TS      N      N N N      N      EXC PDUSRB   DBGPPART TSGPPART
TS      N      N N N      N      EXC PDUSRA   DLCDB    DLCTS
TS      N      N N N      N      EXC PDUSRA   H8816DB H8816TS
TS      N      N N N      N      EXC PDUSRA   H8816DBA H8816TSA
***** Bottom of Data *****

```

Figure 64. EXPLODE primary command results

Once the exploded list appears, you can use the S line command to exclude an object from the profile.



---

## Chapter 8. Creating utility profiles

Utility profiles allow you to select utilities to run on the objects included in an object profile and to set options for the utilities.

You can specify the following DB2 utilities:

- COPY (full or incremental)
- COPYTOCOPY
- RUNSTATS
- Table space REORG
- Index REORG
- QUIESCE
- MODIFY
- REPAIR
- CHECK DATA
- REBIND
- RECOVER

In addition, you can specify the following DB2 Automation Tool utilities:

- Image copies from system level backups taken by DB2 Recovery Expert.
- Data page verification reporting
- Space reallocation

Later, you link object profiles with utility profiles and (optionally) exception profiles to create a job profile.

DB2 Automation Tool can also use utility profiles generated by DB2 Change Accumulation Tool in a job profile. This feature allows you to include DB2 Change Accumulation Tool utilities in a DB2 Automation Tool job profile, just as DB2 utilities can be included. However, you cannot update or view a DB2 Change Accumulation Tool utility profile from within DB2 Automation Tool.

**Note:** Basic descriptions are provided in this documentation for all utility parameters. However, if you have questions about any DB2 utility option, please consult the DB2 Utility Guide and Reference for your version of DB2.

---

### Creating a utility profile

Creating a utility profile involves defining the profile, selecting the utilities to be included in the profile, and setting utility options.

#### Procedure

1. On the DB2 Automation Tool main menu, enter 2 in the **Option** field and press Enter.
2. Specify selection criteria in the **Profile Like** and **Creator Like** fields and press Enter. If profiles exist that meet your selection criteria, they are listed on the Utilities Profile Display, as shown in the following figure:

```

AUTOTOOL V4R2  ----- Utilities Profile Display ----- 2014/07/17 10:40:54
Option ==>                                           Scroll ==> CSR
-----
Line Commands: C - Create  D - Delete  E - Export  I - Import
                Q - Quick   U - Update  V - View   J - Jobs   R - Rename
-----
Profile Like  HAA-*                                DB2 Subsystem: SS01
Creator Like  TWUSR*                               Row 1 of 32      +>
-----

Cmd  Name                               Creator  Updt
HAA-4542                                TWUSR    U
HAA-4542 CHECK DATA                    TWUSRA    U
HAA-4667 REORG                          TWUSR    U
HAA-4669 RECOVER                        TWUSR    U
HAA-4670 REALLOC                        TWUSR    U
HAA-4670 REALLOC 2                      TWUSR    U
HAA-4673                                TWUSR    U
HAA-4676 RECOVER & TS REORG             TWUSR    U
HAA-4678 FLASHCOPY                      TWUSR    U
HAA-4678 IX REORG                       TWUSR    U
HAA-4678 REBUILD INDEX                  TWUSR    U

```

Figure 65. Utilities Profile Display

3. On the Utilities Profile Display, enter C in the **Cmd** field and press Enter. The window that is shown in the following figure is displayed:

```

Enter New Utilities Profile Data

Creator      TWUSR

Profile Name

Description

Update Option U  (U - Update, V - View only, N - No access)

```

Figure 66. Enter New Utilities Profile Data window

4. On the Enter New Utilities Profile Data window, enter the new profile creator, a profile description, and the profile update option in the fields on the window. The **Creator** field contains your user ID, but can be modified.
5. After you complete these fields, press Enter. The panel that is shown in the following figure is displayed. This panel is used to specify the utilities to be included in the profile.



AUTOTOOL V4R2 ----- Utility Profile Options ----- 2017/09/18 14:57:00  
Option ==>

Creator: TWUSR      Profile: SAMPLE UTILITY PROFILE      User: TWUSR  
Description      DB2 Subsystem: SS01  
Share Option U (U - Update, V - View, N - No)

	Include Utility	Update Utility	More:    +
Data Page Verification Reporting	N (Yes/No)	N (Yes/No)	
Reallocation . . . . .	N (Yes/No)	N (Yes/No)	
Recover . . . . .	N (Yes/No)	N (Yes/No)	
Image Copy . . . . .	N (Yes/No)	N (Yes/No)	
Recovery Expert Image Copy . . .	N (Yes/No)	N (Yes/No)	
Copy to Copy . . . . .	N (Yes/No)	N (Yes/No)	
Runstats . . . . .	N (Yes/No)	N (Yes/No)	
TS Reorg . . . . .	N (Yes/No)	N (Yes/No)	
IX Reorg . . . . .	N (Yes/No)	N (Yes/No)	
Quiesce . . . . .	N (Yes/No)	N (Yes/No)	
Modify . . . . .	N (Yes/No)	N (Yes/No)	
Repair . . . . .	N (Yes/No)	N (Yes/No)	

Figure 67. Specifying utilities to add to the profile

- On the Utility Profile Options panel, enter Y in the **Include Utility** column next to the utility that you want to include. Press Enter.
- To specify utility options, enter Y in the **Update Utility** column next to the utility. Press Enter. An options panel for the selected utility is displayed.

## What to do next

You can add one or more utilities to the utility profile. You should review the utility options for each included utility.

---

## Setting the exception rule

All utility profiles contain an Exception Rule field, which controls exception processing. Exception processing produces sets of accepted and rejected objects, and utility profiles can be configured to act upon either set or both sets.

### About this task

The Exception Rule field allows the utility to be run on:

- Objects that are accepted (included) as a result of exception processing OR
- Objects that are rejected (excluded) as a result of exception processing OR
- All objects, regardless of exception processing results

The following figure shows the Exception Rule field on the Image Copy Options screen:

```

AUTOTOOL V4R2 ----- Image Copy options ----- 2017/09/19 09:10:23
Option ==>                                     Scroll ==> CSR
Creator: TWUSR      Name: UTILITY PROFILE          User: TWUSR
                                           DB2 Subsystem: SS01
                                           More:      +
Exception Rule . . . . . A (A - Accepted, R - Rejected, B - Both)
Image Copy Utility mode . . . . D (D - DB2, S - Symmetrix, E - Ess)
Alter EMC Symm/IBM ESS Optns  N (Yes/No)
Alter Image Copy DSN specs . . . Y (Yes/No)
Utility ID . . . . . (16 characters)

```

Figure 68. Exception Rule field on the Image Copy Options screen

To use this field, type A to have the utility act on all objects that are accepted (included) as a result of exception processing. Type R to have the utility act on objects that are rejected (excluded) as a result of exception processing. Type B to have the utility act on all objects, regardless of exception processing results.

**Note:** If the exception rule is set to Rejected but exception profiles are not included in a job profile, the utility JCL is not created, since objects cannot be rejected without exception processing.

## Updating a utility profile

You can update a utility profile at any time to add or delete utilities, or to change utility options.

### Procedure

1. On the DB2 Automation Tool main menu, enter 2 in the **Option** field and press Enter.
2. Specify selection criteria in the **Profile Like** and **Creator Like** fields and press Enter.
3. On the Utilities Profile Display, enter U in the **Cmd** field next to the profile you want to update. Press Enter.

**Note:** If you update a profile created under a previous version of DB2 Automation Tool, the Profile Conversion Warning window is displayed. Refer to “Updating a profile from a previous version of DB2 Automation Tool” on page 405 for information about converting profiles.

4. On the Utility Profile Options panel, enter Y in the **Include Utility** column next to the utility that you want to include. Press Enter.
5. To specify utility options, enter Y in the **Update Utility** column next to the utility. Press Enter. An options panel for the selected utility is displayed.

## Deprecated: Data page verification reporting options

DB2 Automation Tool can generate a page verification report that flags problems with a table space's header page, space map page, and data pages. This option produces a page validation report that is output to the SYSOUT DD when the built job is executed.

**Attention:** DB2 Automation Tool's data page verification functions are deprecated in V4.2. Although these features remain in the current version, they will not be enhanced and may be removed in a future release.

**Note:** Validation of LOB table spaces is not supported.

When you specify to set page verification options, the screen shown in the following figure is displayed:

```

AUTOTOOL V4R2 ----- Page Validation Options ----- 2017/09/19 09:15:23
Option  ==>

Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                                DB2 Subsystem: SS01
Exception Rule . . . . . A (A - Accepted, R - Rejected, B - Both)

Generate Page Reports . . N (Yes/No)

Flag Page Inconsistencies N (Yes/No)

Optional Skeletals      -BEFORE-      -AFTER-

JCL Skeletal . . . . .      . .      (8 Character Name)

Control Cards Skeletal . .      . .      (8 Character Name)

Step End Skeletal . . . . .      . .      (8 Character Name)

```

Figure 69. Page Validation Options screen

The following fields are on this screen:

#### Exception Rule

Type A in this field to have the utility act on all objects that are accepted (included) as a result of exception processing. Type R to have the utility act on objects that are rejected (excluded) as a result of exception processing. Type B to have the utility act on all objects, regardless of exception processing results.

#### Generate Page Reports

Type Y in this field to generate validation reports on the table space header page, space map page, and table space data pages.

#### Flag Page Inconsistencies

Type Y in this field to flag page inconsistencies with an error message in the validation report. For example, the message \*\*\*\* Page Contains Inconsistent Data might appear when the page is corrupted.

Specifying Y in this field also generates a Validation Summary report.

Note that if you specify this option in addition to the page report, the page report will be bypassed for objects with inconsistent header pages.

#### Optional Skeletals: JCL Skeletal, Control Cards Skeletal, Step End Skeletal

These fields can be used to customize the JCL generated by DB2 Automation Tool. You can add your own skeletons that can be processed before or after the utility JCL. For more information on using these fields, refer to “Using the optional skeletons” on page 274.

When you are finished setting options, press PF3 to return.

## Reallocation options

DB2 Automation Tool can reallocate space for objects using the reallocation option. For example, you can specify that a reallocation is performed if the number of extents taken is greater than a specified number. When the job is built, an ALTER command is included for the objects in the object profile that meet that criteria.

You can choose to use DB2 ALTER syntax or DB2 Automation Tool's Dataset Manager to do the reallocation.

When the JCL is generated for data sets that will be reallocated, DB2 Automation Tool reports the before and after values of the primary quantity (PRIQTY) and secondary quantity (SQTY). Also reported is the percent of each page left as free space (PCTFREE) and number of free pages (FREEPAGE), if these options are specified. This feature allows you to compare the old allocations and new allocations that take effect after the job is submitted.

When you specify to set reallocation options, the screen shown in the following figure is displayed:

```

AUTOTOOL V4R2 ----- Reallocate options ----- 2017/09/19 09:17:36
Option ==>
Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                  DB2 Subsystem: SS01
                  More:      +

Use ONLY Exception Profile Criteria . . N (Yes/No)
Reallocate When
  Extents in space greater than . . . . 1 (1 - 255)
  Percentage used greater than . . . . . (.01 - 100%)
Reallocate Space Parameters
  Hash Sp = HASHSPACE plus x percent (1 - 100%)
  or DATASIZE plus x percent (1 - 100%)
  Primary = Allocated plus x percent (1 - 100%)
  or Used plus x percent (1 - 100%)
  Secondary = x percent of Primary . . (1 - 100%)
  DB2 Percent Free per Page . . . . . (0 - 99%)
  DB2 Free Pages . . . . . (0 - 255)
Allow Reallocation to Decrease Size . . Y (Yes/No)
Use Dataset Manager to Reallocate . . . N (Yes/No)
Apply MAXPRIME rules to Reallocation Y (Yes/No)
Round Allocations to the Cylinder level N (Yes/No)
Drop Pending Changes . . . . . N (Yes/No/Only)

```

Figure 70. Reallocate options screen

The following fields are on this screen:

#### Use ONLY Exception Profile Criteria

Type Y in this field to use only exception profile criteria to evaluate whether an object is reallocated. When set to Y, an object is reallocated only when the exception criteria for that object is met. Type N in this field to use both exception profile criteria and reallocation criteria when determining whether to reallocate an object. When set to N, an object is reallocated only when both the exception criteria for that object is met and the reallocation criteria in the reallocation utility is also met.

#### Extents in space greater than

Type in the number of extents that you want to trigger a space reallocation. For example, if you enter 20, the reallocation will occur if more than 20 extents have been taken by the object data sets.

#### Percentage used greater than

Type in the percentage of space allocation that you want to trigger a space reallocation. Valid values are from .01% to 100%. For example, if you type 80, the reallocation will occur if more than 80% of the space allocated for the object is used.

The following describes the space parameter options you can specify when reallocating space.

**HASHSPACE plus x percent**

(DB2 10 and later only) To set the new hash space size in relation to the original HASHSPACE value, enter a percentage of the original hash space. This amount is added to the original hash space size; the result is the new hash space size. This option increases or maintains the size of a table's hash space. If the table is partitioned by range, this is the space for each partition. Either this option or DATASIZE plus x percent must be specified for DB2 10 subsystems; the value will only be used if the table space has a hash table and will be ignored for non-hash access spaces.

**Note:** Hash space for a table can only be altered when the associated index is included in the object profile.

**DATASIZE plus x percent**

(DB2 10 and later only) To set the new hash space size in relation to the actual DATASIZE value, enter a percentage of the current data size. This amount is added to the current data size; the result is the new hash space size. This option increases or maintains the size of a table's hash space. If the table is partitioned by range, this is the space for each partition. Either this option or HASHSPACE plus x percent must be specified for DB2 10 subsystems; the value will only be used if the table space has a hash table and will be ignored for non-hash access spaces.

**Note:** DATASIZE is a real-time statistic. If this option is specified, an exception profile must be included in the job profile. The exception profile must specify any real-time table space statistics exception; this will enable access to the required real-time stats tables.

**Primary = Allocated plus x percent**

To set the new primary allocation, enter a percentage of the original space's allocation. This amount is added to the original allocation; the result is the new primary allocation. Using this option increases or maintains the size of the space's allocation. This option is mutually exclusive with Used plus x percent.

**or Used plus x percent**

To set the new primary allocation, enter a percentage of the amount of space currently used. This amount is added to the amount of space currently used; the result is the new primary allocation. Using this option may increase or decrease the size of the space's primary allocation. This option is mutually exclusive with Allocated plus x percent.

**Secondary = x percent of Primary**

To set the new secondary allocation, enter a percentage of the primary allocation.

**DB2 Percent Free per Page**

Specify what percentage of each page to leave as free space when the space is reallocated. The first record on each page is loaded without restriction. When additional records are loaded, at least *integer* percent of free space is left on each page. *integer* can range from 0 to 99.

**DB2 Free Pages**

Specify how often to leave a page of free space when the space is reallocated. One free page is left after every *integer* pages; *integer* can range from 0 to 255.

**Allow Reallocation to Decrease Size**

Indicate if you want the utility to be able to decrease space allocation. The

default is Y. If you specify N, a reallocation that is calculated to be smaller than the original allocation is ignored, and the object retains its original size.

**Use Dataset Manager to Reallocate**

To use Dataset Manager to reallocate space, type Y. To use the DB2 ALTER utility, type N.

**Apply MAXPRIME rules to Reallocation**

Type Y in this field to apply the maximum primary space allocation specified on the Shared Profile Support setup parameters screen to the reallocation. Refer to “Entering job generation defaults and other product parameters” on page 95 for information about this setting.

**Round Allocations to the Cylinder level**

Type Y in this field to specify that the calculated allocations are to be rounded up to the nearest cylinder.

**DROP Pending Changes**

(DB2 10 NFM and later only) This option allows DROP PENDING CHANGES syntax in the DB2 ALTER statement. To include this syntax, you must:

1. Specify Y or O in this field.
2. In the job profile, include an exception profile that specifies the PENDING\_DEF\_CHGS exception condition. Objects that meet this exception criteria will have DROP PENDING CHANGES syntax included on the ALTER statement.

All pending definition changes for the table space are dropped before reallocating the space. This option also drops all pending definition changes for any indexes within the table space. AREOR states for the table space and associated indexes will be retained. If you specify Y, Dataset Manager cannot be used for the reallocation. If you specify N in this field, DROP PENDING CHANGES syntax is not included in the ALTER. If you specify O in this field, only DROP PENDING CHANGES syntax is generated and no other values on the panel are verified and/or required except the Use Dataset Manager to Reallocate field.

**Optional Skeletals: JCL Skeletal, Control Cards Skeletal, Step End Skeletal**

These fields can be used to customize the JCL generated by DB2 Automation Tool. You can add your own skeletons that can be processed before or after the utility JCL. For more information on using these fields, refer to “Using the optional skeletons” on page 274.

When you are finished setting options, press PF3 to return.

---

## RECOVER options

Some of the options that can be set for the RECOVER utility are recovery point, recovery site, and parallel processing options.

### A note about recovering indexes

You can specify the RECOVER utility for indexes even if the indexes do not have image copies, or were created with DEFER YES and have not been built.

DB2 Automation Tool will detect those situations and will build the appropriate JCL containing the REBUILD INDEX utility.

If an object profile used with a RECOVER utility profile has the Process Dependent Indexes field set to N(o), indexes are not recovered, and indexes related to the recovered table spaces will be placed in REBUILD PENDING status after the recovery.

## Setting RECOVER options

You can set RECOVER utility options and specify the recovery method on the Recover Utility Profile Options panel.

### About this task

When you specify to set RECOVER options, the panel shown in following figure is displayed. This panel allows you to choose from the following recovery methods:

- Recovery using the log.
- Recover to an image copy.
- Recover an error range or a recover specific page.
- You can also choose to alter options for a REBUILD INDEX.

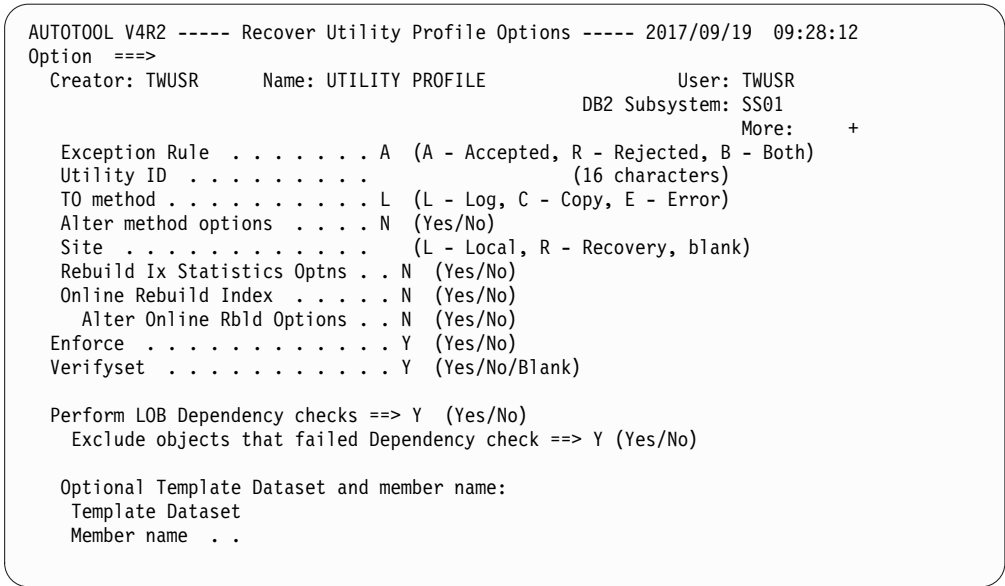


Figure 71. Recover Utility profile options panel

The following describes the options you can set for the RECOVER utility:

#### Exception Rule

Type A in this field to have the utility act on all objects that are accepted (included) as a result of exception processing. Type R to have the utility act on objects that are rejected (excluded) as a result of exception processing. Type B to have the utility act on all objects, regardless of exception processing results.

#### Utility ID

| Enter a 1 to 16 character utility ID to be used to uniquely identify the  
| utility to DB2. The ID must begin with a letter; the remainder can be  
| alphanumeric or the following special characters: #, \$, @, %, !, -, ~, . If this  
| utility profile is included in a job profile that is built for autonomic  
| execution, a utility ID that is specified in this field is ignored. For  
| autonomic builds, DB2 Automation Tool generates a unique utility ID for

each object by using the letter “A” followed by the autonomic action ID that is assigned to the object and utility pair (for example, “A1785”).

#### **TO method**

The TO method field defines the recovery method that will be used, and drives the successive option windows that appear when you specify to alter method options. L - Log recovery. C - Recover to an image copy. E - Recover an error range.

#### **Alter method options**

Type Y in this field to change the options for the type of recovery selected in the TO method field.

**Site** Specify the location of the image copies: L - Local site (LP type image copies). R - Recovery site (RP type image copies). blank - The RECOVER utility uses the current site of invocation.

#### **Rebuild Ix Statistics Optns**

When indexes are included in the objects to be recovered, DB2 Automation Tool chooses to either recover or rebuild the index, depending on the index and the type of recovery. To set options for a REBUILD INDEX, type Y in this field and press Enter.

#### **Online Rebuild Index**

(DB2 Version 9.1 and later) Type Y in this field to specify that the REBUILD INDEX should be performed online. You can specify the type of online rebuild (SHRLEVEL CHANGE or REFERENCE) by entering Y in the Alter Online Rbld Options field.

#### **Alter Online Rbld Options**

(DB2 Version 9.1 and later) To set options for an online REBUILD INDEX, type Y in this field and press Enter.

#### **Enforce**

(DB2 10 and later) Specify whether CHKP and ACHKP pending states are set for a point-in-time recovery when only a subset of the related objects (Base, LOB, XML, and RI) have been recovered to a point in time. Type Y in this field to set CHKP and ACHKP pending states when only a subset of related objects are recovered. Type N in this field to avoid setting CHKP and ACHKP pending states when only a subset of related objects are recovered.

#### **Verifyset**

(DB2 10 and later) Specify whether RECOVER is to verify that all related objects required for a point-in-time recovery are included. VERIFYSET will only be generated at build time if the Log RBA/LRSN field is specified. Type Y in this field to verify that all required objects are included. Type N in this field to avoid recovering objects that have changed since the last recovery point.

#### **Perform LOB Dependency checks**

(DB2 10 and later) Type Y to enable validation for LOB dependencies. If any LOB-related table space is in the object profile, then all LOB-related table spaces are included in the object profile. A LOB-related table space refers to table spaces with LOB columns (parent), and LOB table spaces (children). Validation fails if a parent is included in the object profile, but not all of its children. Validation also fails if a LOB table space (child) is included in the object profile, but its parent is not.



**Note:** The LOB dependency check will fail if either of the dependent objects is excluded via exception processing.

**Exclude objects that failed Dependency check**

(DB2 10 and later) Type Y to specify that when the LOB dependency checks determine that either a child or parent is missing, the included LOB-related table spaces are eliminated from utility processing.

**Optional Template Dataset and member name fields**

These fields can be used when generating an online REBUILD INDEX, which can use a TEMPLATEDD for FlashCopy. If you want to use an existing template for FlashCopy instead of allowing DB2 Automation Tool to create the template, enter the template data set and member name here. The template data set must already exist and the template members must follow DB2 syntax rules for the TEMPLATE control statement. When you select a FlashCopy copy type and update the options for that type, you will be prompted to select a template name on the TEMPLATEDD Name Selection panel. Using your own templates also requires that the job generation option Generate Templates is set to Y in the job profile.

**FlashCopy Options**

(DB2 10 and later) Select this option to set options for FlashCopy image copies that can be taken during the REBUILD INDEX. FlashCopy requires the job generation option Generate Templates. Type Y to generate FLASHCOPY YES. Type C to generate FLASHCOPY CONSISTENT. Type N to generate FLASHCOPY NO. Leave this field blank to omit the FLASHCOPY keyword. If there is a system default setting for FLASHCOPY, it will be honored when this field is left blank.

**View/Update FlashCopy Dataset Options**

(DB2 10 and later) If FlashCopy Options is set to Y or C, use this field to specify FlashCopy data set options; type Y in this field and press Enter.

**Optional Skeletons: JCL Skeletal, Control Cards Skeletal, Step End Skeletal**

These fields can be used to customize the JCL generated by DB2 Automation Tool. You can add your own skeletons that can be processed before or after the utility JCL. For more information on using these fields, refer to “Using the optional skeletons” on page 274.

## Recovery using the log

A log-type recovery recovers the target objects from their existing image copy data sets by applying log records to the data sets.

Recovery points can be specified for:

- A quiesce point. You can specify to recover to the last quiesce point on the log or up to nine quiesce points back in the log.
- A selected point in time. You can enter an RBA or LRSN, or you can select from a list of events in the log. The list can be targeted to a specific object or objects and in a specified time range.
- On subsystems running DB2 Version 9.1 or later, the RECOVER utility can use an image copy, concurrent copy, or system-level backup that was taken *prior* to a specified RBA/LRSN. The RESTOREBEFORE keyword allows the utility to avoid specific image copies, concurrent copies, or system-level backups with matching or more recent RBA or LRSN values. The RECOVER utility applies the log records and restores the object to its current state or the specified TORBA or TOLOGPOINT value.

- Current. If you do not select a specific point in time or quiesce point, recovery is to the current point in time.

When you specify TO method of L and Alter method options = Y, the Recover Utility Log Options panel appears, as shown in the following figure:

```

AUTOTOOL V4R2 ----- Recover Utility Log Options ----- 2017/09/19 11:13:31
Option ==>

Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                                DB2 Subsystem: SS01

Object event . . . . . (Q - Quiesce, blank)
Event generation . . . . . 00 (00 -1 -2 -3 ... -9)
Select point-in-time . . . . N (Yes/No)
Log RBA/LRSN . . . . . (blank = current)
Log timestamp . . . . .
Select RESTOREBEFORE . . . . N (Yes/No)
RESTOREBEFORE Log RBA/LRSN (blank = none)
RESTOREBEFORE Log timestamp
Backout . . . . . N (Yes/No)
Reuse existing data sets . . N (Y - Yes, N - No, L - Log only)
Parallel object restores . . N (Yes/No)
Max nbr of parallel objects 0 (0 = optimal)
Nbr of dynamic tape drives 0 (0 = optimal)
From Dump . . . . . N (Yes/No)
Dump Class . . . . .

```

Figure 72. Recover Utility Log Options panel

The Object Event field is used to specify the type of log recovery:

- If you enter Q in the Object event field, and enter a value in the Event generation field other than 00 (such as -2), recovery will be to the specified number of quiesce points back from the last quiesce point.
- If you leave the field blank, you must select a point-in-time recovery and select options for the recovery.

The fields on the bottom half of the screen are general recovery-related fields that should be set for any log recovery. The following section describes these fields:

#### Reuse existing data sets

Y in this field specifies that RECOVER should logically reset and reuse DB2-managed data sets without deleting and redefining them. N specifies that DB2 should delete and redefine DB2-managed data sets to reset them. L (logonly) specifies that the target objects should be recovered from their existing data sets by applying only log records (no image copies) to the data sets.

#### Parallel object restores

Y indicates that objects will be restored in parallel from image copies on DASD.

#### Max nbr of parallel objects

Specify the maximum number of objects that should be restored in parallel from image copies on DASD or tape. Specifying 0 allows DB2 Automation Tool to optimize parallel processing.

#### Nbr of dynamic tape drives

If specifying processing in parallel, indicate the maximum number of tape drives to be dynamically allocated. Specifying 0 in this field allows DB2 Automation Tool to optimize tape drive allocation.

### From Dump

(DB2 Version 9.1 or later) Type Y in this field to specify that only dumps of the database copy pool are used for the restore of the data sets.

### Dump class

(DB2 Version 9.1 or later) If you specified Y in the From Dump field, enter the DFSMSHsm dump class to use to restore the data sets.

The following sections describe how to set the recovery type and related options.

### Recovery to a quiesce point

To recover to a quiesce point, enter Q in the Object Event field. If the value is 00 in the Event generation field, the most recent quiesce point is used. You can enter negative values up to -9 to recover to 10 quiesce points back.

### Recovery to current

To recover to current, leave the Object event field blank and leave the Log RBA/LRSN field blank.

### Recovery to a point in time

You can specify to recover to a point in time by entering the log RBA/LRSN or choosing a point-in-time from a list. If you know the RBA or LRSN to which you want to recover, enter it in the **Log RBA/LRSN** field. To select a recovery point from a list, follow these steps.

### Procedure

1. On the Recover Utility Log Options panel, enter Y in the **Select point-in-time** field and press Enter.
2. On the Point-In-Time Selection panel, specify selection criteria in the header fields and press Enter. A list of RBAs or LRSNs that match your selection criteria is displayed. The RBA/LRSNs were recorded in SYSIBM.SYSCOPY and the DB2 Automation Tool SYSCOPY table in that time period. The following figure shows a sample list of recovery points:

```
AUTOTOOL V4R2 ----- Point-In-Time Selection ----- 2017/09/19 11:26:30
Option ==> Scroll ==> CSR
-----
Line Commands: S - Select Row 1 of 6635 +>
-----
Start 2017-09-01-03.00.00.000000 Database * DB2 Subsystem: SS01
End 2017-09-24-03.29.15.168727 Space name *
-----
Cmd Timestamp RBA/LRSN Database Spacenam Dsnum
2017-09-01-03.36.55.295043 0000000000F403D39265 DBTROS TABLE3 0
2017-09-01-03.36.55.300659 0000000000F403D39265 DBTROS TABLE2 0
2017-09-01-03.36.55.302500 0000000000F403D39265 DBTROS TABLE1 0
2017-09-01-03.36.55.432024 0000000000F403D3FCC7 DBTROS CHART3 0
2017-09-01-03.36.55.433269 0000000000F403D3FCC7 DBTROS CHART2 0
2017-09-01-03.36.55.434412 0000000000F403D3FCC7 DBTROS CHART1 0
2017-09-01-03.51.25.736217 0000000000F403E86167 DBTROS TABLE3 0
2017-09-01-03.51.25.738658 0000000000F403E86167 DBTROS TABLE2 0
2017-09-01-03.51.25.739572 0000000000F403E86167 DBTROS TABLE1 0
2017-09-01-03.51.26.077441 0000000000F403E8D2BE DBTROS CHART3 0
2017-09-01-03.51.26.079573 0000000000F403E8D2BE DBTROS CHART2 0
2017-09-01-03.51.26.080568 0000000000F403E8D2BE DBTROS CHART1 0
2017-09-01-03.55.32.645519 0000000000F40413DC74 DBTROS TABLE3 0
```

Figure 73. Point-In-Time Selection panel

Scroll right to see the event that caused the log entry. The Description column lists the reason for the log entry, such as REORG LOG(YES) or COPY FULL REORG LOG(NO).

3. To select an RBA or LRSN, enter S in the **Cmd** field next to the timestamp and press Enter. The recovery point information is transferred to the **Log RBA/LRSN** and **Log timestamp** fields on the Recover Utility Log Options panel, as shown in the following figure:

```

AUTOTOOL V4R2 ----- Recover Utility Log Options ----- 2017/09/19 11:28:31
Option ==>

Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                                DB2 Subsystem: SS01
Object event . . . . . (Q - Quiesce, blank)
Event generation . . . . . 00 (00 -1 -2 -3 ... -9)
Select point-in-time . . . . N (Yes/No)
Log RBA/LRSN . . . . . 000000000F403D39265 (blank = current)
Log timestamp . . . . . 2017-09-01-03.36.55.295043
Select RESTOREBEFORE . . . . N (Yes/No)
RESTOREBEFORE Log RBA/LRSN                                (blank = none)
RESTOREBEFORE Log timestamp
Backout . . . . . N (Yes/No)
Reuse existing data sets . . N (Y - Yes, N - No, L - Log only)
Parallel object restores . . N (Yes/No)
Max nbr of parallel objects  0 (0 = optimal)
Nbr of dynamic tape drives   0 (0 = optimal)
From Dump . . . . . N (Yes/No)
Dump Class . . . . .

```

Figure 74. Log RBA and timestamp transferred to Recover Utility Log Options panel

Note that the timestamp appears as read only.

The Backout field (available for DB2 10 and later only) allows you to specify the recovery of objects to a prior point in time by a log-only backout. Type N in this field to specify that a BACKOUT will not be started. Type Y in this field to use the log to backout changes made since the log point that is specified in the RECOVER syntax by the TOLOGPOINT or TORBA options.

## Recovery using the RESTOREBEFORE keyword

The RECOVER utility can use an image copy, concurrent copy, or system-level backup that has an RBA or LRSN that is prior to a specified RBA/LRSN, using the RESTOREBEFORE keyword. If you know the log RBA or LRSN that you want to use as the RESTOREBEFORE point, enter it in the **RESTOREBEFORE Log RBA/LRSN** field. To select the log RBA or LRSN from a list, follow the steps in this topic.

### About this task

The RESTOREBEFORE keyword allows the utility to avoid specific image copies, concurrent copies, or system-level backups with matching or more recent RBA or LRSN values. The RECOVER utility applies the log records and restores the object to its current state or the specified TORBA or TOLOGPOINT value.

### Procedure

1. On the Recover Utility Log Options panel, enter Y in the **Select RESTOREBEFORE** field and press Enter.

- On the Point-In-Time Selection panel, specify selection criteria in the header fields and press Enter. A list of RBAs or LRSNs that match your selection criteria is displayed. The RBA/LRSNs were recorded in SYSIBM.SYSCOPY and the DB2 Automation Tool SYSCOPY table in that time period. The following figure shows a sample list of recovery points:

AUTOTOOL V4R2		----- Point-In-Time Selection -----		2017/09/19 11:30:01	
Option ==>				Scroll ==> CSR	
Line Commands: S - Select			Row 1 of 6635		+>
Start	2017-09-01-03.00.00.000000	Database	*	DB2 Subsystem: SS01	
End	2017-09-24-03.29.15.168727	Space name	*		
Cmd	Timestamp	RBA/LRSN	Database	Spacenam	Dsnum
	2017-09-01-03.36.55.295043	0000000000F403D39265	DBTROS	TABLE3	0
	2017-09-01-03.36.55.300659	0000000000F403D39265	DBTROS	TABLE2	0
	2017-09-01-03.36.55.302500	0000000000F403D39265	DBTROS	TABLE1	0
	2017-09-01-03.36.55.432024	0000000000F403D3FCC7	DBTROS	CHART3	0
	2017-09-01-03.36.55.433269	0000000000F403D3FCC7	DBTROS	CHART2	0
	2017-09-01-03.36.55.434412	0000000000F403D3FCC7	DBTROS	CHART1	0
	2017-09-01-03.51.25.736217	0000000000F403E86167	DBTROS	TABLE3	0
	2017-09-01-03.51.25.738658	0000000000F403E86167	DBTROS	TABLE2	0
	2017-09-01-03.51.25.739572	0000000000F403E86167	DBTROS	TABLE1	0
	2017-09-01-03.51.26.077441	0000000000F403E8D2BE	DBTROS	CHART3	0
	2017-09-01-03.51.26.079573	0000000000F403E8D2BE	DBTROS	CHART2	0
	2017-09-01-03.51.26.080568	0000000000F403E8D2BE	DBTROS	CHART1	0
	2017-09-01-03.55.32.645519	0000000000F40413DC74	DBTROS	TABLE3	0

Figure 75. Point-In-Time Selection panel

Scroll right to see the event that caused the log entry. The Description column lists the reason for the log entry, such as REORG LOG(YES) or COPY FULL REORG LOG(NO).

- To select an RBA or LRSN, enter S in the **Cmd** field next to the timestamp and press Enter. The recovery point information is transferred to the **RESTOREBEFORE Log RBA/LRSN** and **RESTOREBEFORE Log timestamp** fields on the Recover Utility Log Options panel, as shown in the following figure:

```

AUTOTOOL V4R2 ----- Recover Utility Log Options ----- 2017/09/19 11:30:21
Option ==>

Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                                      DB2 Subsystem: SS01
Object event . . . . . (Q - Quiesce, blank)
Event generation . . . . . 00 (00 -1 -2 -3 ... -9)
Select point-in-time . . . . N (Yes/No)
Log RBA/LRSN . . . . . (blank = current)
Log timestamp . . . . .
Select RESTOREBEFORE . . . . N (Yes/No)
RESTOREBEFORE Log RBA/LRSN 000000000F403D39265 (blank = none)
RESTOREBEFORE Log timestamp 2017-09-01-03.36.55.295043
Backout . . . . . N (Yes/No)
Reuse existing data sets . . N (Y - Yes, N - No, L - Log only)
Parallel object restores . . N (Yes/No)
Max nbr of parallel objects 0 (0 = optimal)
Nbr of dynamic tape drives 0 (0 = optimal)
From Dump . . . . . N (Yes/No)
Dump Class . . . . .

```

Figure 76. RESTOREBEFORE Log RBA and timestamp transferred to Recover Utility Log Options panel

Note that the timestamp appears as read-only. During the recovery, the utility will use an image copy with an RBA or LRSN *before* the specified point.

## Recovering to a copy

A recovery to a copy restores the target objects from a specified image copy.

### About this task

The recovery points can be specified for:

- Last image copy. You can specify to recover to the last image copy taken, whether full or incremental.
- Full image copy. This option recovers to the last full image copy before the specified point. Any incremental image copies taken after the full copy are ignored.
- Incremental image copy. This option recovers to the last incremental image copy before the specified recovery point. The most recent full copy and subsequent incremental image copies up to the recovery point are applied.
- A specific recovery data set. You can select a particular data set to which to recover.

When you specifies TO method of C and Alter method options = Y, the Recover Utility Copy Options panel is displayed, as shown in the following figure:

```

AUTOTOOL V4R2 ----- Recover Utility Copy Options ----- 2017/09/19 11:33:31
Option ==>

Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                                DB2 Subsystem: SS01
Object event . . . . . L (L - Last, F - Full, I - Incr, blank)
Event generation . . . . . 00 (00 -1 -2 -3 ... -9)

Select recovery file . . . N (Yes/No)
Copy data set name . . . .
Copy volume serial number
Copy file sequence number
Copy timestamp . . . . . :

Reuse existing data sets . N (Yes/No)

```

Figure 77. Recover Utility Copy Options panel

The Object Event field is used to specify the type of copy to recover to:

- If you enter L, F, or I in the Object event field, and enter 00 in the Event generation field, recovery will be to the last (most recent) specified copy.
- If you enter L, F, or I in the Object event field, and enter a value in the Event generation field other than 00 (such as -2), recovery will be to the specified number of copies back from the last (most recent) copy.
- If you leave the field blank, you must select a recovery file to which to recover. Refer to “Recovering to a file.”

## Recovering to a file

You can specify recovery to a particular image copy file (data set). If you know the image copy data set name, enter it in the **Copy dataset name** field. If the data set is not cataloged, enter the volume serial number, and if the recovery file is on tape, enter the file sequence number. To select a data set from a list of image copies, follow the steps in this topic.

### About this task

When recovering to a file, only one image copy data set can be selected at a time.

### Procedure

1. On the Recover Utility Copy Options panel, enter Y in the **Select recovery file** field and press Enter.
2. On the Recovery File Selection panel, specify selection criteria in the header fields and press Enter. A list of image copies for that time period and that meet the object selection criteria is displayed. The following figure shows a sample list of image copies:

```

AUTOTOOL V4R2 ----- Recovery File Selection ----- 2017/09/19 11:36:01
Option ==> Scroll ==> CSR
-----
Line Commands: S - Select
-----
Database DBC*      Start 2017-09-01-03.00.00.000000 DB2 Subsystem: SS01
Space name *      End   2017-09-24-03.44.34.206734
-----
Cmd Database Spacename Dsnnum Timestamp Description
DBCA0901 TSCA0901      0 2017-09-12-15.21.56.322285 COPY FULL YES
DBCA0903 TSCA0903      0 2017-09-12-15.28.58.794848 COPY FULL YES
DBCA0904 TSCA0904      0 2017-09-12-15.36.01.536894 COPY FULL YES
DBCA849A TSCA849A      0 2017-09-12-14.42.54.674935 COPY FULL YES
***** Bottom of Data *****

```

Figure 78. Recovery File Selection panel

Scroll right to see information about the image copy.

3. To select an image copy, enter S in the **Cmd** field next to the image copy and press Enter. The data set information is transferred to the **Copy data set name** and other copy information fields on the Recover Utility Copy Options panel, as shown in the following figure:

```

AUTOTOOL V4R2 ----- Recover Utility Copy Options ----- 2017/09/19 11:37:18
Option ==>

Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                                DB2 Subsystem: SS01
Object event . . . . . L (L - Last, F - Full, I - Incr, blank)
Event generation . . . . . 00 (00 -1 -2 -3 ... -9)

Select recovery file . . . N (Yes/No)
Copy data set name . . . . TEST.TSCA0901.D2017255.T1921.FC000000
Copy volume serial number
Copy file sequence number
Copy timestamp . . . . . : 2017-09-12-15.21.56.322285

Reuse existing data sets . N (Yes/No)

```

Figure 79. Copy information transferred to Recover Utility Copy Options panel

The corresponding copy timestamp is read only. If the selected image copy data set was not cataloged, the volume serial appears in the **Copy volume serial number** field. If the image copy was on a tape device, the tape volume serial and file sequence number are listed on the panel.

## Recovering an error range or a page

### About this task

This portion of the RECOVER utility offers two options:

- An error range recovery specifies that all pages with reported I/O errors are to be recovered. You should be familiar with specifics about error range recovery before using this option; refer to the DB2 Utility Guide and Reference for your version of DB2.
- If you know the specific page to be recovered, you can specify that page for the recover. This type of recovery should be used only with object profiles containing one object, because the page number is specific to the object.

Both these recovery options are provided under the Error method. When you specify TO method of E and Alter method options = Y, the Recover Utility Error



Options panel appears, as shown in the following figure:

```
AUTOTOOL V4R2 ----- Recover Utility Error Options ----- 2017/09/19 11:39:27
Option ==>

Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                        DB2 Subsystem: SS01

Error range . . . . . Y      (Yes/No)

Page number . . . . . 0      (D - Decimal, X - 'hex')
Page continue . . . . . N      (Yes/No)
```

Figure 80. Recover Utility Error Options panel

The Error Range field specifies the type of error range recovery:

- If you enter Y, the equivalent of RECOVER object ERROR RANGE is specified. This specifies that all pages within the range of reported I/O errors are to be recovered.
- If you enter N, a specific page number will be recovered. You must enter the page number in the Page number field. If you enter Y in the Page continue field, then the recovery continues from the specified page until no I/O errors are detected.

## REBUILD INDEX utility

The REBUILD INDEX utility is provided in conjunction with the RECOVER utility.

### About this task

REBUILD INDEX reconstructs an index from the table that it references. When you select a RECOVER utility for a utility profile, and indexes are included in the objects to be recovered, DB2 Automation Tool chooses the method of recovery:

- When an index was created with the COPY YES attribute and an image copy is available for recovery, DB2 Automation Tool invokes the RECOVER utility with the RECOVER INDEX syntax.
- When an index was created with the COPY NO attribute and/or there are no image copies to recover to, DB2 Automation Tool invokes the REBUILD INDEX utility.

For DB2 Version 9.1 or later subsystems, you can specify to build JCL for an online REBUILD INDEX. Refer to “Online REBUILD INDEX utility” on page 160 for more information.

To set options for the REBUILD INDEX, enter Y in the Rebuild Ix Statistics Optns field on the Recover Utility Profile options panel. The Rebuild Index Profile Options panel is displayed, as shown in the following figure:

```

AUTOTOOL V4R2 ----- Rebuild Index Profile Options ----- 2017/09/19 11:42:20
Option ==>

Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                  DB2 Subsystem: SS01

Reuse existing data sets . . . N (Yes/No)
Gather index statistics . . . N (Yes/No)
Report messages . . . . . N (Yes/No)
Update catalog tables . . . A (A - All, P - Path, S - Space, N - None)
Update history tables . . . A (A - All, P - Path, S - Space, N - None)
Collect all distinct values N (Yes/No)
Update statistics . . . . . N (Yes/No)

```

Figure 81. Rebuild Index Profile Options panel

The following describes the options you can set for the REBUILD INDEX utility:

#### Reuse existing data sets

Type Y in this field to specify that RECOVER should logically reset and reuse DB2-managed data sets without deleting and redefining them. Type N to specify that DB2 should delete and redefine DB2-managed data sets to reset them.

#### Gather index statistics

Type Y in this field to specify that index statistics are to be gathered inline during the REBUILD INDEX.

#### Report messages

Type Y in this field to indicate that a set of messages is to be output to SYSPRINT to report the collected statistics.

#### Update catalog tables

Indicate whether you want DB2 to update the catalog with statistics after the rebuild. A: Update all collected statistics in the catalog. P: Update only catalog table columns that provide statistics used for access path selection. S: Update only the catalog table columns that provide statistics to help you assess the status of a particular table space or index. N: Does not update catalog tables; this option is only valid when REPORT YES is specified.

#### Update history tables

If you specify to update statistics, you can also specify to record catalog table inserts or updates in the catalog history tables. Consult the DB2 Utility Guide and Reference for your version of DB2 for information about using this option.

#### Collect all distinct values

Y indicates that all of the distinct values in all of the 1 to n key column combinations for the specified indexes are collected, where n is the number of columns in the index.

#### Update statistics

If you want to specify FREQVAL or HISTOGRAM statistics, type Y in this field and press Enter.

**Note:** HISTOGRAM statistics are allowed on DB2 Version 11 and later.

### Setting FREQVAL and HISTOGRAM options

This panel allows you to view and set multiple FREQVAL stats and HISTOGRAM options that will be collected by RUNSTATS during a REORG or REBUILD INDEX utility.

## About this task

These utility statistic option panels allows you to specify catalog statistics that can be reported on as part of a RUNSTATS utility run during a REORG or REBUILD utility.

**Note:** Histogram statistics are available only for DB2 Version 11 NFM and later.

## Procedure

1. To specify statistics, type Y in the Update statistics field on the Reorg Utility Statistics options panel or the Rebuild Index Profile Options panel. When you press Enter, the panel shown in the following figure is displayed. This panel allows you to view and set statistics that will be collected.

```
AUTOTOOL V4R2 ---- Rebuild Utility Column Statistics --- 2017/09/19 11:47:42
Option ===>                                         Scroll ===> CSR
Line Commands: V - View  C - Create  D - Delete  U - Update
-----
Creator: TWUSR      Name: UTILITY PROFILE              User: TWUSR
                                           DB2 Subsystem: SS01
                                           Row 1 of 1
-----
Cmd  Statistic Definition
C    Press Enter to Create Statistics
***** Bottom of Data *****
```

Figure 82. Reorg | Rebuild Utility Column Statistics panel

2. To set a column statistic definition, type C in the line command area and press Enter.
  - On subsystems running DB2 Version 11 NFM or later, the Reorg | Rebuild Column Statistics Create window is displayed. Type Y next to the type of statistics you want to define and press Enter.
  - On other subsystems, the Freqval Options window is displayed.
3. Set FREQVAL options on the Freqval Options window as follows:

### Freqval Numcols

Enter the number of columns in the index for which frequently occurring values are to be collected. This value can be a number between 1 and the number of indexed columns.

### Freqval Count

Enter the number of frequently occurring values that are to be collected from the specified key columns.

4. For DB2 Version 11 subsystems, set HISTOGRAM options as follows on the Reorg | Rebuild Histogram Options window:

### Histogram Numcols

Enter the number of columns in the index for which histogram statistics are to be collected. This value can be a number between 1 and the number of indexed columns.

### Histogram Numquantiles

Enter how many quantiles that the utility is to collect. The integer value must be equal to or greater than one. The number of quantiles that you specify should never exceed the total number of distinct values in the specified key columns. The maximum number of quantiles is 100.

## Online REBUILD INDEX utility

You can specify an online REBUILD INDEX for subsystems running on DB2 Version 9.1 or later.

### About this task

To specify an online REBUILD INDEX, type Y in the Online Rebuild Index field on the Recover Utility Profile Options panel.

To set options for the online REBUILD INDEX, type Y in the Alter Online Rbld Options field on the Recovery Utility Profile Options panel and press Enter. The panel shown in the following figure is displayed:

```
AUTOTOOL V4R2 ----- Online Rebuild Index options ----- 2017/09/19 11:51:06
Option  ===>

Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                                DB2 Subsystem: SS01
Enter the options for Online Rebuild Index Utility

Sharelevel . . . . R      (R - Reference, C - Change)
Drain Wait . . . .      (0-1800 seconds)
Retry . . . . .      (blank, 0-255)
Retry Delay . . .      (1-1800 seconds)
Maxro . . . . .      (blank, Number, DEFER)
Longlog . . . . . C      (C - Continue, T - Term, D - Drain)
Delay . . . . . 1200      (Number)
RBALRSN_CONVERSION      (blank, N - None, B - Basic, E - Extended)
```

Figure 83. Online Rebuild Index Options panel

The following describes the options you can set for the online REBUILD INDEX utility:

#### Sharelevel

Indicate the level of access applications will have during the RELOAD phase of the online index rebuild. Type R for reference (applications can read but not write data). Type C for change (applications can read and write data).

#### Drain Wait

Specify the number of seconds that the utility waits when draining the space. The time specified is the aggregate time for objects to be checked during the REBUILD INDEX. This overrides the values specified by IRLMRWT and UTIMOUT. If the keyword is not specified or 0 is specified, then regular draining using the IRLMRWT value will be used. Acceptable values can be from 0 to 1800 seconds.

**Retry** Specify the maximum number of retries that can be attempted. Values can be from 0 to 255. If this field is left blank, no retries will be attempted. For DB2 Version 9.1 or later subsystems, if the keyword is omitted, the utility will use the value of the utility multiplier system parameter UTIMOUT.

#### Retry Delay

Specify the minimum duration in seconds between retries. Values can be from 1 to 1800. The value must be an integer. If you do not specify a value, REBUILD INDEX uses the (DRAIN\_WAIT value x RETRY) value.

**Maxro** Set the maximum amount of time for the last iteration of log processing. During that iteration, applications have read-only access. Type an integer to specify the number of seconds, or enter DEFER to specify that iterations

of log processing can continue indefinitely. The default is the value of the lock timeout system parameter IRLMKWT. If you type DEFER, you should also enter C in the Longlog field.

**Longlog**

Specify what action to take if log reading is not catching up quickly enough to the applications' writing of the log. DB2 sends a message to the console, then takes the action you specify. Type C to continue the online REBUILD INDEX until the time on the JOB statement expires. Type T to terminate the online REBUILD INDEX after the delay specified by the Delay parameter. Type D to drain the write claims after the delay specified by the Delay parameter, forcing the final iteration of log processing.

**Delay**

Specify the minimum interval between the time that the online REBUILD INDEX sends the LONGLOG message to the console and the time that the online REBUILD INDEX performs the action specified by the LONGLOG parameter. Enter an integer value.

**RBALRSN\_CONVERSION**

Specify the RBA or LRSN format of the target object after the completion of the REBUILD. Type N for no conversion to be performed. Type B to convert objects in extended format to basic format. Type E to convert objects in basic format to extended format. If this field is left blank, the conversion in the UTILITY\_OBJECT\_CONVERSION ZPARM will be honored.

When finished entering values, press Enter, then press PF3 to return to the previous panel.

## Setting FlashCopy options

If the subsystem is a DB2 V10 NFM or later and other requirements are met, FlashCopy can be used to make copies.

**About this task**

To use FlashCopy:

- The subsystem must be DB2 V10 New Function Mode (NFM) or later.
- The DB2 objects must be SMS-managed.
- FlashCopy V2 volumes must be available.
- The job generation option "Generate Templates" must be specified.

When FlashCopy is selected, the panel shown in the following figure is displayed:

```

AUTOTOOL V4R2 ----- FlashCopy Options ----- 2017/09/19 11:53:33
Option ==>
Rebuild Index FlashCopy
  Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                                      DB2 Subsystem: SS01

Options for RI
Update DSN create spec . . Y (Yes/No)

Unit Type . . . . . (SYSDA - DISK - etc.)
Catalog Options
DISP=Status . . . . . (M - MOD, N - NEW, O - OLD, S - SHR)

      Normal Termination . . (C - CATLG, D - DEL, K - KEEP, U - UNCATLG)

      Abnormal Termination   (C - CATLG, D - DEL, K - KEEP, U - UNCATLG)

Data Class . . . . . (8 character class)
Storage Class . . . . . (8 character class)
Management Class . . . . . (8 character class)
Expiration date *or* . . . (YYYYDDD - YYDDD)
Retention period . . . . . (4 digit number)

```

Figure 84. FlashCopy Options panel

The following describes the FlashCopy options you can specify:

#### Update DSN create spec

Type Y in this field and press Enter to set or change the FlashCopy data set specifications.

#### Unit Type

Type in a valid UNIT where the image copy data set will be written. SMS may ignore this value. If you enter a value that is not found in your site's eligible device table (EDT), the DASD Device Type window is displayed (see "User-designated unit types for FlashCopy" on page 163).

#### Catalog Options

This section allows you specify the disposition of the FlashCopy data sets. These values will be used to build the DISP= portion of the image copy DD. It is not required, but if one DISP= value is specified, all three must be specified.

#### DISP=Status

Specify the initial disposition or status of the data set.

#### Normal Termination

Specify the disposition of the data set upon normal termination of the job step.

#### Abnormal Termination

Specify the disposition of the data set upon abnormal termination of the job step.

#### Data Class

#### Storage Class

#### Management Class

If your site requires it, specify the SMS data class, storage class, and management class.

#### Expiration date -or- Retention period

Enter either the expiration date in YYYYDDD format, or the retention period in number of days.

## User-designated unit types for FlashCopy

You may need to specify a FlashCopy device name that is not in your site's eligible device table (EDT). The DASD Device Type window allows you to verify the device name.

```
AUTOTOOL V4R2 ----- DASD Device Type ----- 2011/07/06 11:41:29

Device entered TEST      not found in EDT (Eligible Device Table)

NOTE: Flashcopy is only valid with DASD device types.

Enter Y to keep this device name if it is a DASD device or return
to enter a valid device name.

Use this DASD device name? N (Yes/No)
```

Figure 85. DASD Device Type window

To accept the value entered for unit type as the device name, specify Y in the Use this DASD device name field and press Enter. The IC FlashCopy DSN generation panel is displayed.

To cancel and correct the device name, press PF3 from the DASD Device Type window without entering Y in the field.

## Building a data set name for FlashCopy copies

DB2 Automation Tool offers a simple way to construct an image copy data set name for FlashCopy copies.

### About this task

When you type Y in an Update DSN create spec field for a FlashCopy copy, the following panel is displayed.

```
AUTOTOOL V4R2 ----- RI FlashCopy DSN Generation ----- 2017/09/19 11:57:34
Option  ==>
Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
Rebuild Index FlashCopy      DB2 Subsystem: SS01
Qualifier code      Free form literal      Show DSN  N
Current data set name generation qualifier string:

Valid data set name generation codes are:

(* marked items are not supported in IC dynamic data set generation.)
1. Database          13. Month (MM)          27. Utility Name
2. Space Name        14. Day (DD)           28. Job Name
3. Partition         15. Julian Day (DDD)      29. Step Name
* 7. Vcatname        16. Hours (HH)           30. Utility ID
8. Subsystem ID      17. Minutes (MM)          31. Listdef
* 9. User ID         18. Seconds (SS)         32. Sequence
10. Time (HHMMSS)    * 19. Timestamp           33. Index Space Name
11. Date (YYYYDDD)   * 20. Random Number        34. Table Space Name
12. Year (YYYY)      21. Unique                35. Substring Qualifier
                                   36. Use freeform literal
                                   37. Dsnum (required)
```

Figure 86. Flash Copy DSN Generation panel

### Qualifier code

To include a qualifier, type its number in the Qualifier code field and press

Enter. The qualifier string appears in the Current<sup>®</sup> dataset name generation qualifier string field. You can also type the data set name directly in the string field.

**Free form literal**

After selecting the Use Freeform literal qualifier, you can enter an eight-character literal in this field. If you want the literal to be in its own substring, make sure to begin the literal with a period.

**Show DSN**

To view the string as it will be completed, type Y in the Show DSN field.

**Current dataset name generation qualifier string**

This field display the qualifier string as it was input.

Commonly used qualifiers for FlashCopy data set names are listed on the bottom half of the panel. Qualifiers marked with an asterisk are not supported when using the TEMPLATE control statement. Refer to the help system for descriptions of the valid qualifiers.

The following describes the valid data set name qualifiers that you can use on the Image Copy DSN Generation panel:

**Database**

The database name.

**Space Name**

The table space or index name.

**Partition**

The partition number. When you choose this option, the Resulting DSN using Current Symbolic String window appears to prompt you to enter a valid character for the first position in the string.

**Vcatname**

The volume catalog name.

**Subsystem ID**

The subsystem ID.

**User ID**

The TSO user ID of the job builder.

**Time (HHMMSS)**

The current time in the format shown.

**Date (YYYYDDD)**

The current date in the format shown.

**Year (YYYY)**

The year in the format shown.

**Month (MM)**

The month in the format shown.

**Day (DD)**

The day of the month in the format shown.

**Julian Day (DDD)**

The Julian day.

**Hours (HH)**

The current time in hours.



**Minutes (MM)**

The current time in minutes.

**Seconds (SS)**

The current time in seconds.

**Timestamp**

The current timestamp, in format *Dyymmdd.Thhmmss*.

**Random Number**

A random number in format *Rnnnnnnn*.

**Unique**

Unique eight characters derived from the system clock at the time of allocation. This set of characters begins with an alphabetical character and is followed by seven alphabetical or numeric characters.

**Utility Name**

The utility name.

**Job Name**

The job name.

**Step Name**

The job step name.

**Utility ID**

The utility ID, truncated to eight characters and checked for invalid data set name characters. This variable is only allowed with templates.

**Listdef**

The name of the list that is defined by using the LISTDEF. This variable is only allowed with templates and LISTDEFs.

**Sequence**

Sequence number of the list item in the list. This variable is only allowed with templates and LISTDEFs.

**Index Space Name**

The index space name.

**Table Space Name**

The table space name.

**Substring Qualifier**

Select this option to specify one of the qualifiers and customize the substring. When you press Enter, the substring parameters window is displayed.

**Use freeform literal**

After selecting this qualifier, you can enter an eight-character literal in the Free Form literal field. If you want the literal to be in its own substring, make sure to begin the literal with a period.

**Dsnum**

(Required) The data set number. When you choose this option, the Resulting DSN using Current Symbolic String window appears to prompt you to enter a valid character for the first position in the string.

Example: if you enter 1 (Database), 2 (Space Name), then 32(Dsnum), and you choose a D for the character string, the data set name appears as follows:

&DB..&SN..D&DSNUM.

## Using the substring function

You can use the substring qualifier function to customize a data set name.

When you choose the Substring Qualifier function to customize a qualifier substring, the window shown in the following figure is displayed:



Substring Parameters

Enter the Qualifier Code ==>

Enter Starting Position ==>

Enter Substring Length ==>

*Figure 87. Substring Parameters window*

You can choose to enter almost any of the qualifier codes and specify the string's starting position and length. For example, qualifier code 8 generates a string of "&SSID", a four-character subsystem name. However, if your site uses three-character SSIDs, the substring qualifier option can be used to specify the SSID and customize the string length, as shown in the following figure:



Substring Parameters

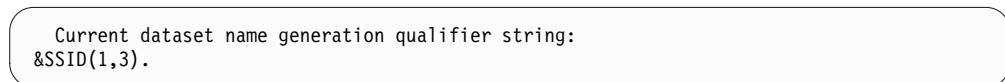
Enter the Qualifier Code ==> 8\_

Enter Starting Position ==> 1\_\_

Enter Substring Length ==> 3\_\_

*Figure 88. Example: specifying the SSID substring length*

The results are shown in the following figure:



Current dataset name generation qualifier string:  
&SSID(1,3).

*Figure 89. Example: results of substring generation*

## Resulting DSN using current symbolic string

Some substrings (such as time and date) require the addition of an alphanumeric or symbol in the beginning of the string.

When you select these substrings, the window shown in the following figure is displayed:

Resulting DSN using current symbolic string

Enter a Literal or Symbolic to Prefix the Invalid Dataset Node

==>

Invalid Dataset Name:

\* SS01.DATABASE.SPACENAM.2008143 \*

---

HAAM250E - Invalid data set node detected. First character not alphabetic or national.

Figure 90. Resulting DSN using current symbolic string window

This panel allows you to insert an alphanumeric or symbol to make the data set node name valid. When finished, press Enter.

### Viewing a sample string

You can view a sample resulting data set name using your specifications by entering Y in the Show DSN field.

### About this task

To view the string as it will be completed, type Y in the Show DSN field. When you press Enter, the sample string appears, as shown in the following figure:

Resulting DSN using current symbolic string

Using the following sample data as input:

&JOBNAME	= 'JOBNAME '	&STEPNAME	= 'STEPNAME'	&UID	= 'TUSER'
&SSID	= 'SS01'	&ICTYPE	= 'F'	&UTIL	= 'UTILNAME'
&LOCREM	= 'L'	&PRIBAC	= 'P'	&DB	= 'DATABASE'
&SN	= 'SPACENAM'	&PART	= '00001'		

The date/time fields are set to the current time.

The generated dataset would be:

\* SS01.DATABASE.SPACENAM.D2008143 \*

Figure 91. Viewing a sample string

Press PF3 (END) to return to the data set name generation panel.

## COPY options

DB2 Automation Tool can build utility JCL for DB2 image copies, as well as image copies of objects on IBM Enterprise Storage Server (ESS) devices and EMC Symmetrix devices.

You must set options for all of these image copy types. The following sections describe how to select the image copy type and specify the appropriate options.

**Note:** Image copies of an index can only be made if the index was created with the COPY=YES parameter.

## Selecting the copy type

You can specify several different methods of making image copies: DB2 COPY, ESS FlashCopy utility, and BCV or Snap Dataset for EMC Symmetrix devices.

### About this task

When you specify to update image copy utility options, the panel shown in the following figure is displayed:

```

AUTOTOOL V4R2 ----- Image Copy options ----- 2017/09/19 12:32:51
Option ==>                                     Scroll ==> CSR
Creator: TWUSR      Name: UTILITY PROFILE          User: TWUSR
                                           DB2 Subsystem: SS01
                                           More:      +
Exception Rule . . . . . A (A - Accepted, R - Rejected, B - Both)
Image Copy Utility mode . . . . D (D - DB2, S - Symmetrix, E - Ess)
Alter EMC Symm/IBM ESS Optns . . N (Yes/No)
Alter Image Copy DSN specs . . . Y (Yes/No)
Utility ID . . . . . (16 characters)

Parallel . . . . . N (Yes/No)
Number of objects . . . . . (0 - 99)
Number of tape units . . . . . (0 - 99)
Filter DDname . . . . . (8 character DD name)
Sharelevel . . . . . R (R - Reference, C - Change)
Full Image Copy . . . . . Y (Yes/No)
Check Page . . . . . N (Yes/No)
Concurrent . . . . . N (Yes/No)
Change Limit
First Percent . . . . . (% value)
Second Percent . . . . . (% value)
Report only . . . . . N (Yes/No)
Max Tape Volume/DASD Unit Cnt 5 (1-255 volumes)
Stack Copy Control Cards . . . Y (Yes/No)
Scope . . . . . A (A - All, P - Pending)
Group Partitions by . . . . . N (J - Job, S - Step, N - None)

Optional Skeletons      -BEFORE-      -AFTER-
JCL Skeletal . . . . .      . .      (8 Character Name)
Control Cards Skeletal . . . . .      . .      (8 Character Name)
Step End Skeletal . . . . .      . .      (8 Character Name)

```

Figure 92. Image Copy options panel

The Image Copy options panel is scrollable; press PF8(DOWN) to view the additional options.

All copy types must set the Exception Rule and the image copy data set specifications. To set image copy data set specifications, refer to “Specifying image copy options” on page 169.

You can use the optional user skeletons for all copy types. Press PF8 to scroll down to the user skeletal fields. Refer to “Specifying user skeletons” on page 182 for information about using those fields.

In the Exception Rule field, type A to have the utility act on all objects that are accepted (included) as a result of exception processing. Type R to have the utility act on objects that are rejected (excluded) as a result of exception processing. Type B to have the utility act on all objects, regardless of exception processing results.

To specify the copy type, set the Image Copy Utility mode field as follows:

- Type D to create DB2 image copies. DB2 Automation Tool builds jobs using DB2 COPY syntax.
- Type E to generate syntax for image copies using IBM ESS's FlashCopy utility.
- Type S to generate syntax for EMC Symmetrix devices.

The options on the remainder of this panel are used for DB2 image copies only. DB2 options are described in “Setting DB2 image copy options” on page 182.

To set options for other copy types, type the appropriate value in the Image Copy Utility Mode field and type Y in the Alter EMC Symm/IBM ESS Optns field. Refer to “Setting IBM ESS copy options” on page 185 and “Setting EMC copy options” on page 186.

## Specifying image copy options

For all copy types, you must specify copy options and choose how the copy data set(s) should be named.

### About this task

To specify the copy options and data set names, on the Image Copy Options panel, type Y in the Alter Image Copy DSN specs field. When you press Enter, the panel shown in the following figure is displayed:

```

AUTOTOOL V4R2 ----- Image Copy Options ----- 2017/09/19 12:44:04
Option  ==>

Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                                DB2 Subsystem: SS01
Enter the Image Copy options to associate with this utility profile

Optional Template Dataset and member name:
Template Dataset
Member name  . .

                                Take Image Copy    Update Options

Local Primary . . . . . N (Yes/No) . . . . N (Yes/No)
Local Backup . . . . . N (Yes/No) . . . . N (Yes/No)
Recovery Site Primary . . . N (Yes/No) . . . N (Yes/No)
Recovery Site Backup . . . N (Yes/No) . . . N (Yes/No)

FlashCopy Options    (blank, Y -Yes, N - No, C - Consistent)
View/Update FlashCopy Dataset Options  N (Yes/No)

```

*Figure 93. Image Copy Options panel: specifying image copy types*

This panel allows you to specify the type of image copy and to update the options for the selected image copy type. The information on this panel is used to create template control statements to allocate the image copy data sets.

To select a copy type, type Y in the Take Image Copy column next to the copy type that you want. To set options for the copy, type Y in the Update Options column next to the copy type.

To use your own template data set, follow these steps:

1. Specify the template data set and member name in the Optional Template Dataset fields.
2. Select the copy type and enter Y in the corresponding Update Options field.

3. When the TEMPLATEDD Name Selection panel is displayed, select a template name and press PF3 to return to this panel.

Specify the Image Copy Options panel fields as follows:

#### **Optional Template Dataset and member name fields**

If you want to use an existing template instead of allowing DB2 Automation Tool to create the template, enter the template data set and member name here. The template data set must already exist and the template members must follow DB2 syntax rules for the TEMPLATE control statement. When you select an image copy type and update the options for that type, you will be prompted to select a template name on the TEMPLATEDD Name Selection panel. Using your own templates also requires that the job generation option Generate Templates is set to Y in the job profile.

**Note:** If these values are included, they override existing templates created by DB2 Automation Tool in this profile as well as TEMPLATEDD default parameters in the setup options.

#### **FlashCopy Options**

(DB2 10 and later) Select this option to set options for FlashCopy image copies. FlashCopy requires the job generation option Generate Templates. Type Y to generate FLASHCOPY YES. Type C to generate FLASHCOPY CONSISTENT. Type N to generate FLASHCOPY NO. Leave this field blank to omit the FLASHCOPY keyword. If there is a system default setting for FLASHCOPY, it will be honored when this field is left blank.

#### **View/Update FlashCopy Dataset Options**

(DB2 10 and later) If FlashCopy Options is set to Y or C, use this field to specify FlashCopy data set options; type Y in this field and press Enter.

#### **Setting image copy options for LP, LB, RP, and RB copies**

For all copy types, you must specify copy options and how the copy data set(s) should be named.

#### **About this task**

To specify the copy options, on the Image Copy Options panel, type Y in the Take Image Copy field. Then enter Y in the corresponding Update Options field. When you press Enter, the panel shown in the following figure is displayed:

```

AUTOTOOL V4R2 ----- Image Copy Options ----- 2017/09/19 12:49:39
Option ==>
Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                                      DB2 Subsystem: SS01
                                      More:      +

Image Copy options for Image Copy Local Primary
Use Threshold Unit if allocated space exceeds x Meg/Gig/Trks/Cyls Optional
Quantity M|G|T|C

          Std Unit      Threshold Unit
Update DSN create spec . . Y . . . . . N (Yes/No)
Unit Type . . . . .      . . . . .      (CART - DISK - etc.)
Catalog Options
DISP=Status . . . . . M . . . . . M (M - MOD, N - NEW,
                                     O - OLD, S - SHR)
          Normal Termination C . . . . . C (C - CATLG, D - DEL,
                                     K - KEEP, U - UNCATLG)
          Abnormal Termination C . . . . . C (C - CATLG, D - DEL,
                                     K - KEEP, U - UNCATLG)
Data Class . . . . .      . . . . .      (8 character class)
Storage Class . . . . .      . . . . .      (8 character class)
Management Class . . . . .      . . . . .      (8 character class)
Parameters Only required if Unit Type is a Tape device:

```

Figure 94. Image Copy Options panel

This panel allows you to set options for the image copy data set and for the threshold data set (if specified). Specify the data set options for the Image Copy Options panel as follows:

#### Use Threshold Unit if allocated space exceeds x Meg/Gig/Trks/Cyls

This field sets the limit on the space allocation for the standard (default) unit. You can specify up to 6 digits in the quantity field and specify the value in megabytes, gigabytes, tracks, or cylinders. When the job is built, the allocation calculations for the image copies are checked against this threshold value; if the limit is exceeded, the threshold unit device specifications are used to generate the DD instead of the standard unit.

For DB2 V9 and later subsystems, if you enter a threshold in this field and then specify to use templates, DB2 Automation Tool will generate two TEMPLATE statements before the utility control statements - one for the standard DSN specification and one for the threshold DSN specification. The appropriate template can then be used based on the data set allocation at job run time rather than build time.

The data set information fields following this field appear in two columns: Std Unit and Threshold Unit. The fields in these columns are the same and are described as follows:

#### Update DSN create spec

Type Y in this field to set or change the image copy data set specifications.

#### Unit Type

Type in a valid UNIT where the image copy data set will be written. If you enter a value that is not found in your site's eligible device table (EDT), the Device Type window is displayed (see "User-designated unit types" on page 172).

#### Catalog Options

This section allows you specify the disposition of the copy data sets. These values will be used to build the DISP= portion of the image copy DD. This is not required, but if one DISP= value is specified, all three must be specified.

**DISP=Status**

Specify the initial disposition of the data set.

**Normal Termination**

Specify what the disposition of the data set should be set to upon successful completion of the job.

**Abnormal Termination**

Specify what the disposition of the data set should be set to upon abnormal termination of the job.

**Data Class****Storage Class****Management Class**

If your site requires it, specify the SMS data class, storage class, and management class.

**Expiration date \*or\* Retention period**

Enter either the tape expiration date in YYYYDDD format, or the tape retention period in number of days.

**User-designated unit types:**

You may need to specify a device name that is not in your site's eligible device table (EDT). The Device Type panel allows you to keep the device name and specify the device type.

```
AUTOTOOL V4R2 ----- Device Type ----- 2017/09/20 14:00:02

Device entered TEST      not found in EDT (Eligible Device Table)

To keep this device name indicate whether it is a tape or DASD
device.

Device type   (T - Tape, D - DASD)
```

*Figure 95. Device Type panel*

The value entered for unit type is accepted as the device name. In the Device type field, specify T for tape or D for DASD device, and press Enter. The appropriate panel for the device type (tape or DASD) that you specified is displayed.

To cancel and correct the device name, press PF3 from the Device Type panel without specifying the device type.

**Setting FlashCopy options**

If the subsystem is a DB2 V10 NFM or later and other requirements are met, FlashCopy can be used to make copies.

**About this task**

To use FlashCopy:

- The subsystem must be DB2 V10 New Function Mode (NFM) or later.
- The DB2 objects must be SMS-managed.
- FlashCopy V2 volumes must be available.
- The job generation option "Generate Templates" must be specified.



When FlashCopy is selected, the panel shown in the following figure is displayed:

```
AUTOTOOL V4R2 ----- FlashCopy Options ----- 2017/09/19 11:53:33
Option ==>
Rebuild Index FlashCopy
  Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                                      DB2 Subsystem: SS01

Options for RI
Update DSN create spec . . Y (Yes/No)

Unit Type . . . . . (SYSDA - DISK - etc.)
Catalog Options
DISP=Status . . . . . (M - MOD, N - NEW, O - OLD, S - SHR)

      Normal Termination . . (C - CATLG, D - DEL, K - KEEP, U - UNCATLG)
      Abnormal Termination   (C - CATLG, D - DEL, K - KEEP, U - UNCATLG)

Data Class . . . . . (8 character class)
Storage Class . . . . . (8 character class)
Management Class . . . . . (8 character class)
Expiration date *or* . . . (YYYYDDD - YYDDD)
Retention period . . . . . (4 digit number)
```

Figure 96. FlashCopy Options panel

The following describes the FlashCopy options you can specify:

**Update DSN create spec**

Type Y in this field and press Enter to set or change the FlashCopy data set specifications.

**Unit Type**

Type in a valid UNIT where the image copy data set will be written. SMS may ignore this value. If you enter a value that is not found in your site's eligible device table (EDT), the DASD Device Type window is displayed (see "User-designated unit types for FlashCopy" on page 163).

**Catalog Options**

This section allows you specify the disposition of the FlashCopy data sets. These values will be used to build the DISP= portion of the image copy DD. It is not required, but if one DISP= value is specified, all three must be specified.

**DISP=Status**

Specify the initial disposition or status of the data set.

**Normal Termination**

Specify the disposition of the data set upon normal termination of the job step.

**Abnormal Termination**

Specify the disposition of the data set upon abnormal termination of the job step.

**Data Class**

**Storage Class**

**Management Class**

If your site requires it, specify the SMS data class, storage class, and management class.

### Expiration date -or- Retention period

Enter either the expiration date in YYYYDDD format, or the retention period in number of days.

### User-designated unit types for FlashCopy:

You may need to specify a FlashCopy device name that is not in your site's eligible device table (EDT). The DASD Device Type window allows you to verify the device name.

```
AUTOTOOL V4R2 ----- DASD Device Type ----- 2011/07/06 11:41:29

Device entered TEST      not found in EDT (Eligible Device Table)

NOTE: Flashcopy is only valid with DASD device types.

Enter Y to keep this device name if it is a DASD device or return
to enter a valid device name.

Use this DASD device name? N (Yes/No)
```

*Figure 97. DASD Device Type window*

To accept the value entered for unit type as the device name, specify Y in the Use this DASD device name field and press Enter. The IC FlashCopy DSN generation panel is displayed.

To cancel and correct the device name, press PF3 from the DASD Device Type window without entering Y in the field.

### Building a data set name for LP, LB, RP, and RB copies

DB2 Automation Tool offers a simple way to construct an image copy data set name for LP, LB, RP, and RB copies.

### About this task

When you type Y in an Update DSN create spec field for LP, LB, RP and RB type backups, the following panel is displayed.

```

AUTOTOOL V4R2 ----- LP Image Copy DSN Generation ----- 2017/09/19 15:59:28
Option ==>
Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
Image Copy Local Primary Non-Threshold      DB2 Subsystem: SS01
Qualifier code      Free form literal      Show DSN  N
GDG Limit . . .    (1-255)
Current dataset name generation qualifier string:

Valid dataset name generation codes are
(* marked items are not supported in IC dynamic dataset generation.)
  1. Database          13. Month (MM)          25. Primary/Backup (P/B)
  2. Space Name        14. Day (DD)            26. ICTYPE
  3. Partition/DSNUM   15. Julian Day (DDD)     27. Utility Name
*  4. Volser           16. Hours (HH)          28. Job Name
*  5. Partition/DSNUM   17. Minutes (MM)        29. Step Name
    only when partitioned 18. Seconds (SS)       30. Utility ID
*  7. Vcatname         * 19. Timestamp         31. Listdef
  8. Subsystem ID      * 20. Random Number     32. Sequence
*  9. User ID          * 21. Unique           33. Index Space Name
 10. Time (HHMMSS)     * 22. GDG (+1)..(+n)      34. Table Space Name
 11. Date (YYYYDDD)    23. ICBACKUP (#24.#25)  35. Substring Qualifier
 12. Year (YYYY)       24. Local/Recovery    36. Use freeform literal

```

Figure 98. Image Copy DSN Generation panel

The Image Copy DSN Generation panel appears once for each standard and threshold image copy type. For threshold data sets, the panel is the same, except for the addition of the Use Standard DSN in Threshold Proc field and the ICTYPE qualifier code only allows Full and Incremental strings.

#### Qualifier code

To include a qualifier, type its number in the Qualifier code field and press Enter. The qualifier string appears in the Current dataset name generation qualifier string field. You can also type the data set name directly in the string field.

#### Free form literal

After selecting the Use Freeform literal qualifier, you can enter an eight-character literal in this field. If you want the literal to be in its own substring, make sure to begin the literal with a period.

#### Show DSN

To view the string as it will be completed, type Y in the Show DSN field.

#### GDG Limit

If you want to set a specific GDG limit for this data set, enter it here. If no GDG limit is set on this panel (GDG limit field left blank), the GDG limit set in the job profile on the Generation Options panel applies. Valid values are from 1 to 255.

#### Use Standard DSN in Threshold Proc

This field only appears for threshold data sets. If you want the threshold data set name to be the same as the standard data set, enter Y in this field. You do not need to re-enter the data set string on this panel.

#### Current dataset name generation qualifier string

This field display the qualifier string as it was input.

Commonly used qualifiers for image copy data set names are listed on the bottom half of the panel. Qualifiers marked with an asterisk are not supported when using the TEMPLATE control statement.

**Note:** If you want date and time variables in templates to be resolved at job run time rather than job build time, you must specify GMT times for image copy data set names on the DB2 Automation Tool setup panels. You can do this either from the Setup option on the main menu or by overriding the job options in the job profile. This option applies to the variables Time, Date, Year, Month, Day, Julian Day, Hours, Minutes, and Seconds.

The following describes the valid data set name qualifiers that you can use on the Image Copy DSN Generation panel:

**Database**

The database name.

**Space Name**

The table space or index name.

**Partition/DSNUM**

The partition number or data set number. When you choose this option, the Resulting DSN using Current Symbolic String window appears to prompt you to enter a valid character for the first position in the string.

**Volser** The volume serial of the data set.

**Partition/DSNUM only when partitioned**

The partition number or data set number. This qualifier is included only if the data set name is being generated for a specific partition of a partitioned space; otherwise, it is ignored. When you choose this option, the Resulting DSN using Current Symbolic String window appears to prompt you to enter a valid character for the first position in the string.

**Vcatname**

The volume catalog name.

**Subsystem ID**

The subsystem ID.

**User ID**

The TSO user ID of the job builder.

**Time (HHMMSS)**

The current time in the format shown.

**Date (YYYYDDD)**

The current date in the format shown.

**Year (YYYY)**

The year in the format shown.

**Month (MM)**

The month in the format shown.

**Day (DD)**

The day of the month in the format shown.

**Julian Day (DDD)**

The Julian day.

**Hours (HH)**

The current time in hours.

**Minutes (MM)**

The current time in minutes.

**Seconds (SS)**

The current time in seconds.

**Timestamp**

The current timestamp, in format *Dyymmdd.Thhmmss*.

**Random Number**

A random number in format *Rnnnnnnn*.

**Unique**

Unique eight characters derived from the system clock at the time of allocation. This set of characters begins with an alphabetical character and is followed by seven alphabetical or numeric characters.

**GDG (+1)..(+n)**

If you are using GDG data sets, this variable appends (+n) to the GDG base. This must be the last qualifier code you specify for the data set name.

**ICBACKUP (#24.#25)**

The image copy backup type. The format is *x.y*, where x is L for local or R for recovery and y is P for primary or B for backup.

**Local/Recovery (L/R)**

The image copy backup type; L is used for local and R for recovery.

**Primary/Backup (P/B)**

The image copy backup type; P is used for primary and B for backup.

**ICTYPE**

The image copy type; F is used for full; I for incremental; and C for a conditional incremental copy made using the Change Limit option.

**Utility Name**

The utility name.

**Job Name**

The job name.

**Step Name**

The job step name.

**Utility ID**

The utility ID, truncated to eight characters and checked for invalid data set name characters. This variable is only allowed with templates.

**Listdef**

The name of the list that is defined by using the LISTDEF. This variable is only allowed with templates and LISTDEFs.

**Sequence**

Sequence number of the list item in the list. This variable is only allowed with templates and LISTDEFs.

**Index Space Name**

The index space name.

**Table Space Name**

The table space name.

**Substring Qualifier**

Select this option to specify one of the qualifiers and customize the substring. When you press Enter, the substring parameters window is displayed.

### Use freeform literal

After selecting this qualifier, you can enter an eight-character literal in the Free Form literal field. If you want the literal to be in its own substring, make sure to begin the literal with a period.

For example, if you enter 1 (Database), 2 (Space Name), then 11 (Julian Date), the data set name appears as:

&DB..&SN..D&JDATE.

### Building a data set name for FlashCopy copies

DB2 Automation Tool offers a simple way to construct an image copy data set name for FlashCopy copies.

### About this task

When you type Y in an Update DSN create spec field for a FlashCopy copy, the following panel is displayed.

```
AUTOTOOL V4R2 ----- RI FlashCopy DSN Generation ----- 2017/09/19 11:57:34
Option ==>
Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
Rebuild Index FlashCopy      DB2 Subsystem: SS01
Qualifier code      Free form literal      Show DSN  N
Current data set name generation qualifier string:

Valid data set name generation codes are:

(* marked items are not supported in IC dynamic data set generation.)
 1. Database          13. Month (MM)          27. Utility Name
 2. Space Name        14. Day (DD)           28. Job Name
 3. Partition         15. Julian Day (DDD)    29. Step Name
* 7. Vcatname         16. Hours (HH)          30. Utility ID
 8. Subsystem ID      17. Minutes (MM)        31. Listdef
* 9. User ID          18. Seconds (SS)        32. Sequence
10. Time (HHMMSS)    * 19. Timestamp          33. Index Space Name
11. Date (YYYYDDD)   * 20. Random Number        34. Table Space Name
12. Year (YYYY)      21. Unique              35. Substring Qualifier
                                   36. Use freeform literal
                                   37. Dsnun (required)
```

Figure 99. Flash Copy DSN Generation panel

### Qualifier code

To include a qualifier, type its number in the Qualifier code field and press Enter. The qualifier string appears in the Current dataset name generation qualifier string field. You can also type the data set name directly in the string field.

### Free form literal

After selecting the Use Freeform literal qualifier, you can enter an eight-character literal in this field. If you want the literal to be in its own substring, make sure to begin the literal with a period.

### Show DSN

To view the string as it will be completed, type Y in the Show DSN field.

### Current dataset name generation qualifier string

This field display the qualifier string as it was input.

Commonly used qualifiers for FlashCopy data set names are listed on the bottom half of the panel. Qualifiers marked with an asterisk are not supported when using the TEMPLATE control statement. Refer to the help system for descriptions of the valid qualifiers.

The following describes the valid data set name qualifiers that you can use on the Image Copy DSN Generation panel:

**Database**

The database name.

**Space Name**

The table space or index name.

**Partition**

The partition number. When you choose this option, the Resulting DSN using Current Symbolic String window appears to prompt you to enter a valid character for the first position in the string.

**Vcatname**

The volume catalog name.

**Subsystem ID**

The subsystem ID.

**User ID**

The TSO user ID of the job builder.

**Time (HHMMSS)**

The current time in the format shown.

**Date (YYYYDDD)**

The current date in the format shown.

**Year (YYYY)**

The year in the format shown.

**Month (MM)**

The month in the format shown.

**Day (DD)**

The day of the month in the format shown.

**Julian Day (DDD)**

The Julian day.

**Hours (HH)**

The current time in hours.

**Minutes (MM)**

The current time in minutes.

**Seconds (SS)**

The current time in seconds.

**Timestamp**

The current timestamp, in format *Dyymmdd.Thhmmss*.

**Random Number**

A random number in format *Rnnnnnnn*.

**Unique**

Unique eight characters derived from the system clock at the time of allocation. This set of characters begins with an alphabetical character and is followed by seven alphabetical or numeric characters.

**Utility Name**

The utility name.

**Job Name**

The job name.

**Step Name**

The job step name.

**Utility ID**

The utility ID, truncated to eight characters and checked for invalid data set name characters. This variable is only allowed with templates.

**Listdef**

The name of the list that is defined by using the LISTDEF. This variable is only allowed with templates and LISTDEFs.

**Sequence**

Sequence number of the list item in the list. This variable is only allowed with templates and LISTDEFs.

**Index Space Name**

The index space name.

**Table Space Name**

The table space name.

**Substring Qualifier**

Select this option to specify one of the qualifiers and customize the substring. When you press Enter, the substring parameters window is displayed.

**Use freeform literal**

After selecting this qualifier, you can enter an eight-character literal in the Free Form literal field. If you want the literal to be in its own substring, make sure to begin the literal with a period.

**Dsnum**

(Required) The data set number. When you choose this option, the Resulting DSN using Current Symbolic String window appears to prompt you to enter a valid character for the first position in the string.

Example: if you enter 1 (Database), 2 (Space Name), then 32(Dsnum), and you choose a D for the character string, the data set name appears as follows:

&DB..&SN..D&DSNUM.

**Using the substring function**

You can use the substring qualifier function to customize a data set name.

When you choose the Substring Qualifier function to customize a qualifier substring, the window shown in the following figure is displayed:

Substring Parameters

Enter the Qualifier Code ==>

Enter Starting Position ==>

Enter Substring Length ==>

*Figure 100. Substring Parameters window*



You can choose to enter almost any of the qualifier codes and specify the string's starting position and length. For example, qualifier code 8 generates a string of "&SSID", a four-character subsystem name. However, if your site uses three-character SSIDs, the substring qualifier option can be used to specify the SSID and customize the string length, as shown in the following figure:

Substring Parameters

Enter the Qualifier Code ==> 8\_

Enter Starting Position ==> 1\_\_

Enter Substring Length ==> 3\_\_

Figure 101. Example: specifying the SSID substring length

The results are shown in the following figure:

Current dataset name generation qualifier string:  
&SSID(1,3).

Figure 102. Example: results of substring generation

## Resulting DSN using current symbolic string

Some substrings (such as time and date) require the addition of an alphanumeric or symbol in the beginning of the string.

When you select these substrings, the window shown in the following figure is displayed:

Resulting DSN using current symbolic string

Enter a Literal or Symbolic to Prefix the Invalid Dataset Node

==>

Invalid Dataset Name:

\* SS01.DATABASE.SPACENAM.2008143 \*

HAAM250E - Invalid data set node detected. First character not alphabetic or national.

Figure 103. Resulting DSN using current symbolic string window

This panel allows you to insert an alphanumeric or symbol to make the data set node name valid. When finished, press Enter.

## Viewing a sample string

You can view a sample resulting data set name using your specifications by entering Y in the Show DSN field.

## About this task

To view the string as it will be completed, type Y in the Show DSN field. When you press Enter, the sample string appears, as shown in the following figure:

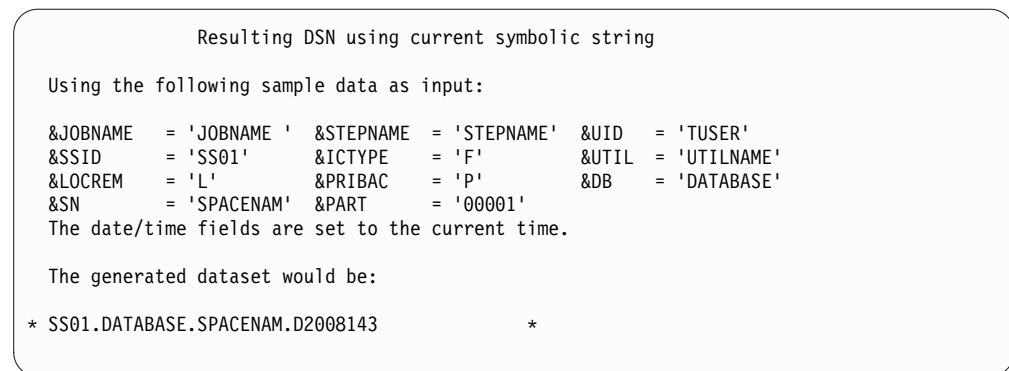


Figure 104. Viewing a sample string

Press PF3 (END) to return to the data set name generation panel.

## Specifying user skeletons

Optionally, you can create and specify your own skeletons that can be processed before or after the utility JCL.

The skeletons can be added to any copy type (DB2 image copies, copies made from DB2 Recovery Expert SLBs, ESS FlashCopy copies, or EMC Symmetrix device copies). For more information on using these fields, refer to “Using the optional skeletons” on page 274.

## Setting DB2 image copy options

In addition to specifying the image copy data set name, you must set some options for DB2 image copies.

### About this task

You can set the following options for DB2 image copies:

#### Utility ID

Enter a 1 to 16 character utility ID to be used to uniquely identify the utility to DB2. The ID must begin with a letter; the remainder can be alphanumeric or the following special characters: #, \$, @, %, !, -, . If this utility profile is included in a job profile that is built for autonomic execution, a utility ID that is specified in this field is ignored. For autonomic builds, DB2 Automation Tool generates a unique utility ID for each object by using the letter “A” followed by the autonomic action ID that is assigned to the object and utility pair (for example, “A1785”).

#### Parallel

Type Y if you want the copy utility to process objects in parallel. Type N to not process objects in parallel.

#### Number of objects

If you want to process objects in parallel, type in the number of objects that should be processed in parallel. Specify 0 to allow the copy utility to determine the optimal number of objects.

**Number of tape units**

Specify the maximum number of tape drives that the utility dynamically allocates for the list of objects to be processed in parallel. This value applies only to tape drives that are dynamically allocated through the TEMPLATE keyword. It does not apply to JCL allocated tape drives. Specify 0 to allow the utility to determine the optimal number of tape drives.

**Filter DDName**

This field is used to specify a DFSMS concurrent copy to make the full image copy. Type in a DD name for the filter data set to be used, if desired, by COPY with the CONCURRENT option. COPY uses this data set to automatically build a list of table spaces to be copied by DFSMSdds with one DFSMSdds DUMP statement. To use this DD name, you must also enter Y in the Concurrent field. In addition, you must set the Generate Templates job option to Y to use this DD name.

**Sharelevel**

Indicate the level of access applications will have during the image copy.

- Type R for reference (applications can read but not write data during the image copy).
- Type C for change (applications can read and write data during the image copy). SHRLEVEL CHANGE is not allowed for concurrent copies on table spaces with greater than 4K page sizes or for table spaces with the NOT LOGGED attribute.

**Full Image Copy**

Type Y to specify full image copies. Type N to specify incremental image copies, which only makes copies of data changed since the last copy. N is not valid for indexes and in other situations, such as when no full image copies exist for the object being copied. In that case, the COPY utility will automatically take a full image copy. If you want to use the Change Limit options, specify N in this field.

**Check Page**

Type Y in this field if you want each page in the table space or index checked for validity during the COPY. If an error is found, a message is issued describing the type of error.

**Concurrent**

Type Y to use DFSMS concurrent copy to make the full image copy.

**Change Limit: First Percent Value**

Specify the percentage of changed pages in the object that, when reached, indicates a full image copy should be taken. Type in the percentage up to one decimal point, if desired (for example, 80.5). Enter 0 to create a full image copy regardless of changed pages. If this is the only value specified, the copy utility checks the percentage of changed pages; if it is:

- greater than or equal to this value, then a full image copy is taken
- if it is less than this value, then an incremental image copy is taken

Refer to the Change Limit: Second Percent Value description for information about using two change limit values. The Full Image Copy field must be set to N to use this option.

**Change Limit: Second Percent Value**

Specify a second percentage of changed pages in the object that, when reached, indicates a full image copy should be taken. Type in the

percentage up to one decimal point, if desired (for example, 80.5) The copy utility checks the percentage of changed pages; if it is:

- greater than the lowest value specified but less than the highest value, then an incremental image copy is taken
- greater than or equal to the highest value, then a full image copy is taken
- less than or equal to the lowest value, then no image copy is taken.

The Full Image Copy field must be set to N to use this option.

#### **Change Limit: Report only**

Type in Y to get a report only. No image copies are taken. The report lists recommendations for image copies based on the Change Limit values.

#### **Max Tape Volumes/DASD Unit Ct**

Type in the maximum number of tape volumes or DASD units that DB2 Automation Tool can use for sequential data sets in the utility JCL. When specifying a tape device for the copy data sets, this number is placed in the UNIT parameter to assign the number of devices. This value is used for the following DDs: SYSREC SYSUT1 SORTOUT SORTWK\* or DATAWK\* You can specify a value from 1 to 255. Because z/OS limits DASD data sets to 59 volumes, the largest value that will be assigned to the UNIT parameter for DASD data sets in the built JCL is 59. For tape data sets, you can specify up to 255 volumes.

#### **Stack Copy Control Cards**

Type Y in this field to stack the control statements. Selected objects are included under a single COPY control statement. Type N to have each object listed in its own COPY control statement.

**Scope** (DB2 V9 and above) Specify the scope of the image copy for the objects. A(II) indicates that all objects are to be copied. P(ending) indicates that only those objects in COPY-pending (COPY) or informational COPY-pending (ICOPY) status will be copied. If the object profile specified to process all partitions, and one or more partitions is in one of those states, a copy will be taken of the entire object. A(II) is the default.

#### **Group Partitions by**

This field controls how partitions of a partitioned object are processed.

Type S to have all partitions of a partitioned object grouped together in the same step within the same job. Objects will not be split across multiple jobs even though this may exceed other job breakdown values. Type J to have all partitions of a partitioned object grouped together in the same job, but not necessarily in the same step within that job. Enter N when grouping of partitioned objects is not required.

The Group Partitions by field affects the Job Breakdown field in the job profile as follows:

- Group Partitions by set to J: When the objects per step is 0, all related partitioned objects are grouped into one (the same) step. In addition, if object pers is 0 and objects per Job is greater than 0, related partitions are split across multiple jobs. When objects per job is 0, all related partitions are grouped into one (the same) job. In addition, if objects per job is 0 and objects per step is greater than 0, related partitions are split across multiple steps, but will be in the same job. When both objects per job and objects per step are 0, all related partitions are grouped into the same step in the same job.

**Note:** If you require that partitions of the same table space be generated into the same batch job, and have set the utility Group Partitions by to J, it is recommended that the job breakdown option objects per job be set to 0.

- Group Partitions by set to S: All related partitioned objects are grouped together into the same step in the same job. Objects per job and objects per step values are ignored.

### Optional Skeletons

These fields can be used to customize the JCL generated by DB2 Automation Tool. You can add your own skeletons that can be processed before or after the utility JCL. For more information on using these fields, refer to “Using the optional skeletons” on page 274.

## Setting IBM ESS copy options

In addition to specifying the image copy data set name, you must set some options for image copies of objects on ESS devices.

DB2 Automation Tool can build utility JCL for image copies of objects on IBM ESS devices. DB2 Automation Tool supports IBM Enterprise Storage Server devices with Advanced Copy Services. The DFSSMS system data mover (SDM) API (macro ANTRQST) must be at level 5 or above.

This functionality uses IBM FlashCopy to make rapid image copies of data sets at the data set level without interruption. DB2 Automation Tool enables these copies to be used by DB2 in a RECOVER utility as follows:

- A copy of the table space data set is created on a target volume with a new high level VCAT. The new high level VCAT and target volume are set on the IBM ESS Backup Options panel. Depending on whether your site is non-SMS or SMS managed, additional settings may be required.
- An image copy is then taken of the copied data set with new high level VCAT.
- A record for the image copy is registered in SYSIBM.SYSCOPY and can be used for recovery.

The ESS copy options are set by selecting the ESS backup type on the Image Copy options panel, then entering Y in the Alter EMC Symm/IBM ESS Optns field. The IBM ESS Backup Options panel is shown in the following figure:

```

AUTOTOOL V4R2 ----- IBM ESS Backup Options ----- 2017/09/19 16:03:46
Option ==>

Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                                DB2 Subsystem: SS01

Wait for volume avail or Stop    W (W - Wait, S - Stop)
Continue or Stop on Errors . . . C (C - Continue, S - Stop)
New High Level VCAT . . . . . (1-8 characters)
Number of Parallel subtasks . . 1 (1-99)
User Catalog . . . . .
Flash Dataset Options                                (Optional)
  SMS Storage Class . . . . . 1-8(characters)
  SMS Data Class . . . . . 1-8(characters)
  SMS Management Class . . . . 1-8(characters)
Volume Options
  Volume list (may be wildcarded) 1-6 volumes
  ==>      ==>      ==>      ==>      ==>      ==>

```

Figure 105. IBM ESS Backup Options panel

In addition to setting the image copy data set name specifications, you also can set the following options for ESS copies:

**Wait for volume avail or Stop**

This field allows you to specify what happens if the volume containing the data set to be backed up is not available. Type W to allow the job to wait for the volume to become available before continuing. Type S to stop the job and end with a user abend code of 0400 if the volume is not available.

**Continue or Stop on Errors**

Specify what happens during processing in case errors are encountered. Type C to continue processing, even if errors are found. Type S to stop job processing upon abend.

**New High Level VCAT**

(Required) Enter a new high level qualifier for the copied data sets.

**Number of Parallel subtasks**

Indicate how many parallel subtasks can be initiated during the build process.

**User Catalog**

This field is optional and is used to specify a user catalog in which to catalog the image copy data sets. All entries will be deleted from this catalog before processing and upon job completion. This catalog will be locked for exclusive use by DB2 Automation Tool during processing. Enter the fully qualified data set name in this field.

**Flash Dataset Options**

If SMS is used at your site, specify the SMS storage, data, or management classes for the copied data sets.

**Volume Options**

If your site does not use SMS, specify a volume or list of volumes that can be used for the copied data sets in this field.

## Setting EMC copy options

In addition to specifying the image copy data set name, you must set some options for EMC image copies.

### About this task

The EMC copy options are set by selecting the Symmetrix backup type on the Image Copy options panel, then entering Y in the Alter EMC Symm/IBM ESS Optns field. The EMC Backup Options panel is shown the following figure:

```

AUTOTOOL V4R2 ----- EMC Backup Options ----- 2017/09/19 16:07:10
Option ==>
Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                                DB2 Subsystem: SS01
Wait for volume avail or Stop    W      (W - Wait, S - Stop)
Continue or Stop on Errors . . . C      (C - Continue, S - Stop)
New High Level VCAT . . . . .      (1-8 characters)
Number of Parallel subtasks . . 1      (1-99)
Snap Dataset Options      Optional
  SMS Storage Class . . . . .      (1-8 characters)
  SMS Data Class . . . . .      (1-8 characters)
  SMS Management Class . . . . .      (1-8 characters)

Snap Dataset/Volume Destination Volumes      Optional for snap dataset
Volume list (may be wildcarded)      1-6 volumes
==>      ==>      ==>      ==>      ==>      ==>

```

Figure 106. EMC Backup Options panel

In addition to setting the image copy data set name specifications, you also can set the following options for EMC copies:

#### Wait for volume avail or Stop

This field allows you to specify what happens if the volume containing the data sets to be copied is not available. Type W to specify that the job will wait for the volume to become available before continuing. Type S to stop the job and end with a user abend code of 0400 if the volume is not available.

#### Continue or Stop on Errors

Specify how the job is to proceed in case of errors. Type C to continue processing even if errors are encountered. Type S to stop the job upon abend.

#### New High Level VCAT

(Required) Enter a new high level qualifier to be assigned to the copied data sets.

#### Number of Parallel subtasks

Specify how many parallel subtasks can be initiated during the build process. Valid values are 1 through 99.

#### Snap Dataset Options

If SMS is used at your site, these fields allow you to specify SMS storage, data, or management classes for the copied data sets.

#### Snap Dataset/Volume Destination Volumes

When using Snap Dataset, this field lets you specify a volume or list of volumes that can be used for the data set copies produced by DB2 Automation Tool.

---

## Options for image copies from DB2 Recovery Expert system level backups

DB2 Automation Tool can create image copies from system level backups taken by DB2 Recovery Expert. To use this feature, you must have DB2 Recovery Expert V2.2 with APAR PM06332 or higher installed on the subsystem.

This image copy utility allows you to select a current or specific DB2 Recovery Expert system level backup and allows you to set options for the image copy.

There are several ways for DB2 Automation Tool to extract an image copy from a DB2 Recovery Expert SLB:

- Select a specific DB2 Recovery Expert system level backup from the utility profile
- Locate the current system level backup at DB2 Automation Tool build time for each object.
- DB2 Automation Tool can locate the system level backup at utility execution time.

Many of the DB2 Automation Tool features, such as user skeletons, object wildcarding, exception processing, and image copy thresholds can be used when making image copies from DB2 Recovery Expert SLBs.

**Attention:**

- Template and LISTDEFs are not supported for this feature and will not be generated regardless of the job options settings in the job profile.
- The system level backups taken with DB2 Recovery Expert do not allow image copies to be made at the all partition level (the DSNUM ALL keyword). Objects in DB2 Automation Tool profiles that specify PART ALL will be exploded into individual partitions and the copies taken at the individual partition level.
- If these image copies will be used for recovery, the recovery must be done at the partition level.

## Setting options for copies made from DB2 Recovery Expert SLBs

In addition to specifying the image copy data set name, you must set some options for image copies from Recovery Expert SLBs.

### About this task

When you specify to update the copy utility options for this utility, the panel shown in the following figure is displayed:

```

AUTOTOOL V4R2 ----- RE Image Copy options ----- 2017/09/20 13:53:51
Option ==>
  Creator: TWUSRA      Name: UTILITY PROFILE      User: TWUSRA
                                DB2 Subsystem: SS02

  Use System Level Backup (SLB) ==> B
    (R - Current Runtime SLB, B - Current Buildtime SLB, S - Select SLB)

  RE Profile creator
  RE Profile Name
  Generation      Date          Time

  Exception Rule . . . . . A (A - Accepted, R - Rejected, B - Both)
  Alter Image Copy DSN specs . . Y (Y - Yes, N - No)
  Number of tasks . . . . . 2 (1-99)
  Work Volumes
  Work Storage Class . . . . .
  Optional Skeletons      -- BEFORE -- -- AFTER --
  JCL Skeletal . . . . .      . .      (8 Character Name)
  Control Cards Skeletal . . . . .      . .      (8 Character Name)
  Step End Skeletal . . . . .      . .      (8 Character Name)

```

Figure 107. RE Image Copy options panel

The following describes the options you can set for this utility:



### Use System Level Backup (SLB)

Specify one of the following ways to use an SLB to make an image copy:

- R: Enter R to allow DB2 Automation Tool locate the system level backup at utility execution (run) time.
- B: Enter B to allow DB2 Automation Tool to find the current system level backup at build time. For each triggered object, a DB2 Recovery Expert interface will be called to find the current system level backup. If no system level backup is found, a warning message will be issued during the build process.
- S: Enter S to select a specific DB2 Recovery Expert system level backup. When you press Enter, the SLB Selection panel is displayed. Verification will be performed during the DB2 Automation Tool build to ensure all triggered objects are included in the selected system level backup. If an object is not found in the specified system level backup, a build warning will be issued.

### RE Profile creator

#### RE Profile Name

#### Generation

#### Date

**Time** These fields are read only. When a specific SLB is selected from DB2 Recovery Expert, these fields will be populated with information about the SLB. The DB2 Recovery Expert profile name and creator are included, as well as the SLB generation number, creation date and time. These fields are blank if one of the other two SLB types are selected.

### Exception Rule

This field specifies how the utility is to be run on objects processed through exception processing. Type A in this field to have the utility act on all objects that are accepted (included) as a result of exception processing. Type R to have the utility act on objects that are rejected (excluded) as a result of exception processing. Type B to have the utility act on all objects, regardless of exception processing results.

### Alter Image Copy DSN specs

Type Y in this field to set or change the image copy specifications. When you press Enter, the RE Image Copy Options panel appears.

### Number of tasks

Specify how many parallel subtasks can be initiated during the build process.

### Work Volumes

Specify the work volumes used during the creation of the image copies. At least one must be specified, but up to six volumes can be specified.

### Work Storage Class

If the work volume(s) are SMS-managed, enter the storage class in this field.

### Optional Skeletons

These fields can be used to customize the JCL generated by DB2 Automation Tool. You can add your own skeletons that can be processed before or after the utility JCL. For more information on using these fields, refer to "Using the optional skeletons" on page 274.

## Selecting a DB2 Recovery Expert SLB

You can use the DB2 Automation Tool interface to select a DB2 Recovery Expert system level backup from which to make copies.

### About this task

On the RE Image Copy Options panel, type S in the Use System Level Backup (SLB) field. When you press Enter, the panel shown in the following figure is displayed:

```
AUTOTOOL V4R2 ----- SLB Selection ----- 2017/09/20 13:55:12
Option ==> Scroll ==> PAGE
Line Commands: S - Select
-----
DB2 Subsystem: SS02 Row 1 of 2 >
-----
CMD Date Time GEN Profile Creator
2017/09/20 13:37:29 03 SS02_DB2 PDUSER
2017/09/19 13:49:22 02 SS02_DB2 PDUSER
```

Figure 108. SLB Selection

This panel allows you to select a specific DB2 Recovery Expert SLB from which the image copy is to be made. To select a backup, enter S in the Cmd area next to the backup.

The fields on this panel provide information about the system level backup and are described in the following section:

#### DB2 subsystem

The DB2 subsystem ID.

**Date** The date the SLB was taken.

**Time** The time the SLB was taken.

**GEN** The generation number of the SLB.

#### Profile

The DB2 Recovery Expert profile name.

#### Creator

The DB2 Recovery Expert creator name.

#### RBA/LRSN

The RBA or LSRN of the SLB.

When you have selected a backup, press Enter. The RE Image Copy Options panel is displayed, with the information for the selected backup transferred to the panel, as shown in the following figure:

Figure 109. Selected backup information on the RE Image Copy options panel

```

AUTOTOOL V4R2 ----- RE LP Image Copy Options ----- 2017/09/19 16:16:23
Option ==>
  Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                                      DB2 Subsystem: SS01

Image Copy options for Image Copy Local Primary
Use Threshold Unit if allocated space exceeds x Meg/Giga/Trks/Cyls  Optional
                                      Quantity M|G|T|C
Std Unit      Threshold Unit
Update DSN create spec . . Y . . . . . N      (Yes/No)
Unit Type . . . . .      . .      (CART - DISK - etc.)
Catalog Image Copy . . . . Y . . . . . Y      (Yes/No)
Register in SYSCOPY . . . Y . . . . . Y      (Yes/No)
Data Class . . . . .      . .      (8 character class)
Storage Class . . . . .      . .      (8 character class)
Management Class . . . . .      . .      (8 character class)
Expiration date *or* . . . . .      . .      (YYYYDD - YYDD)
Retention period . . . . .      . .      (4 digit number)
Tape specific parameters Only needed if Unit Type is a Tape device:
  Stack copies on tape . Y . . . . . Y      (Yes/No)
  Tape stack limit . . . 5 . . . . . 5      (1 - 999)
  Maximum tapes . . . . . 5 . . . . . 5      (1 - 256)

```

Figure 111. RE Image Copy Options panel

This panel allows you to set options for the image copy data set and for the threshold data set (if specified). Specify the data set options for the Image Copy Options panel as follows:

#### Use Threshold Unit if allocated space exceeds x Meg/Giga/Trks/Cyls

This field sets the limit on the space allocation for the standard (default) unit. You can specify up to 6 digits in the quantity field and specify the value in megabytes, gigabytes, tracks, or cylinders. When the job is built, the allocation calculations for the image copies are checked against this threshold value; if the limit is exceeded, the threshold unit device specifications are used to generate the DD instead of the standard unit. If this field is left blank, image copies will be created using the definitions in the Std Unit column. Thresholds cannot be specified for SLBs that will be located at job run time.

The data set information fields following this field appear in two columns: Std Unit and Threshold Unit.

**Note:** Thresholds cannot be specified for SLBs that will be located at job run time. The fields in these columns are the same and are described as follows:

#### Update DSN create spec

Type Y in this field to set or change the image copy data set specifications.

#### Unit Type

Type in a valid UNIT where the image copy data set will be written. If you enter a value that is not found in your site's eligible device table (EDT), the Device Type window is displayed (see "User-designated unit types" on page 172).

#### Catalog Image Copy

Enter Y in this field to specify that the image copy should be cataloged after it is made.

#### Register in SYSCOPY

Enter Y in this field to have the image copy registered in SYSIBM.SYSCOPY after it is made.

**Data Class**

If your site uses SMS to manage data sets, type in the SMS Data Class.

**Storage Class**

If your site uses SMS to manage data sets, type in the SMS Storage Class.

**Management Class**

If your site uses SMS to manage data sets, type in the SMS Management Class.

**Expiration date \*or\* Retention period**

Enter either the tape expiration date in YYYYDDD format, or the tape retention period in number of days.

The following fields are DB2 Recovery Expert settings; they are required for tape and optional for DASD. They are used when DB2 Recovery Expert is invoked to create the image copies.

**Stack copies on tape**

Enter Y to allow image copy data sets to be stacked on tape.

**Note:** If you want to stack multiple objects onto tape, DB2 Recovery Expert requires that the job be in a single step. Ensure that the job breakdown options are set to allow more than one object in each step.

**Tape stack limit**

If stacking image copies, enter the number of image copies that you want stacked on one tape before dismounting the tape.

**Maximum tapes**

The maximum number of tapes for each image copy.

**User-designated unit types**

You may need to specify a device name that is not in your site's eligible device table (EDT). The Device Type panel allows you to keep the device name and specify the device type.

```
AUTOTOOL V4R2 ----- Device Type ----- 2017/09/20 14:00:02

Device entered TEST      not found in EDT (Eligible Device Table)

To keep this device name indicate whether it is a tape or DASD
device.

Device type    (T - Tape, D - DASD)
```

*Figure 112. Device Type panel*

The value entered for unit type is accepted as the device name. In the Device type field, specify T for tape or D for DASD device, and press Enter. The appropriate panel for the device type (tape or DASD) that you specified is displayed.

To cancel and correct the device name, press PF3 from the Device Type panel without specifying the device type.

**Building an image copy data set name**

DB2 Automation Tool offers a simple way to construct an image copy data set name.

## About this task

When you type Y in an Update DSN create spec field, the panel shown in the following figure is displayed:

```
AUTOTOOL V4R2 ----- RE LP Image Copy DSN Generation ----- 2017/09/19 16:18:51
Option ==>
  Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                        DB2 Subsystem: SS01

  Image Copy Local Primary Non-Threshold
  Qualifier code      Free form literal      Show DSN  N
  GDG Limit           (1-255)
  Current dataset name generation qualifier string:

Valid dataset name generation codes are:
  1. Database          13. Month (MM)          25. Primary/Backup (P/B)
  2. Space Name        14. Day (DD)            28. Job Name
  3. Partition         15. Julian Day (DDD)     29. Step Name
  4. Volser            16. Hours (HH)          33. Index Space Name
  7. Vcatname          17. Minutes (MM)         34. Table Space Name
  8. Subsystem ID      18. Seconds (SS)         35. Substring Qualifier
  9. User ID           19. Timestamp           36. Use freeform literal
 10. Time (HHMMSS)     20. Random Number
 11. Date (YYYYDDD)    22. GDG (+1)..(+n)
 12. Year (YYYY)       24. Local/Remote (L/R)
```

Figure 113. RE Image Copy DSN Generation panel

The Image Copy DSN Generation panel appears once for each standard and threshold image copy type. For threshold data sets, the panel is the same, except for the addition of the Use Standard DSN in Threshold Proc field.

### Qualifier code

To include a qualifier, type its number in the Qualifier code field and press Enter. The qualifier string appears in the Current dataset name generation qualifier string field. You can also type the data set name directly in the string field.

### Free form literal

After selecting the Use Freeform literal qualifier, you can enter an eight-character literal in this field. If you want the literal to be in its own substring, make sure to begin the literal with a period.

### Show DSN

To view the string as it will be completed, type Y in the Show DSN field.

### GDG Limit

If you want to set a specific GDG limit for this data set, enter it here. If no GDG limit is set on this panel (GDG limit field left blank), the GDG limit set in the job profile on the Generation Options panel applies. Valid values are from 1 to 255.

### Use Standard DSN in Threshold Proc

This field only appears for threshold data sets. If you want the threshold data set name to be the same as the standard data set, enter Y in this field. You do not need to re-enter the data set string on this panel.

### Current dataset name generation qualifier string

This field displays the qualifier string as it was input.

Commonly used qualifiers for image copy data set names are listed on the bottom half of the panel.

The following describes the valid data set name qualifiers that you can use on the RE Image Copy DSN Generation panel:

**Database**

The database name.

**Space Name**

The table space or index name.

**Partition**

The partition number. When you choose this option, the Resulting DSN using Current Symbolic String window appears to prompt you to enter a valid character for the first position in the string.

**Volser** The volume serial of the data set.

**Vcatname**

The volume catalog name.

**Subsystem ID**

The subsystem ID.

**User ID**

The TSO user ID of the job builder.

**Time (HHMMSS)**

The current time in the format shown.

**Date (YYYYDDD)**

The current date in the format shown.

**Year (YYYY)**

The year in the format shown.

**Month (MM)**

The month in the format shown.

**Day (DD)**

The day of the month in the format shown.

**Julian Day (DDD)**

The Julian day.

**Hours (HH)**

The current time in hours.

**Minutes (MM)**

The current time in minutes.

**Seconds (SS)**

The current time in seconds.

**Timestamp**

The current timestamp, in format *Dyymmdd.Thhmmss*.

**Random Number**

A random number in format *Rnnnnnnn*.

**GDG (+1)..(+n)**

If you are using GDG data sets, this variable appends (+n) to the GDG base. This must be the last qualifier code you specify for the data set name.

**Local/Recovery (L/R)**

The image copy backup type; L is used for local and R for recovery.

**Primary/Backup (P/B)**

The image copy backup type; P is used for primary and B for backup.

**Job Name**

The job name.

**Step Name**

The job step name.

**Index Space Name**

The index space name.

**Table Space Name**

The table space name.

**Substring Qualifier**

Select this option to specify one of the qualifiers and customize the substring. When you press Enter, the substring parameters window is displayed.

**Use freeform literal**

After selecting this qualifier, you can enter an eight-character literal in the Free Form literal field. If you want the literal to be in its own substring, make sure to begin the literal with a period.


For example, if you enter 1 (Database), 2 (Space Name), then 20 (Random Number), the data set name appears as:

&DB..&SN..&RANDOM#.

**Using the substring function**

You can use the substring qualifier function to customize a data set name.

When you choose the Substring Qualifier function to customize a qualifier substring, the window shown in the following figure is displayed:



Substring Parameters

Enter the Qualifier Code ==>

Enter Starting Position ==>

Enter Substring Length ==>

*Figure 114. Substring Parameters window*

You can choose to enter almost any of the qualifier codes and specify the string's starting position and length. For example, qualifier code 8 generates a string of "&SSID", a four-character subsystem name. However, if your site uses three-character SSIDs, the substring qualifier option can be used to specify the SSID and customize the string length, as shown in the following figure:



Substring Parameters

Enter the Qualifier Code ==> 8\_

Enter Starting Position ==> 1\_

Enter Substring Length ==> 3\_

*Figure 115. Example: specifying the SSID substring length*



The results are shown in the following figure:

```
Current dataset name generation qualifier string:  
&SSID(1,3).
```

Figure 116. Example: results of substring generation

### Resulting DSN using current symbolic string

Some substrings (such as time and date) require the addition of an alphanumeric or symbol in the beginning of the string.

When you select these substrings, the window shown in the following figure is displayed:

Resulting DSN using current symbolic string

Enter a Literal or Symbolic to Prefix the Invalid Dataset Node

==>

Invalid Dataset Name:

\* SS01.DATABASE.SPACENAM.2008143 \*

-----

HAAM250E - Invalid data set node detected. First character not alphabetic  
or national.

-----

Figure 117. Resulting DSN using current symbolic string window

This panel allows you to insert an alphanumeric or symbol to make the data set node name valid. When finished, press Enter.

### Viewing a sample string

You can view a sample resulting data set name using your specifications by entering Y in the Show DSN field.

### About this task

To view the string as it will be completed, type Y in the Show DSN field. When you press Enter, the sample string appears, as shown in the following figure:

```

Resulting DSN using current symbolic string

Using the following sample data as input:

&JOBNAME   = 'JOBNAME '  &STEPNAME = 'STEPNAME'  &UID   = 'TUSER'
&SSID      = 'E81B'      &PRIBAC  = 'P'          &DB    = 'DATABASE'
&LOCREM    = 'L'         &SN       = 'SPACENAM' &PART   = '00001'
The date/time fields are set to the current time.

The generated dataset would be:

* DATABASE.SPACENAM.R721880          *

Press ENTER or PF3 to continue

```

Figure 118. Viewing a sample string

Press PF3 (END) to return to the RE Image Copy DSN Generation panel.

## Specifying user skeletons

Optionally, you can create and specify your own skeletons that can be processed before or after the utility JCL.

The skeletons can be added to any copy type (DB2 image copies, copies made from DB2 Recovery Expert SLBs, ESS FlashCopy copies, or EMC Symmetrix device copies). For more information on using these fields, refer to “Using the optional skeletons” on page 274.

## COPYTOCOPY options

The COPYTOCOPY utility makes image copies from an image copy that was taken by the COPY utility.

This includes inline copies made by REORG or LOAD utility. Copy options must be set when including the COPYTOCOPY utility. Some of the COPY options you can set are the source of the copy, the new image copy data set names, and the maximum number of tape volumes.

When you specify to set COPYTOCOPY options, the panel shown in the following figure is displayed:

```

AUTOTOOL V4R2 ----- Copy to Copy options ----- 2017/09/19 16:34:37
Option  ==>

Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
Exception Rule . . . . . A      DB2 Subsystem: SS01
                                   (A - Accepted,
                                   R - Rejected, B - Both)
Utility ID . . . . .      (16 characters)
Alter Image Copy DSN specs . . Y      (Yes/No)
Copy to copy source . . . . . C      (C - last Copy,
                                   F - Full, I - Incr)
Max Tape Volume/DASD Unit Cnt 5      (1-255 volumes)

Optional Skeletons      -BEFORE-      -AFTER-
JCL Skeletal . . . . .      . .      8 (Character Name)
Control Cards Skeletal . . . .      . .      8 (Character Name)
Step End Skeletal . . . . .      . .      8 (Character Name)

```

Figure 119. Copy to Copy options panel

The following describes the options you can set for the COPYTOCOPY utility:

### Exception Rule

Type A in this field to have the utility act on all objects that are accepted (included) as a result of exception processing. Type R to have the utility act on objects that are rejected (excluded) as a result of exception processing. Type B to have the utility act on all objects, regardless of exception processing results.

### Utility ID

Enter a 1 to 16 character utility ID to be used to uniquely identify the utility to DB2. The ID must begin with a letter; the remainder can be alphanumeric or the following special characters: #, \$, @, €, !, -, . If this utility profile is included in a job profile that is built for autonomic execution, a utility ID that is specified in this field is ignored. For autonomic builds, DB2 Automation Tool generates a unique utility ID for each object by using the letter "A" followed by the autonomic action ID that is assigned to the object and utility pair (for example, "A1785").

### Alter Image Copy DSN specs

Type Y in this field to set or change the image copy specifications. When you press Enter, the Copy to Copy Image Copy Options panel appears. You can select up to three copies to be made at a time. Refer to "Setting image copy options for LP, LB, RP, and RB copies" on page 170 for information on setting data set options.

### Copy to copy source

Specify the source for the input to the COPYTOCOPY utility. C - Use the most recent copy that was taken for the object, whether full or incremental image copy. F - Use the last full image copy that was taken for the object. I - Use the last incremental image copy that was taken for the object.

### Max Tape Volume/DASD Unit Ct

Type in the maximum number of tape volumes or DASD units that DB2 Automation Tool can use for sequential data sets in the utility JCL. When specifying a tape device for the copy data sets, this number is placed in the UNIT parameter to assign the number of devices. This value is used for the following DDs: SYSREC SYSUT1 SORTOUT SORTWK\* or DATAWK\*. You can specify a value from 1 to 255. Because z/OS limits DASD data sets to 59 volumes, the largest value that will be assigned to the UNIT parameter for DASD data sets in the built JCL is 59. For tape data sets, you can specify up to 255 volumes.

### Optional Skeletons

These fields can be used to customize the JCL generated by DB2 Automation Tool. You can add your own skeletons that can be processed before or after the utility JCL. For more information on using these fields, refer to "Using the optional skeletons" on page 274.

---

## RUNSTATS options

RUNSTATS gathers statistics about the data in table spaces and indexes and records the statistics in the DB2 catalog.

RUNSTATS statistics help DB2 determine access paths at bind time.

Some of the options that can be set when specifying the RUNSTATS utility include:

- Whether you want RUNSTATS to update the catalog
- Application share level
- Whether you want to generate a report

**Note:** You can use object profiles to set column-level RUNSTATS statistics for indexes or tables. Using the column-level statistics settings will override the settings in the RUNSTATS utility profile. Refer to the topic “Specifying object-specific utility options” on page 126 for information about this feature.

When you specify to set RUNSTATS options, the panel shown in the following figure is displayed:

```

AUTOTOOL V4R2 ----- Runstats Options ----- 2017/09/19 16:36:21
Option ==> Scroll ==> CSR
Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                                      DB2 Subsystem: SS01
                                      More:      +
Exception Rule . . . . . A (A - Accepted, R - Rejected, B - Both)
Utility ID . . . . .      (16 characters)
Sharelevel . . . . . R (R - Reference, C - Change)
Report . . . . . Y (Yes/No)
Update Catalog Tables . . N (A - All, C - aCesspath, S - Space, N - None)
Update History Tables . . N (A - All, C - aCesspath, S - Space, N - None)
Reset Accesspath . . . . N (Yes/No)
History Accesspath . . . N (Yes/No)
Force Rollup . . . . . (blank, Y - Yes, N - No)
Table All . . . . . Y (Yes/No)
Sample . . . . . 25 (Percent)
TableSample . . . . . (Auto, 0.01 - 100.00)
Repeatable . . . . . (Number)
Index . . . . . A (A - All, N - No, P - Part)
Keycard . . . . . N (Yes/No)
Update Statistics . . . N (Yes/No)
Save Stats in Repository N (Yes/No)

```

Figure 120. Runstats Options panel

The following describes the options you can set for the RUNSTATS utility:

### Exception Rule

Type A in this field to have the utility act on all objects that are accepted (included) as a result of exception processing. Type R to have the utility act on objects that are rejected (excluded) as a result of exception processing. Type B to have the utility act on all objects, regardless of exception processing results.

### Utility ID

Enter a 1 to 16 character utility ID to be used to uniquely identify the utility to DB2. The ID must begin with a letter; the remainder can be alphanumeric or the following special characters: #, \$, @, %, !, -, . If this utility profile is included in a job profile that is built for autonomic execution, a utility ID that is specified in this field is ignored. For autonomic builds, DB2 Automation Tool generates a unique utility ID for each object by using the letter “A” followed by the autonomic action ID that is assigned to the object and utility pair (for example, “A1785”).

### Sharelevel

Indicate the level of access applications will have during RUNSTATs.

- Type R for reference (applications can read but not write data during the utility).
- Type C for change (applications can read and write data during the utility). With SHRLEVEL CHANGE, uncommitted data can be collected into statistical summaries.

### Report

Type Y to have DB2 generate a set of messages to SYSPRINT to report the

collected statistics. REPORT YES always generates a report of SPACE and ACCESSPATH statistics, and may report other statistics depending on the option combinations specified. Type N to suppress messages.

### **Update Catalog Tables**

Indicate whether you want DB2 to update the catalog with statistics after RUNSTATS.

- Type A to update all collected statistics in the catalog.
- Type C to update only catalog table columns that provide statistics used for access path selection.
- Type S to update only the catalog table columns that provide statistics to help assess the status of a particular table space or index.
- Type N to not update catalog tables.

### **Update History Tables**

If you specify to update statistics, you can also specify to record catalog table inserts or updates in the catalog history tables. What you specify in this field depends on what you specified for Update. Consult the DB2 Utility Guide and Reference for your version of DB2 for information about using this option.

### **Reset Accesspath**

(DB2 Version 11 and later) Type Y to reset the access path statistics for all tables in a table space and their respective indexes. RESET ACCESSPATH cannot be performed on LOB table spaces. Once RESET ACCESSPATH is complete, the statistics cannot be rolled back to previous values. If there is no statistics history, then there will be no record of the old statistics and no way to restore them, even if HISTORY ACCESSPATH is specified. When Y is specified, no statistics are collected. Only the catalog statistics are reset; the real-time statistics and the SPACE catalog statistics for an object will not be reset.

Statistics are deleted from the following tables (as applicable):

- SYSIBM.SYSTABSTATS
- SYSIBM.SYSCOLSTATS
- SYSIBM.SYSINDEXSTATS
- SYSIBM.SYSCOLDIST
- SYSIBM.SYSCOLDISTSTATS
- SYSIBM.SYSKEYTARGETSTATS
- SYSIBM.SYSKEYTGTDIST
- SYSIBM.SYSKEYTGTDISTSTATS

### **History Accesspath**

(DB2 Version 11 and above) Type Y to insert a history row in the SYSTABLES\_HIST catalog table for each table for which the access path statistics are reset. This will also insert a history row in the SYSINDEXES\_HIST catalog table for each index for which the access path is reset. You can only specify Y in this field when Reset Accesspath is also set to Y.

### **Force Rollup**

Leave a blank in this field (default) to indicate that DB2 is to use the STATROLL ZPARM entry. When this field is blank and the STATROLL ZPARM entry does not exist, FORCEROLLUP NO is generated. Type Y in

| this field to force aggregation or rollup of statistics when RUNSTATS is  
| executed and some parts are empty. Type N to specify aggregation only if  
| data is available for all parts.

#### **Table All**

Type Y in this field to specify TABLE (ALL) syntax. If you use this option, you can enter a value in the Sample field to specify the number of rows to be sampled during RUNSTATS.

**Note:** If Table All (Y) is specified and object-specific utility statistics are specified in the object profile, the Table All (Y) option is ignored.

#### **Sample**

Type the percentage of rows to sample when collecting non-indexed column statistics. Any value from 1 through 100 can be specified. This option is not allowed for LOB table spaces.

#### **TableSample**

(DB2 10 and later) Specify how statistics on a sample of data pages from the table will be collected. Unless the optional REPEATABLE clause is specified, each execution will result in different sample of table. This option is only valid on non-LOB, single-table table spaces. When AUTO is specified, RUNSTATS determines the sampling rate based on the size of the table. A value in the range of .01 - 100.00 represents a sampling percentage.

#### **Repeatable**

(DB2 10 and later) If you want repeated executions of RUNSTATS to return the same sample, enter a positive integer that represents a seed value in determining sampling.

#### **Index All**

Type Y in this field to specify INDEX (ALL) syntax. If you use this option, you can enter values in the Keycard, Numcols, and Count fields to specify additional criteria for collecting statistics on indexes.

#### **Keycard**

Type Y in this field if you want to collect all of the distinct values in all of the 1 to n key column combinations for the object.

#### **Update Statistics**

Type Y in this field to create or update the frequent value statistics and/or histogram statistics definitions. When you press Enter, the Runstats Utility Column statistics panel is displayed.

#### **Save Stats in Repository**

Indicate if you want to save statistics in the DB2 Automation Tool repository.

- Type Y to include the stats in the DB2 Automation Tool repository. If you want to update the DB2 Automation Tool repository, you must also set the Report field to Y.
- Type N to not update the DB2 Automation Tool repository.

#### **Profile**

(DB2 10 NFM and later) This option is used to manage (create, delete, update, or use) one or more tables' statistics profiles. These profiles define the set of statistics that are to be collected when running AUTOSTATS. Note that these are not DB2 Automation Tool-generated profiles, but DB2 RUNSTATS statistics profiles. The following are valid values:

- blank - A profile will not be used.

- U - Use profile. This indicates to gather statistics that were previously created in a profile for the given table.
- I - Use profile, include NPI. This is the same as U(se) profile, except that it also includes the non-partitioned indexes. This is only valid for partitioned objects.
- D - Delete profile. Delete the existing profile from the catalog table.
- P - Update profile. Change the definition of an existing profile.
- S - Set profile. Create a profile for a given table.
- E - Set profile from existing stats. Refer to the DB2 Utility Guide for DB2 V10 for information.

**Note:** If one of the Use Profile options (U or I) is specified, and object-specific utility statistics are specified in the object profile, the object-specific utility statistics are ignored.

### Sort Device Type

This field contains the sort device type. Any device type accepted by DFSORT is allowed.

### Sort Number

This field contains the number of temporary data sets to be dynamically allocated by the sort program.

### Optional Skeletons

These fields can be used to customize the JCL generated by DB2 Automation Tool. You can add your own skeletons that can be processed before or after the utility JCL. For more information on using these fields, refer to “Using the optional skeletons” on page 274.

## Setting RUNSTATS column statistics

This panel allows you to set column statistics that will be collected during RUNSTATS.

### About this task

To specify statistics, type Y in the Update Statistics field on the Runstats Options panel. When you press Enter, the panel shown in the following figure is displayed:

```

AUTOTOOL V4R2 ---- Runstats Utility Column Statistics --- 2017/09/19 16:41:45
Option ==> Scroll ==> CSR
Line Commands: V - View C - Create D - Delete U - Update
-----
Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                        DB2 Subsystem: SS01
                        Row 1 of 1
-----
Cmd  Statistic Definition
FREQVAL  NUMCOLS  1 COUNT      10
***** Bottom of Data *****

```

Figure 121. Runstats Utility Column Statistics panel

This panel allows you to view and set statistics that will be collected. To set a column statistic definition, type U in the line command area and press Enter. The Runstats Column Statistics Create window is displayed to allow you to choose which type of column statistics to define for the utility, as shown in the figure:

```

Runstats Column Statistics Create

Define FREQVAL Statistics . . . N    (Yes/No)

Define HISTOGRAM Statistics . . N    (Yes/No)

```

Figure 122. Runstats Column Statistics Create window

Enter the values as follows:

#### Define FREQVAL Statistics

Type Y to define FREQVAL column statistics. When you press Enter, the Runstats Freqval Options window is displayed.

#### Define HISTOGRAM Statistics

Type Y to define HISTOGRAM statistics. When you press Enter, the Runstats Histogram Options window is displayed.

The Runstats Freqval Options window lets you set values for the FREQVAL syntax, as shown in the following figure:

```

Runstats Freqval Options

Option  ==>

Freqval Numcols . . . . . 1      (Number)
Freqval Count . . . . . 10      (Number)

```

Figure 123. Runstats Freqval Options window

#### Freqval Numcols

Enter the number of columns in the index for which frequently occurring values are collected. This value can be a number between 1 and the number of indexed columns.

#### Freqval Count

Enter the number of frequently occurring values that are to be collected from the specified key columns.

The Runstats Histogram Options window allows you to set values for HISTOGRAM syntax, as shown in the following figure :

```

Runstats Histogram Options

Option  ==>

Histogram Numcols . . . . . 1      (Number)
Histogram Numquantiles. . . 100    (Number)

```

Figure 124. Runstats Histogram Options window

#### Histogram Numcols

Enter the number of columns in the index for which RUNSTATS is to collect histogram statistics. This value can be a number between 1 and the number of indexed columns.

#### Histogram Numquantiles

Enter how many quantiles that the utility is to collect. The integer value must be equal to or greater than one. The number of quantiles that you



specify should never exceed the total number of distinct values in the specified key columns. The maximum number of quantiles is 100.

## Table space REORG options

Reorganizing a table space can improve access performance and reclaim fragmented space.

When specifying a table space REORG, some of the options you can specify are:

- The degree of access to the data during the REORG
- Whether to take image copies before or after the REORG
- Whether to collect statistics as part of the REORG
- To generate a report as to whether a REORG is needed

## Setting REORG options

DB2 Automation Tool provides many options for REORGs of table spaces.

### About this task

When you specify to set table space REORG options, the panel shown in the following figure is displayed. Only a portion of the panel is shown in this figure:

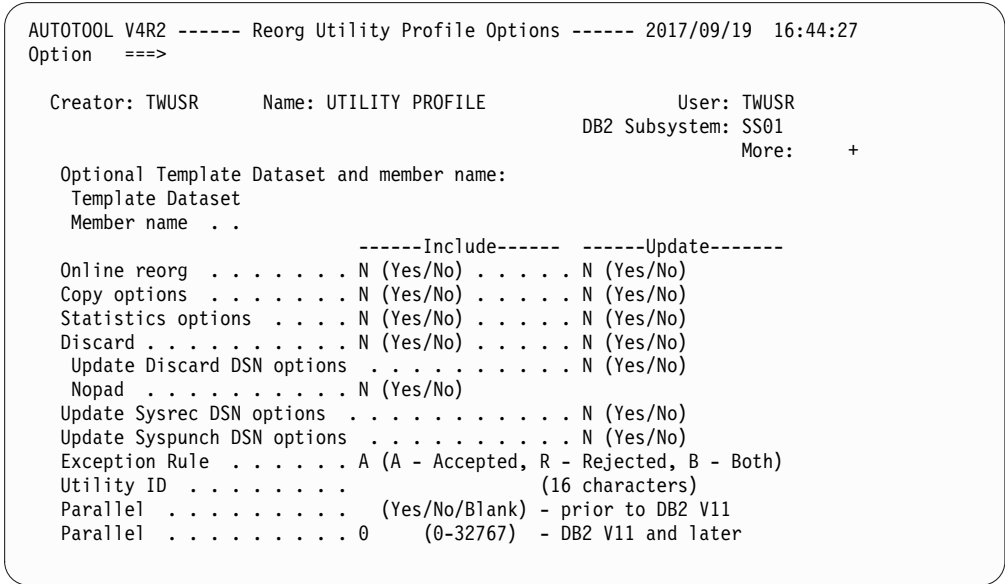


Figure 125. Reorg utility profile options panel

The Reorg Utility profile options panel is scrollable; press PF8(DOWN) to view the additional options. The following describes the options you can set for the REORG utility:

### Optional Template Dataset and member name fields

If you want to use an existing template instead of allowing DB2 Automation Tool to create the template, enter the template data set and member name here. Template data sets can be used for copies and for discard, SYSPUNCH, and SYSREC data sets. The template data set must already exist and the template members must follow DB2 syntax rules for

the TEMPLATE control statement. If you enter a template data set and member name, you must enter Y in one or more of the following fields to select a template name:

- Copy options (Include and Update)
- Discard (Include and Update Discard DSN options)
- Update Sysrec DSN options
- Update Syspunch DSN options

When you select one or more of these, you are prompted to select a template name on the TEMPLATEDD Name Selection panel.

Using your own templates also requires that the job generation option Generate Templates is set to Y in the job profile.

**Note:** If these values are included, they override existing templates created by DB2 Automation Tool in this profile as well as TEMPLATEDD default parameters in the setup options.

#### **Online reorg**

Type Y if you want to specify an online REORG. You must also set the REORG options by entering Y in the corresponding Update field.

#### **Copy options**

Type Y in this field to indicate that you want image copies to be taken during the REORG. You must set the copy options by entering Y in the Update field as well.

#### **Statistics options**

Type Y in this field to specify to collect inline statistics during the REORG. You must set the statistics options by entering Y in the Update field as well.

#### **Discard**

Type Y in this field to specify that records that meet specified WHEN conditions are to be discarded during REORG TABLESPACE UNLOAD CONTINUE or UNLOAD PAUSE. You must specify text to be used for the DISCARD FROM TABLE ... WHEN specification; type Y in the Update field to enter the text. You may optionally specify a data set to contain the discarded records; type Y in the Update DSN options field.

**Note:** LISTDEFS are not allowed with DISCARD.

#### **Update Discard DSN options**

Type Y in this field to set or change the discard data set specifications.

#### **Nopad**

Type Y in this field to specify that the variable-length columns in the unloaded or discarded records are to occupy the actual data length without additional padding. The unloaded records can have varying lengths. If you leave N in this field, default REORG processing pads variable-length columns in the unloaded or discarded records to their maximum length; the unloaded or discarded records have equal lengths for each table.

#### **Update Sysrec DSN options**

Type Y in this field to set or change the SYSREC data set options. The SYSREC DD holds the UNLOAD data set.

### Update Syspunch DSN options

Type Y in this field to set or change the SYSPUNCH data set options. A SYSPUNCH DD is generated when Discard = Y or UNLOAD EXTERNAL is specified.

### Exception Rule

Type A in this field to have the utility act on all objects that are accepted (included) as a result of exception processing. Type R to have the utility act on objects that are rejected (excluded) as a result of exception processing. Type B to have the utility act on all objects, regardless of exception processing results.

### Utility ID

Enter a 1 to 16 character utility ID to be used to uniquely identify the utility to DB2. The ID must begin with a letter; the remainder can be alphanumeric or the following special characters: #, \$, @, €, !, ~, . If this utility profile is included in a job profile that is built for autonomic execution, a utility ID that is specified in this field is ignored. For autonomic builds, DB2 Automation Tool generates a unique utility ID for each object by using the letter "A" followed by the autonomic action ID that is assigned to the object and utility pair (for example, "A1785").

### Parallel (prior to DB2 V11)

(DB2 Version 9 NFM and later, but deprecated beginning in DB2 Version 11 NFM) Type Y to specify that if multiple partitions for an individual table space exist in the LISTDEF list, they will be processed in parallel on a single invocation of the REORG utility. Type N to specify that if multiple partitions for an individual table space exist in the LISTDEF list, they will be processed serially (one at a time) on individual invocations of the REORG utility. Specify N when system resources are insufficient to process a large number of partitions in parallel. A blank value will not generate the Parallel keyword; blank is the default. The keyword will not be generated if LISTDEFs are not specified.

### Parallel (DB2 V11 and later)

(DB2 Version 11 NFM) Specify the maximum number of subtasks that are to be started in parallel to reorganize a table space. If the PARALLEL keyword is omitted, the maximum number of subtasks is limited by either the number of partitions that are being unloaded or the number of indexes that are built. This value must be an integer between 0 and 32767, inclusive. If 0 is specified, the REORG TABLESPACE utility uses the optimal number of parallel subtasks. If the specified value is greater than the calculated optimal number, the REORG TABLESPACE utility limits the number of parallel subtasks to the optimal number.

**Reuse** Type Y if you want REORG to reuse DB2-managed data sets without deleting and redefining them. This option is only available if the REORG is SHRLEVEL NONE. In addition, if a table space has been altered, the REUSE keyword will not be included when the job is generated.

**Log** Type Y if you want the REORG utility to log records during the reload phase. This option is only available for REORGs with SHRLEVEL NONE.

### Fastswitch

Type Y to enable the SWITCH phase methodology. If you enter N, the SWITCH phase will use IDCAMS RENAME.

### Sortdata

Type Y if you want the data to be unloaded by table space scan, then

sorted in clustering order. Records are sorted by the table. If a space contains large (greater than 32k) composite records, this keyword cannot be included.

**Recluster**

(DB2 Version 11 and later) This field specifies whether data records are to be reclustered by unloading them via the clustering index. Type Y to ensure data records are reclustered and unloaded by the clustering index if one exists. Recluster Y is only valid with Sortdata N.

**Scope** Indicate the scope of the reorganization of the specified table space or of one or more specified partitions. Type A to specify that you want the table space or one or more partitions to be reorganized. Type P to indicate that the table space or one or more partitions should be reorganized only if they are in REORG-pending or advisory REORG-pending status.

**Rebalance**

Type Y to specify that REORG TABLESPACE is to set new partition boundaries so that pages are evenly distributed across the reorganized partitions. If the columns that are used in defining the partition boundaries have many duplicate values within the data rows, even balancing is not always possible. REBALANCE is only valid for more than one partition; if you specify a single partition for rebalancing, REORG TABLESPACE ignores the specification. If you select REBALANCE, you must also specify to create an inline copy. Type Y in the Copy options field to include an inline copy. Additional restrictions apply when specifying REBALANCE - refer to the DB2 Utility Guide and Reference for your version of DB2 for further information.

**Keep Dictionary**

Type Y to include the KEEPDICTIONARY keyword in the REORG utility JCL. This option may only be specified if a compression dictionary exists and the table space or partition being reorganized has the COMPRESS YES attribute. If a dictionary does not exist, the REORG utility builds one, a warning message is issued, and all the records are compressed. Refer to the DB2 Utility Guide and Reference for your version of DB2 for information about using the KEEPDICTIONARY keyword.

**Sort Device Type**

Type in the sort device type. Any device type accepted by DFSORT is allowed.

**Sort Number**

Enter the number of temporary data sets to be dynamically allocated by the sort program.

**Nosysrec**

If you specified Sortdata=Y, type Y if you want the sorted output (if there is a clustering index) as the input to reloading, without using an unload data set. You can specify this option only if you do not specify UNLOAD PAUSE or UNLOAD ONLY.

**Unload Data**

This field specifies whether the utility job is to continue processing or end after the data is unloaded. Type C to specify CONTINUE; after the data has been unloaded, the utility is to continue processing. Type E to specify EXTERNAL; after the data has been unloaded, the utility job is to end and the status that corresponds to this utility ID is removed. Type O to specify ONLY; after the data has been unloaded, the utility job ends and the status that corresponds to this utility ID is removed from SYSIBM.SYSUTIL. Type

P to specify PAUSE; after the data has been unloaded, processing is to end. The utility stops and the RELOAD status is stored in SYSIBM.SYSUTIL so that processing can be restarted with RELOAD RESTART(PHASE). PAUSE cannot be used with LISTDEFs.

#### **Preformat**

Type Y to specify that the remaining pages are to be preformatted up to the high RBA in the table space. The preformatting occurs after the data is loaded and indexes are built.

#### **Rowformat**

Specify the output row format of the affected table space or partition. It has no effect on LOB, XML, catalog, directory, and universal table spaces involved in a clone relationship. Specify B for Basic Row Format. Specify R for Reorder Row Format.

#### **Sortnpsi**

This field is used to specify when REORG TABLESPACE PART should sort all keys of a non-partitioned secondary index. The default is blank, which indicates to use the subsystem parameter REORG\_PART\_SORT\_NPSI. Type A to specify that if sorting all keys of the non-partitioned secondary indexes improves the elapsed time and the CPU performance, all keys are sorted. Type Y to specify that if sorting all keys of the non-partitioned secondary indexes improves the elapsed time, all keys are sorted. Type N to specify that only keys of the non-partitioned secondary indexes that are in the scope of the REORG are sorted.

#### **Generate NPSI Runstats**

(DB2 V10 and earlier) Type Y to generate RUNSTATS on the dependent non-partitioned index if the following conditions are met:

- Sortnpsi = Y
- SHRLEVEL is set to CHANGE or REFERENCE
- The table space being REORGed is partitioned and includes a non-partitioned index
- In the object profile, Process IX = Y on the parent table space, or the NPI is included separately.
- Statistics Options = Y
- Index All = Y on the Reorg Utility Statistics Options panel.

If all of these conditions are true, the values from the Reorg Utility Statistics Options panel will replace the default values for the RUNSTATS utility.

#### **Offposlimit**

If you want the REORG to run only if a percentage of the rows in the table space are not in index sequence, enter the percentage here. This option uses catalog statistics to determine if the data is disorganized. For more information, refer to DB2 Utility Guide and Reference for your version of DB2. This option is valid for non-LOB table spaces only.

#### **Indreflimit**

If you want the REORG to run only if a percentage of the rows in the table space have been relocated due to row length increases from table space scans, enter the percentage here. This option uses catalog statistics to determine if the data is disorganized. For more information, refer to DB2 Utility Guide and Reference for your version of DB2. This option is valid for non-LOB table spaces only.

### **Report only**

If you specified a value in the Offposlimit or Indreflimit fields, you can type Y in this field to generate a report that indicates whether a REORG is recommended. No REORG is performed.

### **Max Concurrent Idx Builds**

Type in the maximum number of indexes that you want DB2 Automation Tool to build concurrently. The default value of 99 specifies that DB2 Automation Tool is to determine the maximum number.

### **Max Tape Volumes/DASD Units**

Type in the maximum number of tape volumes or DASD units that DB2 Automation Tool can use for sequential data sets in the utility JCL. When specifying a tape device for the copy data sets, this number is placed in the UNIT parameter to assign the number of devices. This value is used for the following DDs: SYSREC SYSUT1 SORTOUT SORTWK\* or DATAWK\*. You can specify a value from 1 to 255. Because z/OS limits DASD data sets to 59 volumes, the largest value that will be assigned to the UNIT parameter for DASD data sets in the built JCL is 59. For tape data sets, you can specify up to 255 volumes.

### **Turn off Tape Stacking**

If an image copy with templates is included with a REORG utility that uses a tape device, the default behavior is to generate STACK YES. Enter Y to exclude the STACK keyword, or N to let DB2 Automation Tool determine if STACK should be generated.

### **Decompress alloc multiplier**

If the table space to be REORGed is compressed, enter a multiplier that DB2 Automation Tool can use to properly allocate work data sets. Valid values are from 1 to 99. For example, if you enter 2, the work data sets are allocated twice the size of the input data set. The appropriate value depends on the size of the table space and the amount of the compression; refer to the DB2 Utility Guide and Reference for your version of DB2.

### **Group Partitions by**

Type N when grouping of partitioned objects is not required. Type J to have all partitions of a partitioned object grouped together in the same job. Objects will not be split across multiple jobs even though this may exceed other job breakdown values. Type S to have all partitions of a partitioned object grouped together in the same step. Like the J option, this may override other job breakdown values. When REORGing partitioned objects with non-partitioned indexes (NPIs), specify S to prevent DB2 from shadowing the NPIs more than once. UNLOAD PAUSE cannot be specified when grouping by partitions.

**Note:** Non-consecutive partitions are generated in a single REORG statement as long as:

- The Process Dependent Indexes flag is set to Y
- LISTDEFs are not specified in the job profile
- APAR PM03078 has been applied to DB2 Automation Tool
- For DB2 V9 subsystems, APAR PK87762 has been applied

### **List Partitions**

(DB2 Version 11 and later) Specify the maximum number of partitions to be reorganized in a single REORG on a LISTDEF. Valid values are between 1 and 4096, or leave this field blank to generate all partitions in a single REORG.

### **Auto Estimate Hash Space**

(DB2 V10 and later) Enter N if you want the reallocation of the hash space value to be based on the ALTER (REALLOCATION utility) or CREATE TABLE to be used. Enter Y to allow the REORG utility to automatically adjust the hash table space based on the TOTALROWS and DATASIZE columns of SYSTABLESPACESTATS.

### **Perform LOB Dependency checks**

(DB2 V10 and later) Enter Y to enable validation for LOB dependencies. If any LOB-related table space is in the object profile, then all LOB-related table spaces are included in the object profile. A LOB-related table space refers to table spaces with LOB columns (parent), and LOB table spaces (children). Validation fails if a parent is included in the object profile, but not all of its children. Validation also fails if a LOB table space (child) is included in the object profile, but its parent is not.

**Note:** The LOB dependency check will fail if either of the dependent objects is excluded via exception processing.

### **Exclude objects that failed Dependency check**

(DB2 V10 and later) Type Y to specify that when the LOB dependency checks determine that either a child or parent is missing, the included LOB-related table spaces are eliminated from utility processing.

**Note:** If you set this field to N and only the base table space is included (either explicitly in the object profile or through exception processing), you can ensure that the base table space's associated LOB table spaces are reorganized if you specify AUX YES in the REORG utility profile.

### **Ignore dependency check for DEFINE NO objects**

(DB2 V10 and later ) Type Y to ignore the dependency check and allow processing of the base table space if the related LOB table space is created with DEFINE NO.

### **RBA/LRSN Conversion**

(DB2 Version 11 and later) Specify the RBA or LRSN format for the target object after the completion of the REORG. Specify blank to use the UTILITY\_OBJECT\_CONVERSION ZPARM entry. Type B to convert objects that are in EXTENDED (10-byte) format to BASIC (6-byte) format. Type E to convert objects that are in BASIC (6-byte) format to EXTENDED (10-byte) format. Type N to not perform any conversion.

### **REORG ALL partitions if percentage exceeded**

(DB2 V9 and later) Specify a percentage from 1-100 to REORG all partitions if the percentage of partitions in the object profile exceeds the specified value. The percentage is based on the total number of partitions for the table space. The following conditions must be met:

- The object profile includes the Process Indexes = Y setting.
- A nonpartitioning index is included.
- (DB2 V9 and DB2 V10) The Parallel field is set to NO.
- (DB2 V11 and later) The List Partitions field is blank.

### **Optional Skeletons**

These fields can be used to customize the JCL generated by DB2 Automation Tool. You can add your own skeletons that can be processed before or after the utility JCL.

## Setting online REORG options

Several options can be set for online REORGs of table spaces.

### About this task

To set options for an online REORG, type Y in both the Include field and the Update field on the Reorg Utility Profile Options panel and press Enter. The panel shown in the following figure is displayed:

```

AUTOTOOL V4R2 ----- Online Reorg options ----- 2017/09/19 16:47:19
Option ==> Scroll ==> CSR

Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                  DB2 Subsystem: SS01

Enter the options to associate with this utility profile

Sharelevel . . . . . C      (R - Reference, C - Change, N - None)
Drain Wait . . . . .      (blank, 0-1800 seconds)
Retry . . . . .      (blank, 0-255)
Retry Delay . . . . .      (blank, 1-1800 seconds)
Timeout . . . . . T      (A - Abend, T - Term, N - None)
Force . . . . . N      (A - All, R - Readers, N - None)
AUX . . . . .      (blank, Y - Yes, N - No)
Drain Allparts . . . . . N      (Yes/No)

                                Include      Update
Deadline Options . . . . . N (Yes/No) . . . . . N (Yes/No)
Switchtime Options . . . . . N (Yes/No) . . . . . N (Yes/No)
Shrlevel Change Options Y (Yes/No) . . . . . N (Yes/No)

```

Figure 126. Online Reorg options panel

The following describes the online REORG utility options you can specify.

#### Sharelevel

Indicate the level of access applications will have during the RELOAD phase of the online REORG.

- Type R for reference (applications can read but not write data during the REORG).
- Type C for change (applications can read and write data during the REORG). This option is not available for spaces with large composite records (greater than 32k) or for table spaces with the NOT LOGGED attribute.
- Type N for no access (applications can neither read or write data during the REORG).

#### Drain Wait

Specify the number of seconds that the utility waits when draining the space. The time specified is the aggregate time for objects to be reorganized. This overrides the values specified by IRLMRWT and UTIMOUT. If the keyword is not specified or 0 is specified, then regular draining using the IRLMRWT and UTIMOUT values will be used. Acceptable values can be from 0 to 1800 seconds.

**Retry** Specify the maximum number of retries that can be attempted. Values can be from 0 to 255. If this field is left blank, no retries will be attempted.

#### Retry Delay

Specify the minimum duration in seconds between retries. Values can be from 1 to 1800. The value must be an integer. The default is 300 seconds.



For DB2 Version 9.1 subsystems, the default is the smaller of two possible values: (DRAIN\_WAIT value x RETRY value) or (DRAIN\_WAIT value x 10).

**Timeout**

Specify the action to be taken if the REORG utility receives a time out condition while trying to drain objects in either the LOG or SWITCH phase. Type A (Abend) to specify that DB2 leaves the objects in a UTRO or UTUT state. Type T (Term) to specify that DB2 issues an implicit TERM UTILITY command, causing the utility to end with a return code 8; issues the DSNU590I and DSNU170I messages; and leaves the objects in an RW state.

**Force** Specify the action to be taken when the utility is draining the table space. Type A to specify that both the read and write claimers are canceled when REORG is requesting a drain all or drain writers on the last RETRY processing. Type R to specify that read claimers are canceled when REORG is requesting a drain all on the last RETRY processing. Type N to specify that no action is taken when REORG performs a drain.

**AUX** Specifies a partition range or multiple partitions to be used by the REORG utility when LOB table spaces and associated partitioned table spaces are reorganized. Type N to indicate that a reorganization is performed on the base table space, but the associated LOB table spaces are not reorganized. Type Y to indicate that LOB table spaces associated with the base partitioned table space are reorganized when the base table space is reorganized. Partitions of the associated table spaces are also reorganized.

If the AUX keyword is omitted, then the following cases will default to AUX Yes; otherwise the default is No:

- A REORG TABLESPACE of a partition-by-growth base table space with one or more LOB columns, where the REORG is reorganizing the entire PBG table space or some contiguous part ranges.
- A REORG TABLESPACE of a partitioned base table space with one or more LOB columns where one or more partition ranges are in REORG PENDING state because an ALTER TABLE PARTITION command has been issued to change the partition key boundaries.
- A REORG TABLESPACE DISCARD of a table in a partitioned table space with one or more LOB columns.

**Drain Allparts**

(DB2 Version 11 and later) Specifies the action to take during a partition level REORG TABLESPACE SHRLEVEL REFERENCE or CHANGE when a non-partitioned secondary index is defined on a partitioned table space. Type Y to have REORG drain the target data partitions serially followed by the nonpartitioned secondary indexes. Type N to have REORG obtain the table space level drain on the entire partitioned table space first, before draining the target data partitions and indexes. This option can provide relief by eliminating drain timeout or deadlocks caused by the reverse order of object draining by REORG and object claiming by DML statements.

**Deadline Options**

If you specified SHRLEVEL REFERENCE or CHANGE, type Y to include this option. To specify the deadline options, type Y in the Update field and press Enter.

### Switchtime Options

(DB2 Version 11 and later) Type Y to include this option. To specify switch time options, type Y in the Update field and press Enter.

### Shrlevel Change Options

If you specified SHRLEVEL CHANGE, type Y to include this option. To specify more SHRLEVEL CHANGE options, type Y in the Update field and press Enter.

### Setting deadline options

When performing an online REORG, you can specify a deadline for the switch phase to finish.

### About this task

To specify the deadline, type Y in both the Deadline options Include and Update fields on the Online Reorg options panel and press Enter. The panel shown in the following figure is displayed:

```
AUTOTOOL V4R2 ----- Deadline options ----- 2017/09/19 16:49:11
Option ==>

Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                        DB2 Subsystem: SS01
Enter the "Deadline" options to associate with this utility profile

Deadline . . . . . N (N - None, T - Timestamp, L - Lde)

Timestamp value . . . . .

Labeled Duration Expression
Base On Current Date/Timestamp (D - Date, T - Timestamp)
+/- Value
      Year(s)
      Month(s)
      Day(s)
      Hour(s)
      Minute(s)
      Seconds(s)
      Microseconds(s)
```

Figure 127. Deadline options panel

The following describes the deadline options you can specify:

#### Deadline

Indicate the type of deadline you want to set for the switch phase to finish.

- To specify a timestamp, type T in this field and complete the Timestamp value field.
- To specify an LDE (labeled duration expression), type L in this field and complete the Labeled Duration Expression fields.

#### Timestamp value

If you specified a timestamp deadline, enter the timestamp here.

The following fields are used for LDE deadlines:

#### Based on Current Date/Timestamp

Indicate in this field whether you want to use a date or timestamp as the base. Type D for date and T for timestamp.

+/- In this column, type + to add the specified value, or - to subtract the specified value.

**Value** Type an integer value to correspond with the time value.

For example, if you want to set the switch phase deadline for 12 hours and 30 minutes after the current timestamp, fill out the fields as shown in the following figure:

Labeled Duration Expression:		
Base On Current Date/Timestamp ==> t		(Date/Timestamp)
+/-	Value	
-	—	Year(s)
-	—	Month(s)
-	—	Day(s)
+	12	Hour(s)
+	30	Minute(s)
-	—	Seconds(s)
-	—	Microseconds(s)

Figure 128. Deadline options field entry example

## Setting switch time options

When performing an online REORG, you can specify a switch time for the final log iteration of the LOG phase to begin.

### About this task

On the Online Reorg options panel, type Y in both the Switchtime options Include and Update fields and press Enter. The panel shown in the following figure is displayed:

```
AUTOT00L V4R2 ----- Switchtime Options ----- 2017/09/19 16:50:28
Option ==>

Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                                DB2 Subsystem: SS01
Enter the "Switchtime" options to associate with this utility profile

Switchtime . . . . . N (N - None, T - Timestamp, L - Lde)

Timestamp value . . . . .

Newmaxro . . . . . (blank, Number)

Labeled Duration Expression
Base On Current Date/Timestamp (D - Date, T - Timestamp)
+/- Value
      Year(s)
      Month(s)
      Day(s)
      Hour(s)
      Minute(s)
      Seconds(s)
      Microseconds(s)
```

Figure 129. Switchtime Options panel

The following describes the switch time options you can specify:

### Switchtime

Indicate the type of switch time you want to set for the final log iteration of the LOG phase to begin.

- To specify a timestamp, type T in this field and complete the Timestamp value field.

- To specify an LDE (labeled duration expression), type L in this field and complete the Labeled Duration Expression fields.

#### **Timestamp value**

If you specified a timestamp switch time, enter the timestamp in this field. The timestamp format is YYYY-MM-DD-HH.MM.SS.ssssss.

#### **Newmaxro**

This field is used when the Switchtime field is set to Timestamp or Lde to set the maximum amount of time for the last log iteration after SWITCHTIME is met. The Newmaxro value overrides the existing MAXRO value. Type an integer to specify the number of seconds. A small value reduces the length of read-only access, but it might increase the elapsed time for REORG to complete. A large value will probably ensure that REORG will enter the last log iteration almost immediately at or after the specified SWITCHTIME. Leaving this field blank will result in Newmaxro NONE at job build time.

The following fields are used for LDE deadlines:

#### **Based on Current Date/Timestamp**

Indicate in this field whether you want to use the current date or timestamp as the base. Type D for date and T for timestamp.

+/- In this column, type + to add the specified value, or - to subtract the specified value.

**Value** Type an integer value to correspond with the time value.

#### **Setting SHRLEVEL CHANGE options**

When performing an online REORG, you can specify several options specific to SHRLEVEL CHANGE.

#### **About this task**

**Note:** SHRLEVEL CHANGE is not available for spaces with large composite records (greater than 32k).

To specify these options, type Y in both the Shrlevel Change Options Include and Update fields on the Online Reorg options screen and press Enter. The screen shown in the following figure is displayed:

```

AUTOTOOL V4R2 ----- Change options ----- 2017/09/19 16:52:00
Option ==>
Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                  DB2 Subsystem: SS01
                  More:      +
Enter the "Shrlevel Change" options to associate with this utility profile
Create Dynamic Mapping Table . . . . Y  (Y - Yes, N - No, I - Ignore)
Mapping Database . . . . . (dbname)
Mapping Table Creator . . . . . &JOBNAME (8 Characters)
Mapping Table Name . . . . . REORG_STEPNAM (18 Characters)
Dyn Map Table Bufferpool . . . . . BP0 (8 Characters)
Dyn Map Table Storage Group . . . . . SYSDEFLT (8 Characters)
Dyn Map Index Storage Group . . . . . SYSDEFLT (8 Characters)
Dyn Map Index Primary Quantity . . . 48 (Number in kilobytes)
Dyn Map Index Secondary Quantity . . 48 (Number in kilobytes)
Maxro . . . . . (blank, Number, or DEFER)
Drain . . . . . A (W - Writers, A - All, N - No)
Longlog . . . . . C (C - Continue, T - Term, D - Drain)
Delay . . . . . 1200 (Number)
Logranges . . . . . Y (Yes/No)

You can let DB2 or DB2 Utilities Enhancement Tool manage the creation
and deletion of the mapping table by setting Create Dynamic Mapping
Table to 'I' (Ignore). Or, if you are providing a mapping table, set
Create Dynamic Mapping Table to 'N'. Automation Tool will create and
delete a mapping table if Create Dynamic Mapping Table is 'Y'.

```

Figure 130. Change options screen

The following describes the options you can specify:

### Create Dynamic Mapping Table

Type Y if you want to allow DB2 Automation Tool to create the mapping table for you. The dynamic mapping table will be created before the REORG step and will be dropped after REORG completion. You can specify the mapping table name and other options in the fields that follow. Y is the default.

Type I to allow one of the following:

- If DB2 Utilities Enhancement Tool for z/OS V2.1 or later is installed and enabled for automatic creation of mapping tables for REORGs, type I to allow DB2 Utilities Enhancement Tool to create the mapping table for you. Refer to the DB2 Utilities Enhancement Tool User's Guide for detailed information about this feature.
- For DB2 Version 11 and later, and if DB2 Utilities Enhancement Tool is not configured to automatically create mapping tables, enter I to allow DB2 to create the mapping table.

If you type N in this field, you must create the mapping table outside of DB2 Automation Tool and specify the creator and table name in the Mapping Table Creator and Name fields.

### Mapping Database

(Only valid for DB2 Version 11 and later, and if Create Dynamic Mapping Table is set to I) This field is optional; if you want DB2 to use a specific database for the mapping table, enter it here.

### Mapping Table Creator

#### Mapping Table Name

- When Y is specified in the Create Dynamic Mapping Table field, DB2 Automation Tool will create a temporary mapping table that is dropped upon completion of the REORG. The creator name defaults to the job name and the table name defaults to REORG\_stepname. If you leave the defaults in both fields, DB2 Automation Tool will create a temporary

table using the defaults. You can also specify a different creator and table name. In either case, the table will be dropped upon completion of the REORG.

- When N is specified in the Create Dynamic Mapping Table field, specify an existing mapping table in these fields. The mapping table and its index must already exist. For information about creating this table, refer to the DB2 Utility Guide and Reference for your version of DB2.

**Dyn Map Table Bufferpool, Dyn Map Table Storage Group, Dyn Map Index Storage Group, Dyn Map Table Primary Quantity, Dyn Map Index Secondary Quantity**

To allow DB2 Automation Tool to dynamically create a mapping table for the REORG, specify Y in the Create Mapping Table field. Specify a buffer pool, storage groups, and primary and secondary quantities for the dynamic table. DB2 Automation Tool will create the table in the specified buffer pool and storage group, then drop the table upon completion of the REORG. If the Dyn Map Index Storage Group field is left blank, the value of Dyn Map Table Storage Group will be used.

**Maxro** Set the maximum amount of time for the last iteration of log processing. During that iteration, applications have read-only access. Type an integer to specify the number of seconds, or enter DEFER to specify that iterations of log processing can continue indefinitely. If you type DEFER, you should also enter C in the Longlog field. Leave this field blank to omit the MAXRO keyword.

**Drain** Specify how readers or writers are drained at the end of the log phase after the Maxro threshold is reached and when the last iteration of the log is to be applied.

- Type W to drain only writers during the log phase after the Maxro threshold has been reached; all writers are drained upon entering the SWITCH phase.
- Type A to drain all readers and writers during the log phase after the Maxro threshold has been reached.
- Type N to exclude the DRAIN keyword.

**Longlog**

Specify what action to take if the REORG's reading of the log is not catching up quickly enough to the applications' writing of the log. DB2 sends a message to the console, then takes the action you specify.

- Type C to continue the REORG until the time on the JOB statement expires.
- Type T to terminate the REORG after the delay specified by the Delay parameter.
- Type D to drain the write claims after the delay specified by the Delay parameter, forcing the final iteration of log processing.

**Delay** Specify the minimum interval between the time that REORG sends the LONGLOG message to the console and the time that REORG performs the action specified by the LONGLOG parameter. Enter an integer value.

**Logranges**

(DB2 Version 11 and later) Specify whether REORG will use SYSLGRNX information for the LOG phase. Type Y to have REORG use SYSLGRNX information for the LOG phase when possible. Type N to have REORG not use SYSLGRNX information for the LOG phase. This can cause REORG to run much longer. In a data sharing environment, this option can result in

the merging of all logs from all members. This option is feasible when there is a known integrity issue with SYSLGRNX entries and performance problems in accessing SYSLGRNX for log read determination.

### Setting copy options

During the RELOAD phase of the REORG, DB2 Automation Tool can create full image copies. You can specify some options for copies taken during table space REORGs.

#### About this task

To set copy options, type Y in the Copy options/Update field on the Reorg Utility profile options screen and press Enter. The Image Copy Options screen appears. Refer to “Specifying image copy options” on page 169 for instructions on setting image copy options.

The REORG copy options are set independently of the image copy utility options. You can specify one set of copy options for image copies taken with the COPY utility and a different set for image copies taken during a REORG.

### Setting statistics options

Catalog statistics can be updated or reported on as part of the table space REORG.

#### About this task

To specify this option, type Y in the Statistics options/Update field on the Reorg Utility Profile Options panel and press Enter. The panel shown in the following figure is displayed:

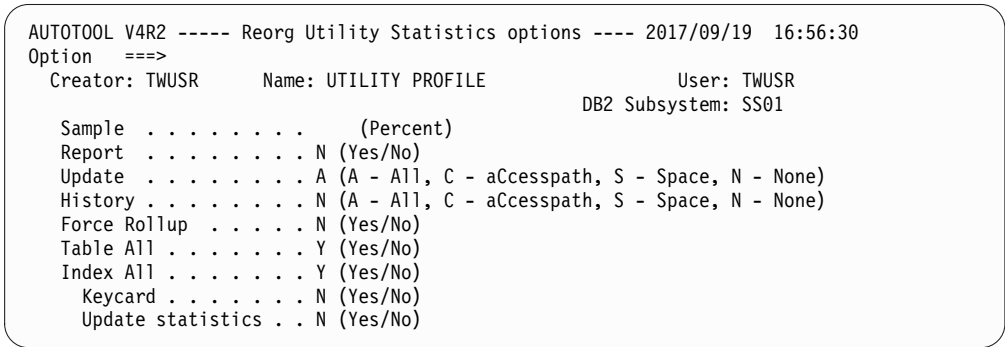


Figure 131. Reorg Utility Statistics options panel

The following describes the REORG utility statistics options you can specify:

#### Sample

Type in an integer from 1 to 100 that indicates the percentage of rows to sample when collecting non-indexed column statistics. This option is not allowed for LOB table spaces.

#### Report

Type Y to have DB2 generate a set of messages to SYSPRINT to report the collected statistics. Type N to suppress messages.

#### Update

Indicate whether you want DB2 to update the catalog with statistics after the REORG.

- Type A to update all collected statistics in the catalog.
- Type C to update only catalog table columns that provide statistics used for access path selection.
- Type S to update only the catalog table columns that provide statistics to help you assess the status of a particular table space or index.
- Type N to not update catalog tables; this option is only valid when REPORT YES is specified.

### History

If you specify to update statistics, you can also specify to record catalog table inserts or updates in the catalog history tables. What you specify in this field depends on what you specified for Update. Consult the DB2 for z/OS Utility Guide for your version of DB2 for information about using this option.

### Force Rollup

Type Y in this field to force aggregation or rollup of statistics when RUNSTATS is executed and some parts are empty. Type N to specify aggregation only if data is available for all parts.

### Table All

Type Y in this field to specify TABLE (ALL) syntax. If you use this option, you can enter a value in the Sample field to specify the number of rows to be sampled during RUNSTATS.

### Index All

Type Y in this field to specify INDEX (ALL) syntax. If you use this option, you can enter values in the Keycard, Numcols, and Count fields to specify additional criteria for collecting statistics on indexes.

### Keycard

Type Y in this field if you want to collect all of the distinct values in all of the 1 to n key column combinations for the object.

### Update statistics

Type Y in this field to create or update the frequent value and histogram statistics definitions. Histogram statistics are available for DB2 Version 11 NFM and later.

## Setting FREQVAL and HISTOGRAM options

This panel allows you to view and set multiple FREQVAL stats and HISTOGRAM options that will be collected by RUNSTATS during a REORG or REBUILD INDEX utility.

### About this task

These utility statistic option panels allows you to specify catalog statistics that can be reported on as part of a RUNSTATS utility run during a REORG or REBUILD INDEX utility.

**Note:** Histogram statistics are available only for DB2 Version 11 NFM and later.

### Procedure

1. To specify statistics, type Y in the Update statistics field on the Reorg Utility Statistics options panel or the Rebuild Index Profile Options panel. When you press Enter, the panel shown in the following figure is displayed.



```

AUTOTOOL V4R2 ---- Rebuild Utility Column Statistics --- 2017/09/19 11:47:42
Option ==> Scroll ==> CSR
Line Commands: V - View C - Create D - Delete U - Update
-----
Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                                      DB2 Subsystem: SS01
                                      Row 1 of 1
-----
Cmd  Statistic Definition
C    Press Enter to Create Statistics
***** Bottom of Data *****

```

Figure 132. Reorg | Rebuild Utility Column Statistics panel

This panel allows you to view and set statistics that will be collected.

2. To set a column statistic definition, type C in the line command area and press Enter.
  - On subsystems running DB2 Version 11 NFM or later, the Reorg | Rebuild Column Statistics Create window is displayed. Type Y next to the type of statistics you want to define and press Enter.
  - On other subsystems, the Freqval Options window is displayed.
3. Set FREQVAL options on the Freqval Options window as follows:

#### Freqval Numcols

Enter the number of columns in the index for which frequently occurring values are to be collected. This value can be a number between 1 and the number of indexed columns.

#### Freqval Count

Enter the number of frequently occurring values that are to be collected from the specified key columns.

4. For DB2 Version 11 subsystems, set HISTOGRAM options as follows on the Reorg | Rebuild Histogram Options window:

#### Histogram Numcols

Enter the number of columns in the index for which histogram statistics are to be collected. This value can be a number between 1 and the number of indexed columns.

#### Histogram Numquantiles

Enter how many quantiles that the utility is to collect. The integer value must be equal to or greater than one. The number of quantiles that you specify should never exceed the total number of distinct values in the specified key columns. The maximum number of quantiles is 100.

## Setting discard options

As part of the table space REORG, you can specify that records that meet certain WHEN conditions are to be discarded during REORG TABLESPACE UNLOAD CONTINUE or UNLOAD PAUSE.

You must specify text to be used for the DISCARD FROM TABLE ... WHEN specification. You may optionally specify a data set to contain the discarded records.

**Note:** LISTDEFS are not allowed with DISCARD.

### Entering DISCARD text

If you specify DISCARD, you must qualify the rows that you want to discard by specifying FROM TABLE with the WHEN option.

## About this task

Records that meet the specified WHEN conditions are then discarded during the REORG TABLESPACE UNLOAD CONTINUE or UNLOAD PAUSE.

To specify the discard text:

### Procedure

1. On the Reorg Utility Profile Options panel, type Y in the Discard Include field to include the Discard options.
2. Type Y in the Update field for the Discard option and press Enter. An ISPF edit session appears in which you can enter the FROM TABLE...WHEN syntax. The first time you create a utility profile that specifies DISCARD, the text appears as follows:

```
File Edit Edit_Settings Menu Utilities Compilers Test Help
EDIT      DISCARD_FROM_TABLE(S)_SQL_TEXT      Columns 00001 00072
Command ==>                                Scroll ==> CSR
***** ***** Top of Data *****
000001 -- THE DISCARD TEXT MUST BE PRECEDED WITH A COMMENT
000002 -- DESCRIBING THE DATABASE AND TABLESPACE THAT THE
000003 -- FOLLOWING TEXT IS ASSOCIATED WITH.
000004 -- EXAMPLE:
000005 --
000006 -- DATABASE: MYDATABS TABLESPACE: MYSPACE1
000007 --          FROM TABLE MYCCTR1.MYTABLE1
000008 --          WHEN (KEY_COL BETWEEN 6001 AND 7000)
000009 -- DATABASE: MYDATABS TABLESPACE: MYSPACE2
000010 --          FROM TABLE MYCCTR2.MYTABLE2
000011 --          WHEN (KEY_COL BETWEEN 6001 AND 7000)
000012 --
000013 -- ----- KEYWORD DATABASE: IS REQUIRED
000014 -- | ----- DATABASE NAME
000015 -- | ----- KEYWORD TABLESPACE: IS REQUIRED
000016 -- | ----- TABLESPACE NAME
000017 -- |
000018 -- V      V      V      V
000019 -- DATABASE: MYDATABS TABLESPACE: MYSPACE2
000019 -- DATABASE: MYDATABS TABLESPACE: MYSPACE2
000020 --          FROM TABLE CRTR1.TABLE1
000021 --          WHEN (KEY_COL BETWEEN 8001 AND 9000)
000022 --          FROM TABLE CRTR2.TABLE2
000023 --          WHEN (KEY_COL BETWEEN 8001 AND 9000)
000024 --          FROM TABLE CRTR3.TABLE3
000025 --          WHEN (KEY_COL BETWEEN 8001 AND 9000)
000026 --
000027 -- DATABASE: DATABAS1 TABLESPACE: TABLSPC1
000028 --          FROM TABLE CRTR4.TABLE4
000029 --          WHEN (KEY_COL BETWEEN 8001 AND 9000)
000030 --
000031 -- DATABASE: DATABAS2 TABLESPACE: TABLSPC2
000032 --          FROM TABLE CRTR5.TABLE5
***** ***** Bottom of Data *****
```

Figure 133. Edit session for entering DISCARD text

3. You can edit this text to fit your needs. The discard text must specify the table name(s) and the WHEN clauses that describe the rows to discard. In addition, the discard text must be preceded by a comment that includes the database name and table space name. The layout of the comment statement is as follows:

```
-- ----- KEYWORD DATABASE: IS REQUIRED
-- | ----- DATABASE NAME
-- | ----- KEYWORD TABLESPACE: IS REQUIRED
-- | ----- TABLESPACE NAME
```

```
-- |           |           |           |
-- V           V           V           V
-- DATABASE: MYDATABS TABLESPACE: MYSPACE2
```

The comment describing the database and table space must be formatted as follows:

- The keyword DATABASE must begin in column 4
- Your database name must begin in column 14
- The keyword TABLESPACE must begin in column 23
- Your table space name must begin in column 35

The remainder of the text (the FROM TABLE and WHEN clauses) must be entered per SQL statement syntax rules. Be sure to remove extra sample statements from the text before exiting the edit session.

**Note:** The discard text is not validated by DB2 Automation Tool.

## Results

For additional information about using the DISCARD option, refer to the DB2 Utility Guide for your version of DB2.

## Specifying DISCARD options

If you specify DISCARD, you can specify the data set name and other options for the data set to contain the discarded records.

## About this task

This data set will contain copies of records that meet the DISCARD FROM TABLE ... WHEN specification. When the syntax is built, the data set will be used in the SYSDISC DD statement.

To specify the discard data set options:

## Procedure

1. On the Reorg Utility Profile Options panel, type Y in the Discard Include field to include the Discard options.
2. Type Y in the Update Discard DSN options field and press Enter. The Discard Options screen

```
AUTOTOOL V4R2 ----- Discard Options ----- 2017/09/20 22:41:02
Option ==>
Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                                      DB2 Subsystem: SS01
Update DSN create spec . . . Y      (Yes/No)
Unit Type . . . . .      (CART - DISK - etc.)
Catalog Options
DISP=Status . . . . . M      (M - MOD, N - NEW, O - OLD, S - SHR)
    Normal Termination . . C      (C - CATLG, D - DEL,
                                   K - KEEP, U - UNCATLG)
    Abnormal Termination . . C      (C - CATLG, D - DEL,
                                   K - KEEP, U - UNCATLG)
Data Class . . . . .      (8 character class)
Storage Class . . . . .      (8 character class)
Management Class . . . . .      (8 character class)
Expiration date *or* . . .      (YYYYDDD - YYDDD)
Retention period . . . . .      (4 digit number)
```

Figure 134. Edit session for entering DISCARD text

3. Edit these fields as follows:

**Update DSN create spec**

Type Y in this field to set or change the data set specifications for the DISCARD data set.

**Unit Type**

Type in a valid UNIT where the data set will be written. If you enter a value that is not found in your site's eligible device table (EDT), the Device Type window is displayed (see "User-designated unit types" on page 172).

**Catalog Options**

Enter valid selections for each catalog parameter as shown on the panel.

**DISP=Status**

Specify the initial disposition of the discard data set.

**Normal Termination**

Specify what the disposition of the discard data set should be set to upon successful completion of the REORG.

**Abnormal Termination**

Specify what the disposition of the discard data set should be set to upon abnormal termination of the REORG.

**Data Class**

If your site uses SMS to manage data sets, type in the SMS Data Class.

**Storage Class**

If your site uses SMS to manage data sets, type in the SMS Storage Class.

**Management Class**

If your site uses SMS to manage data sets, type in the SMS Management Class.

**Expiration date \*or\* Retention period**

If the unit type specified in the Unit Type field is a tape device, enter either the tape expiration date in YYYYDDD format, or the tape retention period in number of days.

**User-designated unit types:**

You may need to specify a device name that is not in your site's eligible device table (EDT). The Device Type panel allows you to keep the device name and specify the device type.

```
AUTOTOOL V4R2 ----- Device Type ----- 2017/09/20 14:00:02

Device entered TEST      not found in EDT (Eligible Device Table)

To keep this device name indicate whether it is a tape or DASD
device.

Device type    (T - Tape, D - DASD)
```

*Figure 135. Device Type panel*

The value entered for unit type is accepted as the device name. In the Device type field, specify T for tape or D for DASD device, and press Enter. The appropriate panel for the device type (tape or DASD) that you specified is displayed.

To cancel and correct the device name, press PF3 from the Device Type panel without specifying the device type.

## Building a DISCARD data set name

DB2 Automation Tool offers a simple way to construct a data set name for a DISCARD data set.

### About this task

When you type Y in the Update DSN create spec field, the panel shown in the following figure is displayed:

```
AUTOTOOL V4R2 ----- Discard DSN Generation ----- 2017/09/20 22:43:10
Option ==>
Creator: TWDEB      Name: UTILITY PROFILE      User: TWDEB
Reorg Tablespace DISCARD      DB2 Subsystem: DC1A
Qualifier code      Free form literal      Show DSN  N
GDG Limit . . .    (1-255)
Current dataset name generation qualifier string:
```

Valid dataset name generation codes are

- |                       |                      |                          |
|-----------------------|----------------------|--------------------------|
| 1. Database           | 13. Month (MM)       | 27. Utility Name         |
| 2. Space Name         | 14. Day (DD)         | 28. Job Name             |
| 3. Partition/DSNUM    | 15. Julian Day (DDD) | 29. Step Name            |
| 4. Volser             | 16. Hours (HH)       | 30. Utility ID           |
| 5. Partition/DSNUM    | 17. Minutes (MM)     | 31. Listdef              |
| only when partitioned | 18. Seconds (SS)     | 32. Sequence             |
| 7. Vcatname           | 19. Timestamp        | 33. Index Space Name     |
| 8. Subsystem ID       | 20. Random Number    | 34. Table Space Name     |
| 9. User ID            | 21. Unique           | 35. Substring Qualifier  |
| 10. Time (HHMMSS)     | 22. GDG (+1)..(+n)   | 36. Use freeform literal |
| 11. Date (YYYYDDD)    |                      |                          |
| 12. Year (YYYY)       |                      |                          |

```
AUTOTOOL V4R2 ----- Discard DSN Generation ----- 2011/08/25 13:23:55
Option ==>
Creator: TWUSR      Name: HAA 41      User: TWUSR
Reorg Tablespace DISCARD
Qualifier code      Free form literal      Show DSN  N
GDG Limit . . .    (1-255)
Current dataset name generation qualifier string:
```

Valid dataset name generation codes are

- |                       |                      |                          |
|-----------------------|----------------------|--------------------------|
| 1. Database           | 11. Date (YYYYDDD)   | 21. Unique               |
| 2. Space Name         | 12. Year (YYYY)      | 22. GDG (+1)..(+n)       |
| 3. Partition/DSNUM    | 13. Month (MM)       | 23. Utility Name         |
| 4. Volser             | 14. Day (DD)         | 24. Job Name             |
| 5. Partition/DSNUM    | 15. Julian Day (DDD) | 25. Step Name            |
| only when partitioned | 16. Hours (HH)       | 26. Substring Qualifier  |
| 7. Vcatname           | 17. Minutes (MM)     | 27. Use freeform literal |
| 8. Subsystem ID       | 18. Seconds (SS)     |                          |
| 9. User ID            | 19. Timestamp        |                          |
| 10. Time (HHMMSS)     | 20. Random Number    |                          |

Figure 136. Discard DSN Generation panel

The fields on the Discard DSN Generation panel are:

**Qualifier code**

To include a qualifier, type its number in the Qualifier code field and press Enter. The qualifier string appears in the Current dataset name generation qualifier string field. You can also type the data set name directly in the string field.

**Free form literal**

After selecting the Use Freeform literal qualifier, you can enter an eight-character literal in this field. If you want the literal to be in its own substring, make sure to begin the literal with a period.

**Show DSN**

To view the string as it will be completed, type Y in the Show DSN field.

**GDG Limit**

If you want to set a specific GDG limit for this data set, enter it here. If no GDG limit is set on this panel (GDG limit field left blank), the GDG limit set in the job profile on the Generation Options panel applies. Valid values are from 1 to 255.

**Current dataset name generation qualifier string**

This field displays the qualifier string as it was input.

Commonly used qualifiers for discard data set names are listed on the bottom half of the panel. Qualifiers marked with an asterisk are not supported when using the TEMPLATE control statement.

The following describes the valid data set name qualifiers that you can use on the Discard DSN Generation panel:

**Database**

The database name.

**Space Name**

The table space or index name.

**Partition/DSNUM**

The partition number or data set number. When you choose this option, the Resulting DSN using Current Symbolic String window appears to prompt you to enter a valid character for the first position in the string.

**Volser** The volume serial of the data set.

**Partition/DSNUM only when partitioned**

The partition number or data set number. This qualifier is included only if the data set name is being generated for a specific partition of a partitioned space; otherwise, it is ignored. When you choose this option, the Resulting DSN using Current Symbolic String window appears to prompt you to enter a valid character for the first position in the string.

**Vcatname**

The volume catalog name.

**Subsystem ID**

The subsystem ID.

**User ID**

The TSO user ID of the job builder.

**Time (HHMMSS)**

The current time in the format shown.

**Date (YYYYDDD)**

The current date in the format shown.

**Year (YYYY)**

The year in the format shown.

**Month (MM)**

The month in the format shown.

**Day (DD)**

The day of the month in the format shown.

**Julian Day (DDD)**

The Julian day.

**Hours (HH)**

The current time in hours.

**Minutes (MM)**

The current time in minutes.

**Seconds (SS)**

The current time in seconds.

**Timestamp**

The current timestamp, in format *Dyymmdd.Thhmmss*.

**Random Number**

A random number in format *Rnnnnnnn*.

**GDG (+1)..(+n)**

If you are using GDG data sets, this variable appends (+n) to the GDG base. This must be the last qualifier code you specify for the data set name.

**Utility Name**

The utility name.

**Job Name**

The job name.

**Step Name**

The job step name.

**Utility ID**

The utility ID, truncated to eight characters and checked for invalid data set name characters. This variable is only allowed with templates.

**Listdef**

The name of the list that is defined by using the LISTDEF. This variable is only allowed with templates and LISTDEFs.

**Sequence**

Sequence number of the list item in the list. This variable is only allowed with templates and LISTDEFs.

**Substring Qualifier**

Select this option to specify one of the qualifiers and customize the substring. When you press Enter, the substring parameters window is displayed.

**Use freeform literal**

After selecting this qualifier, you can enter an eight-character literal in the Free Form literal field. If you want the literal to be in its own substring, make sure to begin the literal with a period.

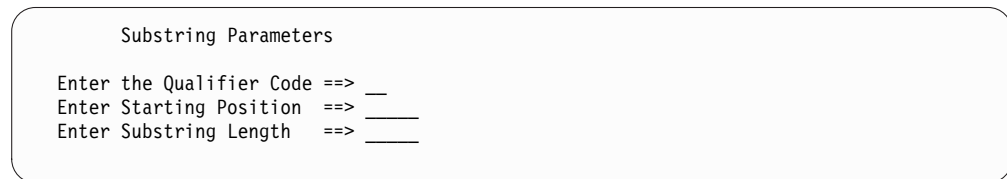
For example, if you enter 1 (Database), 2 (Space Name), then 15 (Julian Day), the data set name appears as:

&DB..&SN..D&JDATE.

## Using the substring function

You can use the substring qualifier function to customize a data set name.

When you choose the Substring Qualifier function to customize a qualifier substring, the window shown in the following figure is displayed:



Substring Parameters

Enter the Qualifier Code ==> \_\_\_

Enter Starting Position ==> \_\_\_

Enter Substring Length ==> \_\_\_

Figure 137. Substring Parameters window

You can choose to enter almost any of the qualifier codes and specify the string's starting position and length. For example, qualifier code 8 generates a string of "&SSID", a four-character subsystem name. However, if your site uses three-character SSIDs, the substring qualifier option can be used to specify the SSID and customize the string length, as shown in the following figure:



Substring Parameters

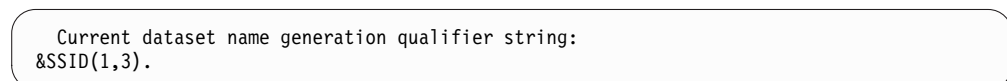
Enter the Qualifier Code ==> 8\_

Enter Starting Position ==> 1\_\_\_

Enter Substring Length ==> 3\_\_\_

Figure 138. Example: specifying the SSID substring length

The results are shown in the following figure:



Current dataset name generation qualifier string:  
&SSID(1,3).

Figure 139. Example: results of substring generation

## Resulting DSN using current symbolic string

Some substrings (such as time and date) require the addition of an alphanumeric or symbol in the beginning of the string.

When you select these substrings, the window shown in the following figure is displayed:



```

Resulting DSN using current symbolic string

Enter a Literal or Symbolic to Prefix the Invalid Dataset Node

==>

Invalid Dataset Name:

* SS01.DATABASE.SPACENAM.2008143          *

-----
| HAAM250E - Invalid data set node detected. First character not alphabetic |
| or national.                                                                |
|-----

```

Figure 140. Resulting DSN using current symbolic string window

This panel allows you to insert an alphanumeric or symbol to make the data set node name valid. When finished, press Enter.

### Viewing a sample string

You can view a sample string that would be generated by using your specification for a data set.

### About this task

To view the string as it will be completed, type Y in the Show DSN field. When you press Enter, the sample string appears, as shown in the following figure:

```

Resulting DSN using current symbolic string

Using the following sample data as input:

&JOBNAME  = 'JOBNAME '  &STEPNAME = 'STEPNAME'  &PART   = '00001'
&SSID     = 'SS01'      &UTIL    = 'UTILNAME'    &SN      = 'SPACENAM'
&DB       = 'DATABASE'

The date/time fields are set to the current time.

The generated dataset would be:

* DATABASE.SPACENAM.D00001.D2008155          *

Press ENTER or PF3 to continue

```

Figure 141. Viewing a sample string

Press PF3 (END) to return to the previous panel.

## Specifying SYSREC and SYSPUNCH data set options

The SYSREC and SYSPUNCH options panels allows you to specify data set options for the SYREC and SYSPUNCH data sets. These data sets are used as UNLOAD and input data sets for the REORG jobs.

## About this task

This feature allows you to supply a data set name for SYSREC and SYSPUNCH in a REORG TABLESPACE utility job. You can specify variables in the data set name to ensure unique data set names each time the job is run.

The SYSREC data set is a single data set into which the data is to be unloaded. The SYSPUNCH data set contains the generated LOAD utility control cards that can be used for reloading the data, if desired. The process for specifying data set options for these two is the same.

The SYSREC or SYSPUNCH Options panel is displayed when you specify to update options for either data set, as shown in the following figures:

```
AUTOTOOL V4R2 ----- SYSREC Options ----- 2017/09/19 17:15:23
Option ==>
Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                  DB2 Subsystem: SS01

Update DSN create spec . . Y
Unit Type . . . . . (CART - DISK - etc.)
Catalog Options
DISP=Status . . . . . M (M - MOD, N - NEW,
                        O - OLD, S - SHR)
      Normal Termination C (C - CATLG, D - DEL,
                        K - KEEP, U - UNCATLG)
      Abnormal Termination C (C - CATLG, D - DEL,
                        K - KEEP, U - UNCATLG)
Data Class . . . . . (8 character class)
Storage Class . . . . . (8 character class)
Management Class . . . . . (8 character class)
Parameters Only required if Unit Type is a Tape device:
Expiration date *or* . . . (YYYYDD - YYDD)
Retention period . . . . . (4 digit number)
```

Figure 142. SYSREC Options panel

```
AUTOTOOL V4R2 ----- SYSPUNCH Options ----- 2017/09/19 17:17:46
Option ==>
Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                  DB2 Subsystem: SS01

Update DSN create spec . . . Y (Yes/No)
Unit Type . . . . . (CART - DISK - etc.)
Catalog Options
DISP=Status . . . . . M (M - MOD, N - NEW, O - OLD, S - SHR)
      Normal Termination . . C (C - CATLG, D - DEL,
                        K - KEEP, U - UNCATLG)
      Abnormal Termination C (C - CATLG, D - DEL,
                        K - KEEP, U - UNCATLG)
Data Class . . . . . (8 character class)
Storage Class . . . . . (8 character class)
Management Class . . . . . (8 character class)
Parameters Only required if Unit Type is a Tape device:
Expiration date *or* . . . (YYYYDD - YYDD)
Retention period . . . . . (4 digit number)
```

Figure 143. SYSPUNCH Options panel

Specify the fields on this panel as follows:

### Update DSN create spec

Type Y in this field and press Enter to set or change the data set specifications for the SYSREC or SYSPUNCH data set.

### Unit Type

Enter a valid unit for the SYSREC or SYSPUNCH data set. If you enter a

value that is not found in your site's eligible device table (EDT), the Device Type window is displayed (see "User-designated unit types" on page 172).

#### **Catalog Options**

This section allows you specify the disposition of the SYSREC or SYSPUNCH data set. The following values will be used to build the DISP= portion of the data set DD.

#### **DISP=Status**

Specify the initial disposition or status of the data set.

#### **Normal Termination**

Specify the disposition of the data set upon normal termination of the job step.

#### **Abnormal Termination**

Specify the disposition of the data set upon abnormal termination of the job step.

#### **Data Class**

If your site uses SMS to manage data sets, type in the SMS data class.

#### **Storage Class**

If your site uses SMS to manage data sets, type in the SMS storage class.

#### **Management Class**

If your site uses SMS to manage data sets, type in the SMS management class.

#### **Expiration date -or- Retention period**

Enter either the expiration date in YYYYDDD format, or the retention period in number of days.

When you have finished entering the appropriate values on this panel, press PF3 (END) to continue.

### **User-designated unit types**

You may need to specify a device name that is not in your site's eligible device table (EDT). The Device Type panel allows you to keep the device name and specify the device type.

```
AUTOTOOL V4R2 ----- Device Type ----- 2017/09/20 14:00:02

Device entered TEST      not found in EDT (Eligible Device Table)

To keep this device name indicate whether it is a tape or DASD
device.

Device type   (T - Tape, D - DASD)
```

*Figure 144. Device Type panel*

The value entered for unit type is accepted as the device name. In the Device type field, specify T for tape or D for DASD device, and press Enter. The appropriate panel for the device type (tape or DASD) that you specified is displayed.

To cancel and correct the device name, press PF3 from the Device Type panel without specifying the device type.

## Building a data set name for SYSREC and SYSPUNCH data sets

DB2 Automation Tool offers a simple way to construct data set names for SYSREC and SYSPUNCH data sets.

### About this task

When you type Y in an Update DSN create spec field on the SYSREC Options panel or the SYSPUNCH Options panel, one of the following panels is displayed:

```
AUTOTOOL V4R2 ----- SYSREC DSN Generation ----- 2017/09/19 17:20:27
Option ==>
  Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
  Reorg Tablespace SYSREC      DB2 Subsystem: SS01
  Qualifier code      Free form literal      Show DSN  N
  GDG Limit . . .      (1-255)
  Current dataset name generation qualifier string:

Valid dataset name generation codes are
  1. Database          13. Month (MM)          27. Utility Name
  2. Space Name        14. Day (DD)           28. Job Name
  3. Partition/DSNUM   15. Julian Day (DDD)    29. Step Name
  4. Volser            16. Hours (HH)         30. Utility ID
  5. Partition/DSNUM   17. Minutes (MM)       31. Listdef
      only when partitioned 18. Seconds (SS)      32. Sequence
  7. Vcatname          19. Timestamp          33. Index Space Name
  8. Subsystem ID      20. Random Number      34. Table Space Name
  9. User ID           21. Unique              35. Substring Qualifier
 10. Time (HHMMSS)     22. GDG (+1)..(+n)      36. Use freeform literal
 11. Date (YYYYDDD)
 12. Year (YYYY)
```

Figure 145. SYSREC DSN Generation panel

```
AUTOTOOL V4R2 ----- SYSPUNCH DSN Generation ----- 2017/09/19 17:21:25
Option ==>
  Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
  Reorg Tablespace SYSPUNCH      DB2 Subsystem: SS01
  Qualifier code      Free form literal      Show DSN  N
  GDG Limit . . .      (1-255)
  Current dataset name generation qualifier string:

Valid dataset name generation codes are
  1. Database          13. Month (MM)          27. Utility Name
  2. Space Name        14. Day (DD)           28. Job Name
  3. Partition/DSNUM   15. Julian Day (DDD)    29. Step Name
  4. Volser            16. Hours (HH)         30. Utility ID
  5. Partition/DSNUM   17. Minutes (MM)       31. Listdef
      only when partitioned 18. Seconds (SS)      32. Sequence
  7. Vcatname          19. Timestamp          33. Index Space Name
  8. Subsystem ID      20. Random Number      34. Table Space Name
  9. User ID           21. Unique              35. Substring Qualifier
 10. Time (HHMMSS)     22. GDG (+1)..(+n)      36. Use freeform literal
 11. Date (YYYYDDD)
 12. Year (YYYY)
```

Figure 146. SYSPUNCH DSN Generation

These panels contain the same fields and operate the same for SYSREC and SYSPUNCH data sets. The following fields are on these panels:

#### Qualifier code

To include a qualifier, type its number in the Qualifier code field and press

Enter. The qualifier string appears in the Current dataset name generation qualifier string field. You can also type the data set name directly in the string field.

**Free form literal**

After selecting the Use Freeform literal qualifier, you can enter an eight-character literal in this field. If you want the literal to be in its own substring, make sure to begin the literal with a period.

**Show DSN**

To view the string as it will be completed, type Y in the Show DSN field.

**GDG Limit**

If you want to set a specific GDG limit for this data set, enter it here. If no GDG limit is set on this panel (GDG limit field left blank), the GDG limit set in the job profile on the Generation Options panel applies. Valid values are from 1 to 255.

**Current dataset name generation qualifier string**

This field display the qualifier string as it was input.

Commonly used qualifiers for SYSREC or SYSPUNC data set names are listed on the bottom half of the panel.

The following describes the valid data set name qualifiers that you can use on the SYSREC DSN Generation panel or the SYSPUNCH DSN Generation panel:

**Database**

The database name.

**Space Name**

The table space or index name.

**Partition/DSNUM**

The partition number or data set number. When you choose this option, the Resulting DSN using Current Symbolic String window appears to prompt you to enter a valid character for the first position in the string.

**Volser** The volume serial of the data set.

**Partition/DSNUM only when partitioned**

The partition number or data set number. This qualifier is included only if the data set name is being generated for a specific partition of a partitioned space; otherwise, it is ignored. When you choose this option, the Resulting DSN using Current Symbolic String window appears to prompt you to enter a valid character for the first position in the string.

**Vcatname**

The volume catalog name.

**Subsystem ID**

The subsystem ID.

**User ID**

The TSO user ID of the job builder.

**Time (HHMMSS)**

The current time in the format shown.

**Date (YYYYDDD)**

The current date in the format shown.

**Year (YYYY)**

The year in the format shown.

**Month (MM)**

The month in the format shown.

**Day (DD)**

The day of the month in the format shown.

**Julian Day (DDD)**

The Julian day.

**Hours (HH)**

The current time in hours.

**Minutes (MM)**

The current time in minutes.

**Seconds (SS)**

The current time in seconds.

**Timestamp**

The current timestamp, in format *Dyymmdd.Thhmmss*.

**Random Number**

A random number in format *Rnnnnnnn*.

**Unique**

Unique eight characters derived from the system clock at the time of allocation. This set of characters begins with an alphabetical character and is followed by seven alphabetical or numeric characters.

**GDG (+1)..(+n)**

If you are using GDG data sets, this variable appends (+n) to the GDG base. This must be the last qualifier code you specify for the data set name.

**Utility Name**

The utility name.

**Job Name**

The job name.

**Step Name**

The job step name.

**Utility ID**

The utility ID, truncated to eight characters and checked for invalid data set name characters. This variable is only allowed with templates.

**Listdef**

The name of the list that is defined by using the LISTDEF. This variable is only allowed with templates and LISTDEFs.

**Sequence**

Sequence number of the list item in the list. This variable is only allowed with templates and LISTDEFs.

**Index Space Name**

The index space name.

**Table Space Name**

The table space name.

### Substring Qualifier

Select this option to specify one of the qualifiers and customize the substring. When you press Enter, the substring parameters window is displayed.

### Use freeform literal

After selecting this qualifier, you can enter an eight-character literal in the Free Form literal field. If you want the literal to be in its own substring, make sure to begin the literal with a period.

For example, if you enter 1 (Database), 2 (Space Name), then 11 (Julian Date), the data set name appears as:

`&DB..&SN..D&JDATE.`

## Using the substring function

You can use the substring qualifier function to customize a data set name.

When you choose the Substring Qualifier function to customize a qualifier substring, the window shown in the following figure is displayed:

Substring Parameters

Enter the Qualifier Code ==>

Enter Starting Position ==>

Enter Substring Length ==>

Figure 147. Substring Parameters window

You can choose to enter almost any of the qualifier codes and specify the string's starting position and length. For example, qualifier code 8 generates a string of "&SSID", a four-character subsystem name. However, if your site uses three-character SSIDs, the substring qualifier option can be used to specify the SSID and customize the string length, as shown in the following figure:

Substring Parameters

Enter the Qualifier Code ==> 8\_

Enter Starting Position ==> 1\_

Enter Substring Length ==> 3\_

Figure 148. Example: specifying the SSID substring length

The results are shown in the following figure:

Current dataset name generation qualifier string:  
&SSID(1,3).

Figure 149. Example: results of substring generation

## Resulting DSN using current symbolic string

Some substrings (such as time and date) require the addition of an alphanumeric or symbol in the beginning of the string.

When you select these substrings, the window shown in the following figure is displayed:

Resulting DSN using current symbolic string

Enter a Literal or Symbolic to Prefix the Invalid Dataset Node

==>

Invalid Dataset Name:

\* SS01.DATABASE.SPACENAM.2008143 \*

-----

HAAM250E - Invalid data set node detected. First character not alphabetic  
or national.

-----

Figure 150. Resulting DSN using current symbolic string window

This panel allows you to insert an alphanumeric or symbol to make the data set node name valid. When finished, press Enter.

### Viewing a sample string

You can view a sample resulting data set name using your specifications by entering Y in the Show DSN field.

### About this task

To view the string as it will be completed, type Y in the Show DSN field. When you press Enter, the sample string appears, as shown in the following figure:

Resulting DSN using current symbolic string

Using the following sample data as input:

&JOBNAME = 'JOBNAME ' &STEPNAME = 'STEPNAME' &UID = 'TUSER'

&SSID = 'SS01' &ICTYPE = 'F' &UTIL = 'UTILNAME'

&LOCREM = 'L' &PRIBAC = 'P' &DB = 'DATABASE'

&SN = 'SPACENAM' &PART = '00001'

The date/time fields are set to the current time.

The generated dataset would be:

\* SS01.DATABASE.SPACENAM.D2008143 \*

Figure 151. Viewing a sample string

Press PF3 (END) to return to the data set name generation panel.



# Index REORG options

Reorganizing an index can improve access performance and reclaim fragmented space.

When specifying an index REORG, some of the options you can specify are:

- The degree of access to the data during the REORG
- Whether to take image copies before or after the REORG
- Whether to collect statistics as part of the REORG
- To generate a report as to whether a REORG is needed

## Setting index REORG options

Index REORG settings that can be configured include statistics options, specifying an online REORG, and other options.

### About this task

**Note:** Basic descriptions are provided in this documentation for all utility parameters. However, if you have questions about any utility option, please consult the DB2 Utility Guide and Reference for your version of DB2.

When you specify to set index REORG options, the panel shown in the following figure is displayed:

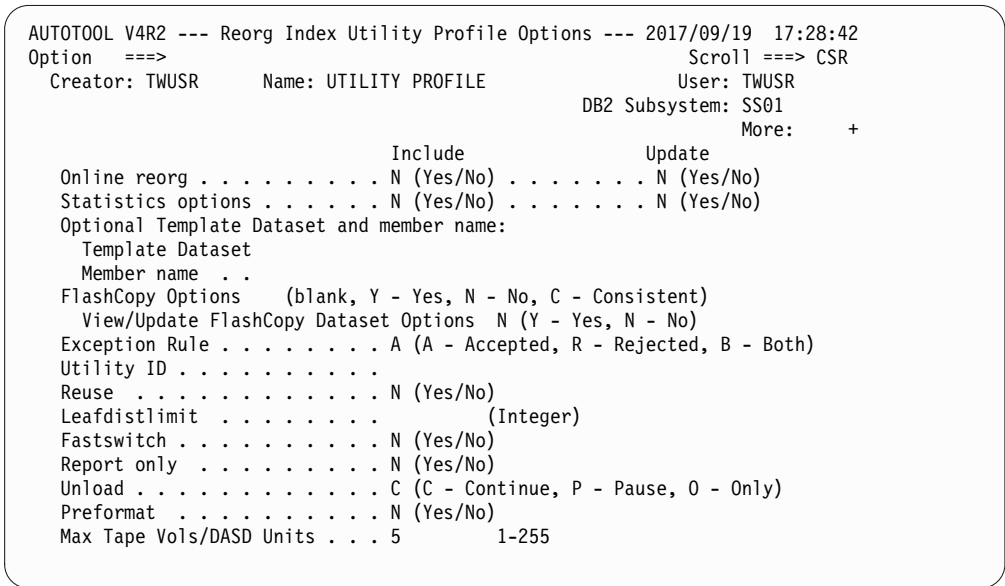


Figure 152. Reorg Index Utility profile options panel

The following describes the options you can set for the index REORG utility.

### Online reorg

Type Y if you want to specify an online REORG. You must also enter Y in corresponding Update field next to set options for the online REORG.

### Statistics options

Type Y in this field to specify to collect inline statistics during the REORG. You must set the statistics options by entering Y in the Update field as well.

### **Optional Template Dataset and member name:**

If you want to use an existing template for FlashCopy instead of allowing DB2 Automation Tool to create the template, enter the template data set and member name here. The template data set must already exist and the template members must follow DB2 syntax rules for the TEMPLATE control statement. When you select a FlashCopy copy type and update the options for that type, you will be prompted to select a template name on the TEMPLATEDD Name Selection panel. Using your own templates also requires that the job generation option Generate Templates is set to Y in the job profile.

**Note:** If these values are included, they override existing templates created by DB2 Automation Tool in this profile, as well as TEMPLATEDD default parameters in the setup options.

### **FlashCopy Options**

(DB2 10 and later) Select this option to set options for FlashCopy image copies that can be taken during the REORG INDEX. FlashCopy requires the job generation option Generate Templates. Type Y to generate FLASHCOPY YES. Type C to generate FLASHCOPY CONSISTENT. Type N to generate FLASHCOPY NO. Leave this field blank to omit the FLASHCOPY keyword. If there is a system default setting for FLASHCOPY, it will be honored when this field is left blank.

### **View/Update FlashCopy Dataset Options**

(DB2 10 and later) If FlashCopy Options is set to Y or C, use this field to specify FlashCopy data set options; type Y in this field and press Enter.

### **Exception Rule**

Type A in this field to have the utility act on all objects that are accepted (included) as a result of exception processing. Type R to have the utility act on objects that are rejected (excluded) as a result of exception processing. Type B to have the utility act on all objects, regardless of exception processing results.

### **Utility ID**

Enter a 1 to 16 character utility ID to be used to uniquely identify the utility to DB2. The ID must begin with a letter; the remainder can be alphanumeric or the following special characters: #, \$, @, €, !, ~, . If this utility profile is included in a job profile that is built for autonomic execution, a utility ID that is specified in this field is ignored. For autonomic builds, DB2 Automation Tool generates a unique utility ID for each object by using the letter "A" followed by the autonomic action ID that is assigned to the object and utility pair (for example, "A1785").

**Reuse** Type Y if you want REORG to reuse DB2-managed data sets without deleting and redefining them. This option is only available if the REORG is SHRLEVEL NONE.

### **Leafdistlimit**

Enter a value to compare to LEAFDIST for the specified partitions in SYSINDEXPART for the specified index. If any LEAFDIST exceeds the value specified for LEAFDISTLIMIT, REORG is performed or recommended.

### **Fastswitch**

(DB2 V8 and earlier only) Enter Y to enable the SWITCH phase methodology. If you enter N, the SWITCH phase will use IDCAMS RENAME.

**Report only**

If you specified a value in the Leafdistlimit field, you can type Y in this field to generate a report that indicates whether a REORG is recommended. No REORG is performed.

**Unload**

Indicate whether processing should continue or end after the unload phase.

- Enter C to continue processing.
- Enter P to pause the utility; the utility stops and the RELOAD status is stored in SYSUTIL so that processing can be restarted with RELOAD RESTART(PHASE).
- Enter O to specify that after the data has been unloaded, the utility job ends and the status in SYSUTIL corresponding to this utility ID is removed.

**Preformat**

Enter Y to specify that after the index is built, the remaining pages are preformatted to the high allocated RBA in the index space.

**Max Tape Vols/DASD Units**

Type in the maximum number of tape volumes or DASD units that DB2 Automation Tool can use for sequential data sets in the utility JCL. When specifying a tape device for the copy data sets, this number is placed in the UNIT parameter to assign the number of devices. This value is used for the following DDs: SYSREC SYSUT1 SORTOUT SORTWK\* or DATAWK\*. You can specify a value from 1 to 255. Because z/OS limits DASD data sets to 59 volumes, the largest value that will be assigned to the UNIT parameter for DASD data sets in the built JCL is 59. For tape data sets, you can specify up to 255 volumes.

**Decompress alloc multiplier**

If the index to be REORGed is compressed, enter a multiplier that DB2 Automation Tool can use to properly allocate work data sets. Valid values are from 1 to 99. For example, if you enter 2, the work data sets are allocated twice the size of the input data set. The appropriate value depends on the size of the index and the amount of the compression; refer to the DB2 Utility Guide and Reference for your version of DB2.

**Sort Device Type**

Specify the device type for temporary data sets that are to be dynamically allocated by DFSORT. Specify any device that is valid on the DYNALLOC parameter of the SORT or OPTION options for DFSORT.

**Sort Number**

Specify the number of temporary data sets that are to be dynamically allocated when collecting statistics for a data-partitioned secondary index. If you do not put a value in the Sort Device Type field, this field is ignored.

**RBA/LRSN Conversion**

(DB2 Version 11 and later) Specify the RBA or LRSN format for the target object after the completion of the REORG. Specify blank to use the UTILITY\_OBJECT\_CONVERSION ZPARM entry. Type B to convert objects that are in EXTENDED (10-byte) format to BASIC (6-byte) format. Type E to convert objects that are in BASIC (6-byte) format to EXTENDED (10-byte) format. Type N to not perform any conversion.

## Optional Skeletons

These fields can be used to customize the JCL generated by DB2 Automation Tool. You can add your own skeletons that can be processed before or after the utility JCL. For more information on using these fields, refer to “Using the optional skeletons” on page 274.

## Setting online REORG options for indexes

Online index REORG options that can be set for indexes include share level options, retries and timeouts, switch times, and deadlines.

### About this task

To set online REORG options, enter Y in both the Online Reorg Include and Update fields and press Enter. The Online Reorg Index options panel appears, shown in the following figure:

```
AUTOTOOL V4R2 ----- Online Reorg Index Options ----- 2017/09/19 17:32:13
Option  ===>

Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                                DB2 Subsystem: SS01

Enter the options to associate with this utility profile

Sharelevel . . . . . C      (R - Reference, C - Change, N - None)
Drain Wait . . . . .      (blank, 0-1800 seconds)
Retry . . . . .      (blank, 0-255)
Retry Delay . . . . .      (blank, 1-1800 seconds)
Force . . . . . N      (A - All, R - Readers, N - None)
Timeout . . . . . T      (A - Abend, T - Term, N - No)

                                Include      Update
Deadline Options . . . . . N (Yes/No) . . . . . N (Yes/No)
Switchtime Options . . . . . N (Yes/No) . . . . . N (Yes/No)
Shrlevel Change Options . . . Y (Yes/No) . . . . . N (Yes/No)
```

Figure 153. Online Reorg Index options panel

The following describes the online index REORG utility options you can specify.

### Sharelevel

Indicate the level of access applications will have during the RELOAD phase of the online REORG.

- Type R for reference (applications can read but not write data during the REORG).
- Type C for change (applications can read and write data during the REORG). This option is not available for spaces with large composite records (greater than 32k) or for table spaces with the NOT LOGGED attribute.
- Type N for no access (applications can neither read or write data during the REORG).

### Drain Wait

Specify the number of seconds that the utility waits when draining the space. The time specified is the aggregate time for objects to be reorganized. This overrides the values specified by IRLMRWT and UTIMOUT. If the keyword is not specified or 0 is specified, then regular draining using the IRLMRWT and UTIMOUT values will be used. Acceptable values can be from 0 to 1800 seconds.

**Retry** Specify the maximum number of retries that can be attempted. Values can be from 0 to 255. If this field is left blank, no retries will be attempted.

**Retry Delay**

Specify the minimum duration in seconds between retries. Values can be from 1 to 1800. The value must be an integer. The default is 300 seconds. For DB2 Version 9.1 subsystems, the default is the smaller of two possible values: (DRAIN\_WAIT value x RETRY value) or (DRAIN\_WAIT value x 10).

**Force** Specify the action to be taken when the utility is draining the space. Type A to specify that both the read and write claimers are canceled when REORG is requesting a drain all or drain writers on the last RETRY processing. Type R to specify that read claimers are canceled when REORG is requesting a drain all on the last RETRY processing. Type N to specify that no action is taken when REORG performs a drain.

**Timeout**

Specify the action to be taken if the REORG utility receives a time out condition while trying to drain objects in either the LOG or SWITCH phase. Type A (Abend) to specify that DB2 leaves the objects in a UTRO or UTUT state. Type T (Term) to specify that DB2 issues an implicit TERM UTILITY command, causing the utility to end with a return code 8; issues the DSNU590I and DSNU170I messages; and leaves the objects in an RW state.

**Deadline Options**

If you specified SHRLEVEL REFERENCE or CHANGE, type Y to include this option. To specify the deadline options, type Y in the Update field and press Enter.

**Switchtime Options**

(DB2 Version 11 and later) Type Y to include this option. To specify switch time options, type Y in the Update field and press Enter.

**Shrlevel Change Options**

If you specified SHRLEVEL CHANGE, type Y to include this option. To specify more SHRLEVEL CHANGE options, type Y in the Update field and press Enter.

**Setting deadline options**

When performing an online REORG, you can specify a deadline for the switch phase to finish.

**About this task**

To specify the deadline, type Y in both the Deadline options Include and Update fields on the Online Reorg options panel and press Enter. The panel shown in the following figure is displayed:

AUTOTOOL V4R2 ----- Deadline options ----- 2017/09/19 16:49:11
Option ==>

Creator: TWUSR
Name: UTILITY PROFILE
User: TWUSR

DB2 Subsystem: SS01

Enter the "Deadline" options to associate with this utility profile

Deadline . . . . . N (N - None, T - Timestamp, L - Lde)

Timestamp value . . . . .

Labeled Duration Expression
Base On Current Date/Timestamp (D - Date, T - Timestamp)
+/- Value

Year(s)
Month(s)
Day(s)
Hour(s)
Minute(s)
Seconds(s)
Microseconds(s)

Figure 154. Deadline options panel

The following describes the deadline options you can specify:

**Deadline**

Indicate the type of deadline you want to set for the switch phase to finish.

- To specify a timestamp, type T in this field and complete the Timestamp value field.
- To specify an LDE (labeled duration expression), type L in this field and complete the Labeled Duration Expression fields.

**Timestamp value**

If you specified a timestamp deadline, enter the timestamp here.

The following fields are used for LDE deadlines:

**Based on Current Date/Timestamp**

Indicate in this field whether you want to use a date or timestamp as the base. Type D for date and T for timestamp.

**+/-** In this column, type + to add the specified value, or - to subtract the specified value.

**Value** Type an integer value to correspond with the time value.

For example, if you want to set the switch phase deadline for 12 hours and 30 minutes after the current timestamp, fill out the fields as shown in the following figure:

Labeled Duration Expression:
Base On Current Date/Timestamp ==> t (Date/Timestamp)
+/- Value

—
—
Year(s)
—
—
Month(s)
—
—
Day(s)
+
12
Hour(s)
+
30
Minute(s)
—
—
Seconds(s)
—
—
Microseconds(s)

Figure 155. Deadline options field entry example

## Setting switch time options

When performing an online REORG, you can specify a switch time for the final log iteration of the LOG phase to begin.

### About this task

On the Online Reorg options panel, type Y in both the Switchtime options Include and Update fields and press Enter. The panel shown in the following figure is displayed:

```
AUTOTOOL V4R2 ----- Switchtime Options ----- 2017/09/19 16:50:28
Option ==>

Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                                DB2 Subsystem: SS01
Enter the "Switchtime" options to associate with this utility profile

Switchtime . . . . . N (N - None, T - Timestamp, L - Lde)

Timestamp value . . . . .

Newmaxro . . . . . (blank, Number)

Labeled Duration Expression
Base On Current Date/Timestamp (D - Date, T - Timestamp)
+/- Value
    Year(s)
    Month(s)
    Day(s)
    Hour(s)
    Minute(s)
    Seconds(s)
    Microseconds(s)
```

Figure 156. Switchtime Options panel

The following describes the switch time options you can specify:

#### Switchtime

Indicate the type of switch time you want to set for the final log iteration of the LOG phase to begin.

- To specify a timestamp, type T in this field and complete the Timestamp value field.
- To specify an LDE (labeled duration expression), type L in this field and complete the Labeled Duration Expression fields.

#### Timestamp value

If you specified a timestamp switch time, enter the timestamp in this field. The timestamp format is YYYY-MM-DD-HH.MM.SS.ssssss.

#### Newmaxro

This field is used when the Switchtime field is set to Timestamp or Lde to set the maximum amount of time for the last log iteration after SWITCHTIME is met. The Newmaxro value overrides the existing MAXRO value. Type an integer to specify the number of seconds. A small value reduces the length of read-only access, but it might increase the elapsed time for REORG to complete. A large value will probably ensure that REORG will enter the last log iteration almost immediately at or after the specified SWITCHTIME. Leaving this field blank will result in Newmaxro NONE at job build time.

The following fields are used for LDE deadlines:

### Based on Current Date/Timestamp

Indicate in this field whether you want to use the current date or timestamp as the base. Type D for date and T for timestamp.

**+/-** In this column, type + to add the specified value, or - to subtract the specified value.

**Value** Type an integer value to correspond with the time value.

### Setting SHRLEVEL CHANGE options for index REORGs

When performing an online REORG of an index, you can specify several options specific to SHRLEVEL CHANGE.

### About this task

To specify these options, type Y in both the Shrlevel Change Options Include and Update fields on the Online Reorg Index options screen and press Enter. The screen shown in the following figure is displayed:

```
AUTOTOOL V4R2 ----- Change Options ----- 2017/09/19 17:36:54
Option  ===>

Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                                DB2 Subsystem: SS01
Enter the "Shrlevel Change" options to associate with this utility profile

Maxro  . . . . . (blank, Number, DEFER)
Drain  . . . . . A      (W - Writers, A - All, N - No)
Longlog . . . . . C      (C - Continue, T - Term, D - Drain)
Delay  . . . . . 0      (Number)
Logranges . . . . . Y      (Yes/No)
```

Figure 157. Change options screen

The following describes the options you can specify:

**Maxro** Set the maximum amount of time for the last iteration of log processing. During that iteration, applications have read-only access. Type an integer to specify the number of seconds, or enter DEFER to specify that iterations of log processing can continue indefinitely. If you type DEFER, you should also enter C in the Longlog field. Leave this field blank to omit the MAXRO keyword.

**Drain** Specify how readers or writers are drained at the end of the log phase after the Maxro threshold is reached and when the last iteration of the log is to be applied.

- Type W to drain only writers during the log phase after the Maxro threshold has been reached; all writers are drained upon entering the SWITCH phase.
- Type A to drain all readers and writers during the log phase after the Maxro threshold has been reached.
- Type N to exclude the DRAIN keyword.

### Longlog

Specify what action to take if the REORG's reading of the log is not catching up quickly enough to the applications' writing of the log. DB2 sends a message to the console, then takes the action you specify.

- Type C to continue the REORG until the time on the JOB statement expires.



- Type T to terminate the REORG after the delay specified by the Delay parameter.
- Type D to drain the write claims after the delay specified by the Delay parameter, forcing the final iteration of log processing.

**Delay** Specify the minimum interval between the time that REORG sends the LONGLOG message to the console and the time that REORG performs the action specified by the LONGLOG parameter. Enter an integer value.

### Logranges

(DB2 Version 11 and later) Specify whether REORG will use SYSLGRNX information for the LOG phase. Type Y to have REORG use SYSLGRNX information for the LOG phase when possible. Type N to have REORG not use SYSLGRNX information for the LOG phase. This can cause REORG to run much longer. In a data sharing environment, this option can result in the merging of all logs from all members. This option is feasible when there is a known integrity issue with SYSLGRNX entries and performance problems in accessing SYSLGRNX for log read determination.

## Setting statistics options

You can specify to update or report on catalog statistics as part of the index REORG.

### About this task

To specify this option, type Y in the Statistics options Update field on the Reorg Index Utility profile options panel and press Enter. The panel shown in the following figure is displayed:

```

AUTOTOOL V4R2 ----- Reorg Utility Statistics options ----- 2017/09/19 17:38:25
Option  ==>

Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                                DB2 Subsystem: SS01

Report  . . . . . Y      (Yes/No)
Update  . . . . . N      (A - All, C - aCcesspath,
                        S - Space, N - None)

History . . . . . N      (A - All, C - aCcesspath,
                        S - Space, N - None)

Force Rollup . . . . . N      (Yes/No)
Keycard . . . . . N      (Yes/No)
Update statistics . . . . . N      (Yes/No)

```

Figure 158. Reorg Utility Statistics options panel

The following describes the REORG INDEX utility statistics options you can specify:

### Report

Type Y to have DB2 generate a set of messages to SYSPRINT to report the collected statistics. Type N to suppress messages.

### Update

Indicate whether you want DB2 to update the catalog with statistics after the REORG.

- Type A to update all collected statistics in the catalog.
- Type C to update only catalog table columns that provide statistics used for access path selection.

- Type S to update only the catalog table columns that provide statistics to help you assess the status of a particular table space or index.
- Type N to not update catalog tables; this option is only valid when REPORT YES is specified.

### History

If you specify to update statistics, you can also specify to record catalog table inserts or updates in the catalog history tables. What you specify in this field depends on what you specified for Update. Consult the DB2 Utility Guide and Reference for your version of DB2 for information about using this option.

### Force Rollup

Type Y in this field to force aggregation or rollup of statistics when RUNSTATS is executed and some parts are empty. Type N to specify aggregation only if data is available for all parts.

### Keycard

Type Y in this field if you want to collect all of the distinct values in all of the 1 to *n* key column combinations for the index.

### Update statistics

Type Y in this field to create or update the frequent value and histogram statistics definitions. Histogram statistics are available for DB2 Version 11 NFM and later.

## Setting FREQVAL and HISTOGRAM options

This panel allows you to view and set multiple FREQVAL stats and HISTOGRAM options that will be collected by RUNSTATS during a REORG or REBUILD INDEX utility.

### About this task

These utility statistic option panels allows you to specify catalog statistics that can be reported on as part of a RUNSTATS utility run during a REORG or REBUILD utility.

**Note:** Histogram statistics are available only for DB2 Version 11 NFM and later.

### Procedure

1. To specify statistics, type Y in the Update statistics field on the Reorg Utility Statistics options panel or the Rebuild Index Profile Options panel. When you press Enter, the panel shown in the following figure is displayed.  
This panel allows you to view and set statistics that will be collected.

```

AUTOTOOL V4R2 ---- Rebuild Utility Column Statistics --- 2017/09/19 11:47:42
Option ==> Scroll ==> CSR
Line Commands: V - View C - Create D - Delete U - Update
-----
Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                        DB2 Subsystem: SS01
                        Row 1 of 1
-----
Cmd  Statistic Definition
C   Press Enter to Create Statistics
***** Bottom of Data *****

```

Figure 159. Reorg / Rebuild Utility Column Statistics panel

2. To set a column statistic definition, type C in the line command area and press Enter.

- On subsystems running DB2 Version 11 NFM or later, the Reorg | Rebuild Column Statistics Create window is displayed. Type Y next to the type of statistics you want to define and press Enter.
  - On other subsystems, the Freqval Options window is displayed.
3. Set FREQVAL options on the Freqval Options window as follows:

**Freqval Numcols**

Enter the number of columns in the index for which frequently occurring values are to be collected. This value can be a number between 1 and the number of indexed columns.

**Freqval Count**

Enter the number of frequently occurring values that are to be collected from the specified key columns.

4. For DB2 Version 11 subsystems, set HISTOGRAM options as follows on the Reorg | Rebuild Histogram Options window:

**Histogram Numcols**

Enter the number of columns in the index for which histogram statistics are to be collected. This value can be a number between 1 and the number of indexed columns.

**Histogram Numquantiles**

Enter how many quantiles that the utility is to collect. The integer value must be equal to or greater than one. The number of quantiles that you specify should never exceed the total number of distinct values in the specified key columns. The maximum number of quantiles is 100.

## Setting FlashCopy options

If the subsystem is a DB2 V10 NFM or later and other requirements are met, FlashCopy can be used to make copies.

### About this task

To use FlashCopy:

- The subsystem must be DB2 V10 New Function Mode (NFM) or later.
- The DB2 objects must be SMS-managed.
- FlashCopy V2 volumes must be available.
- The job generation option "Generate Templates" must be specified.

When FlashCopy is selected, the panel shown in the following figure is displayed:

```

AUTOTOOL V4R2 ----- FlashCopy Options ----- 2017/09/19 11:53:33
Option ==>
Rebuild Index FlashCopy
  Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                                      DB2 Subsystem: SS01

Options for RI
Update DSN create spec . . Y (Yes/No)

Unit Type . . . . . (SYSDA - DISK - etc.)
Catalog Options
DISP=Status . . . . . (M - MOD, N - NEW, O - OLD, S - SHR)

      Normal Termination . . (C - CATLG, D - DEL, K - KEEP, U - UNCATLG)
      Abnormal Termination   (C - CATLG, D - DEL, K - KEEP, U - UNCATLG)

Data Class . . . . . (8 character class)
Storage Class . . . . . (8 character class)
Management Class . . . . . (8 character class)
Expiration date *or* . . . (YYYYDDD - YYDDD)
Retention period . . . . . (4 digit number)

```

Figure 160. FlashCopy Options panel

The following describes the FlashCopy options you can specify:

#### Update DSN create spec

Type Y in this field and press Enter to set or change the FlashCopy data set specifications.

#### Unit Type

Type in a valid UNIT where the image copy data set will be written. SMS may ignore this value. If you enter a value that is not found in your site's eligible device table (EDT), the DASD Device Type window is displayed (see "User-designated unit types for FlashCopy" on page 163).

#### Catalog Options

This section allows you specify the disposition of the FlashCopy data sets. These values will be used to build the DISP= portion of the image copy DD. It is not required, but if one DISP= value is specified, all three must be specified.

#### DISP=Status

Specify the initial disposition or status of the data set.

#### Normal Termination

Specify the disposition of the data set upon normal termination of the job step.

#### Abnormal Termination

Specify the disposition of the data set upon abnormal termination of the job step.

#### Data Class

#### Storage Class

#### Management Class

If your site requires it, specify the SMS data class, storage class, and management class.

#### Expiration date -or- Retention period

Enter either the expiration date in YYYYDDD format, or the retention period in number of days.

## User-designated unit types for FlashCopy

You may need to specify a FlashCopy device name that is not in your site's eligible device table (EDT). The DASD Device Type window allows you to verify the device name.

```
AUTOTOOL V4R2 ----- DASD Device Type ----- 2011/07/06 11:41:29

Device entered TEST      not found in EDT (Eligible Device Table)

NOTE: Flashcopy is only valid with DASD device types.

Enter Y to keep this device name if it is a DASD device or return
to enter a valid device name.

Use this DASD device name? N (Yes/No)
```

Figure 161. DASD Device Type window

To accept the value entered for unit type as the device name, specify Y in the Use this DASD device name field and press Enter. The IC FlashCopy DSN generation panel is displayed.

To cancel and correct the device name, press PF3 from the DASD Device Type window without entering Y in the field.

## Building a data set name for LP, LB, RP, and RB copies

DB2 Automation Tool offers a simple way to construct an image copy data set name for LP, LB, RP, and RB copies.

### About this task

When you type Y in an Update DSN create spec field for LP, LB, RP and RB type backups, the following panel is displayed.

```
AUTOTOOL V4R2 ----- LP Image Copy DSN Generation ----- 2017/09/19 15:59:28
Option ==>
Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
Image Copy Local Primary Non-Threshold      DB2 Subsystem: SS01
Qualifier code      Free form literal      Show DSN  N
GDG Limit . . .    (1-255)
Current dataset name generation qualifier string:

Valid dataset name generation codes are
(* marked items are not supported in IC dynamic dataset generation.)
 1. Database          13. Month (MM)          25. Primary/Backup (P/B)
 2. Space Name        14. Day (DD)            26. ICTYPE
 3. Partition/DSNUM   15. Julian Day (DDD)      27. Utility Name
* 4. Volser           16. Hours (HH)           28. Job Name
* 5. Partition/DSNUM   17. Minutes (MM)         29. Step Name
    only when partitioned 18. Seconds (SS)      30. Utility ID
* 7. Vcatname         * 19. Timestamp          31. Listdef
 8. Subsystem ID      * 20. Random Number      32. Sequence
* 9. User ID          * 21. Unique              33. Index Space Name
10. Time (HHMMSS)     * 22. GDG (+1)..(+n)      34. Table Space Name
11. Date (YYYYDDD)    23. ICBACKUP (#24.#25) 35. Substring Qualifier
12. Year (YYYY)       24. Local/Recovery    36. Use freeform literal
```

Figure 162. Image Copy DSN Generation panel

The Image Copy DSN Generation panel appears once for each standard and threshold image copy type. For threshold data sets, the panel is the same, except for the addition of the Use Standard DSN in Threshold Proc field and the ICTYPE qualifier code only allows Full and Incremental strings.

**Qualifier code**

To include a qualifier, type its number in the Qualifier code field and press Enter. The qualifier string appears in the Current dataset name generation qualifier string field. You can also type the data set name directly in the string field.

**Free form literal**

After selecting the Use Freeform literal qualifier, you can enter an eight-character literal in this field. If you want the literal to be in its own substring, make sure to begin the literal with a period.

**Show DSN**

To view the string as it will be completed, type Y in the Show DSN field.

**GDG Limit**

If you want to set a specific GDG limit for this data set, enter it here. If no GDG limit is set on this panel (GDG limit field left blank), the GDG limit set in the job profile on the Generation Options panel applies. Valid values are from 1 to 255.

**Use Standard DSN in Threshold Proc**

This field only appears for threshold data sets. If you want the threshold data set name to be the same as the standard data set, enter Y in this field. You do not need to re-enter the data set string on this panel.

**Current dataset name generation qualifier string**

This field display the qualifier string as it was input.

Commonly used qualifiers for image copy data set names are listed on the bottom half of the panel. Qualifiers marked with an asterisk are not supported when using the TEMPLATE control statement.

**Note:** If you want date and time variables in templates to be resolved at job run time rather than job build time, you must specify GMT times for image copy data set names on the DB2 Automation Tool setup panels. You can do this either from the Setup option on the main menu or by overriding the job options in the job profile. This option applies to the variables Time, Date, Year, Month, Day, Julian Day, Hours, Minutes, and Seconds.

The following describes the valid data set name qualifiers that you can use on the Image Copy DSN Generation panel:

**Database**

The database name.

**Space Name**

The table space or index name.

**Partition/DSNUM**

The partition number or data set number. When you choose this option, the Resulting DSN using Current Symbolic String window appears to prompt you to enter a valid character for the first position in the string.

**Volser** The volume serial of the data set.

**Partition/DSNUM only when partitioned**

The partition number or data set number. This qualifier is included only if the data set name is being generated for a specific partition of a partitioned space; otherwise, it is ignored. When you choose this option, the Resulting DSN using Current Symbolic String window appears to prompt you to enter a valid character for the first position in the string.

**Vcatname**

The volume catalog name.

**Subsystem ID**

The subsystem ID.

**User ID**

The TSO user ID of the job builder.

**Time (HHMMSS)**

The current time in the format shown.

**Date (YYYYDDD)**

The current date in the format shown.

**Year (YYYY)**

The year in the format shown.

**Month (MM)**

The month in the format shown.

**Day (DD)**

The day of the month in the format shown.

**Julian Day (DDD)**

The Julian day.

**Hours (HH)**

The current time in hours.

**Minutes (MM)**

The current time in minutes.

**Seconds (SS)**

The current time in seconds.

**Timestamp**

The current timestamp, in format *Dyymmdd.Thhmmss*.

**Random Number**

A random number in format *Rnnnnnnn*.

**Unique**

Unique eight characters derived from the system clock at the time of allocation. This set of characters begins with an alphabetical character and is followed by seven alphabetical or numeric characters.

**GDG (+1)..(+n)**

If you are using GDG data sets, this variable appends (+n) to the GDG base. This must be the last qualifier code you specify for the data set name.

**ICBACKUP (#24.#25)**

The image copy backup type. The format is *x.y*, where x is L for local or R for recovery and y is P for primary or B for backup.

**Local/Recovery (L/R)**

The image copy backup type; L is used for local and R for recovery.

**Primary/Backup (P/B)**

The image copy backup type; P is used for primary and B for backup.

**ICTYPE**

The image copy type; F is used for full; I for incremental; and C for a conditional incremental copy made using the Change Limit option.

**Utility Name**

The utility name.

**Job Name**

The job name.

**Step Name**

The job step name.

**Utility ID**

The utility ID, truncated to eight characters and checked for invalid data set name characters. This variable is only allowed with templates.

**Listdef**

The name of the list that is defined by using the LISTDEF. This variable is only allowed with templates and LISTDEFS.

**Sequence**

Sequence number of the list item in the list. This variable is only allowed with templates and LISTDEFS.

**Index Space Name**

The index space name.

**Table Space Name**

The table space name.

**Substring Qualifier**

Select this option to specify one of the qualifiers and customize the substring. When you press Enter, the substring parameters window is displayed.

**Use freeform literal**

After selecting this qualifier, you can enter an eight-character literal in the Free Form literal field. If you want the literal to be in its own substring, make sure to begin the literal with a period.

For example, if you enter 1 (Database), 2 (Space Name), then 11 (Julian Date), the data set name appears as:

&DB...&SN...D&JDATE.

## Using the substring function

You can use the substring qualifier function to customize a data set name.

When you choose the Substring Qualifier function to customize a qualifier substring, the window shown in the following figure is displayed:



Substring Parameters

Enter the Qualifier Code ==>

Enter Starting Position ==>

Enter Substring Length ==>

Figure 163. Substring Parameters window

You can choose to enter almost any of the qualifier codes and specify the string's starting position and length. For example, qualifier code 8 generates a string of "&SSID", a four-character subsystem name. However, if your site uses three-character SSIDs, the substring qualifier option can be used to specify the SSID and customize the string length, as shown in the following figure:

Substring Parameters

Enter the Qualifier Code ==> 8\_

Enter Starting Position ==> 1\_

Enter Substring Length ==> 3\_

Figure 164. Example: specifying the SSID substring length

The results are shown in the following figure:

Current dataset name generation qualifier string:  
&SSID(1,3).

Figure 165. Example: results of substring generation

## Resulting DSN using current symbolic string

Some substrings (such as time and date) require the addition of an alphanumeric or symbol in the beginning of the string.

When you select these substrings, the window shown in the following figure is displayed:

Resulting DSN using current symbolic string

Enter a Literal or Symbolic to Prefix the Invalid Dataset Node  
==>

Invalid Dataset Name:  
\* SS01.DATABASE.SPACENAM.2008143 \*

HAAM250E - Invalid data set node detected. First character not alphabetic or national.

Figure 166. Resulting DSN using current symbolic string window

This panel allows you to insert an alphanumeric or symbol to make the data set node name valid. When finished, press Enter.

## Viewing a sample string

You can view a sample resulting data set name using your specifications by entering Y in the Show DSN field.

### About this task

To view the string as it will be completed, type Y in the Show DSN field. When you press Enter, the sample string appears, as shown in the following figure:

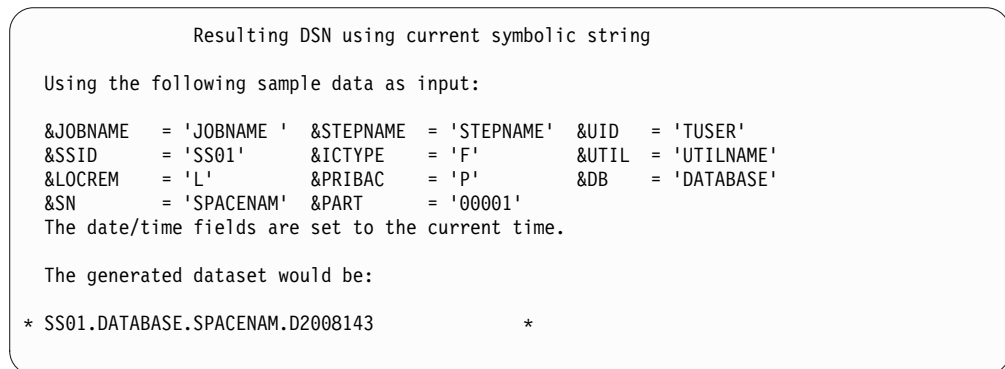


Figure 167. Viewing a sample string

Press PF3 (END) to return to the data set name generation panel.

---

## QUIESCE options

The QUIESCE utility establishes a quiesce point (the current log RBA or log record sequence number (LRSN)) for an object and records it in the SYSCOPY catalog table. A successful QUIESCE improves the probability of a successful RECOVER or COPY.

Quiesce options that can be set include:

- Whether all referentially related table spaces are to be quiesced at once
- Whether to write changed pages to disk
- The utility ID

When you specify to set QUIESCE options, the panel shown in the following figure is displayed:

```

AUTOTOOL V4R2 ----- Quiesce options ----- 2017/09/19 17:43:00
Option ==>

Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                                DB2 Subsystem: SS01
Exception Rule . . . . . A (A - Accepted, R - Rejected, B - Both)
Utility ID . . . . .      16 characters
Tablespaceset . . . . . N (Yes/No)
Write . . . . . Y (Yes/No)
Optional Skeletals      -BEFORE-      -AFTER-
JCL Skeletal . . . . .      . .      (8 Character Name)
Control Cards Skeletal . . .      . .      (8 Character Name)
Step End Skeletal . . . . .      . .      (8 Character Name)

```

Figure 168. Quiesce options panel

The following describes the options you can set for the QUIESCE utility:

### Exception Rule

Type A in this field to have the utility act on all objects that are accepted (included) as a result of exception processing. Type R to have the utility act on objects that are rejected (excluded) as a result of exception processing. Type B to have the utility act on all objects, regardless of exception processing results.

### Utility ID

Enter a 1 to 16 character utility ID to be used to uniquely identify the utility to DB2. The ID must begin with a letter; the remainder can be alphanumeric or the following special characters: #, \$, @, €, !, ~, . If this utility profile is included in a job profile that is built for autonomic execution, a utility ID that is specified in this field is ignored. For autonomic builds, DB2 Automation Tool generates a unique utility ID for each object by using the letter “A” followed by the autonomic action ID that is assigned to the object and utility pair (for example, “A1785”).

### Tablespaceset

Type Y to specify that all of the referentially related table spaces in a table space set are to be quiesced. For the purposes of the QUIESCE utility, a table space set is either:

- A group of table spaces that have a referential relationship.
- A base table space with all of its LOB table spaces.

**Write** Type Y in this field to write all changed pages from the table spaces and indexes to disk as part of the QUIESCE.

**Note:** You cannot specify N in this field for table spaces with the NOT LOGGED attribute.

### Optional Skeletals

These fields can be used to customize the JCL generated by DB2 Automation Tool. You can add your own skeletons that can be processed before or after the utility JCL. For more information on using these fields, refer to “Using the optional skeletons” on page 274.

## MODIFY options

The MODIFY utility with the RECOVERY option deletes records from the SYSCOPY catalog table, related log records from SYSLGRNX directory table, and entries from the DBD. In addition, you can choose options to delete old rows from the DB2 Automation Tool data repository. You can also clean up several SYSIBM

tables used for recovery operations, as well as DB2 Change Accumulation and DB2 Recovery Expert table spaces used with DB2 Automation Tool.

When you specify to set MODIFY options, the panel shown in the following figure appears:

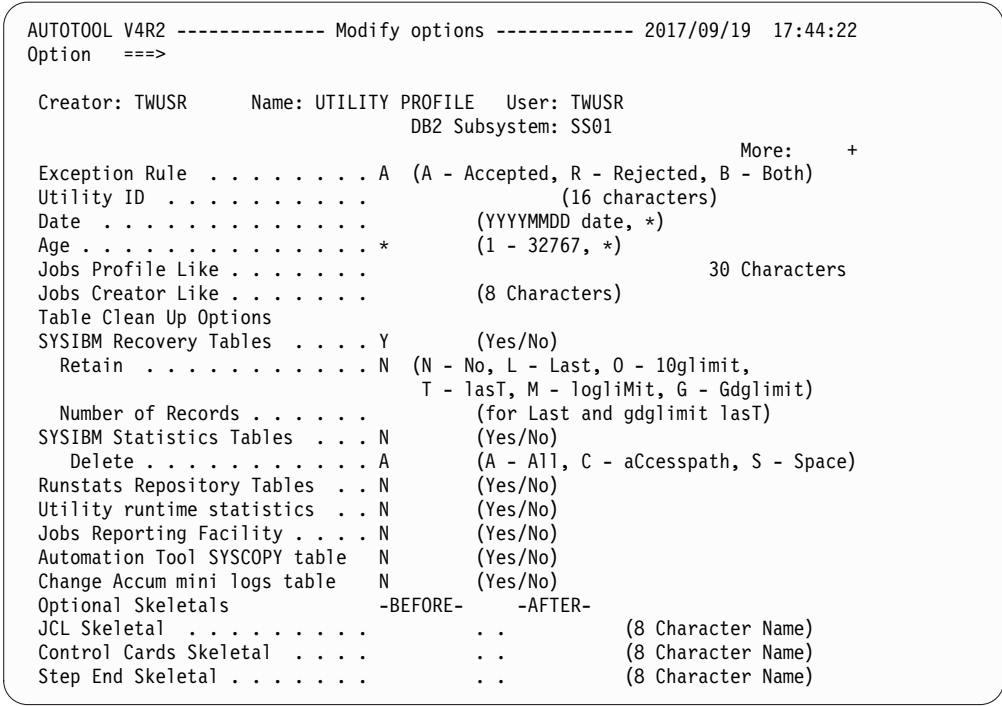


Figure 169. Modify options panel

The following describes the options you can set for the MODIFY utility.

**Exception Rule**

Type A in this field to have the utility act on all objects that are accepted (included) as a result of exception processing. Type R to have the utility act on objects that are rejected (excluded) as a result of exception processing. Type B to have the utility act on all objects, regardless of exception processing results.

**Utility ID**

Enter a 1 to 16 character utility ID to be used to uniquely identify the utility to DB2. The ID must begin with a letter; the remainder can be alphanumeric or the following special characters: #, \$, @, %, !, -, . If this utility profile is included in a job profile that is built for autonomic execution, a utility ID that is specified in this field is ignored. For autonomic builds, DB2 Automation Tool generates a unique utility ID for each object by using the letter "A" followed by the autonomic action ID that is assigned to the object and utility pair (for example, "A1785").

**Date** Type in a date in format yyyyymmdd. All records written before this date will be deleted. Type \* to delete all records, regardless of date.

**Age** To delete all records older than a specified number of days, type the number of days here. Type \* to delete all records, regardless of age.

**Jobs Profile Like and Jobs Creator Like**

These fields can be used only for cleaning up the Jobs Reporting Facility tables. Entering criteria in one or both of these new fields will provide

further qualification (beyond Date and Age) to what LPxxxx rows will be deleted. These fields operate with other fields as follows:

- If Jobs Profile Like and/or Jobs Creator Like criteria are entered, then the Exception Rule field is effectively ignored, since the delete process is no longer object driven, but profile driven.
- When Jobs Profile Like and/or Jobs Creator Like criteria is specified in conjunction with Date or Age criteria, only those LPxxxx rows associated with those job profiles will be deleted if they also meet the Date or Age criteria. All criteria will be evaluated together to identify rows to be deleted.
- When only Jobs Profile Like and/or Jobs Creator Like criteria is specified (Date or Age criteria is NOT specified), then all qualifying LPxxxx rows will be deleted.
- When only Date or Age criteria is specified (Jobs Profile Like and Jobs Creator Like are blank) and the Exception Rule is A (accepted) or R (rejected), orphaned rows in the LPxxxx tables may be created. Providing an Exception Rule value of B (both) in this instance will eliminate the possibility of orphaned residual rows since ALL objects in the current jobs profile would be evaluated, not just triggered (accepted) or non-triggered (rejected) objects.
- The specification of criteria for Jobs Profile Like and/or Jobs Creator Like may result in the deletion of LPxxxx rows for objects that are not included in the current job profile. This is possible because this type of processing is profile driven, not object driven; objects included in the current job have no bearing on this type of repository cleanup.

#### **SYSIBM Recovery Tables**

Type Y in this field to clean up the following tables:

- SYSIBM.SYSCOPY
- SYSIBM.SYSLGRNG
- SYSIBM.SYSLGRNX

**Retain** (DB2 Version 9.1 or later) If cleaning up SYSIBM recovery tables, specify whether to include the RETAIN keyword as part of the syntax.

- Type N to not include the RETAIN keyword. DELETE syntax will be generated.
- Type L to retain a specific number of recent records in SYSIBM.SYSCOPY. If you use this option, specify the number of records in the Number of Records field.
- Type O to specify that the BSDS be queried to determine the oldest archive log timestamp. For DB2 data sharing, the BSDS of all data sharing members are queried to determine the overall oldest archive log timestamp. SYSIBM.SYSCOPY records older than this timestamp for the table space will be deleted.
- Type G to specify that if the most recent record in SYSIBM.SYSCOPY refers to a GDS (generation data set), the GDG limit will be retrieved. As many recent records (referring to this GDG) as specified in the GDG limit will be retained in SYSIBM.SYSCOPY. If the most recent record in SYSIBM.SYSCOPY refers to a non-GDS, no action will be performed.
- Type T to specify that if the most recent record in SYSIBM.SYSCOPY refers to a GDS (generation data set), the GDG limit will be retrieved. As many recent records (referring to this GDG) as specified in the GDG limit will be retained in SYSIBM.SYSCOPY. If the most recent record in SYSIBM.SYSCOPY refers to a non-GDS, the number of records specified

in the Number of Records field will be retained in SYSIBM.SYSCOPY. If you use this option, specify the number of records in the Number of Records field.

- Type M to specify that if the most recent record in SYSIBM.SYSCOPY refers to a GDS (generation data set), the GDG limit will be retrieved. As many recent records (referring to this GDG) as specified in the GDG limit will be retained in SYSIBM.SYSCOPY. If the most recent record in SYSIBM.SYSCOPY refers to a non-GDS, the BSDS will be queried to determine the oldest archive log timestamp. For DB2 data sharing, the BSDS of all data sharing members are queried to determine the overall oldest archive log timestamp. SYSIBM.SYSCOPY records older than this timestamp for the table space will be deleted.

#### **Number of records**

If specifying the RETAIN LAST or RETAIN GDGLIMIT LAST keywords, enter the number of records you wish to retain in this field.

#### **SYSIBM Statistics Tables**

Type Y in this field to clean up the following tables:

- SYSIBM.SYSCOLDIST\_HIST
- SYSIBM.SYSCOLUMNS\_HIST
- SYSIBM.SYSINDEXES\_HIST
- SYSIBM.SYSINDEXPART\_HIST
- SYSIBM.SYSINDEXSTATS\_HIST
- SYSIBM.SYSLOBSTATS\_HIST
- SYSIBM.SYSTABLEPART\_HIST
- SYSIBM.SYSTABSTATS\_HIST
- SYSIBM.SYSTABLES\_HIST

**Delete** If cleaning up statistics tables, specify which statistics to remove:

- Type A to delete all statistics history rows that are related to the specified object from all catalog history tables.
- Type C to delete all access path statistics history rows that are related to the specified object from the following history tables:
  - SYSIBM.SYSINDEXPART\_HIST
  - SYSIBM.SYSTABLEPART\_HIST
  - SYSIBM.SYSLOBSTATS\_HIST
- Type S to delete all space-tuning statistics history rows related to the specified object from the following history tables:
  - SYSIBM.SYSINDEXPART\_HIST
  - SYSIBM.SYSTABLEPART\_HIST
  - SYSIBM.SYSLOBSTATS\_HIST

#### **Runstats Repository Tables**

Select this option to clean up the following DB2 Automation Tool repository tables. These tables are used to maintain statistics used in exception processing.

- SYSTABLEPART
- SYSTABLESPACE
- SYSTABSTATS
- SYSTABLES
- SYSCOLDIST

- SYSCOLDISTSTATS
- SYSCOLSTATS
- SYSCOLUMNS
- SYSINDEXES
- SYSINDEXPART
- SYSINDEXSTATS

#### **Utility runtime statistics**

Select this option to clean up the DB2 Automation Tool UTILITY\_STATS\_V11 table. This table is used to track utility runtime statistics.

#### **Jobs Reporting Facility**

Select this option to clean up the following tables. These tables are used to keep information for the Execution Reports facility.

- LPJOBS\_V11
- LPSTEPS\_V11
- LPSPACES\_V11

#### **Automation Tool SYSCOPY table**

Select this option to clean up the DB2 Automation Tool SYSCOPY table. This table is used to hold backup and recovery information on table spaces and indexes that were backed up using the EMC Symmetrix or IBM ESS full volume backups.

#### **Change Accum mini logs table**

Select this option to clean up the GGC.MINI\_LOG\_V14 table. This table is used with DB2 Change Accumulation Tool.

#### **Optional Skeletons**

These fields can be used to customize the JCL generated by DB2 Automation Tool. You can add your own skeletons that can be processed before or after the utility JCL. For more information on using these fields, refer to “Using the optional skeletons” on page 274.

---

## **REPAIR options**

The REPAIR online utility repairs data. REPAIR is intended as a means of replacing invalid data with valid data.

#### **CAUTION:**

**Use caution in using REPAIR, as already-damaged data could be further compromised if REPAIR is improperly used.**

When you specify to set REPAIR options, the panel shown in the following figure is displayed:

```

AUTOTOOL V4R2 ----- Repair options ----- 2017/09/19 17:46:23
Option ==>
Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                  DB2 Subsystem: SS01
                  More:      +
Exception Rule . . . . . A (A - Accepted, R - Rejected, B - Both)
Utility ID . . . . .      (16 characters)
Log . . . . . Y (Yes/No)
Process . . . . . S (S - Set, D - Dbd, L - Levelid)
No Copy Pending . . . . . N (Yes/No)
No Recover Pending . . . . . N (Yes/No)
No Check Pending . . . . . N (Yes/No)
No Auxiliary Warning . . . . . N (Yes/No)
No Auxiliary Check Pending . . . . . N (Yes/No)
No Rebuild Pending . . . . . N (Yes/No)
No Advisory Reorg Pending . . . . . N (Yes/No)
No Advisory Reorg Pending* . . . . . N (Yes/No)
Rebuild Pending . . . . . N (Yes/No)
Page Set Rebuild Pending . . . . . N (Yes/No)
Repair Catalog . . . . . N (Yes/No)
Repair Catalog Test . . . . . N (Yes/No)
DBD Process Option . . . . . N (N - No, D - Drop, T - Test,
                               I - diagnose, R - Rebuild)
Output DDName . . . . . (Optional 8 char DDName)
Optional Skeletals -BEFORE- -AFTER-
JCL Skeletal . . . . . . . (8 Character Name)
Control Cards Skeletal . . . . . (8 Character Name)
Step End Skeletal . . . . . (8 Character Name)

```

Figure 170. Repair options panel

The following describes the options you can set for the REPAIR utility.

#### Exception Rule

Type A in this field to have the utility act on all objects that are accepted (included) as a result of exception processing. Type R to have the utility act on objects that are rejected (excluded) as a result of exception processing. Type B to have the utility act on all objects, regardless of exception processing results.

#### Utility ID

Enter a 1 to 16 character utility ID to be used to uniquely identify the utility to DB2. The ID must begin with a letter; the remainder can be alphanumeric or the following special characters: #, \$, @, €, !, ~, . If this utility profile is included in a job profile that is built for autonomic execution, a utility ID that is specified in this field is ignored. For autonomic builds, DB2 Automation Tool generates a unique utility ID for each object by using the letter "A" followed by the autonomic action ID that is assigned to the object and utility pair (for example, "A1785").

**Log** Type Y to log the changes made by REPAIR. If the changes are logged, they are applied again if the data is recovered.

#### Process

Indicate the type of REPAIR to be done.

- Type S to specify Set. Using this option resets the pending statuses of the object(s) as specified in the status fields. For table spaces or data sets, the SET statement resets the COPY-pending, RECOVER-pending, CHECK-pending, auxiliary warning (AUXW), and auxiliary CHECK-pending (ACHKP) statuses. For indexes, the SET statement resets the informational COPY-pending (ICOPY), RECOVER-pending, REBUILD-pending, or CHECK-pending status for an index.
- Type D to specify Dbd. This option compares the definition of a database in the DB2 catalog with its definition in the DB2 directory,



rebuilds the database definition in the directory from the information in the DB2 catalog (including LOB information), and drops an inconsistent database definition from the DB2 catalog and the DB2 directory.

- Type L to specify Levelid. This option sets the level identifier of the named table space, table space partition, index, or index space partition to a new identifier. Use this option to accept the use of a down-level data set. You cannot specify multiple LEVELIDs.

**Note:** You cannot use LEVELID with a table space, table space partition, index, or index space partition with outstanding indoubt log records or pages in the logical page list (LPL).

**No Copy Pending**

Specify Y to reset the COPY-pending status of the specified table space, or informational COPY-pending (ICOPY) status of the specified index. This option can only be used if Process is set to S.

**No Recover Pending**

Specify Y to reset the RECOVER-pending (RECP) status of the specified table space or index. This option can only be used if Process is set to S.

**No Check Pending**

Specify Y to reset the CHECK-pending (CHKP) status of the specified table space or index. This option can only be used if Process is set to S.

**No Auxiliary Warning**

Specify Y to reset the auxiliary warning (AUXW) status of the specified table space. The specified table space must be a base table space or a LOB table space. This option can only be used if Process is set to S.

**No Auxiliary Check Pending**

Specify Y to reset the auxiliary CHECK-pending (ACHKP) status of the specified table space. The specified table space must be a base table space. This option can only be used if Process is set to S.

**No Rebuild Pending**

Specify Y to reset the REBUILD-pending (RBDP) status, the page set REBUILD-pending status (PSRBDP), or the RBDP\* status of the specified index. This option can only be used if Process is set to S.

**No Advisory Reorg Pending**

(DB2 10 and later) Specify Y to reset the advisory REORG-pending (AREOR) status of the specified table space or index. This option can only be used if Process is set to S.

**No Advisory Reorg Pending\***

(DB2 Version 8 and later) Specify Y to reset the advisory REORG-pending (AREOR\*) status of the specified table space or index. This option can only be used if Process is set to S.

**Rebuild Pending**

(DB2 10 and later) Specify Y to set the REBUILD-pending (RBDP) status on the specified index. This option can only be used if Process is set to S.

**Page Set Rebuild Pending**

(DB2 Version 9.1 and later) Specify Y to set the PAGE SET REBUILD-pending (PSRBD) status on the specified index. This option can only be used if Process is set to S.

**Repair Catalog**

(DB2 Version 11 NFM and later) Specify Y to repair inconsistencies

between data, catalog, and OBDs. This option is not valid with LOB or XML table spaces and will only be generated when Process is set to S.

#### **Repair Catalog Test**

(DB2 Version 11 NFM and later) Specify Y to report inconsistencies in the job output. This option is not valid with LOB or XML table spaces and will only be generated when Process is set to S.

#### **DBD Process Option**

If DBD processing was specified, set this option to indicate the type of DBD processing to be done. This option can only be used if Process is set to D.

- Type N to specify no DBD processing.
- Type D to specify Drop. This option drops the specified database from both the DB2 catalog and the DB2 directory.

**Note:** Use this option with extreme care.

- Type T to specify Test. This option builds a DBD from information in the DB2 catalog and compares it with the DBD in the DB2 directory. This option reports significant differences between the two DBDs.
- Type I to specify Diagnose. This option produces information necessary for resolving an inconsistent database definition. Like the test option, this option builds a DBD based on the information in the DB2 catalog and compares it with the DBD in the DB2 directory. In addition, this option reports any differences between the two DBDs.
- Type R to specify Rebuild. This option rebuilds the DBD associated with the specified database from information in the DB2 catalog.

#### **Output DDName**

For DBD processing, specifies the DD statement for an optional output data set. This data set contains copies of the DB2 catalog records used to rebuild the DBD.

#### **Optional Skeletons**

These fields can be used to customize the JCL generated by DB2 Automation Tool. You can add your own skeletons that can be processed before or after the utility JCL. For more information on using these fields, refer to “Using the optional skeletons” on page 274.

---

## **CHECK DATA options**

CHECK DATA checks table spaces for violations of referential and table check constraints, and reports information about violations.. CHECK DATA can also checks for consistency between a base table space and the corresponding LOB or XML table spaces.

#### **Restriction:**

- Under some conditions, it is recommended that CHECK INDEX and CHECK LOB be run prior to running CHECK DATA. For information about the circumstances under which you may need to run these utilities, refer to the DB2 utilities guide for your version of DB2 CHECK INDEX and CHECK LOB are not currently supported in DB2 Automation Tool. These utilities can be included via the use of user exits and user skeletons.
- For user-managed spaces, CHECK DATA with the SHRLEVEL CHANGE option spaces requires that shadow data sets be created prior to running CHECK

DATA. You must create the shadow data sets before running the CHECK DATA utility job generated by DB2 Automation Tool.

When you specify to set CHECK DATA options, the panel shown in the following figure is displayed.

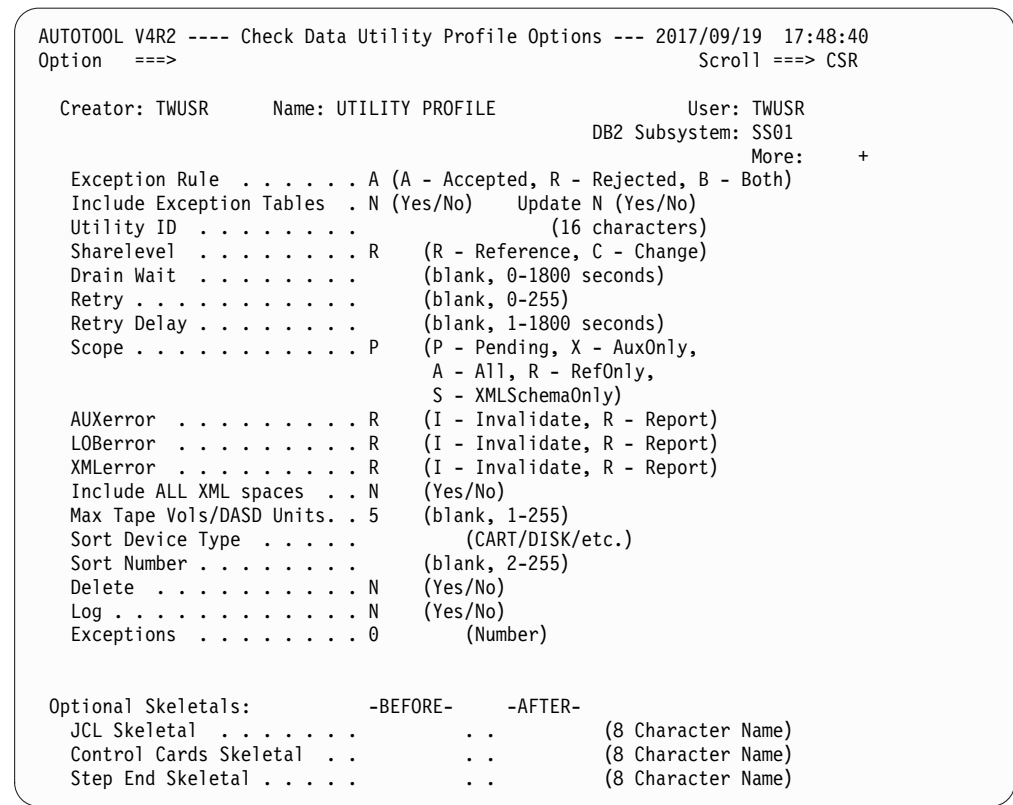


Figure 171. Check Data Utility Profile Options

The following describes the options you can set for the CHECK DATA utility.

### Exception Rule

Type A in this field to have the utility act on all objects that are accepted (included) as a result of exception processing. Type R to have the utility act on objects that are rejected (excluded) as a result of exception processing. Type B to have the utility act on all objects, regardless of exception processing results.

### Include Exception Tables

This field allows you to specify that exception tables will be included in a FOR EXCEPTION clause. Enter Y in the first field to include the exception tables. Enter Y in the corresponding Update field to specify or update definitions for exception tables.

### Utility ID

Enter a 1 to 16 character utility ID to be used to uniquely identify the utility to DB2. The ID must begin with a letter; the remainder can be alphanumeric or the following special characters: #, \$, @, %, !, ~, . If this utility profile is included in a job profile that is built for autonomic execution, a utility ID that is specified in this field is ignored. For autonomic builds, DB2 Automation Tool generates a unique utility ID for each object by using the letter “A” followed by the autonomic action ID that is assigned to the object and utility pair (for example, “A1785”).

**Sharelevel**

(DB2 Version 9.1 and later) Indicate the type of access that is to be allowed for the table space, partition, or index that is to be checked. Enter R for SHRLEVEL REFERENCE or C for SHRLEVEL CHANGE.

**Drain Wait**

(DB2 Version 9.1 and later) Specify the number of seconds that CHECK DATA is to wait when draining the table space or index. Valid values are integers from 0 to 1800 seconds. A blank or 0 means that CHECK DATA will use the value of the lock timeout subsystem parameter IRLMRWT.

**Retry** (DB2 Version 9.1 and later) Specify the maximum number of retries that CHECK DATA is to attempt. Valid values can be any integer from 0 to 255. If you do not specify RETRY, CHECK DATA uses the value of the utility multiplier system parameter UTIMOUT.

**Retry Delay**

(DB2 Version 9.1 and later) Specify the minimum duration, in seconds, between retries. Valid values are integers from 1 to 1800. If you do not specify RETRY\_DELAY, CHECK DATA uses the smaller of the following two values:

DRAIN\_WAIT value X RETRY value

DRAIN\_WAIT value X 10

**Scope** Specify the scope of the rows in the table space that are to be checked.

- Type P to indicate that the only rows that are to be checked are those that are in table spaces, partitions, or tables that are in CHECK-pending status.
- Type X to indicate that only the LOB column and the XML column check are to be performed for table spaces that have tables with LOB columns or XML columns.
- Type A to indicate that all dependent tables in the specified table spaces are to be checked. The referential integrity check, constraints check, LOB check, and XML checks are performed.
- Type R to specify the same as the ALL option, except that the LOB column check and the XML column check are not performed.
- Type S to indicate that only the XML schema validation is to be performed on the XML objects specified by the INCLUDE XML TABLESPACE keyword. XML and LOB integrity checks and the referential integrity and constraints checks are not performed. Valid for DB2 10 and later.

**AUXerror**

Indicate the action that CHECK DATA is to perform when it finds a LOB or XML column check error. Type I to indicate that a LOB or XML column check error is reported with a warning message and the base table LOB or XML column is set to an invalid status. Type R to indicate that a LOB or XML column check error is reported with a warning message and the base table space is set to the auxiliary CHECK-pending (ACHKP) status.

**LOBerror**

(DB2 Version 9.1 and later) Specify the action that CHECK DATA is to perform when it finds a LOB column check error. Type I to specify that a LOB column check error is reported with a warning message and the base table LOB column is set to an invalid status. A LOB column with invalid status that is now correct is set valid. The base table space is set to the auxiliary warning (AUXW) status if any LOB column remains in invalid

status. Type R to specify that a LOB column check error is reported with a warning message and the base table space is set to the auxiliary CHECK-pending (ACHKP) status.

**XMLerror**

(DB2 Version 9.1 and later) Specify the action that CHECK DATA is to perform when it finds an XML column check error. Type I to specify that an XML column check error is reported with a warning message and the base table XML column is set to an invalid status. An XML column with invalid status that is now correct is set to valid. The base table space is set to the auxiliary warning (AUXW) status if any LOB column remains in invalid status. Type R to specify that an XML column check error is reported with a warning message and the base table space is set to the auxiliary CHECK-pending (ACHKP) status.

**Include ALL XML spaces**

(DB2 10 and later) Indicate if consistency checks are performed on the specified XML table spaces and related node ID indexes. Entering Y means that all XML table spaces that are related to the base table spaces are checked.

**Max Tape Vols/DASD Units**

Type in the maximum number of tape volumes or DASD units that DB2 Automation Tool uses for sequential data sets in the utility JCL. When specifying a tape device, this number is placed in the UNIT parameter to assign the number of devices. This value is used for the following DDs: SYSREC SYSUT1 SORTOUT SORTWK\* or DATAWK\* You can specify a value from 1 to 255. Because z/OS limits DASD data sets to 59 volumes, the largest value that will be assigned to the UNIT parameter for DASD data sets in the built JCL is 59. For tape data sets, you can specify up to 255 volumes.

**Sort Device Type**

Enter the device type for temporary data sets that are to be dynamically allocated by a sort program. You can specify any disk device type that is acceptable to the DYNALLOD parameter of the SORT or OPTION control statement for the sort program.

**Sort Number**

Specify the number of temporary data sets that are to be dynamically allocated by the sort program. Valid values are 2 to 255.

**Delete** Enter Y to specify that rows that are in violation of referential or table check constraints are to be deleted from the table space.

**Log** Enter Y to indicate that all records that are deleted during the REPORTCK PHASE are logged. If the table space has the NOT LOGGED attribute, LOG YES is ignored.

**Exceptions**

Specify the maximum number of exceptions allowed.

**Optional Skeletons**

These fields can be used to customize the JCL generated by DB2 Automation Tool. You can add your own skeletons that can be processed before or after the utility JCL. For more information on using these fields, refer to "Using the optional skeletons" on page 274.

## Exception table options

When you specify to include exception tables, the Check Data Exceptions option panel is displayed, as shown in the following figure:

```

AUTOTOOL V4R2 ----- Check Data Exception options ----- 2017/09/19 17:51:30
Option ==> Scroll ==> CSR

```

```

Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
DB2 Subsystem: SS01

```

Enter the options for Exception Tables

```

Database . . . . . (8 Characters)
Table space . . . . . (8 Characters)
Bufferpool . . . . . (8 Characters)
Storage Group . . . . . (8 Characters)
Primary Quantity . . . . . 12 (Number in kilobytes)
Secondary Quantity . . . . . 12 (Number in kilobytes)
Exception Table Creator . . . . (8 Characters)
Exception Table Suffix . . . . (8 Characters)
Include RID column . . . . . N (Yes/No)
Include Timestamp column . . . . N (Yes/No)

```

You can enter an existing exceptions table. If the table does not exist, DB2 Automation Tool will create the table for you, using the information provided on this panel.

The following describes the options you can set for an exceptions table to be used with the CHECK DATA utility.

#### Database

(Required) Enter the database that contains the exception table(s).

#### Table space

(Required) Enter the table space that contains the exception table(s).

#### Bufferpool

(Required) Enter a valid buffer pool that will be used for the exception table.

#### Storage Group

(Required) Enter the storage group for the exception table.

#### Primary Quantity

If the exceptions table will be created by DB2 Automation Tool, this field is required; enter the primary quantity.

#### Secondary Quantity

If the exceptions table will be created by DB2 Automation Tool, this field is required; enter the secondary quantity.

#### Exception Table Creator

#### Exception Table Suffix

If the exceptions table will be created by DB2 Automation Tool, you can enter a table creator and a suffix in these fields. Because many objects may be expanded for CHECK DATA (especially if SCOPE ALL is specified), specifying a combination of Exception Table Creator and Exception Table Suffix can help ensure the exception tables have unique names. For example, if you specify creator ABC and suffix \_EXCP, an exception table for PDUSR.MYOBJECT will be generated as ABC.MYOBJECT\_EXCP.

#### Include RID column

Specify Y to include a column for the row ID in the exceptions table.

#### Include Timestamp column

Specify Y to include a column for the timestamp of the start of the CHECK DATA utility in the exceptions table.

Figure 172. Check Data Utility Profile Options

## REBIND options

The REBIND command is used to rebind plans and packages. DB2 Automation Tool builds REBIND jobs for plans and packages related to triggered objects in the object profile.

When you specify to set REBIND options, the panel shown in the following figure is displayed. Only a portion of the fields are shown; scroll down to see all the fields.

```
AUTOTOOL V4R2 ----- Rebind Utility profile options ----- 2017/09/19 17:52:43
Option ==> Scroll ==> CSR
Creator: TWUSR      Name: UTILITY PROFILE      User: TWUSR
                                      DB2 Subsystem: SS01
                                      More:      +

Exception Rule . . . . . A (A - Accepted, R - Rejected, B - Both)
Rebind Parameters
Acquire . . . . . U (blank, A - Allocate, U - Use)
Access Path Compare . . . . . (blank, W - Warn, E - Error, N - None)
Access Path Reuse . . . . . (blank, W - Warn, E - Error, N - None)
Access Path Retain Duplicate . . . . . (blank, Y - Yes, N - No)
Business Time Sensitive . . . . . (blank, Y - Yes, N - No)
Cachesize . . . . . (blank, 0-4096)
Concurrent Access Resolution . . . . . (blank,
U - Use Currently Committed,
W - Wait for Outcome)
Currentdata . . . . . Y (blank, Y - Yes, N - No)
Database Connect Protocol . . . . . D (blank, D - DRDA, P - Private)
Defer Prepare . . . . . N (blank, Y - Yes, N - No)
Degree . . . . . 1 (blank, A - Any, 1 - 1)
Disconnect . . . . . E (blank,
A - Automatic,
C - Conditional,
E - Explicit)
Dynamic Rules . . . . . R (blank,
B - Bind,
D - Define Bind,
F - Define Run,
I - Invoke Bind,
O - Invoke Run,
R - Run)
```

Figure 173. Rebind Utility profile options panel

The following describes the options you can set for the REBIND command.

### Exception Rule

Type A in this field to have the utility act on all objects that are accepted (included) as a result of exception processing. Type R to have the utility act on objects that are rejected (excluded) as a result of exception processing. Type B to have the utility act on all objects, regardless of exception processing results.

### Access Path Compare

(DB2 V10 and later) Specify whether DB2 should compare the old and new access paths for each matching statement. If the access paths are dissimilar, message DSNT285I is issued.

- W: DB2 compares old and new access paths. If the paths are dissimilar, a warning is issued and processing of the package continues.
- E: DB2 compares old and new access paths. If the paths are dissimilar, an error is issued and processing of the package terminates.
- N: DB2 will not compare old and new access paths.



- blank: The value from the previous BIND or REBIND is used.

#### **Access Path Reuse**

(DB2 V10 and later) Specify whether DB2 should attempt to reuse previous access paths.

- W: (Valid for DB2 Version 11 and later only) DB2 will attempt to reuse previous access paths. If an access path cannot be used, a warning is issued, but the package is rebound successfully.
- E: DB2 will attempt to reuse previous access paths. If an access path cannot be reused, an error is issued and processing of the package terminates.
- N: DB2 will not attempt to reuse previous access paths.
- blank: The value from the previous BIND or REBIND is used.

#### **Acquire**

Enter A to specify that resources for DBRMs are acquired when the plan is allocated; enter U to specify that resources are acquired when the application first accesses them. If left blank, the value from the previous BIND or REBIND is used.

#### **Access Path Retain Duplicate**

(DB2 10 and later) This option allows you to specify whether you want DB2 to retain an old package copy when access paths of the old copy are identical. This option only applies when PLANMGMT(BASIC) or PLANMGMT(EXTENDED) bind options are in effect.

- Y: Retain the old package copy.
- N: Discard the old package copy.
- blank: The value from the previous BIND or REBIND is used.

#### **Business Time Sensitive**

(DB2 Version 11 and later) This option indicates how references to system-period temporal tables in static and dynamic SQL statements are affected by the value of the CURRENT TEMPORAL BUSINESS\_TIME special register.

- Y: References to system-period temporal tables in static and dynamic SQL statements are affected by the value of the CURRENT TEMPORAL BUSINESS\_TIME special register.
- N: References to system-period temporal tables in static and dynamic SQL statements are not affected by the value of the CURRENT TEMPORAL BUSINESS\_TIME special register.
- blank: The value from the previous BIND or REBIND is used.

#### **Cachesize**

Enter the size of the authorization cache acquired in the EDM pool for the plan. Valid values are from 0 to 4096. If left blank, the value from the previous BIND or REBIND is used.

#### **Concurrent Access Resolution**

(DB2 V10 and later) This option allows you to specify whether transactions should wait for row-level locks to be freed or are allowed to access currently committed rows.

- U: Allows applications to access currently committed data.
- W: The application must wait until the locks are released to access the data.
- blank: The value from the previous BIND or REBIND is used.

**Currentdata**

Type Y to require data currency for read-only and ambiguous cursors when the isolation level of cursor stability is in effect. N specifies that currency is not required for read-only and ambiguous cursors when the isolation level of cursor stability is in effect. If left blank, the value from the previous BIND or REBIND is used.

**Database Connect Protocol**

(DB2 V9 and earlier only) Specify which protocol to use when connecting to a remote site that is identified by a three-part name statement.

- D: DRDA<sup>®</sup> protocol.
- P: Private protocol; note that an application that uses DB2 private protocol access cannot include SQL statements that were added to DB2 after Version 7.
- blank: The value from the previous BIND or REBIND is used.

**Defer Prepare**

Specify Y to defer preparation for dynamic SQL statements that refer to remote objects. Specify N to prepare them immediately. If left blank, the value from the previous BIND or REBIND is used.

**Degree**

Determines whether to attempt to run a query using parallel processing to maximize performance.

- A: Allows parallel processing.
- 1: Prohibits parallel processing.
- blank: The value from the previous BIND or REBIND is used.

**Disconnect**

Specify which remote connections to destroy during commit operations.

- A: Destroy all remote connections.
- C: Destroy all remote connections unless an open cursor defined as WITH HOLD is associated with the connection.
- E: Destroy only connections in the release pending state.
- blank: The value from the previous BIND or REBIND is used.

**Dynamic Rules**

This field controls what values apply at run time to dynamic SQL attributes. For more information about this field, refer to the BIND command information in the DB2 for z/OS documentation for your version of DB2.

- B: Use bind behavior.
- D: Use define behavior or bind behavior.
- F: Use define behavior or run behavior.
- I: Use invoke or bind behavior.
- O: Use invoke behavior or run behavior.
- R: Use run behavior.
- blank: The value from the previous BIND or REBIND is used.

**Encoding**

Specifies the application encoding for all host variables static statements in the plan or package. If left blank, the value from the previous BIND or REBIND is used.

**Explain**

Enter Y if EXPLAIN information is to be collected and retained. Enter N to not collect EXPLAIN information. Enter O to EXPLAIN ONLY; this option is only valid for DB2 V10 and later. It allows you to explain the statements without the privilege of executing it. If left blank, the value from the previous BIND or REBIND is used.

**Extended Indicator**

(DB2 V10 and later) Indicate whether extended indicator variable values are recognized during the execution of the associated plan or package. Enter N to specify that extended indicator variable values are not recognized. Enter Y to indicate that extended indicator values are recognized. If left blank, the value from the previous BIND or REBIND is used.

**Flag** Indicate which messages to display.

- C: Completion messages only.
- E: Error and completion messages.
- I: Information, warning, error and completion messages.
- W: Warning, error and completion messages.
- blank: The value from the previous BIND or REBIND is used.

**Immediate Write**

Indicate whether immediate writes are to be done for updates that are made to group buffer pool dependent page sets or partitions. This option is only applicable for data sharing environments.

- Y: Updated pages that are group buffer pool dependent are immediately written as soon as the buffer update completes.
- N: Normal write activity is done.
- blank: The value from the previous BIND or REBIND is used.

**Isolation**

Indicate how far to isolate an application from the effects of other running applications.

- CS: Cursor stability: Ensures that the application does not read a row that another process changes until that process releases that row.
- NC: No commit: Used on packages that are bound to certain servers other than DB2 for z/OS. DB2 for z/OS does not support NC. If the server does not support this isolation level, it uses UR.
- RR: Repeatable read: Ensures that the application does not read a row that another process has changed until that process releases that row, and other processes do not change a row that the application reads until the application commits or terminates.
- RS: Read stability: Ensures that the application does not read a row that another process has changed until that process releases that row, and other processes do not change a row that satisfies the application's search condition until the application commits or terminates. It does allow other application processes to insert a row, or to change a row that did not originally satisfy the search condition. If the server does not support RS, it uses RR.
- UR: Uncommitted read: Unlike repeatable read and cursor stability, does not ensure anything. With the exception of LOB data, uncommitted read avoids acquiring locks on data.
- blank: The value from the previous BIND or REBIND is used.

**Keep Dynamic**

Enter Y to specify that DB2 is to keep dynamic SQL statements after commit points. If left blank, the value from the previous BIND or REBIND is used.

**Owner**

Enter the authorization ID of the owner of the object (plan or package). The owner must have the privileges required to execute the SQL statements contained in the object. If left blank, the value from the previous BIND or REBIND is used.

**Path Default**

Enter Y to reset the PATH for a package or plan to SYSIBM, SYSFUN, SYSPROC, or the plan or package qualifier. If left blank, the value from the previous BIND or REBIND is used.

**Plan Management**

(DB2 V9 and later) This option determines the extent to which DB2 will capture and retain access paths.

- O: DB2 will regenerate access paths and replace any current copies that exist in the access path repository. Not valid for DB2 V9.
- F: DB2 will not store any access paths for the incoming package.
- B: DB2 will discard the previous copy of a package. The current copy becomes the previous copy, and the incoming copy becomes the current copy. If an original copy of a package already exists, it remains available.
- E: DB2 will discard the previous copy of a package. The current copy becomes the previous copy, and the original copy is managed as follows:
  - If no original copy exists, the current copy is cloned to become the original.
  - If an original copy exists, it is retained as the original.
- blank: The value from the previous BIND or REBIND is used.

**Plan Management Scope**

(DB2 V10 and later) Indicate whether the Plan Management setting applies to static statements, dynamic statements, or both.

- A: All statements.
- S: Static statements.
- D: Dynamic statements.
- blank: The value from the previous BIND or REBIND is used.

**Qualifier**

Enter the implicit qualifier for unqualified names of tables, views, indexes, and aliases contained in the plan or package. If left blank, the value from the previous BIND or REBIND is used.

**Release**

Indicate when to release resources that a program uses.

- C: Release at each commit point.
- D: Release when the program terminates.
- blank: The value from the previous BIND or REBIND is used.

**Reopt** Specify whether to have DB2 determine an access path at run time by using the values of host variables, parameter markers, and special registers.

- A: Always: Determines the access path again at run time each time the statement is run.

- N: None: Does not determine an access path at run time.
- O: Once: Determines the access path for any dynamic statement only once, at the first run time or at the first time the statement is opened.
- blank: The value from the previous BIND or REBIND is used.

### **Reopt Scope**

(DB2 V10 and later) Indicate whether the Reopt setting applies to static statements, dynamic statements, or both.

- A: All statements.
- S: Static statements.
- D: Dynamic statements.
- blank: The value from the previous BIND or REBIND is used.

### **SQL RULES**

Indicate whether a type 2 CONNECT statement can be executed to an existing SQL connection, according to DB2 rules.

- D: DB2 rules; no error occurs if CONNECT identifies an existing SQL connection.
- S: Standard; an error occurs if CONNECT identifies an existing SQL connection.
- blank: The value from the previous BIND or REBIND is used.

### **Switch**

(DB2 10 and later) Using this option restores all previous or original package information in the catalog tables and directory to that of the specified package copy. This allows you to fall back to an older copy of a package in the event of a performance regression. This option cannot be specified with any other rebind option.

- P: Switch to Previous package information.
- O: Switch to Original package information.

### **System Time Sensitive**

(DB2 Version 11 and later) Use this field to indicate how references to system-period temporal tables in static and dynamic SQL statements are affected by the value of the CURRENT TEMPORAL SYSTEM\_TIME special register.

- Y: References to system-period temporal tables in static and dynamic SQL statements are affected by the value of the CURRENT TEMPORAL SYSTEM\_TIME special register.
- N: References to system-period temporal tables in static and dynamic SQL statements are not affected by the value of the CURRENT TEMPORAL SYSTEM\_TIME special register.
- blank: The value from the previous BIND or REBIND is used.

### **Validate**

Indicate whether to recheck, at run time, errors of the type "OBJECT NOT FOUND" and "NOT AUTHORIZED" found during bind or rebind.

- B: Bind: If not all objects or needed privileges exist at bind time, the process issues error messages, and does not bind or rebind the plan or package.
- R: Run: If not all objects or privileges exist at bind time, the process issues warning messages, but the bind succeeds.
- blank: The value from the previous BIND or REBIND is used.

### Optional Skeletons

These fields can be used to customize the JCL generated by DB2 Automation Tool. You can add your own skeletons that can be processed before or after the utility JCL. For more information on using these fields, refer to "Using the optional skeletons."

---

## Using the optional skeletons

You can customize the JCL generated by DB2 Automation Tool by adding your own skeletons that can be processed before or after the utility JCL.

User skeletons can be included for JCL, control card, and step end skeletons for any utility JCL prepared by DB2 Automation Tool. For REORG TABLESPACE with UNLOAD PAUSE, you can include a skeleton that is included after the PAUSE. Utility screens that allow this option contain fields in which to place the skeleton member names.

### About creating user skeletons

When creating user skeletons, you can access variables that are used by DB2 Automation Tool.

This section lists the variables that you can insert into a control card skeleton.

#### CAUTION:

**These variables can only be used when creating control card skeleton members. Do not alter the value of these variables. Altering the variable values during processing may produce unpredictable results.**

#### &CONDSTEP

References the step directly before the current user step.

#### &USROBJTY

Object type

#### &USRTSDBN

Database name

#### &USRTSNAM

Table space name

#### &USRPTNB

Partition number, as follows:

- ALL: when all partitions are selected
- 0000: when a non-partitioned table space is selected
- 0001-4096: the partition number when a partitioned table space is selected

#### &USRIXNAM

Index name

#### &USRIXCRT

Index creator

#### &USREXTNT

Number of extents

#### &USRDSNMS

Number of data sets

**&USROBIDS**  
Space OBID

**&USRDBIDS**  
Space DBID

**&USRPSIDS**  
Space PSID

**&USRPGSIZ**  
Space page size

**&USRPIESZ**  
Space piece size

**&USRUSDBL**  
Space used block

**&USRPCTUS**  
Space percent used

**&USRCISIZ**  
Space control interval size

**&USRVCATN**  
VCAT name

**&USRSTORT**  
Storage type

**&USRSTGRP**  
Storage group

**&USRDATCL**  
SMS data class

**&USRSTOCL**  
SMS storage class

**&USRMGTCL**  
SMS management class

**&USRPRSPC**  
Primary space

**&USRSCSPC**  
Secondary space

**&USRCOMPR**  
Whether the object is compressed; valid values are Y or N.

**&USRIXDBN**  
Index database name

**&USRIXSPC**  
Index space name

**&USRCOPYI**  
Index copy indicator; valid values are Y or N.

**&USRIXTSD**  
The data base name of the table for which the index is defined

**&USRIXTSN**  
The table space name of the table for which the index is defined

**&USRIXTBN**

The table name for which the index is defined

**&USRIXTBC**

The creator of the table on which the index is defined

**&USRIPREF**

The first character of the instance qualifier for the data set name for the table space or partition. 'T' or 'J' are the only valid characters for this field.

**&USRUSTEP**

For BEFORE skeletons, reference the upcoming main utility stepname. For AFTER skeletons, references the previous main utility stepname.

## Steps for using user skeletons

In order to implement user skeletons, you must follow the steps in this section.

### About this task

#### Procedure

1. Create skeletons to build the JCL and/or control cards that you want to insert into the DB2 Automation Tool generated job. You can create these types of skeletons:
  - JCL
  - Control cards
  - Pause skeleton (for REORG TABLESPACE only)
  - Step end cards
2. Update the HAAV42C CLIST to specify your skeleton library. This is accomplished by inserting the user skeleton library into the HAASLIB1 library in the CLIST, as follows:
 

```
HAASLIB1(user.skeleton.library)          +
HAASLIB2(HAALVL.SHAASLIB)              +
```
3. Update each utility profile to specify the user skeleton member name and specify whether the user skeleton is to be inserted before or after the utility JCL and/or control cards. For example, if you scroll to the bottom of the Reorg Utility Profile options panel, the skeleton fields appear:



```
Creator: TWUSR          Name: UTILITY PROFILE          User: TWUSR
                                                              DB2 Subsystem: SS01
                                                              More: -
```

Turn off Tape Stacking . . N (Yes/No)

Decompress alloc multiplier 03 (1-99)

Group Partitions by . . . . N (J - Job, S - Step, N - None)

List Partitions . . . . . (blank, 1-4096)

Auto Estimate Hash Space Y (Yes/No)

Perform LOB Dependency checks Y (Yes/No)

Exclude objects that failed Dependency check Y (Yes/No)

Ignore dependency check for DEFINE NO objects N (Yes/No)

RBA/LRSN Conversion . . . . (blank, B - Basic, E - Extended, N - No)

REORG ALL PARTS if percentage exceeded (blank, 1-100%)

Optional Skeletals               -BEFORE-       -AFTER-

JCL Skeletal . . . . .       . .       (8 Character Name)

Control Cards Skeletal . .       . .       (8 Character Name)

Step End Skeletal . . . . .       . .       (8 Character Name)

Pause Skeletal . . . . .       (8 Character Name)

location. Therefore, the Pause skeleton should be a complete job step, including JCL and EOF card for SYSLN.

## Examples

This section show examples of job output when using the skeleton fields.

## REORG TABLESPACE with UNLOAD PAUSE and no user skeletons

An example of a basic REORG TABLESPACE job output when using the skeleton fields is provided in this topic.

The object profile contained two table spaces and two indexes. The utility profile specified REORG PAUSE with inline copy; no skeleton overrides were used. (For brevity's sake, the registration step and job card are not shown.)

[illegible]

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```

000165 //          DD DSN=DSN.V810.SDSNLOAD,DISP=SHR
000166 //SYSOUT DD SYSOUT=*
000167 //UTPRINT DD SYSOUT=*
000168 //SYSPRINT DD SYSOUT=*
000169 //SYSREC DD DSN=TEST.TESTING4.RC02001.REORG.SYSREC,
000170 //          DISP=(MOD,CATLG,CATLG),
000171 //          UNIT=(VIO,5),SPACE=(CYL,(5,1),,,ROUND)
000172 //SYSUT1 DD DSN=TEST.TESTING4.RC02001.REORG.SYSUT1,
000173 //          DISP=(MOD,CATLG,CATLG),
000174 //          UNIT=(VIO,5),SPACE=(CYL,(5,1),,,ROUND)
000175 //SORTOUT DD DSN=TEST.TESTING4.RC02001.REORG.SORTOUT,
000176 //          DISP=(MOD,CATLG,CATLG),
000177 //          UNIT=(VIO,5),SPACE=(CYL,(5,1),,,ROUND)
000178 //SORTWK01 DD UNIT=(VIO,5),SPACE=(CYL,(20,1),,,ROUND)
000179 //SORTWK02 DD UNIT=(VIO,5),SPACE=(CYL,(20,1),,,ROUND)
000180 //SORTWK03 DD UNIT=(VIO,5),SPACE=(CYL,(20,1),,,ROUND)
000181 //R1LP0002 DD DSN=&R1LP0002,DISP=(NEW,DELETE,DELETE),
000182 //          UNIT=VIO,SPACE=(TRK,(0,0))
000183 //SYSIN DD *
000184 REORG TABLESPACE ADHTSTDB.ADHTSTTS
000185 LOG YES
000186 COPYDDN (R1LP0002)
000187 SHRLEVEL NONE
000188 UNLOAD PAUSE
000189
000190 /*
000191 /**
000192 /** * * * * *
000193 /**
000194 /** Step: RC02001
000195 /**
000196 /** Desc: This step will invoke the IBM Reorg Tablespace Utility
000197 /**
000198 /** * * * * *
000199 /**
000200 //RC02001 EXEC PGM=DSNUTILB,REGION=0000M,COND=(4,LT),
000201 //          PARM=(SS01,,RESTART)
000202 /**
000203 //STEPLIB DD DSN=HAA.WRK0220.LOADLIB,DISP=SHR
000204 //          DD DSN=FEC.MNT0130.LOADLIB,DISP=SHR
000205 //          DD DSN=FEC.PRD0130.LOADLIB,DISP=SHR
000206 //          DD DSN=SS01.SDSNEXIT,DISP=SHR
000207 //          DD DSN=DSN.V810.SDSNLOAD,DISP=SHR
000208 //SYSOUT DD SYSOUT=*
000209 //UTPRINT DD SYSOUT=*
000210 //SYSPRINT DD SYSOUT=*
000211 //SYSREC DD DSN=TEST.TESTING4.RC02001.REORG.SYSREC,
000212 //          DISP=(MOD,DELETE,CATLG),
000213 //          UNIT=(VIO,5),SPACE=(CYL,(20,1),,,ROUND)
000214 //SYSUT1 DD DSN=TEST.TESTING4.RC02001.REORG.SYSUT1,
000215 //          DISP=(MOD,DELETE,CATLG),
000216 //          UNIT=(VIO,5),SPACE=(CYL,(20,1),,,ROUND)
000217 //SORTOUT DD DSN=TEST.TESTING4.RC02001.REORG.SORTOUT,
000218 //          DISP=(MOD,DELETE,CATLG),
000219 //          UNIT=(VIO,5),SPACE=(CYL,(20,1),,,ROUND)
000220 //SORTWK01 DD UNIT=(VIO,5),SPACE=(CYL,(20,1),,,ROUND)
000221 //SORTWK02 DD UNIT=(VIO,5),SPACE=(CYL,(20,1),,,ROUND)
000222 //SORTWK03 DD UNIT=(VIO,5),SPACE=(CYL,(20,1),,,ROUND)
000223 //R1LP0002 DD DSN=TUSER.ADHTSTDB.ADHTSTTS.P00000,
000224 //          DISP=(MOD,CATLG,CATLG),
000225 //          UNIT=(3390,5),
000226 //          SPACE=(TRK,(1,1),RLSE)
000227 //SYSIN DD *
000228 REORG TABLESPACE ADHTSTDB.ADHTSTTS
000229 LOG YES
000230 COPYDDN (R1LP0002)
000231 SHRLEVEL NONE

```

```

000232          UNLOAD          PAUSE
000233
000234 /*
000235 /**

```

## REORG TABLESPACE with UNLOAD PAUSE and one user skeleton

An example of a basic REORG TABLESPACE job output with UNLOAD PAUSE and one user skeleton is provided in this topic.

The following output shows a REORG TABLESPACE job with the UNLOAD PAUSE option. The object profile contained two table spaces and two indexes. The utility profile specified REORG PAUSE with inline copy. A user skeleton was included in the utility profile. (For brevity's sake, the registration step and job card are not shown.)

Here is the skeleton:

```

//TUSERDD JOB TUSERA,CLASS=A,NOTIFY=&SYSUID
//*
//*
/** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
//*
//* This is JKL's test job
//*
/** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
//*
//*
//USERSTEP EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//SYSOUT DD SYSOUT=*
//SYSIN DD *
      DELETE 'SS01..DSNDBC.&USRDBNAM.&USRTSNAM..I0001.A001'

      SET MAXCC = 0

      DEFINE CLUSTER
          ( NAME(SS01..DSNDBC.&USRDBNAM.&USRTSNAM..I0001.A001) -
            LINEAR
            REUSE
            VOLUMES(* *)
            RECORDS(10 10)
            SHAREOPTIONS(3 3) )
      DATA
          ( NAME(SS01..DSNDBC.&USRDBNAM.&USRTSNAM..I0001.A001))

/*
/**

```

When the job was built, the output appears as follows. Note lines 106 and 219; these are the locations where the user PAUSE skeleton was included.

```

000064 /** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
000065 /**
000066 /** Step:      RP01001
000067 /**
000068 /** Desc:      This step will invoke the IBM Reorg Tablespace Utility
000069 /**
000070 /** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
000071 /**
000072 //RP01001 EXEC PGM=DSNUTILB,REGION=0000M,COND=(4,LT),
000073 //          PARM=(SS01,)
000074 /**
000075 //STEPLIB DD DSN=HAA.WRK0220.LOADLIB,DISP=SHR
000076 //          DD DSN=FEC.MNT0130.LOADLIB,DISP=SHR

```

—

```

000126          VOLUMES(* *)              -
000127          RECORDS(10 10)             -
000128          SHAREOPTIONS(3 3)          -
000129          DATA                        -
000130          ( NAME(SS01.DSNDBD.ADHTS2.I0001.A001))
000131 /*
000132 /**
000133 /** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
000134 /**
000135 /** Step:      RCER001                  *
000136 /**
000137 /** Desc:      This step will invoke the IBM Reorg Tablespace Utility *
000138 /**
000139 /** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
000140 /**
000141 /**RCER001 EXEC PGM=DSNUTILB,REGION=0000M,COND=(4,LT),
000142 /**          PARM=(SS01,,RESTART)
000143 /**
000144 /**STEPLIB DD DSN=HAA.WRK0220.LOADLIB,DISP=SHR
000145 /**          DD DSN=FEC.MNT0130.LOADLIB,DISP=SHR
000146 /**          DD DSN=FEC.PR00130.LOADLIB,DISP=SHR
000147 /**          DD DSN=SS01.SDSNEXIT,DISP=SHR
000148 /**          DD DSN=DSN.V810.SDSNLOAD,DISP=SHR
000149 /**SYSOUT DD SYSOUT=*
000150 /**UTPRINT DD SYSOUT=*
000151 /**SYSPRINT DD SYSOUT=*
000152 /**SYSREC DD DSN=TEST.TESTING4.RC01001.REORG.SYSREC,
000153 /**          DISP=(MOD,DELETE,CATLG),
000154 /**          UNIT=(VIO,5),SPACE=(CYL,(20,1),,,ROUND)
000155 /**SYSUT1 DD DSN=TEST.TESTING4.RC01001.REORG.SYSUT1,
000156 /**          DISP=(MOD,DELETE,CATLG),
000157 /**          UNIT=(VIO,5),SPACE=(CYL,(20,1),,,ROUND)
000158 /**SORTOUT DD DSN=TEST.TESTING4.RC01001.REORG.SORTOUT,
000159 /**          DISP=(MOD,DELETE,CATLG),
000160 /**          UNIT=(VIO,5),SPACE=(CYL,(20,1),,,ROUND)
000161 /**SORTWK01 DD UNIT=(VIO,5),SPACE=(CYL,(20,1),,,ROUND)
000162 /**SORTWK02 DD UNIT=(VIO,5),SPACE=(CYL,(20,1),,,ROUND)
000163 /**SORTWK03 DD UNIT=(VIO,5),SPACE=(CYL,(20,1),,,ROUND)
000164 /**R1LP0001 DD DSN=TUSER.ADHDB2.ADHTS2.P00000,
000165 /**          DISP=(MOD,CATLG,CATLG),
000166 /**          UNIT=(3390,5),
000167 /**          SPACE=(TRK,(1,1),RLSE)
000168 /**SYSIN DD *
000169 REORG TABLESPACE ADHDB2.ADHTS2
000170 LOG YES
000171 COPYDDN (R1LP0001)
000172 SHRLEVEL NONE
000173 UNLOAD PAUSE
000174
000175 /*
000176 /**
000177 /** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
000178 /**
000179 /** Step:      RP02001                  *
000180 /**
000181 /** Desc:      This step will invoke the IBM Reorg Tablespace Utility *
000182 /**
000183 /** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
000184 /**
000185 /**RP02001 EXEC PGM=DSNUTILB,REGION=0000M,COND=(4,LT),
000186 /**          PARM=(SS01,)
000187 /**
000188 /**STEPLIB DD DSN=HAA.WRK0220.LOADLIB,DISP=SHR
000189 /**          DD DSN=FEC.MNT0130.LOADLIB,DISP=SHR
000190 /**          DD DSN=FEC.PR00130.LOADLIB,DISP=SHR
000191 /**          DD DSN=SS01.SDSNEXIT,DISP=SHR
000192 /**          DD DSN=DSN.V810.SDSNLOAD,DISP=SHR

```

```

000193 //SYSOUT DD SYSOUT=*
000194 //UTPRINT DD SYSOUT=*
000195 //SYSPRINT DD SYSOUT=*
000196 //SYSREC DD DSN=TEST.TESTING4.RC02001.REORG.SYSREC,
000197 // DISP=(MOD,CATLG,CATLG),
000198 // UNIT=(VIO,5),SPACE=(CYL,(5,1),,,ROUND)
000199 //SYSUT1 DD DSN=TEST.TESTING4.RC02001.REORG.SYSUT1,
000200 // DISP=(MOD,CATLG,CATLG),
000201 // UNIT=(VIO,5),SPACE=(CYL,(5,1),,,ROUND)
000202 //SORTOUT DD DSN=TEST.TESTING4.RC02001.REORG.SORTOUT,
000203 // DISP=(MOD,CATLG,CATLG),
000204 // UNIT=(VIO,5),SPACE=(CYL,(5,1),,,ROUND)
000205 //SORTWK01 DD UNIT=(VIO,5),SPACE=(CYL,(20,1),,,ROUND)
000206 //SORTWK02 DD UNIT=(VIO,5),SPACE=(CYL,(20,1),,,ROUND)
000207 //SORTWK03 DD UNIT=(VIO,5),SPACE=(CYL,(20,1),,,ROUND)
000208 //R1LP0002 DD DSN=&R1LP0002,DISP=(NEW,DELETE,DELETE),
000209 // UNIT=VIO,SPACE=(TRK,(0,0))
000210 //SYSIN DD *
000211 REORG TABLESPACE ADHTSTDB.ADHTSTTS
000212 LOG YES
000213 COPYDDN (R1LP0002)
000214 SHRLEVEL NONE
000215 UNLOAD PAUSE
000216
000217 /*
000218 /**
000219 //TUSERDD JOB TUSERA,CLASS=A,NOTIFY=
000220 /**
000221 /**
000222 /** * * * * *
000223 /** *
000224 /** This is JKL's test job *
000225 /** *
000226 /** * * * * *
000227 /** *
000228 /** *
000229 //USERSTEP EXEC PGM=IDCAMS
000230 //SYSPRINT DD SYSOUT=*
000231 //SYSOUT DD SYSOUT=*
000232 //SYSIN DD *
000233 DELETE 'SS01.DSNDBC.ADHTSTTS.I0001.A001'
000234 SET MAXCC = 0
000235 DEFINE CLUSTER -
000236 ( NAME(SS01.DSNDBC.ADHTSTTS.I0001.A001) -
000237 LINEAR -
000238 REUSE -
000239 VOLUMES(* *) -
000240 RECORDS(10 10) -
000241 SHAREOPTIONS(3 3) ) -
000242 DATA -
000243 ( NAME(SS01.DSNDBD.ADHTSTTS.I0001.A001))
000244 /*
000245 /**
000246 /** * * * * *
000247 /** *
000248 /** Step: RCER001 *
000249 /** *
000250 /** Desc: This step will invoke the IBM Reorg Tablespace Utility *
000251 /** *
000252 /** * * * * *
000253 /** *
000254 //RCER001 EXEC PGM=DSNUTILB,REGION=0000M,COND=(4,LT),
000255 // PARM=(SS01,,RESTART)
000256 /**
000257 //STEPLIB DD DSN=HAA.WRK0220.LOADLIB,DISP=SHR
000258 // DD DSN=FEC.MNT0130.LOADLIB,DISP=SHR
000259 // DD DSN=FEC.PR00130.LOADLIB,DISP=SHR

```



```

000260 //          DD DSN=SS01.SDSNEXIT,DISP=SHR
000261 //          DD DSN=DSN.V810.SDSNLOAD,DISP=SHR
000262 //SYSOUT      DD SYSOUT=*
000263 //UTPRINT      DD SYSOUT=*
000264 //SYSPRINT     DD SYSOUT=*
000265 //SYSREC       DD DSN=TEST.TESTING4.RC02001.REORG.SYSREC,
000266 //              DISP=(MOD,DELETE,CATLG),
000267 //              UNIT=(VIO,5),SPACE=(CYL,(20,1),,,ROUND)
000268 //SYSUT1       DD DSN=TEST.TESTING4.RC02001.REORG.SYSUT1,
000269 //              DISP=(MOD,DELETE,CATLG),
000270 //              UNIT=(VIO,5),SPACE=(CYL,(20,1),,,ROUND)
000271 //SORTOUT      DD DSN=TEST.TESTING4.RC02001.REORG.SORTOUT,
000272 //              DISP=(MOD,DELETE,CATLG),
000273 //              UNIT=(VIO,5),SPACE=(CYL,(20,1),,,ROUND)
000274 //SORTWK01     DD UNIT=(VIO,5),SPACE=(CYL,(20,1),,,ROUND)
000275 //SORTWK02     DD UNIT=(VIO,5),SPACE=(CYL,(20,1),,,ROUND)
000276 //SORTWK03     DD UNIT=(VIO,5),SPACE=(CYL,(20,1),,,ROUND)
000277 //R1LP0002     DD DSN=TUSER.ADHTSTDB.ADHTSTTS.P00000,
000278 //              DISP=(MOD,CATLG,CATLG),
000279 //              UNIT=(3390,5),
000280 //              SPACE=(TRK,(1,1),RLSE)
000281 //SYSIN        DD *
000282      REORG TABLESPACE ADHTSTDB.ADHTSTTS
000283          LOG          YES
000284          COPYDDN      (R1LP0002)
000285          SHRLEVEL     NONE
000286          UNLOAD       PAUSE
000287
000288 /*
000289 /*

```



---

## Chapter 9. Creating exception profiles

Exception profiles allow you to define when a utility in a utility profile is to be run against an object in an object profile.

You select the conditions from a list in the exception profile. For example, an exception might examine the PERCDROP column in SYSTABLEPART (which contains the percentage of space that is occupied by rows of dropped tables). If you specify a comparator and value of "greater than 10", a REORG might be triggered for objects with more than 10% space that is occupied by dropped table rows.

The exception profile is placed in the job profile with the object and utility profile. During the job build, exception processing produces a list of accepted objects (those that meet the conditions) and a list of rejected objects (those that do not meet the conditions). When you create utility profiles, you can specify whether the utility is to be run on the accepted objects, the rejected objects, or both.

DB2 Automation Tool offers various exceptions conditions that you can specify in a profile. In addition, you can incorporate user exits to allow extension of DB2 Automation Tool's exception monitoring beyond its native z/OS environment.

Through the Exceptions Profile Display, you can also access the DB2 Automation Tool statistics reporting and maintenance facility.

---

### Creating an exception profile

Creating an exception profile involves defining the profile and then selecting the conditions to be included in the profile.

#### Procedure

1. On the DB2 Automation Tool main menu, enter 3 in the **Option** field and press Enter.
2. Specify selection criteria in the **Profile Like** and **Creator Like** fields and press Enter. If profiles exist that meet your selection criteria, they are listed on the Exceptions Profile Display, as shown in the following figure:

```

AUTOTOOL V4R2 ----- Exceptions Profile Display ----- 2017/09/19 18:00:00
Option ==> Scroll ==> CSR
Line Commands: C - Create D - Delete E - Export I - Import
                U - Update V - View J - Jobs R - Rename
-----
Profile Like * DB2 Subsystem: SS01
Creator Like *SAMP* Row 1 of 11 +>
-----
Display Statistics Reports and/or Perform Statistics Maintenance? N (Yes/No)
-----

Cmd  Name                               Creator  Updt
    BEST PRACTICE IMAGE COPY FULL      REGRSAMP  U
    BEST PRACTICE REORG AVOIDANCE      REGRSAMP  U
    BEST PRACTICE RUNSTATS             REGRSAMP  U
    CLUSTERRATIO VALUE RANGE           REGRSAMP  U
    COPY CONDITIONS                   REGRSAMP  U
    LARGE OBJECTS                     REGRSAMP  U
    NEVER COPIED                      REGRSAMP  U
    REORG CONDITIONS                  REGRSAMP  U
    SATURDAY ONLY                     REGRSAMP  U
    SMALL OBJECTS                     REGRSAMP  U

```

Figure 175. Exceptions Profile Display

- On the Exceptions Profile Display, enter C in the **Cmd** field and press Enter. The window that is shown in the following figure is displayed:

```

Enter New Exceptions Profile Data

Creator . . . TWUSR

Profile Name

Description

Update Option U (U - Update, V - View only, N - No access)

```

Figure 176. Enter New Exceptions Profile Data window

- On the Enter New Exceptions Profile Data window, enter the new profile creator, a profile description, and the profile update option in the fields on the window. The **Creator** field contains your user ID, but can be modified.
- After you complete these fields, press Enter. The Update Exceptions Profile Display is displayed.

## Setting exception conditions

The next steps in creating an exception profile are specifying the source for statistics, and then selecting exception conditions.

### About this task

DB2 Automation Tool checks statistics from the source that you specify to determine if the objects selected in the object profile meet exception criteria. The following figure shows the Update Exceptions Profile Display:

```

AUTOTOOL V4R2 ---- Update Exceptions Profile Display --- 2017/09/19 18:01:48
Option ==> Scroll ==> CSR
Commands: View B - View Boolean View S - View Selected Save - Save Profile
Line Commands: A - And O - Or S - Select D - Deselect R - Repeat
CONDITIONS: LT|<|LE|<=|EQ|=|GT|>|GE|>=|NE|=|<> "*" indicates an HAA stat
-----
Creator: TWUSR Profile: EXCEPTION PROFILE User: TWUSR
DB2 Subsystem: SS01
-----
Share Option U (U - Update, V - View, N - No)
Description Scroll Right for Column Help
Use Stats From: R (R - Repository, Update Runstats Options: N (Yes/No)
C - Catalog, Save Triggers in Repository: N (Yes/No)
U - Runstats, WTO number of triggered Objects: N (Yes/No)
S - Shadow, Combine IX/TS Exceptions when
H - History) evaluating an IX triggering a TS: N (Yes/No)
-----
S Statistics Type--- *Column----- Cond -----Exception Value-----
DAY OF WEEK MONDAY
TUESDAY
WEDNESDAY
----- Row 1 of 220 +>

```

Figure 177. Update Exceptions Profile Display

## Conditions and statistics specification fields

These fields allow you to specify how multiple conditions are handled and which set of statistics to use.

These fields are shown in the following figure:

```

Use Stats From: R (R - Repository, Update Runstats Options: N (Yes/No)
C - Catalog, Save Triggers in Repository: N (Yes/No)
U - Runstats, WTO number of triggered Objects: N (Yes/No)
S - Shadow, Combine IX/TS Exceptions when
H - History) evaluating an IX triggering a TS: N (Yes/No)

```

Figure 178. Update Exceptions Profile Display: profile specification fields

The following topics describe the statistics fields.

### Use Stats From:

The Use Stats From fields tell DB2 Automation Tool which set of statistics are used when evaluating the exception condition.

Indicate which statistics are used when evaluating the condition.

- Type R to use DB2 Automation Tool's repository of statistics.
- Type C to use the DB2 catalog statistics.
- Type S to use a DB2 shadow catalog. To use this option, you must have added the shadow catalog package set to the Setup screen.
- Type H to use DB2 history statistics from the \_HIST tables.
- Type U to have DB2 Automation Tool invoke a RUNSTATS utility. The statistics generated by RUNSTATs are used in evaluating the exception conditions. You should also specify RUNSTATS options by entering Y in the Update Runstats Option field.

Refer to "Specifics about exception conditions" on page 297 for more information about how statistics are used in evaluating conditions.

## Update Runstats Options:

When you specify to use RUNSTATS to evaluate exception conditions, you can update options for RUNSTATS as part of the exception profile.

If you specified to use statistics from RUNSTATS, type Y in this field to update the options for the RUNSTATS utility.

When you specify to set RUNSTATS options, the panel shown in the following figure is displayed:

```
HAA$ERST V4R2 ----- Runstats Options ----- 2017/09/19 18:05:14
Option ==>

Creator: TWUSR      Name: EXCEPTION PROFILE      User: TWUSR
                  DB2 Subsystem: SS01
                  More:      +

Utility ID . . . . . (16 characters)
Sharelevel . . . . . R (R - Reference, C - Change)
Report . . . . . Y (Yes)
Update Catalog Tables . . N (A - All, C - Accesspath, S - Space, N - None)
Update History Tables . . N (A - All, C - Accesspath, S - Space, N - None)
Force Rollup . . . . . N (Yes/No)
Table All . . . . . N (Yes/No)
Sample . . . . . (Percent)
Index All . . . . . N (Yes/No)
Keycard . . . . . N (Yes/No)
Numcols . . . . . 1 (Number)
Count . . . . . 10 (Number)
Histogram Numcols . . (Number)
Numquantiles . . (Number)
Process NPIs . . . . . A (Yes/No/Automatic)
Collect All Statistics . . N (Yes/No)
Save Stats in Repository Y (Yes/No)
Sort Device Type . . . . (CART/DISK/etc.)
Sort Number . . . . . (2-255)
```

Figure 179. Runstats Options panel

The following describes the options you can set for the RUNSTATS utility:

### Utility ID

Enter a 1 to 16 character utility ID to be used to uniquely identify the utility to DB2. The ID must begin with a letter; the remainder can be alphanumeric or the following special characters: #, \$, @, €, !, ~, .

### Sharelevel

Indicate the level of access applications will have during RUNSTATs.

- Type R for reference (applications can read but not write data during the utility).
- Type C for change (applications can read and write data during the utility). With SHRLEVEL CHANGE, uncommitted data can be collected into statistical summaries.

### Report

Type Y to have DB2 generate a set of messages to SYSPRINT to report the collected statistics. REPORT YES always generates a report of SPACE and ACCESSPATH statistics, and may report other statistics depending on the option combinations specified. Type N to suppress messages.

### Update Catalog Tables

Indicate whether you want DB2 to update the catalog with statistics after RUNSTATS.

- Type A to update all collected statistics in the catalog.
- Type C to update only catalog table columns that provide statistics used for access path selection.
- Type S to update only the catalog table columns that provide statistics to help a DBA assess the status of a particular table space or index.
- Type N to not update catalog tables; this option is only valid when REPORT YES is specified.

#### **Update History Tables**

If you specify to update statistics, you can also specify to record catalog table inserts or updates in the catalog history tables. What you specify in this field depends on what you specified for Update. Consult the DB2 Utility Guide and Reference for your version of DB2 for information about using this option.

#### **Force Rollup**

Type Y in this field to force aggregation or rollup of statistics when RUNSTATS is executed and some parts are empty. Type N to specify aggregation only if data is available for all parts.

#### **Table All**

Type Y in this field to specify TABLE (ALL) syntax. If you use this option, you can enter a value in the Sample field to specify the number of rows to be sampled during RUNSTATS.

#### **Sample**

Type the percentage of rows to sample when collecting non-indexed column statistics. Any value from 1 through 100 can be specified. This option is not allowed for LOB table spaces.

#### **Index All**

Type Y in this field to specify INDEX (ALL) syntax. If you use this option, you can enter values in the Keycard, Numcols, and Count fields to specify additional criteria for collecting statistics on indexes.

#### **Keycard**

Type Y in this field if you want to collect all of the distinct values in all of the 1 to n key column combinations for the object.

#### **Numcols**

Enter the number of key columns to concatenate when collecting frequent values from the indexes.

**Count** Type in the number of frequent values to be collected.

#### **Histogram Numcols**

(DB2 Version 9.1 or later) If you want the RUNSTATS utility to gather statistics based on histograms, indicate the number of columns in the table space or index for which RUNSTATS should collect frequently occurring statistics.

#### **Histogram: Numquantiles**

(DB2 Version 9.1 or later) If you want the RUNSTATS utility to gather statistics based on histograms, indicate the number of quantiles for which a set of statistics parameters are collected.

#### **Process NPIs**

Type A in this field if you want exception processing to determine whether or not to collect statistics for non-partitioning indexes (NPIs) based on the following criteria:

- Statistics will be collected when ALL partitions for an object are included in the object profile.
- Statistics will not be collected when only SOME of the parts (a subset) are included in the object profile (in other words, when there are missing parts for an object). This can occur when:
  - Objects are at the PART level and only a subset of all the partitions are selected in the object profile. For example, only parts 2, 5, and 9 are included in the object profile.
  - Individual partitions are specifically excluded by using the EXC indicator in the object profile.

Type Y in this field if you want to collect statistics for NPIs regardless of the previous criteria.

Type N to not collect statistics for NPIs.

#### **Collect All Statistics**

If you specify N in this field, the only RUNSTATS statistics collected will be based on the selected exception conditions. For example, if only SYSINDEXES.CLUSTERRATIO was selected, then RUNSTATS statistics will only be collected for indexes. If you want to collect all RUNSTATS statistics for objects in the object profiles, specify Y in this field. You might want to collect all statistics if the DB2 catalog and/or DB2 Automation Tool repository is to be updated with the collected statistics in that job. This allows the DB2 catalog and/or repository to have current table space and index statistics for all objects in the job, even if the exceptions profile does not have corresponding table space or index exception conditions. Subsequent jobs using the same object profiles could then use statistics from the recently updated catalog or repository rather than having to rerun RUNSTATS.

#### **Save Stats in Repository**

Indicate if you want to save statistics in the DB2 Automation Tool repository. Type Y to include the stats in the DB2 Automation Tool repository. Type N to not update the DB2 Automation Tool repository.

#### **Sort Device Type**

This field contains the sort device type. Any device type accepted by DFSORT is allowed.

#### **Sort Number**

This field contains the number of temporary data sets to be dynamically allocated by the sort program.

#### **Save Triggers in Repository:**

The Save Triggers in Repository field specifies whether DB2 Automation Tool is to save information about the triggers generated by exception processing for this profile.

When you specify Y in this field, trigger information is written to a DB2 Automation Tool repository and is then available for viewing and analysis through the Statistics Reports and Maintenance facility. For example, you might use this information to analyze why triggers have been repeatedly generated for an object. If you specify N, trigger information is not saved to the repository.



## WTO number of triggered objects:

The WTO number of triggered Objects field specifies whether DB2 Automation Tool is to issue a write-to-operator (WTO) message if any objects are triggered by exception processing during the build process. The message displays the number of objects that were triggered. This feature can be used to indicate whether any exception condition is met.

When the exception rule (set on the appropriate utility panel) is A(ccepted) or B(oth), a WTO is issued when the accepted count is greater than 0. When the exception rule is set to R(ejected) or B(oth), a WTO is issued when the rejected count is greater than 0.

## Combine IX/TS Exceptions when evaluating IX triggering a TS:

The Combine IX/TS Exceptions when evaluating IX triggering a TS field re-evaluate the associated table space exception criteria when an index meets its index space criteria, but triggers the corresponding table space instead of itself.

Index exception criteria that trigger the associated table space are:

SYSINDEXES: CLUSTERED, CLUSTERING, CLUSTERRATIO, CLUSTERRATIOF

SYSINDEXSTATS: CLUSTERRATIO, CLUSTERRATIOF

SYSINDEXPART: NEAROFFPOSF, FAROFFPOSF, PERCOFFPOS

If this field is set to Y, when a table space is triggered because its index meets one of the index exception criteria listed previously, DB2 Automation Tool then evaluates the table space against the table space exception criteria included in the profile. The table space must still meet the table space criteria in order to be triggered.

A jobs profile contains a REORG utility profile and an exceptions profile that includes:

A	DB2 DISPLAY STATUS	READWRITE	EQ
A	MVSCATALOG	ALLOCATED_TRACKS	< 1001
A	SYSINDEXES	CLUSTERRATIO	< 95

When evaluating table space criteria, a table space (TS1) meets the specified DB2 DISPLAY STATUS criteria but does not meet the ALLOCATED\_TRACKS criteria. Therefore, TS1 is not triggered. When evaluating indexspace criteria, however, the associated index (IX1) does meet the specified CLUSTERRATIO criteria, AND the ALLOCATED\_TRACKS criteria, AND the specified DB2 DISPLAY STATUS criteria. Since Combine IX/TS Exceptions when evaluating IX triggering a TS is set to Y, DB2 Automation Tool re-evaluates the associated table space TS1 to make sure it meets all of its table space criteria. However, TS1 does not meet the table space criteria and, therefore, would not be triggered.

## Selecting statistics

The next part of the screen allows you to select the statistics to evaluate and enter the values you want to use for comparison.

## Procedure

To select a statistic, type S(elect), A(nd), or O(r) in the S(elect) column next to the statistics. Use the PF7/PF8 keys to scroll UP/DOWN through the column list. The following section describes the columns for selecting statistics:

To select a statistic, type S(elect), A(nd), or O(r) in the S(elect) column next to the statistics. Use the PF7/PF8 keys to scroll UP/DOWN through the column list. The following section describes the columns for selecting statistics:

#### **Statistics Type**

The type of statistics that can be specified appears in this column. Some statistics types are catalog tables, such as SYSTABLEPART. Others, such as MVS CATALOG and DB2 DISPLAY STATUS, refer to DB2 Automation Tool defined statistics and are not tables in the DB2 catalog. For information about the statistics type, scroll right (PF11) to view the column description.

#### **\*Column**

This column contains the value to be compared. The value is either:

- An operand to be compared, such as the NTH\_MONDAY for the DAY OF MONTH value
- A catalog column that contains the value to be compared, such as the ICTYPE column for the SYSCOPY table.

An asterisk (\*) next to a value indicates that the column is a special DB2 Automation Tool statistic that is retrieved or derived from RUNSTATs or another source, such as its own repository or the MVS catalog.

**Cond** Type in the comparator that you want to use in the condition. Valid values are:

- LT or <: Less than
- LE or <=: Less than or equal to
- EQ or =: Equal to
- GT or >: Greater than
- GE or >=: Greater than or equal to
- NE or <> or != : Not equal to

#### **Exception Value**

Type in an appropriate exception value for the column you selected.

#### **Column Description**

A brief description of the column statistics.

#### **Results**

When you finish entering exceptions, press PF3. Your changes are saved and the Exceptions Profile Display is re-displayed.

#### **What to do next**

Refer to “Statistics types on the Update Exceptions Profile Display” on page 298 for more information about the exception conditions.

## **Adding conditions**

This topic describes how to add exception conditions.

#### **Procedure**

To add conditions, type S(elect), A(nd) or O(r) in the S(elect) line next to the condition you want to include.

## Results

For most statistics types, you will be prompted to complete the Cond and Exception Value fields as described in "Selecting statistics" on page 293.

## Deselecting conditions

This topic explains how to deselect conditions.

### Procedure

To deselect conditions, type D in the S(elect) line next to the condition you want to deselect and press Enter.

### Results

The comparator and exception values are cleared from the condition line.

## Specifying "or" condition values

This topic explains how to specify more than one possible value for a condition.

### Procedure

To specify more than one possible value for a condition, type R (Repeat) in the S(elect) line next to the condition you want to repeat and press Enter.

### Results

A line for the column is added, preceded by an OR.

### Example

For example, if you set an exception condition for SYSCOPY where ICTYPE =W OR Y, the exception is triggered if the image copy type registered in SYSCOPY is REORG LOG(NO) or LOAD LOG(NO).

## Using the A and O line commands

Instead of the S line command, you can use the A or O line commands to specify how a statistic should be evaluated.

In some cases, using the A or O line commands is not allowed. For example, you cannot specify DAY OF WEEK = MONDAY AND TUESDAY. The following error message warns you when this option is not available:

HAA315E - Cannot use the "A"nd/"O"r line commands on this Column. Use the "S" command.

## Reviewing selected exception conditions

On the Update Exceptions Profile Display, you can use commands to review all the exception conditions that you selected consolidated onto one panel. You can also see how exception processing logic will evaluate the selected exception conditions in a Boolean logic format.

### Procedure

1. On the Update Exceptions Profile Display, select one or more exception conditions.

2. In the **Option** line, enter one of the following commands:

- To view the exceptions consolidated onto a single display, enter View S and press Enter. The View Selected Exceptions panel shows all selection exceptions, as shown in the following figure:

```

AUTOTOOL V4R2  ---- View Selected Exceptions      --- 2017/09/20 11:49:07
Option ==>                                         Scroll ==> CSR
-----
Creator: TWUSR      Profile: EXCEPTION PROFILE      User: TWUSR
                                         DB2 Subsystem: SS01
-----
Description                                         Scroll Right for Column Help
----- Row 1 of 4 >
S Statistics Type--- *Column----- Cond -----Exception Value-----
S DAY OF WEEK        SATURDAY      And  EQ
S                     SUNDAY        Or   EQ
O MVS CATALOG        *EXTENTS       >    5
A                     *ALLOCATED_TRACKS >   10
***** Bottom of Data *****

```

- To view the exceptions in a Boolean logic format, enter View B and press Enter. The exceptions are displayed in the order that they will be processed on the View Exception Boolean Logic panel, as shown in the following figure:

```

AUTOTOOL V4R2  ---- View Exception Boolean Logic  --- 2017/09/20 11:52:16
Option ==>                                         Scroll ==> CSR
-----
Creator: TWUSR      Profile: EXCEPTION PROFILE      User: TWUSR
                                         DB2 Subsystem: SS01
-----
Description                                         ----- Row 1 of 14
IF ( DAY OF WEEK      NE SATURDAY
AND  DAY OF WEEK      NE SUNDAY
)  TERMINATE EXCEPTION PROCESSING
ENDIF
FOR EACH TABLESPACE OBJECT...
IF ( MVS CATALOG      ALLOCATED_TRACKS > 10
AND( MVS CATALOG      EXTENTS         > 5
))  TRIGGER OBJECT
ENDIF
FOR EACH INDEX OBJECT...
IF ( MVS CATALOG      ALLOCATED_TRACKS > 10
AND( MVS CATALOG      EXTENTS         > 5
))  TRIGGER OBJECT
ENDIF

```

Use these panels to review your selected exception conditions and processing. The panels are view only; no changes can be made.

3. Press PF3 to return to the Update Exceptions Profile Display.

## When to use multiple exception profiles

You might need to create more than one exception profile if you need to include the same condition more than once.

In that case, create two exception profiles, each with its own conditions, then add both exception profiles to a job profile.

For example, if you want to take an image copy for objects that have never had a full image copy (ICTYPE NE F in SYSCOPY) or if the number of days since the last full image copy is greater than 14 (ICTYPE EQ F in SYSCOPY AND DAYS GT 14 in SYSCOPY), you will need to create two exception profiles.

---

## Specifics about exception conditions

The following section provides additional information about exception conditions and how you can use them in your exception profiles.

### Day and time-related exceptions are always evaluated first

If specified, the day and time exceptions are the first conditions evaluated, regardless of any other exceptions specified.

This means that if any day exception or any time exception is selected, it must be true or no objects will be triggered. For example, if you specify Day of Week = Monday or Tuesday, the result is as follows:

```
IF (DAY OF WEEK = MONDAY OR TUESDAY)
THEN CHECK OTHER EXCEPTIONS....
```

If more than one day or time is selected, they are treated as AND conditions. For example:

```
IF (DAY OF WEEK = MONDAY OR TUESDAY)
AND IF (DAY OF MONTH = LAST DAY)
THEN CHECK OTHER EXCEPTIONS....
```

In this case, both conditions must be true before the other exceptions will be checked.

### How RUNSTATS is used in exception processing

This section explains how DB2 Automation Tool uses RUNSTATS in exception processing.

#### How DB2 Automation Tool determines the source of statistics when evaluating exceptions

The setting in the Use Stats From field determines the source of statistics used by DB2 Automation Tool when evaluating those conditions. The statistics can reside in the DB2 catalog (C in the Use Stats From field), the catalog history tables (H), a shadow catalog (S), the DB2 Automation Tool repository (R), or can be collected dynamically (U).

At some point, RUNSTATS must be executed to get statistics. The RUNSTATS utility itself will allow you to update the catalog, the history tables, or neither. If you want to update the DB2 Automation Tool repository, you must use a DB2 Automation Tool RUNSTATS utility profile (included in a job profile) with the following options:

- Report Y
- Save Stats in Repository Y

When you build the RUNSTATS job profile, a RUNSTATS step is generated, followed by a step that parses the RUNSTATS output and populates the repository.

If you do not want to save the RUNSTATS statistics anywhere, you can specify Use Stats From U, which will cause DB2 Automation Tool to execute RUNSTATS immediately before evaluating conditions. The statistics are kept in memory for evaluating conditions. Set Update Runstats Options to Y if you want to control whether or not to save these statistics and to set other RUNSTATS options.

## RUNSTATS and package set names

The selection of a particular Use Stats From value requires a corresponding package list name that was specified on the setup panel for DB2 Automation Tool.

The name that was specified on the Setup panel must correspond to a PKLIST name in the bind job for your DB2 version from the SAMP library (HAA#BDxx). DB2 Automation Tool uses the specified package list name when retrieving RUNSTATS statistics.

Note that an appropriate shadow catalog must be created in your environment if you specify that RUNSTATS statistics are to be retrieved from a DB2 shadow catalog.

## How DB2 Automation Tool handles lack of RUNSTATS statistics

When retrieving RUNSTATS statistics from either the DB2 catalog, DB2 shadow catalog, history tables, or DB2 Automation Tool repository, DB2 Automation Tool verifies whether RUNSTATS has been run on an object prior to performing exception processing. If RUNSTATS statistics are not found, an error message is displayed and DB2 Automation Tool will attempt to continue processing.

## How DB2 Automation Tool verifies whether RUNSTATS has been run on an object

Prior to performing exception processing, DB2 Automation Tool verifies whether RUNSTATS has been run on an object by checking the columns in certain tables.

The catalog tables listed in the following table in Table 10 are checked for the indicated value.

*Table 10. Runstats value check*

Table	Value
SYSTABLEPART.CARDF	-1
SYSTABLEPART.STATTIME	0001-01-01
SYSTABLES.CARDF	-1
SYSTABLES.STATTIME	0001-01-01
SYSINDEXPART.CARDF	-1
SYSINDEXPART.STATTIME	0001-01-01

If there are no RUNSTATS statistics for an object, the statistics values for all columns of the tables (except for PQTY and SQTY) will be their default values (either -1 or 0). If a corresponding statistic table row is not found, then PQTY and SQTY will be 0.

---

## Statistics types on the Update Exceptions Profile Display

This section provides information about the statistics types that can be specified in an exception profile.

### Day of Week

The Day of Week exception triggers exceptions based on the day of the week.

Use S to select the day; the AND/OR operator for these exceptions are fixed.  
Example:

```
S DAY OF WEEK      MONDAY      And   EQ
S                  TUESDAY      Or    EQ
```

triggers an exception if the day of the week is Monday or Tuesday.

## Day of Month

The Day of Month exception triggers exceptions based on the day of the month.

Use S to select the day; the AND/OR operator for these exceptions are fixed.

Example:

```
S                  NTH_TUESDAY      LE   2
```

triggers an exception if the current day is Tuesday and it is the first or second Tuesday of the month.

## Time of Day

This topic describes the Time of Day exception.

Triggers exceptions in a time range. Use S to select the TIME\_FROM and TIME\_TO exceptions; the AND/OR operator for these are fixed. Enter the start time in the TIME\_FROM field and the end time in the TIME\_TO field. Example:

```
S TIME OF DAY      TIME_FROM      And   GE   01 : 30 P M
S                  TIME_TO        And   LE   05 : 00 P M
```

triggers an exception if the current time is between the listed times.

## Object

The Object exception triggers exceptions based on object properties.

The following table shows possible statistics types:

*Table 11. Statistics type: Object*

Statistic	Description
LOB	Triggers an exception if table space is a LOB. The allowed exception value is either E(xclude) or O(nly).
PGSIZE_32K	Triggers an exception if table space was defined with a 32k page size. The allowed exception value is either E(xclude) or O(nly).
PBG_TS	Triggers an exception if the object is a partition-by-growth (PBG) table space. The allowed exception value is either E(xclude) or O(nly).
PARTITION	Triggers an exception if the object's partition number matches the exception value. Enter a condition value and a partition number or range.
PENDING_DEF_CHGS	Triggers an exception if the object has any pending definition changes. The allowed exception value is either A(nd) or O(r).

Table 11. Statistics type: Object (continued)

Statistic	Description
PEND_PARTNUM_KEYS	(DB2 Version 11 and later) Triggers an exception if the object has any pending alters of the limit key value (pending ALTER TABLE ALTER PARTITION statement with the ENDING AT keywords). If the object is selected at the ALL level, the PARTITION is not included on the SELECT. If the object is at the PART level, the PARTITION of the object is included on the SELECT. The allowed exception value is either A(nd) or O(r).
PEND_DROP_COLUMNS	(DB2 Version 11 and later) Triggers an exception if the object has any pending dropped columns (pending ALTER TABLE DROP COLUMN). The allowed exception value is either A(nd) or O(r).

## User Exits

The User Exits exception allows you to specify a load module or a CLIST/REXX EXEC to be executed.

This user-defined program should contain the logic necessary to check for exception conditions.

User exits can perform any type of function, including executing SQL. You can set up a program to query any catalog or user-defined table. This option allows you to query additional catalog columns not offered in exception profiles.

Each load module, CLIST, and REXX EXEC is called once per object included in the object profiles.

A sample assembler DSECT is contained in the HAA\$USRX member in *hilevel*.SAMPLIB. The following parameter list is passed to the user exit:

```

HAA$USRX_S           DSECT
HAA$USRX_IDENTIFIER  DS  CL08'HAA$USRX'
HAA$USRX_RETURN_CODE DS  F      UserExit must set this to either
HAA$USRX_RC_SKIP     EQU 0      this value or
HAA$USRX_RC_TRIGGER  EQU 4      this value.
HAA$USRX_FIRST_CALL   DS  CL01   Yes if First call to UserExit
HAA$USRX_LAST_CALL    DS  CL01   Yes if Last call to UserExit
HAA$USRX_LOB          DS  CL01   Yes if a Large Object
HAA$USRX_YES          EQU C'Y'
HAA$USRX_NO           EQU C'N'
                     DS  CL09
HAA$USRX_DB2_SSID     DS  CL04   DB2 SubSystem ID
HAA$USRX_DBID         DS  H      Internal ID of Database
HAA$USRX_OBID         DS  H      Internal ID of Object
HAA$USRX_PSID         DS  H      Internal ID of TS/IX Page Set
HAA$USRX_DATASET_EXTENTS DS  H      Number of Dataset Extents
HAA$USRX_DATASET_DSNUMS DS  H      Number of Datasets for Object
HAA$USRX_PARTITION    DS  H      -1 if Object at ALL level
HAA$USRX_PGFSIZE      DS  H      TS - PAGE SIZE IN K
*                     IX - SIZE, IN BYES, OF LEAF
*                     PAGES IN INDEX:
*                     256|512|1024|2048|4096
                     DS  CL08
HAA$USRX_TYPE         DS  CL02   TS|IX
HAA$USRX_DATABASE     DS  CL08   TableSpace Database Name
HAA$USRX_SPACENAME     DS  CL08   TableSpace Name
HAA$USRX_IX_CREATOR    DS  CL128  If NOT an IX, these are blank.
HAA$USRX_IX_NAME       DS  CL128  x

```



HAA\$USRX_IX_DATABASE	DS	CL08	x
HAA\$USRX_IX_INDEXSPACE	DS	CL08	x
HAA\$USRX_IX_TABLE_NAME	DS	CL128	x
HAA\$USRX_IX_TABLE_CREATOR	DS	CL128	x
HAA\$USRX_IX_COPY_INDICATOR	DS	CL01	Can IX be Image Copied? Y/N
HAA\$USRX_RETPD	DS	CL04	Retention Period
	DS	CL(4096-(*-HAA\$USRX_S))	
HAA\$USRX_LEN	EQU	*-HAA\$USRX	
HAA\$USRX_PARMS	EQU	HAA\$USRX_S,*-HAA\$USRX_S	
HAA\$USRX	EQU	HAA\$USRX_PARMS	

The user exit sets HAA\$USRX\_RETURN\_CODE to indicate whether the object is selected for processing.

### Additional information about the retention period parameter

The HAA\$USRX\_RETPD parameter allows you to specify a retention period for a particular object to DB2 Automation Tool from an outside source (for example, a DB2 table).

### About this task

DB2 Automation Tool then builds the DDs for that object using the supplied value rather than the retention period specified in the utility profile. This field can be set by specifying a user exit in an exception profile. The user-written exit can return a numeric value for the object's retention period to DB2 Automation Tool. If the value is present, DB2 Automation Tool will use it for the retention period; if it is not present, DB2 Automation Tool will use the value from the utility profile for the retention period.

This exit can be used with the COPY and COPYTOCOPY utilities and the REORG utility when an inline COPY is specified. Using this function affects the retention period parameters in DDs or TEMPLATE control statements used for COPY utilities.

### Procedure

1. Create a user exit by following the instructions in the HAA\$USRX member. You must write the user exit to return the retention period in the required parameter field (HAA\$USRX\_RETPD).
2. Create an exception profile specifying the user exit.
3. Include the exception profile in the job profile.

### Results

Note the following:

- HAA\$USRX\_RETPD is initialized to blanks. If the field is left blank after user exit execution, DB2 Automation Tool uses the retention period specified in the utility profile.
- If the user exit returns a retention period (the HAA\$USRX\_RETPD field is NOT blank), the retention period value is used only for the object on which the exception profile was operating on. Because a user exit is called once per object in the object profile, the value is reset to blanks each time the user exit is called.
- No validation is performed on the parameter; you must ensure that the value passed to DB2 Automation Tool is a valid value for a retention period.
- If both the retention period in an exception profile and an expiration date in a utility profile are specified in the same job profile, the built JCL may contain both parameters and result in a JCL error.

## Stored procedure user exit exceptions

The stored procedure user exit exception allows you to invoke a DB2 stored procedure immediately before, during, and immediately after exceptions processing. You can code any type of DB2 stored procedure that will either accept (trigger) or reject an object.

The stored procedure can be a native SQL procedure, an external SQL procedure, or an external procedure written in C, COBOL, or any programming language supported by DB2. The stored procedure can perform any type of allowable function, including executing SQL. The user exit will be called by exceptions processing during three processing phases and passed information about every object in the object profiles included in the jobs profile. This user-defined stored procedure should contain the logic necessary to check for exception conditions.

Three exceptions are provided to allow the stored procedure to be called:

- Prior to any processing performed by exception processing (pre-user exit). The pre-user exit is called once per included object in the jobs profile.
- During exception processing, once per included object in the jobs profile.
- After exception processing is finished (post-user exit). The post-user exit is called once per included object in the jobs profile.

## Specifying the stored procedure

The stored procedure names can be specified with or without a schema name. At build time, exception processing verifies that the specified stored procedure exists as follows:

- If the schema name is not specified, a `SELECT` from `SYSIBM.SYSROUTINES` is issued to obtain the schema name, based on the stored procedure name, parameter count, and routine type.
- If the schema name is specified, exception processing does an `SQL CALL` of *schema-name.stored-procedure-name*.

If no row is returned from `SYSROUTINES` or a -440 SQL return code is obtained on the `SQL CALL`, a build error message is issued and further processing of the stored procedure is aborted. Processing of other exception conditions continues.

The `STORED_PROC_PRE` and `STORED_PROCEDURE` exception conditions are handled like any other exception condition, and can either be an And or Or condition. If selected as an And condition, all And conditions for a particular object, including any of the two noted stored procedure exception conditions, must be true in order for the object to be accepted. If selected as an Or condition, an object will be accepted if the stored procedure accepts the object.

The `STORED_PROC_POST` exception condition (the post-user exit stored procedure) is handled differently than other exception conditions, since exception processing is not processing other exception conditions at the time a post-user exit runs. This means that a post-user exit can accept and reject an object by itself without any other exception condition being applied. A post-user exit can accept and reject an object without any other exception conditions affecting what the user exit does with the objects. Further, the post-user exit can reject an object that had previously met all specified exception conditions.

You can specify the same procedure name for any or all of the three stored procedure exception conditions. If the stored procedure user exit does not want to process objects during a particular phase of exception processing (before, during,

or after), or only needs to process a certain number of objects, the user exit can set HAA\_RETURN\_CODE to 8 to indicate to terminate that phase of the user exit.

## Parameters passed to the user exit

The information passed to an exceptions stored procedure user exit is similar to the information passed to an exceptions CLIST, REXX exec, and load module user exit. The HAA\$USRP member in *hilevel.SAMPLIB* contains the parameters that are passed to the user exit. The stored procedure user exit must specify the parameters as outlined in HAA\$USRP. Following are the parameters passed to the stored procedure:

```
(INOUT HAA_RETURN_CODE      INTEGER  --0=Reject Object
                                --4=Accept Object
                                --8=Terminate User-Exit
,IN HAA_FUNCTION             CHAR(01) --B=Pre-User-Exit
                                --P=Process each Object
                                --X=Post-User-Exit
,IN HAA_TYPE                 CHAR(02) --TS|IX
,IN HAA_DATABASE             CHAR(08) --TS Database Name
,IN HAA_SPACENAME            CHAR(08) --TableSpace Name
,IN HAA_IX_CREATOR           CHAR(128) --_IX_ fields are blank
,IN HAA_IX_NAME              CHAR(128) --      if not an IX.
,IN HAA_IX_DATABASE          CHAR(08) --IX Database Name
,IN HAA_IX_INDEXSPACE        CHAR(08) --IX IndexSpace Name
,IN HAA_IX_TABLE_NAME        CHAR(128) --Table Name in the TS
,IN HAA_IX_TABLE_CRTR        CHAR(128) --Creator Name of the Table
,IN HAA_DB2_SSID             CHAR(04) --DB2 SubSystem ID
,IN HAA_DBID                 SMALLINT --ID of Database
,IN HAA_OBID                 SMALLINT --ID of Object
,IN HAA_PSID                 SMALLINT --ID of TS/IX Page Set
,IN HAA_DATASET_EXTNTS       SMALLINT --Nbr of Dataset Extents
,IN HAA_DATASET_DSNUMS       SMALLINT --Nbr of Datasets
,IN HAA_PARTITION            SMALLINT -- -1 if at ALL level
,IN HAA_PGSIZE               SMALLINT --TS - PAGE SIZE IN K
                                --IX - SIZE, in bytes,of
                                --      Leaf Pages in IX.
,INOUT HAA_RETPD_OVERRIDE    CHAR(04) --Overridden Retention Period
                                --# of days to retain dataset
,IN HAA_IX_COPY_IND          CHAR(01) --Can be ICed? Y|N
,IN HAA_LOB                  CHAR(01) --Large Object? Y|N
)
```

If there are multiple exceptions profiles in a job, and if the exceptions profiles are processed one at a time, once an object is triggered, it is not evaluated by any subsequent exceptions profile. This prevents exceptions profiles from rejecting an object that was accepted by another exceptions profile. This is also the case for user exits. However, during the post-user exit phase, exception processing will pass accepted objects to the post-user exits only if those objects were triggered by the same exceptions profile as the post-user exit.

Upon entry to the post-user exit, HAA\_RETURN\_CODE is set to 4 if the object was triggered by that exceptions profile. Otherwise, HAA\_RETURN\_CODE is set to 0.

Setting HAA\_RETURN\_CODE to 0 upon exit from the post-user exit will reject a previously accepted object. This overrides any previously met exception conditions. The Exceptions Trigger Report, however, will list those triggers that were turned off by a post-user exit, along with an indicator noting that the post-user exit overrode those exception conditions.

## Real-time statistics

Real-time statistics can be used to help determine when maintenance functions need to be run on your table spaces and index spaces. If the real-time statistics tables have been set up on the subsystem, DB2 Automation Tool can use the data in them to evaluate exceptions.

The statistics are kept in DB2 catalog tables SYSIBM.SYSTABLESPACESTATS and SYSIBM.SYSINDEXSPACESTATS.

DB2 Automation Tool uses some statistics directly from the real-time statistics tables. In addition, DB2 Automation Tool uses the statistics to calculate other pertinent values that can be specified for exception processing. For real-time statistics table information, refer to the DB2 Administration Guide for your version of DB2.

The following table explains the exception values related to real-time statistics that appear on the Update Exceptions Profile Display.

*Table 12. Statistics type: TABLESPACESTATS*

Column	Description	How calculated
TOTALROWS	The number of rows or LOBs in the table space or partition; if the space contains more than one table, this value is the total number of rows for all tables.	Table space statistics table: TOTALROWS column
SPACE	The kilobytes of DASD storage allocated to the table space or partition	Table space statistics table: SPACE column
EXTENTS	The number of physical extents for the table space or partition; for multi-piece table spaces, this value is the number of extents for the last data set.	Table space statistics table: EXTENTS column
NACTIVE	The number of active (preformatted) pages in the table space or partition.	Table space statistics table: NACTIVE column
NPAGES	The number of distinct pages with active rows in the table space or partition.	Table space statistics table: NPAGES column
DATASIZE	The total number of bytes that row data occupy in the data rows or LOB rows.	Table space statistics table: DATASIZE column
UNCOMPRSD_ DATASIZE	The total number of bytes that row data would have occupied in data rows or LOB rows if the data was not compressed.	Table space statistics table: UNCOMPRSD_ DATASIZE
COMPRESSION_ RATIO	Ratio of uncompressed data to compressed data; a value of 250 means a ratio of 2.50.	$(\text{UNCOMPRSD\_DATASIZE} / \text{DATASIZE}) * 100$

*Table 13. Statistics type: INDEXSPACESTATS*

Stats	Description	How calculated
TOTALENTRIES	The number of index entries (including duplicates) in the index space or partition.	Indexspace statistics table: TOTALENTRIES column

Table 13. Statistics type: INDEXSPACESTATS (continued)

Stats	Description	How calculated
SPACE	The kilobytes of DASD storage allocated to the index space or partition.	Indexspace statistics table: SPACE column
EXTENTS	The number of physical extents for the index or partition; for multi-piece index spaces, this value is the number of extents for the last data set.	Indexspace statistics table: EXTENTS column
NACTIVE	The number of active (preformatted) pages in the index space or partition.	Indexspace statistics table: NACTIVE column
NPAGES	For DB2 V10 and later, the number of pages in the index tree that contain only pseudo-deleted index entries.	Indexspace statistics table: NPAGES column
NLEVELS	The number of levels in the index tree.	Indexspace statistics table: NLEVELS column
NLEAF	The number of leaf pages in the index.	Indexspace statistics table: NLEAF column

Table 14. Statistics type: REALTIME ICOPY

Stat	Description	How calculated
REORG_OR_LOAD	If selected, triggers an exception if a REORG or LOAD was performed on the object after the last COPY.	Compare timestamps of last copy (COPYLASTTIME) to timestamp of last REORG (REORGLASTTIME) and LOAD (LOADLASTTIME)
REORG_LOAD_STATS	If selected, triggers an exception if a REORG, LOAD, or RUNSTATS was performed on the object after the last COPY.	Compare timestamps of last copy (COPYLASTTIME) to timestamp of last REORG (REORGLASTTIME), LOAD (LOADLASTTIME), and RUNSTATS (STATSLASTTIME)
DAYS_SINCE_LAST	The number of days since the last COPY.	Table space or indexspace statistics table: CURRENT DATE-COPYLASTTIME (in days)
UPDATED_PAGES	The number of distinct pages updated.	Table space or indexspace statistics table: COPYUPDATEDPAGES
UPDATED_PAGES_PCT	The number of distinct pages updated as a percentage of the total number of active (preformatted) pages.	Table space or indexspace statistics table: (COPYUPDATEDPAGES * 100) / NACTIVE
COPY_CHANGES	The number of inserts, deletes, and updates.	Table space or indexspace statistics table: COPYCHANGES
COPY_CHANGES_PCT	The number of inserts, deletes, and updates as a percentage of the total number of rows.	Table space or indexspace statistics table: (COPYCHANGES * 100) / TOTALROWS

Table 15. Statistics type: *REALTIME REORG TS*

Stat	Description	How calculated
DAYS_SINCE_LAST	The number of days since the last REORG.	Table space statistics table: CURRENT DATE - REORGLASTTIME (in days)
DAYS_SINCE_HASH	The number of days since hash access was used for SELECT, FETCH, searched UPDATE, searched DELETE, or used to enforce RI constraints.	CURRENT DATE – HASHLASTUSED value (in days) in SYSTABLESPACESTATS
DATAISMORETHAN HASH	Trigger an exception if the DATASIZE is larger than the HASH SPACE for a hash organized table space. Enables reallocation of hash access tables and adjustment of hash space.	Compare table space statistics table DATASIZE to HASHSPACE value in SYSTABLESPACE
INS_UPD_DEL	The number of inserts, updates, and deletes.	Table space statistics table: REORGINSERTS + REORGDELETES + REORGUPDATES
INS_UPD_DEL_PCT	The number of inserts, updates, and deletes as a percentage of the total number of rows.	Table space statistics table: [(REORGINSERTS + REORGDELETES + REORGUPDATES) * 100] / TOTALROWS
UNCLUST_INS	The number of inserted rows placed greater than 16 pages away from target page.	Table space statistics table: REORGUNCLUSTINS
UNCLUST_INS_PCT	The number of inserted rows placed greater than 16 pages away from target page, as a percentage of the total number of rows.	Table space statistics table: (REORGUNCLUSTINS * 100) / TOTALROWS
DISORGED_LOBS	The number of LOBs inserted since the last REORG or LOAD REPLACE that are not perfectly chunked.	Table space statistics table: REORGDISORGLOB
DISORGED_LOBS_PCT	The number of LOBs inserted since the last REORG or LOAD REPLACE that are not perfectly chunked, as a percentage of the total number of rows.	Table space statistics table: (REORGDISORGLOB * 100) / TOTALROWS
RELOCATED_ROWS	Total number of relocated rows.	Table space statistics table: REORGNEARINDREF + REORGFARINDREF
RELOCATED_ROWS_PCT	Total number of relocated rows as a percentage of the total number of rows.	Table space statistics table: (RELOCATED_ROWS * 100) / TOTALROWS
MASS_DELETES	The number of tables that have been mass deleted since the last REORG or LOAD REPLACE. If this value is not zero, the space may need a REORG.	Table space statistics table: REORGMASDELETE

Table 15. Statistics type: *REALTIME REORG TS* (continued)

Stat	Description	How calculated
CLUSTERSENS	The number of times data has been read by SQL sensitive to clustering sequence of data since last REORG or LOAD REPLACE.	Table space statistics table: REORGCLUSTERSENS
HASHACCESS	The number of times data is accessed using hash access or used to enforce RI constraints.	Table space statistics table: REORGHASHACCESS
SCANACCESS	The number of times data is accessed for SELECT, FETCH, UPDATE, or DELETE.	Table space statistics table: REORGSCANACCESS

Table 16. Statistics type: *REALTIME REORG IX*

Stat	Description	How calculated
DAYS_SINCE_LAST	The number of days since the last REORG.	Indexspace statistics table: CURRENT DATE - REORGLASTTIME (in days)
INS_DEL	The number of inserts and deletes.	Indexspace statistics table: REORGINSERTS + REORGDELETES
INS_DEL_PCT	The number of inserts and deletes as a percentage of the total number of index entries.	Indexspace statistics table: [(REORGINSERTS + REORGDELETES) * 100] / TOTALENTRIES
APPENDED_INS	The number of index entries that have been inserted since the last REORG, REBUILD INDEX, or LOAD REPLACE on the index space or partition that have a key value greater than the maximum key value in the index space or partition.	Indexspace statistics table: REORGAPPENDINSERT
APPENDED_INS_PCT	The percentage of index entries that have been inserted since the last REORG, REBUILD INDEX, or LOAD REPLACE on the index space or partition that have a key value greater than the maximum key value in the index space or partition, as a percentage of the total number of index entries.	Indexspace statistics table: (REORGAPPENDINSERT * 100) / TOTALENTRIES
PSEUDO_DEL	The number of pseudo-deleted index entries stored in the index space or partition.	Indexspace statistics table: REORGPSEUDODELETES
PSEUDO_DEL_PCT	The percentage of pseudo-deleted index entries stored in the index space or partition, as a percentage of the total number of index entries.	Indexspace statistics table: (REORGPSEUDODELETES * 100) / TOTALENTRIES

Table 16. Statistics type: *REALTIME REORG IX* (continued)

Stat	Description	How calculated
LEAFFAR_SPLITS_PCT	The percentage of leaf pages located far away from the previous leaf pages, as a percentage of the total number of active (preformatted) pages.	Indexspace statistics table: $(\text{REORGLEAFFAR} * 100) / \text{NACTIVE}$
NLEAF_SPLITS	The total number of index page splits.	Indexspace statistics table: $\text{REORGLEAFNEAR} + \text{REORGLEAFFAR}$
NLEAF_SPLITS_PCT	The percentage of index page splits as a percentage of the total number of active (preformatted) pages.	Indexspace statistics table: $[(\text{REORGLEAFNEAR} + \text{REORGLEAFFAR}) * 100] / \text{NACTIVE}$
NUMLEVELS_UPDATED	The number of levels in the index tree that were added or removed since last REORG, REBUILD INDEX, or LOAD REPLACE.	Indexspace statistics table: $\text{REORGNUMLEVELS}$
MASS_DELETES	The number of mass deletes or the number of dropped tables since the last REORG, REBUILD INDEX, or LOAD REPLACE.	Indexspace statistics table: $\text{REORGMASDELETE}$
INDEXACCESS	The number of times the index was used for SELECT, FETCH, searched UPDATE, searched DELETE, or was used to enforce RI constraints. For hash overflow indexes, this is the number of times the hash overflow exception index was used.	Indexspace statistics table: $\text{REORGINDEXACCESS}$

Table 17. Statistics type: *REALTIME RUNSTATS*

Stat	Description	How calculated
DAYS_SINCE_LAST	The number of days since the last RUNSTATS.	Table space or indexspace statistics table: $\text{CURRENT DATE} - \text{STATSLASTTIME}$ (in days)
INS_UPD_DEL	For table spaces, the number of inserts, updates and deletes since the last RUNSTATS was run. For index spaces, the number of inserts and deletes since the last RUNSTATS was run.	Table space statistics table: $\text{STATSINSERTS} + \text{STATSUPDATES} + \text{STATSDELETES}$ Indexspace statistics table: $\text{STATSINSERTS} + \text{STATSDELETES}$
INS_UPD_DEL_PCT	For table spaces, the number of inserts, updates and deletes as a percentage of the total number of rows since the last RUNSTATS was run. For index spaces, the number of inserts and deletes as a percentage of the total number of rows since the last RUNSTATS was run.	Table space statistics table: $[(\text{STATSINSERTS} + \text{STATSUPDATES} + \text{STATSDELETES}) * 100] / \text{TOTALROWS}$ Indexspace statistics table: $[(\text{STATSINSERTS} + \text{STATSDELETES}) * 100] / \text{TOTALENTRIES}$



Table 17. Statistics type: REALTIME RUNSTATS (continued)

Stat	Description	How calculated
MASS_DELETES	The number of times that the index or index space partition was mass deleted since the last RUNSTATS was run.	Table space or indexspace statistics table: STATSMASSDELETE

## MVS Catalog

The MVS catalog exceptions triggers exceptions based on the following values. These statistics are derived from information in the z/OS catalog.

Table 18. Statistics type: MVS Catalog

Statistic	Description
DSNUM	The number of individual data sets for each object partition.
EXTENTS	The number of data set extents for each individual object partition.
PERCENT_USED	The percentage of space used for each individual object partition; calculated as (total used space / total allocated space) x 100. When specifying trigger amounts based on the PERCENT_USED column, you should be aware that fractional amounts are truncated when DB2 Automation Tool reviews an object's space utilization. Therefore if you use exception criteria to specify that a table space should be triggered when its percent used is > 25%, and a table space's percent used is 25.70%, it will NOT be triggered because the 25.7% is truncated to 25 (which is not greater than 25). You can trigger an object taking fractional amounts into consideration by specifying the exception criteria to be greater than or EQUAL TO the numerical value. In this case you would specify the exception criteria to be PERCENT_USED GE 25.

Table 18. Statistics type: MVS Catalog (continued)

Statistic	Description
PERCENT_MAXUSED PERCENT_MAXALLOC	<p>These conditions allow exceptions for object space usage. These values can be a whole number in the range of 0 to 100. The values are calculated as follows:</p> <ul style="list-style-type: none"> <li>PERCENT_MAXALLOC is calculated as <math>(total\_allocated\_space / max\_size) * 100</math></li> <li>PERCENT_MAXUSED is calculated as <math>(total\_used\_space / max\_size) * 100</math></li> </ul> <p>Where <i>max_size</i> is determined according to the “Calculations used for maximum potential size of an object for exception processing” on page 821 topic.</p> <p>Exceptions are evaluated as follows:</p> <ul style="list-style-type: none"> <li>If the object is simple or segmented (non-partitioned) or a LOB, PERCENT_MAXALLOC and PERCENT_MAXUSED are calculated against the entire object's space usage. This takes into account potential multiple data sets.</li> <li>If the object is partitioned, PERCENT_MAXALLOC and PERCENT_MAXUSED are calculated against each object partition. If the object was included at the ALL partition level and any one of the object partitions meets the exception criteria, the entire object is triggered.</li> <li>For partition-by-growth table spaces that are included at the ALL partition level, the space usage for each partition is totaled and then divided by the total amount of potential space for all allocated partitions. The MVS catalog exceptions are then applied against that percentage. If you want PBG partitions to be evaluated individually, you must include the PBG spaces at the PART level in the object profile.</li> </ul>
ALLOCATED_TRACKS	The number of tracks allocated for each individual object partition.
PQTY	Primary space allocation in units of 4K blocks for each individual object partition.
SQTY	Secondary space allocation in units of 4K blocks for each individual object partition.

## SYSCOPY

The SYSCOPY exceptions trigger exceptions based on values in SYSIBM.SYSCOPY.

Triggers exceptions based on values in SYSIBM.SYSCOPY.

Table 19. Statistics type: SYSCOPY

Stat	Description
ICTYPE	Triggers an exception if the value in the ICTYPE field in SYSIBM.SYSCOPY equals or does not equal the specified value. Possible values are: A - ALTER B - REBUILD INDEX D - CHECK DATA LOG(NO) (no log records for the range are available for RECOVER utility) F - COPY FULL YES I - COPY FULL NO P - RECOVER TOCOPY or RECOVER TORBA (partial recovery point) Q - QUIESCE R - LOAD REPLACE LOG(YES) S - LOAD REPLACE LOG(NO) T - TERM UTILITY command (terminated utility) V - REPAIR VERSIONS utility (DB2 V8 only) W - REORG LOG(NO) X - REORG LOG(YES) Y - LOAD LOG(NO) Z - LOAD LOG(YES)
DAYS	Triggers an exception if the specified utility has not been run in the specified number of days. You must specify the utility in the ICTYPE column.
CHGD_SINCE_LAST_IC	Triggers an exception if changes have been made to an object since the last image copy. <b>Note:</b> If you select this exception condition, jobs using this exception profile must be built in batch.

## DB2 Display Status

Exceptions can be triggered based on the results of the DISPLAY DATABASE command.

Triggers exceptions based on the display status. DB2 Automation Tool runs the DISPLAY DATABASE command to retrieve this information.

Table 20. Statistics type: DB2 Display Status

Stat	Description
TRIGGER_IF_1_MATCH	When ANDing conditions, select this field to trigger an object if only ONE status matches; otherwise all statuses must match.
STATUS_ARBDP	The object is in the advisory REBUILD-pending status.
STATUS_AREO*	The object is in the advisory REORG-pending status.
STATUS_AREOR	The object is in the advisory REORG-pending status and needs reorganization to apply pending definition changes.
STATUS_AREST	The object is in advisory RESTART-pending state.
STATUS_AUXW	Either the base table space or XML table space is in the auxiliary warning advisory status, or the LOB table space is in the auxiliary warning advisory status.
STATUS_CHKP	The object is in the CHECK-pending status.
STATUS_COPY	The object is in the COPY-pending status.
STATUS_GRECP	The object is GBP-dependent and a group buffer pool RECOVER is pending.
STATUS_ICOPY	The index space is in the informational COPY-pending advisory status.
STATUS_LPL	The object has entries in the logical page list and therefore may have a page error.

Table 20. Statistics type: DB2 Display Status (continued)

Stat	Description
STATUS_LSTOP	The logical partition of a nonpartitioning index is stopped.
STATUS_PSRBD	The entire nonpartitioning index space is in a page set REBUILD-pending status.
STATUS_RBDP	The physical or logical index partition is in the REBUILD-pending status.
STATUS_RECP	The object is in the RECOVER-pending status.
STATUS_REFP	The object is in the REFRESH-pending status.
STATUS_REORP	The data partition is in the REORG-pending status.
STATUS_RO	The object is started for read-only activity.
STATUS_RW	The object is started for read and write activity.
STATUS_RESTP	The object is being restarted (restart-pending).
STATUS_STOP	The object is stopped.
STATUS_STOPE	The table space or index is stopped because of an invalid log RBA or LRSN in one of its pages.
STATUS_STOPP	A stop is pending for the object.
STATUS_UT	The object is started for utility processing only.
STATUS_UTRO	A utility is in process on the object that allows only RO access.
STATUS_UTRW	A utility is in process on the object that allows RW access.
STATUS_UTUT	A utility is in process on the object that allows only UT access.

## DB2 catalog-based statistics

Exceptions can be triggered based on various statistics contained in the DB2 catalog.

Many of the catalog columns listed are standard catalog table columns. For specific information on the column contents, refer to the DB2 SQL Reference for your version of DB2.

Columns marked with an asterisk (\*) are DB2 Automation Tool statistics derived from catalog statistics. Refer to the description in the Column Description area on the screen or “Statistics types on the Update Exceptions Profile Display” on page 298 for information about those statistics.

Different columns may appear on this screen depending on your version of DB2. For example, columns that were added on DB2 Version 11 tables will not appear on DB2 10 subsystem screens.

---

## Updating an exception profile

You can update an exception profile any time to add, delete, or change conditions or settings in the profile.

## About this task

To update an exception profile, access the Exceptions Profile Display and type U in the Cmd line next to the profile you want to update. The Update Exceptions Profile Display is displayed; you can use line commands to add or delete conditions from the profile. You can also change the comparators or the exception values.

**Note:** If you update a profile created under a previous version of DB2 Automation Tool, the Profile Conversion Warning window is displayed. Refer to “Updating a profile from a previous version of DB2 Automation Tool” on page 405 for information about converting profiles.

---

## Maintaining and reporting on repository statistics

The DB2 Automation Tool repository is a set of DB2 tables (one set per DB2 subsystem) that can become full over time. You can maintain the repository and review reports on the statistics using an option from the Exceptions Profile Display.

### Procedure

To maintain or report on statistics, type Y in the Display Statistics Reports and/or Perform Statistics Maintenance field on the Exceptions Profile Display and press Enter. The Statistics Reports and Maintenance screen, shown in the following figure, appears:

```
AUTOTOOL V4R2 --- Statistics Reports and Maintenance --- 2017/09/20 11:54:45
Option ==>

Number of the statistics report to be displayed
1 - SYSCOLSTATS      2 - SYSCOLUMNS  3 - SYSINDEXES      4 - SYSINDEXPART
5 - SYSINDEXSTATS    6 - SYSTABLES   7 - SYSTABSTATS    8 - SYSTABLEPART
9 - SYSTABLESPACE    10 - SLOG          11 - SYSLOBSTATS   12 - TRIGGERS
OR
Letter of the statistics maintenance function.
C - Count number of rows in HAA Repository
D - Delete rows in HAA Repository
X - Exit Statistics Reports
-----
DB2 Subsystem ID: SS01      Current SQLID:      User: TWUSR
-----
```

Figure 180. Statistics Reports and Maintenance screen

### Results

You can report on the DB2 Automation Tool table spaces listed at the top of the panel. The statistics maintenance functions are listed in the middle of the panel.

## Reporting on statistics

The DB2 Automation Tool repository tables that you can generate reports on are listed on the panel.

### Procedure

To get a report, in the Option line type in the number listed next to the desired table and press Enter.

# SYSCOLSTATS

You can use this option to retrieve a statistics report on SYSCOLSTATS.

When you type 1 in the option line to get a statistics report on SYSCOLSTATS, the window shown in the following figure is displayed:

Enter Column Statistics Report Selection Criteria

Table Creator Like \*

>

Column Name Like \*

>

Table Name Like . . \*

>

Part \*

Date From . . . . . 2017/09/01

to

2017/09/20 (YYYY/MM/DD)

Time From . . . . . 00:00:01

to

23:59:00 (HH:MM:SS)

Figure 181. Enter Column Statistics Report Selection Criteria window: SYSCOLSTATS

This window allows you to enter filtering criteria to display only the statistics of interest. The fields that appear in this window are described in the following section:

**Table Creator Like**

Type in a table creator ID or mask.

**Column Name Like**

Type in a column name or mask.

**Table Name Like**

Type in a table name or mask.

**Part** Enter the partition number you want to include.

**Date From/To**

Enter a date range in format YYYY/MM/DD that you want to include.  
This date represents the date the statistics were gathered.

**Time From/To**

Enter a timestamp range in format HH:MM:SS that you want to include.  
This time represents the time the statistics were gathered.

When you have completed the fields, press Enter. The report that is shown in the following figure is generated. Scroll right to see all the columns.

```

AUTOTOOL V4R2 ----- Statistics Report ----- 2017/09/20 13:00:08
Option ==>                                         Scroll ==> CSR
-----
DB2 Subsystem ID: SS01      Current SQLID:          User: TWUSR
                        Statistics Table: SYSCOLSTATS
Table Creator Like *      > Column Name Like *      >
Table Name Like . . TB010301      > Part *
Date From . . . . . 2017/09/01    to 2017/09/20    (YYYY/MM/DD)
Time From . . . . . 00:00:01      to 23:59:00      (HH:MM:SS)
-----
Row 1 of 24      +>
TBOWNER- TBNAME----- NAME----- Part# -----STATTIME-----
MYQA1    TB010301      COL1          1 2017-09-19-00.19.39.000000
MYQA1    TB010301      COL1          1 2017-09-14-04.18.44.000000
MYQA1    TB010301      COL1          1 2017-09-14-03.21.24.000000
MYQA1    TB010301      COL1          1 2017-09-12-07.11.53.000000
MYQA1    TB010301      COL1          1 2017-09-07-20.24.46.000000
MYQA1    TB010301      COL1          1 2017-09-06-05.17.42.000000
MYQA1    TB010301      COL1          1 2017-09-06-04.40.47.000000
MYQA1    TB010301      COL1          1 2017-09-02-00.23.36.000000
MYQA1    TB010301      COL1          2 2017-09-19-00.19.39.000000
MYQA1    TB010301      COL1          2 2017-09-14-04.18.44.000000
MYQA1    TB010301      COL1          2 2017-09-14-03.21.24.000000

```

Figure 182. Statistics Report panel: SYSCOLSTATS

The Statistics Report panel allows you to view the statistics from the selected DB2 Automation Tool repository table. The following describes the fields that appear on this panel.

**DB2 Subsystem ID**

The current DB2 subsystem ID

**Current SQLID**

The current SQL ID.

**User** The current user.

**Statistics Table**

The catalog table on which the report is generated.

**Table Creator Like**

The table creator ID or mask you specified is shown here. You can change it on this panel to change or further refine the report output.

**Column Name Like**

The column name or mask you specified is shown here. You can change it on this panel to change or further refine the report output.

**Table Name Like**

The table name or mask you specified is shown here. You can change it on this panel to change or further refine the report output.

**Part** The partition number you specified is shown here. You can change it on this panel to change or further refine the report output.

**Date From/To**

This field shows the date range you entered on the previous panel. You can change it on this panel to change or refine the report output. This date represents the date the statistics were gathered.

**Time From/To**

This field shows the time range you entered on the previous panel. You can change it on this panel to change or refine the report output. This time represents the time the statistics were gathered.

**TBOWNER**

The authorization ID of the owner of the table that contains the column.

**TBNAME**

The name of the table that contains the column.

**NAME**

The name of the column.

**Part #** The partition number for the table space that contains the table in which the column is defined.

**STATSTIME**

If RUNSTATs updated the table space statistics, this is the date and time when the last invocation of RUNSTATs updated the repository with statistics. If RUNSTATs has not been run, this column contains the default value of 0001-01-01.00.00.00.000000.

**COLCARD**

The estimated number of distinct column values in the partition.

**HIGHKEY**

The highest value of the column within the partition. Blank if statistics have not been gathered or if the column is an indicator column. If the column has a non-character data type, the data may not be printable.

**HIGH2KEY**

The second highest value of the column within the partition. Blank if statistics have not been gathered or if the column is an indicator column. If the column has a non-character data type, the data may not be printable.

**LOWKEY**

The lowest value of the column within the partition. Blank if statistics have not been gathered or if the column is an indicator column. If the column has a non-character data type, the data may not be printable.

**LOW2KEY**

The second lowest value of the column within the partition. Blank if statistics have not been gathered or if the column is an indicator column. If the column has a non-character data type, the data may not be printable.

When you finish reviewing the report, press PF3 to return to the Statistics Report and Maintenance panel.

**SYSCOLUMNS**

You can use this option to retrieve a statistics report on SYSCOLUMNS.

When you type 2 in the option line to get a statistics report on SYSCOLUMNS, the window shown in the following figure is displayed:

```

Enter Column Statistics Report Selection Criteria

Table Creator Like *          > Column Name Like *          >
Table Name Like . . *        >
Date From . . . . . 2017/09/01 to 2017/09/20 (YYYY/MM/DD)
Time From . . . . . 00:00:01 to 23:59:00 (HH:MM:SS)
  
```

Figure 183. Enter Column Statistics Report Selection Criteria window: SYSCOLUMNS



This window allows you to enter filtering criteria to display only the statistics of interest. The fields in this window are described in the following section:

**Table Creator Like**

Type in a table creator ID or mask.

**Column Name Like**

Type in a column name or mask.

**Table Name Like**

Type in a table name or mask.

**Date From/To**

Enter a date range in format YYYY/MM/DD that you want to include.  
This date represents the date the statistics were gathered.

**Time From/To**

Enter a timestamp range in format HH:MM:SS that you want to include.  
This time represents the time the statistics were gathered.

When you have completed the fields, press Enter. The report that is shown in the following figure is generated. Scroll right to see all the columns.

```

AUTOTOOL V4R2  ----- Statistics Report ----- 2017/09/20 13:02:52
Option ==>                                         Scroll ==> CSR
-----
DB2 Subsystem ID: SS01      Current SQLID:          User: TWUSR
                        Statistics Table: SYSCOLUMNS
Table Creator Like *      > Column Name Like *      >
Table Name Like . . TB010301      >
Date From . . . . 2017/09/01      to 2017/09/20 (YYYY/MM/DD)
Time From . . . . 00:00:01      to 23:59:00 (HH:MM:SS)
----- Row 1 of 8 ----- >
TBCREATO TBNAME----- NAME----- STATTIME-----
MYQA1    TB010301      COL1      2017-09-19-00.19.39.000000
MYQA1    TB010301      COL1      2017-09-14-04.18.44.000000
MYQA1    TB010301      COL1      2017-09-14-03.21.24.000000
MYQA1    TB010301      COL1      2017-09-12-07.11.53.000000
MYQA1    TB010301      COL1      2017-09-07-20.24.46.000000
MYQA1    TB010301      COL1      2017-09-06-05.17.42.000000
MYQA1    TB010301      COL1      2017-09-06-04.40.47.000000
MYQA1    TB010301      COL1      2017-09-02-00.23.36.000000
***** Bottom of Data *****

```

Figure 184. Statistics Report screen: SYSCOLUMNS

The Statistics Report screen allows you to view the statistics from the selected DB2 Automation Tool repository table. The fields in this window are described in the following section:

**DB2 Subsystem ID**

The current DB2 subsystem ID.

**Current SQLID**

The current SQL ID.

**User**

The current user.

**Statistics Table**

The catalog table on which the report is generated.

**Table Creator Like**

The table creator ID or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**Column Name Like**

The column name or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**Table Name Like**

The table name or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**Date From/To**

This field shows the date range you entered on the previous screen. You can change it on this screen to change or refine the report output. This date represents the date the statistics were gathered.

**Time From/To**

This field shows the time range you entered on the previous screen. You can change it on this screen to change or refine the report output. This time represents the time the statistics were gathered.

**TBCREATOR**

The authorization ID of the owner of the table that contains the column.

**TBNAME**

The name of the table that contains the column.

**NAME**

The name of the column.

**STATSTIME**

If RUNSTATs updated the table space statistics, this is the date and time when the last invocation of RUNSTATs updated the repository with statistics. If RUNSTATs has not been run, this column contains the default value of 0001-01-01.00.00.00.000000.

**COLCARD**

The estimated number of distinct values in the column.

**HIGHKEY**

The highest value of the column within the partition. Blank if statistics have not been gathered or if the column is an indicator column. If the column has a non-character data type, the data may not be printable.

**HIGH2KEY**

The second highest value of the column within the partition. Blank if statistics have not been gathered or if the column is an indicator column. If the column has a non-character data type, the data may not be printable.

**LOWKEY**

The lowest value of the column within the partition. Blank if statistics have not been gathered or if the column is an indicator column. If the column has a non-character data type, the data may not be printable.

**LOW2KEY**

The second lowest value of the column within the partition. Blank if statistics have not been gathered or if the column is an indicator column. If the column has a non-character data type, the data may not be printable.

When you finish reviewing the report, press PF3 to return to the Statistics Report and Maintenance screen.

**SYSINDEXES**

You can use this option to retrieve a statistics report on SYSINDEXES.

When you type 3 in the option line to get a statistics report on SYSINDEXES, the window shown in the following figure is displayed:

Enter Index Statistics Report Selection Criteria

IX Creator Like *	>	Table Creator Like *	>
IX Name Like . *	>	Table Name Like *	>
Date From . . 2017/09/01	to	2017/09/20	(YYYY/MM/DD)
Time From . . 00:00:01	to	23:59:00	(HH:MM:SS)

Figure 185. Enter Index Statistics Report Selection Criteria window: SYSINDEXES

This window allows you to enter filtering criteria to display only the statistics of interest. The fields in this window are described in the following section:

**IX Creator Like**

Type in an index creator ID or mask.

**Table Creator Like**

Type in a table creator ID or mask.

**IX Name Like**

Type in an index name or mask.

**Table Name Like**

Type in a table name or mask.

**Date From/To**

Enter a date range in format YYYY/MM/DD that you want to include.  
This date represents the date the statistics were gathered.

**Time From/To**

Enter a timestamp range in format HH:MM:SS that you want to include.  
This time represents the time the statistics were gathered.

When you have completed the fields, press Enter. The report that is shown in the following figure is generated. Scroll right to see all the columns.

AUTOTOOL V4R2 ----- Statistics Report ----- 2017/09/20 13:06:39  
Option ==> Scroll ==> CSR

---

DB2 Subsystem ID: SS01 Current SQLID: User: TWUSR  
Statistics Table: SYSINDEXES

IX Creator Like *	>	Table Creator Like *	>
IX Name Like . . *	>	Table Name Like . . TB010301	>
Date From . . . 2017/09/01	to	2017/09/20	(YYYY/MM/DD)
Time From . . . 00:00:01	to	23:59:00	(HH:MM:SS)

---

Row 1 of 8 >

CREATOR- NAME-----	TBCREATO	TBNAME-----
MYQA1 I0103011	MYQA1	TB010301
MYQA1 I0103011	MYQA1	TB010301
MYQA1 I0103011	MYQA1	TB010301
MYQA1 I0103011	MYQA1	TB010301
MYQA1 I0103011	MYQA1	TB010301
MYQA1 I0103011	MYQA1	TB010301
MYQA1 I0103011	MYQA1	TB010301
MYQA1 I0103011	MYQA1	TB010301
MYQA1 I0103011	MYQA1	TB010301

\*\*\*\*\* Bottom of Data \*\*\*\*\*

Figure 186. Statistics Report screen: SYSINDEXES

The Statistics Report screen allows you to view the statistics from the selected DB2 Automation Tool repository table. The fields in this screen are described in the following section:

**DB2 Subsystem ID**

The current DB2 subsystem ID.

**Current SQLID**

The current SQL ID.

**User** The current user.

**Statistics Table**

The catalog table on which the report is generated.

**IX Creator Like**

The index creator ID or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**Table Creator Like**

The table creator ID or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**IX Name Like**

The index name or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**Table Name Like**

The table name or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**Date From/To**

This field shows the date range you entered on the previous screen. You can change it on this screen to change or refine the report output. This date represents the date the statistics were gathered.

**Time From/To**

This field shows the time range you entered on the previous screen. You can change it on this screen to change or refine the report output. This time represents the time the statistics were gathered.

**CREATOR**

The authorization ID of the owner of the index.

**NAME**

The name of the index.

**TBCREATOR**

The authorization ID of the owner of the table.

**TBNAME**

The name of the table on which the index is defined.

**STATSTIME**

If RUNSTATs updated the table space statistics, this is the date and time when the last invocation of RUNSTATs updated the repository with statistics. If RUNSTATs has not been run, this column contains the default value of 0001-01-01.00.00.00.000000.

**SPACEF**

The number of kilobytes of DASD storage.

**CLUSTERRATIOF**

When multiplied by 100, the value in this column is the percentage of rows that are in clustering order. For a partitioning index, it is the weighted average of all index partitions. The value is 0 if statistics have not been gathered.

**FIRSTKEYCARDF**

The number of distinct values of the first key column. This number is an estimate if updated while collecting statistics on a single partition.

**FULLKEYCARDF**

The number of distinct values of the key.

**NLEAF**

The number of active leaf pages in the index.

**NLEVELS**

The number of levels in the index tree. If the index is partitioned, it is the maximum of the number of levels in the index tree for all partitions.

**CLUSTERED**

Whether the table is clustered by the index. Y indicates that most of the rows are in clustering order. N indicates that a significant number of rows are not in clustering order, or statistics have not been gathered. Blank means clustering is not applicable.

When you finish reviewing the report, press PF3 to return to the Statistics Report and Maintenance screen.

**SYSINDEXPART**

You can use this option to retrieve a statistics report on SYSINDEXPART.

When you type 4 in the option line to get a statistics report on SYSINDEXPART, the window shown in the following figure is displayed:

Enter Index Statistics Report Selection Criteria

IX Creator Like *		> Part *
IX Name Like *		>
Date From . . . 2017/09/01	to	2017/09/20 (YYYY/MM/DD)
Time From . . . 00:00:01	to	23:59:00 (HH:MM:SS)

*Figure 187. Enter Index Statistics Report Selection Criteria window: SYSINDEXPART*

This window allows you to enter filtering criteria to display only the statistics of interest. The fields in this window are described in the following section:

**IX Creator Like**

Type in an index creator ID or mask.

**Part** Type in the partition number you want to include.

**IX Name Like**

Type in an index name or mask.

**Date From/To**

Enter a date range in format YYYY/MM/DD that you want to include.  
This date represents the date the statistics were gathered.

**Time From/To**

Enter a timestamp range in format HH:MM:SS that you want to include.  
This time represents the time the statistics were gathered.

When you have completed the fields, press Enter. The report that is shown in the following figure is generated. Scroll right to see all the columns.

```

AUTOTOOL V4R2 ----- Statistics Report ----- 2017/09/20 13:11:10
Option ==>                                         Scroll ==> CSR
-----
DB2 Subsystem ID: SS01      Current SQLID:          User: TWUSR
                        Statistics Table: SYSINDEXPART
IX Creator Like *          > Part *
IX Name Like . . I0101011* >
Date From . . . 2017/09/01 to 2017/09/20 (YYYY/MM/DD)
Time From . . . 00:00:01 to 23:59:00 (HH:MM:SS)
-----
Row 1 of 16      +>
IXCREATO NAME----- Part# -----STATTIME-----CARDF-----
MYQA1 I0101011 0 2017-09-19-00.19.39.000000 165.0
MYQA1 I0101011 0 2017-09-19-00.19.30.000000 165.0
MYQA1 I0101011 0 2017-09-14-04.18.44.000000 165.0
MYQA1 I0101011 0 2017-09-14-04.18.32.000000 165.0
MYQA1 I0101011 0 2017-09-14-03.21.24.000000 165.0
MYQA1 I0101011 0 2017-09-14-03.21.14.000000 165.0
MYQA1 I0101011 0 2017-09-12-07.11.53.000000 165.0
MYQA1 I0101011 0 2017-09-12-07.11.46.000000 165.0
MYQA1 I0101011 0 2017-09-07-20.24.46.000000 165.0
MYQA1 I0101011 0 2017-09-07-20.24.38.000000 165.0
MYQA1 I0101011 0 2017-09-06-05.17.42.000000 165.0

```

Figure 188. Statistics Report screen: SYSINDEXPART

The Statistics Report screen allows you to view the statistics from the selected DB2 Automation Tool repository table. The fields in this screen are described in the following section:

**DB2 Subsystem ID**

The current DB2 subsystem ID.

**Current SQLID**

The current SQL ID.

**User** The current user.

**Statistics Table**

The catalog table on which the report is generated.

**IX Creator Like**

The index creator ID or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**Part** The partition number you specified is shown here. You can change it on this screen to change or further refine the report output.

**IX Name Like**

The index name or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**Date From/To**

This field shows the date range you entered on the previous screen. You can change it on this screen to change or refine the report output. This date represents the date the statistics were gathered.

**Time From/To**

This field shows the time range you entered on the previous screen. You can change it on this screen to change or refine the report output. This time represents the time the statistics were gathered.

**IXCREATO**

The authorization ID of the owner of the index.

**NAME**

The name of the index.

**Part #** The partition number of the index; zero if the index is not partitioned.

**STATSTIME**

If RUNSTATs updated the table space statistics, this is the date and time when the last invocation of RUNSTATs updated the repository with statistics. If RUNSTATs has not been run, this column contains the default value of 0001-01-01.00.00.00.000000.

**CARDF**

The number of keys in the index that refer to data rows or LOBs.

**SPACEF**

The number of kilobytes of DASD storage.

**PQTY** The primary space allocation in units of 4KB storage blocks. For user-managed data sets, the value is set to the primary space allocation only if RUNSTATS TABLESPACE| INDEX with UPDATE(ALL) or UPDATE(SPACE) is executed; otherwise, the value is zero.

**SQTY** The secondary space allocation in units of 4KB storage blocks. For user-managed data sets, the value is set to the secondary space allocation only if RUNSTATS TABLESPACE| INDEX with UPDATE(ALL) or UPDATE(SPACE) is executed; otherwise, the value is zero.

**DSNUM**

The number of data sets.

**EXTENTS**

The number of data set extents.

**NEAROFFPOSF**

The number of referred rows near, but not at optimal position, because of an insert into a full page.

**FAROFFPOSF**

The number of referred rows far from optimal position because of an insert into a full page.

**LEAFDIST**

This value is 100 times the average number of leaf pages between successive active leaf pages of the index.

**LEAFNEAR**

The number of leaf pages physically near previous leaf page for successive active leaf pages.

**LEAFFAR**

The number of leaf pages located physically far away from previous leaf pages for successive active leaf pages accessed in an index scan.

**P\_DEL\_ENT**

The number of pseudo-deleted entries (entries that are logically deleted but still physically present to the index). For a non-unique index, value is the number of RIDs that are pseudo-deleted. For a unique index, the value is the number of keys and RIDs that are pseudo-deleted. The value is -1 if statistics have not been gathered.

When you finish reviewing the report, press PF3 to return to the Statistics Report and Maintenance screen.

**SYSINDEXSTATS**

You can use this option to retrieve a statistics report on SYSINDEXSTATS.

When you type 5 in the option line to get a statistics report on SYSINDEXSTATS, the window shown in the following figure appears:

Enter Index Statistics Report Selection Criteria

IX Creator Like \*

IX Name Like \*

Date From . . . 2017/09/01 to 2017/09/20 (YYYY/MM/DD)

Time From . . . 00:00:01 to 23:59:00 (HH:MM:SS)

> Part \*

>

Figure 189. Enter Index Statistics Report Selection Criteria: SYSINDEXSTATS

This window allows you to enter filtering criteria to display only the statistics of interest. The fields in this window are described in the following section:

**IX Creator Like**

Type in an index creator ID or mask.

**Part** Type in the partition number you want to include.

**IX Name Like**

Type in an index name or mask.

**Date From/To**

Enter a date range in format YYYY/MM/DD that you want to include.  
This date represents the date the statistics were gathered.

**Time From/To**

Enter a timestamp range in format HH:MM:SS that you want to include.  
This time represents the time the statistics were gathered.

When you have completed the fields, press Enter. The report that is shown in the following figure is generated. Scroll right to see all the columns.

AUTOTOOL V4R2 ----- Statistics Report ----- 2017/09/20 13:14:26

Option ==> Scroll ==> CSR

-----

DB2 Subsystem ID: SS01

Current SQLID:

User: TWUSR

Statistics Table: SYSINDEXSTATS

IX Creator Like \*

IX Name Like . . \*

Date From . . . 2017/09/01 to 2017/09/20 (YYYY/MM/DD)

Time From . . . 00:00:01 to 23:59:00 (HH:MM:SS)

> Part \*

>

----- Row 1 of 648 +>

OWNER---	NAME-----	Part#	-----STATTIME-----	-CLUSTERRATIOF--
MYQA1	I0103011	1	2017-09-19-00.19.39.000000	1.0
MYQA1	I0103011	1	2017-09-14-04.18.44.000000	1.0
MYQA1	I0103011	1	2017-09-14-03.21.24.000000	1.0
MYQA1	I0103011	1	2017-09-12-07.11.53.000000	1.0
MYQA1	I0103011	1	2017-09-07-20.24.46.000000	1.0
MYQA1	I0103011	1	2017-09-06-05.17.42.000000	1.0
MYQA1	I0103011	1	2017-09-06-04.40.47.000000	1.0
MYQA1	I0103011	1	2017-09-02-00.23.36.000000	1.0
MYQA1	I0103011	2	2017-09-19-00.19.39.000000	1.0
MYQA1	I0103011	2	2017-09-14-04.18.44.000000	1.0
MYQA1	I0103011	2	2017-09-14-03.21.24.000000	1.0

Figure 190. Statistics Report screen: SYSINDEXSTATS

The Statistics Report screen allows you to view the statistics from the selected DB2 Automation Tool repository table. The fields in this screen are described in the following section:

**DB2 Subsystem ID**

The current DB2 subsystem ID.



**Current SQLID**

The current SQL ID.

**User** The current user.

**Statistics Table**

The catalog table on which the report is generated.

**IX Creator Like**

The index creator ID or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**Part** The partition number you specified is shown here. You can change it on this screen to change or further refine the report output.

**IX Name Like**

The index name or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**Date From/To**

This field shows the date range you entered on the previous screen. You can change it on this screen to change or refine the report output. This date represents the date the statistics were gathered.

**Time From/To**

This field shows the time range you entered on the previous screen. You can change it on this screen to change or refine the report output. This time represents the time the statistics were gathered.

**OWNER**

The authorization ID of the owner of the index.

**NAME**

The name of the index.

**Part #** The partition number of the index; zero if the index is not partitioned.

**STATSTIME**

If RUNSTATs updated the table space statistics, this is the date and time when the last invocation of RUNSTATs updated the repository with statistics. If RUNSTATs has not been run, this column contains the default value of 0001-01-01.00.00.00.000000.

**CLUSTERRATIOF**

When multiplied by 100, the value in this column is the percentage of rows that are in clustering order for the index partition. The value is 0 if statistics have not been gathered.

**FIRSTKEYCARDF**

The number of distinct values of the first key column for the index partition.

**FULLKEYCARDF**

The number of distinct values of the key for the index partition.

**NLEAF**

The number of active leaf pages in the index partition.

**NLEVELS**

The number of levels in the partition index tree.

**KEYCOUNTF**

The total number of rows in the partition.

When you finish reviewing the report, press PF3 to return to the Statistics Report and Maintenance screen.

## SYSTABLES

You can use this option to retrieve a statistics report on SYSTABLES.

When you type 6 in the option line to get a statistics report on SYSTABLES, the window shown in the following figure is displayed:

Enter Table Statistics Report Selection Criteria

Table Creator Like \* >

Table Name Like . . \* >

Date From 2017/09/01 to 2017/09/20 (YYYY/MM/DD)

Time From 00:00:01 to 23:59:00 (HH:MM:SS)

Figure 191. Enter Table Statistics Report Selection Criteria: SYSTABLES

This window allows you to enter filtering criteria to display only the statistics of interest. The fields in this window are described in the following section:

### Table Creator Like

Enter a table creator ID or mask.

### Table Name Like

Enter a table name or mask.

### Date From/To

Enter a date range in format YYYY/MM/DD that you want to include.  
This date represents the date the statistics were gathered.

### Time From/To

Enter a timestamp range in format HH:MM:SS that you want to include.  
This time represents the time the statistics were gathered.

When you have completed the fields, press Enter. The report that is shown in the following figure is generated. Scroll right to see all the columns.

AUTOTOOL V4R2 ----- Statistics Report ----- 2017/09/20 13:19:22

Option ==> Scroll ==> CSR

---

DB2 Subsystem ID: SS01 Current SQLID: User: TWUSR

Statistics Table: SYSTABLES

Table Creator Like \* >

Table Name Like . TB010301 >

Date From . . . . 2017/09/01 to 2017/09/20 (YYYY/MM/DD)

Time From . . . . 00:00:01 to 23:59:00 (HH:MM:SS)

---

Row 1 of 8 >

CREATOR-	NAME-----	DBNAME--	TSNAME--	-----STATTIME-----
MYQA1	TB010301	NMHAQA01	TSQA0103	2017-09-19-00.19.48.000000
MYQA1	TB010301	NMHAQA01	TSQA0103	2017-09-14-04.18.59.000000
MYQA1	TB010301	NMHAQA01	TSQA0103	2017-09-14-03.21.35.000000
MYQA1	TB010301	NMHAQA01	TSQA0103	2017-09-12-07.12.03.000000
MYQA1	TB010301	NMHAQA01	TSQA0103	2017-09-07-20.24.58.000000
MYQA1	TB010301	NMHAQA01	TSQA0103	2017-09-06-05.17.49.000000
MYQA1	TB010301	NMHAQA01	TSQA0103	2017-09-06-04.40.59.000000
MYQA1	TB010301	NMHAQA01	TSQA0103	2017-09-02-00.23.43.000000

\*\*\*\*\* Bottom of Data \*\*\*\*\*

Figure 192. Statistics Report screen: SYSTABLES

The Statistics Report screen allows you to view the statistics from the selected DB2 Automation Tool repository table. The fields on this screen are described in the following section:

**DB2 Subsystem ID**

The current DB2 subsystem ID.

**Current SQLID**

The current SQL ID.

**User** The current user.

**Statistics Table**

The catalog table on which the report is generated.

**Table Creator Like**

The table creator ID or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**Table Name Like**

The table name or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**Date From/To**

This field shows the date range you entered on the previous screen. You can change it on this screen to change or refine the report output. This date represents the date the statistics were gathered.

**Time From/To**

This field shows the time range you entered on the previous screen. You can change it on this screen to change or refine the report output. This time represents the time the statistics were gathered.

**CREATOR**

The authorization ID of the owner of the table.

**NAME**

The name of the table.

**DBNAME**

The name of the database that contains the table space named in TSNAME.

**TSNAME**

The name of the table space that contains the table.

**STATSTIME**

If RUNSTATs updated the table space statistics, this is the date and time when the last invocation of RUNSTATs updated the repository with statistics. If RUNSTATs has not been run, this column contains the default value of 0001-01-01.00.00.00.000000.

**CARDF**

The total number of rows in the table.

**%PAGES**

The percentage of active table space pages that contain rows of the table. A page is active if it is formatted for rows, regardless of whether it contains any. If the table space is segmented, the percentage is based on the number of active pages in the set of segments assigned to the table.

**%RCOMP**

The percentage of rows compressed within the total number of active rows in the table. This includes any row in a table space that is defined with COMPRESS YES.

**NPAGESF**

The number of pages used by the table.

**SPACEF**

The number of kilobytes of DASD storage.

**AVGROWLEN**

The average length of rows for the tables in the table space.

When you finish reviewing the report, press PF3 to return to the Statistics Report and Maintenance screen.

**SYSTABSTATS**

You can use this option to retrieve a statistics report on SYSTABSTATS.

When you type 7 in the option line to get a statistics report on SYSTABSTATS, the window shown in the following figure is displayed:

```

Enter Table Statistics Report Selection Criteria

Table Creator Like *          > Part *
Table Name Like . . *        >
Date From 2017/09/01 to 2017/09/20 (YYYY/MM/DD)
Time From 00:00:01 to 23:59:00 (HH:MM:SS)
  
```

*Figure 193. Enter Table Statistics Report Selection Criteria: SYSTABSTATS*

This window allows you to enter filtering criteria to display only the statistics of interest. The fields in this window are described in the following section:

**Table Creator Like**

Type in a table creator ID or mask.

**Part** Type in the partition number you want to include.

**Table Name Like**

Type in a table name or mask.

**Date From/To**

Type in a date range in format YYYY/MM/DD that you want to include.  
This date represents the date the statistics were gathered.

**Time From/To**

Type in a timestamp range in format HH:MM:SS that you want to include.  
This time represents the time the statistics were gathered.

When you have completed the fields, press Enter. The report that is shown in the following figure is generated. Scroll right to see all the columns.

```

AUTOTOOL V4R2 ----- Statistics Report ----- 2017/09/20 13:22:09
Option ==> Scroll ==> CSR
-----
DB2 Subsystem ID: SS01      Current SQLID:      User: TWUSR
                        Statistics Table: SYSTABSTATS
Table Creator Like *      >      Part *
Table Name Like . TB010301 >
Date From . . . . 2017/09/01 to 2017/09/20 (YYYY/MM/DD)
Time From . . . . 00:00:01 to 23:59:00 (HH:MM:SS)
-----
Row 1 of 24      +>
OWNER--- NAME----- DBNAME-- TSNAME-- Part# -----STATTIME-----
MYQA1   TB010301      NMHAQA01 TSQA0103  1 2017-09-19-00.19.48.000000
MYQA1   TB010301      NMHAQA01 TSQA0103  1 2017-09-14-04.18.59.000000
MYQA1   TB010301      NMHAQA01 TSQA0103  1 2017-09-14-03.21.35.000000
MYQA1   TB010301      NMHAQA01 TSQA0103  1 2017-09-12-07.12.03.000000
MYQA1   TB010301      NMHAQA01 TSQA0103  1 2017-09-07-20.24.58.000000
MYQA1   TB010301      NMHAQA01 TSQA0103  1 2017-09-06-05.17.49.000000
MYQA1   TB010301      NMHAQA01 TSQA0103  1 2017-09-06-04.40.59.000000
MYQA1   TB010301      NMHAQA01 TSQA0103  1 2017-09-02-00.23.43.000000
MYQA1   TB010301      NMHAQA01 TSQA0103  2 2017-09-19-00.19.48.000000
MYQA1   TB010301      NMHAQA01 TSQA0103  2 2017-09-14-04.18.59.000000
MYQA1   TB010301      NMHAQA01 TSQA0103  2 2017-09-14-03.21.35.000000

```

Figure 194. Statistics Report screen: SYSTABSTATS

The Statistics Report screen allows you to view the statistics from the selected DB2 Automation Tool repository table. The fields in this screen are described in the following section:

**DB2 Subsystem ID**

The current DB2 subsystem ID.

**Current SQLID**

The current SQL ID.

**User** The current user.

**Statistics Table**

The catalog table on which the report is generated.

**Table Creator Like**

The table creator ID or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**Part** The partition number you specified is shown here. You can change it on this screen to change or further refine the report output.

**Table Name Like**

The table name or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**Date From/To**

This field shows the date range you entered on the previous screen. You can change it on this screen to change or refine the report output. This date represents the date the statistics were gathered.

**Time From/To**

This field shows the time range you entered on the previous screen. You can change it on this screen to change or refine the report output. This time represents the time the statistics were gathered.

**OWNER**

The authorization ID of the owner of the table.

**NAME**

The name of the table.

**DBNAME**

The name of the database that contains the table space named in TSNAME.

**TSNAME**

The name of the table space that contains the table.

**Part#** The partition number of the table space that contains the table.

**STATSTIME**

If RUNSTATs updated the table space statistics, this is the date and time when the last invocation of RUNSTATs updated the repository with statistics. If RUNSTATs has not been run, this column contains the default value of 0001-01-01.00.00.00.000000.

**CARDF**

The total number of rows in the partition.

**NPAGESF**

The total number of pages on which rows of the partition appear.

**NACTIVE**

The number of active pages in the partition.

**%PAGES**

The percentage of active table space pages in the partition that contain rows of the table.

**%RCOMP**

The percentage of rows compressed within the total number of active rows in the partition. This includes any row in a table space that is defined with COMPRESS YES.

When you finish reviewing the report, press PF3 to return to the Statistics Report and Maintenance screen.

**SYSTABLEPART**

You can use this option to retrieve a statistics report on SYSTABLEPART.

When you type 8 in the option line to get a statistics report on SYSTABLEPART, the window shown in the following figure is displayed:

```

Enter TableSpace Statistics Report Selection Criteria

Database Like . . *           Part *
TableSpace Like *
Date From . . . . 2017/09/01   to   2017/09/20   (YYYY/MM/DD)
Time From . . . . 00:00:01     to   23:59:00     (HH:MM:SS)
  
```

*Figure 195. Enter Tablespace Statistics Report Selection Criteria: SYSTABLEPART*

This window allows you to enter filtering criteria to display only the statistics of interest. The fields in this window are described in the following section:

**Database Like**

Type in a database name or mask.

**Part** Type in the partition number you want to include.

**TableSpace Like**

Enter a table space name or mask.

**Date From/To**

Type in a date range in format YYYY/MM/DD that you want to include.  
This date represents the date the statistics were gathered.

**Time From/To**

Type in a timestamp range in format HH:MM:SS that you want to include.  
This time represents the time the statistics were gathered.

When you have completed the fields, press Enter. The report that is shown in the following figure is generated. Scroll right to see all the columns.

```

AUTOTOOL V4R2  ----- Statistics Report ----- 2017/09/20 13:25:48
Option ==>                                           Scroll ==> CSR
-----
DB2 Subsystem ID: SS01      Current SQLID:           User: TWUSR
                        Statistics Table: SYSTABLEPART
Database Like . . NMH*      Part *
TableSpace Like  *
Date From . . . . 2017/09/01 to 2017/09/20 (YYYY/MM/DD)
Time From . . . . 00:00:01 to 23:59:00 (HH:MM:SS)
----- Row 1 of 432 +>
DBNAME-- TSNAME-- Part# -----STATTIME----- -----CARDF----- ----PQTY---
NMHAQA01 TSQA0101      0 2017-09-19-00.19.48.000000 165.0              720
NMHAQA01 TSQA0101      0 2017-09-14-04.18.59.000000 165.0              720
NMHAQA01 TSQA0101      0 2017-09-14-03.21.35.000000 165.0              720
NMHAQA01 TSQA0101      0 2017-09-12-07.12.03.000000 165.0              720
NMHAQA01 TSQA0101      0 2017-09-07-20.24.58.000000 165.0              720
NMHAQA01 TSQA0101      0 2017-09-06-05.17.49.000000 165.0              720
NMHAQA01 TSQA0101      0 2017-09-06-04.40.59.000000 165.0              720
NMHAQA01 TSQA0101      0 2017-09-02-00.23.43.000000 165.0              720
NMHAQA01 TSQA0103      1 2017-09-19-00.19.48.000000 1.0                12
NMHAQA01 TSQA0103      1 2017-09-14-04.18.59.000000 1.0                12
NMHAQA01 TSQA0103      1 2017-09-14-03.21.35.000000 1.0                12

```

Figure 196. Statistics Report screen: SYSTABLEPART

The Statistics Report screen allows you to view the statistics from the selected DB2 Automation Tool repository table. The fields in this screen are described in the following section:

**DB2 Subsystem ID**

The current DB2 subsystem ID.

**Current SQLID**

The current SQL ID.

**User** The current user.

**The current user.**

The catalog table on which the report is generated.

**Database Like**

The database name or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**Part** The partition number you specified is shown here. You can change it on this screen to change or further refine the report output.

**TableSpace Like**

The table space name or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**Date From/To**

This field shows the date range you entered on the previous screen. You

can change it on this screen to change or refine the report output. This date represents the date the statistics were gathered.

**Time From/To**

This field shows the time range you entered on the previous screen. You can change it on this screen to change or refine the report output. This time represents the time the statistics were gathered.

**DBNAME**

The name of the database that contains the table space named in TSNAME.

**TSNAME**

The name of the table space.

**Part#** The partition number; 0 if the table space is not partitioned.

**STATSTIME**

If RUNSTATs updated the table space statistics, this is the date and time when the last invocation of RUNSTATs updated the repository with statistics. If RUNSTATs has not been run, this column contains the default value of 0001-01-01.00.00.00.000000.

**CARDF**

The total number of rows in the table space or partition, or if the table space is a LOB table space, the number of LOBs in the table space.

**PQTY** The primary space allocation in units of 4KB storage blocks. For user-managed data sets, the value is set to the primary space allocation only if RUNSTATS TABLESPACE | INDEX with UPDATE(ALL) or UPDATE(SPACE) is executed; otherwise, the value is zero.

**SQTY** The secondary space allocation in units of 4KB storage blocks. For user-managed data sets, the value is set to the secondary space allocation only if RUNSTATS TABLESPACE | INDEX with UPDATE(ALL) or UPDATE(SPACE) is executed; otherwise, the value is zero.

**SECQTYI**

For user-managed data sets, the secondary space allocation in 4KB blocks for the data set, in integer format.

**EXTENTS**

The number of data set extents.

**NEARINDREF**

The number of rows that have been relocated near their original page.

**FARINDREF**

The number of rows that have been relocated far from their original page.

**TOTINDREF**

The total number of rows that have been relocated from their original page.

**%INDRF**

The percentage of rows that have been relocated from their original page.

**%ACTIV**

The percentage of space occupied by rows of data from active tables. This value is -2 if the table space is a LOB table space.

**%DROP**

The percentage of space occupied by rows of dropped tables. This value is 0 for segmented table spaces.



## DROPSPACE

The number of kilobytes occupied by rows of dropped tables. This value is 0 for segmented table spaces.

## PGSAV

The percentage of pages saved in a table space or partition as a result of defining the table space with COMPRESS YES or other compression routines. Refer to the DB2 SQL Reference for your version of DB2 for more information about this field.

## SPACEF

The number of kilobytes of DASD storage.

## DSNUM

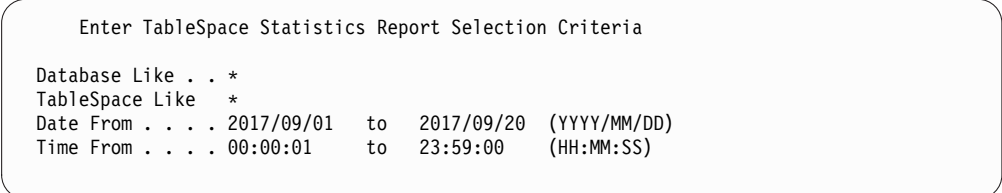
The number of data sets.

When you finish reviewing the report, press PF3 to return to the Statistics Report and Maintenance screen.

## SYSTABLESPACE

You can use this option to retrieve a statistics report on SYSTABLESPACE.

When you type 9 in the option line to get a statistics report on SYSTABLESPACE, the window shown in the following figure is displayed:



```
Enter TableSpace Statistics Report Selection Criteria

Database Like . . *
TableSpace Like *
Date From . . . . 2017/09/01 to 2017/09/20 (YYYY/MM/DD)
Time From . . . . 00:00:01 to 23:59:00 (HH:MM:SS)
```

Figure 197. Enter TableSpace Statistics Report Selection Criteria: SYSTABLESPACE

This window allows you to enter filtering criteria to display only the statistics of interest. The fields in this window are described in the following section:

### Database Like

Type in a database name or mask.

### TableSpace Like

Type in a table space name or mask.

### Date From/To

Type in a date range in format YYYY/MM/DD that you want to include. This date represents the date the statistics were gathered.

### Time From/To

Type in a timestamp range in format HH:MM:SS that you want to include. This time represents the time the statistics were gathered.

When you have completed the fields, press Enter. The report that is shown in the following figure is generated:

```

AUTOTOOL V4R2 ----- Statistics Report ----- 2017/09/20 13:28:12
Option ==> Scroll ==> CSR
-----
DB2 Subsystem ID: SS01      Current SQLID:      User: TWUSR
                        Statistics Table: SYSTABLESPACE

Database Like . . NMH*
TableSpace Like *
Date From . . . 2017/09/01 to 2017/09/20 (YYYY/MM/DD)
Time From . . . 00:00:01 to 23:59:00 (HH:MM:SS)
----- Row 1 of 80 ----- +
DBNAME-- NAME---- -----STATTIME----- ----NACTIVEF----
NMHQA01 TSQA0101 2017-09-19-00.19.48.000000 720.0
NMHQA01 TSQA0101 2017-09-14-04.18.59.000000 720.0
NMHQA01 TSQA0101 2017-09-14-03.21.35.000000 720.0
NMHQA01 TSQA0101 2017-09-12-07.12.03.000000 720.0
NMHQA01 TSQA0101 2017-09-07-20.24.58.000000 720.0
NMHQA01 TSQA0101 2017-09-06-05.17.49.000000 720.0
NMHQA01 TSQA0101 2017-09-06-04.40.59.000000 720.0
NMHQA01 TSQA0101 2017-09-02-00.23.43.000000 720.0
NMHQA01 TSQA0103 2017-09-19-00.19.48.000000 36.0
NMHQA01 TSQA0103 2017-09-14-04.18.59.000000 36.0
NMHQA01 TSQA0103 2017-09-14-03.21.35.000000 36.0

```

Figure 198. Statistics Report screen: SYSTABLESPACE

The Statistics Report screen allows you to view the statistics from the selected DB2 Automation Tool repository table. The fields in this screen are described in the following section:

**DB2 Subsystem ID**

The current DB2 subsystem ID.

**Current SQLID**

The current SQL ID.

**User** The current user.

**Statistics Table**

The catalog table on which the report is generated.

**Database Like**

The database name or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**TableSpace Like**

The table space name or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**Date From/To**

This field shows the date range you entered on the previous screen. You can change it on this screen to change or refine the report output. This date represents the date the statistics were gathered.

**Time From/To**

This field shows the time range you entered on the previous screen. You can change it on this screen to change or refine the report output. This time represents the time the statistics were gathered.

**DBNAME**

The name of the database that contains the table space named in TSNAME.

**NAME**

The name of the table space.

**STATSTIME**

If RUNSTATs updated the table space statistics, this is the date and time

when the last invocation of RUNSTATs updated the repository with statistics. If RUNSTATs has not been run, this column contains the default value of 0001-01-01.00.00.00.000000.

### **NACTIVEF**

The number of active pages in the table space. A page is active if it is formatted for rows, even if it currently contains none.

When you finish reviewing the report, press PF3 to return to the Statistics Report and Maintenance screen.

### **SLOG**

You can use this option to retrieve a statistics report on the SLOG table.

When you type 10 in the option line to get a statistics report on SLOG (a table that tracks information about the user ID or job that last updated the statistics table), the window shown in the following figure is displayed:

```
Enter Log Statistics Report Selection Criteria

Job Profile Like *
Job Creator Like *
Stats Updated UserID Like *
Date From 2017/09/01 to 2017/09/20 (YYYY/MM/DD)
Time From 00:00:01 to 23:59:00 (HH:MM:SS)
```

*Figure 199. Enter Log Statistics Report Selection Criteria screen*

This window allows you to enter filtering criteria to display only the statistics of interest. The fields in this window are described in the following section:

#### **Job Profile Like**

Enter a job profile name or mask.

#### **Creator Like**

Enter a creator name or mask.

#### **Stats Updated UserID Like**

Enter a user ID name or mask who last updated the statistics.

#### **Date From/To**

Type in a date range in format YYYY/MM/DD that you want to include. This date represents the date the statistics were gathered.

#### **Time From/To**

Type in a timestamp range in format HH:MM:SS that you want to include. This time represents the time the statistics were gathered.

When you have completed the fields, press Enter to continue. The report that is shown in the following figure is generated:

```

AUTOTOOL V4R2 ----- Statistics Report ----- 2017/09/20 13:30:43
Option ==>                                         Scroll ==> CSR
-----
DB2 Subsystem ID: SS01      Current SQLID:          User: TWUSR
                        Statistics Table: SLOG

Job Profile Like *
Job Creator Like *          Stats Updated UserID Like *
Date From . . . 2017/09/01 to 2017/09/20 (YYYY/MM/DD)
Time From . . . 00:00:01 to 23:59:00 (HH:MM:SS)
----- Row 1 of 5
(Job Profile) NAME----- CREATOR- USERID-- -----STATTIME-----
MONB3044A                MYQA1   BLD3044A 2017-09-19-00.19.30.000000
MONB3044B                MYQA1   BLD3044B 2017-09-19-00.19.39.000000
MONB3517                 MYQA1   BLD3517 2017-09-19-00.20.08.000000
MONB8503                 MYQA1   CSHAA3 2017-09-19-00.41.41.000000
ABC36895                 MYQA1   BLD36895 2017-09-19-00.19.48.000000
***** Bottom of Data *****

```

Figure 200. Statistics Report screen: SLOG

The Statistics Report screen allows you to view the statistics from the selected DB2 Automation Tool repository table. The fields in this screen are described in the following section:

**DB2 Subsystem ID**

The current DB2 subsystem ID.

**Current SQLID**

The current SQL ID.

**User** The current user.

**Statistics Table**

The catalog table on which the report is generated.

**Job Profile Like**

The job profile name or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**Creator Like**

The job profile creator name or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**Stats Updated UserID Like**

The user ID name or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**Date From/To**

This field shows the date range you entered on the previous screen. You can change it on this screen to change or refine the report output. This date represents the date the statistics were gathered.

**Time From/To**

This field shows the time range you entered on the previous screen. You can change it on this screen to change or refine the report output. This time represents the time the statistics were gathered.

**(Job Profile) NAME**

The name of the job profile.

**CREATOR**

The user ID of the job profile creator.

**USERID**

The TSO user ID of the user who ran the job that updated the repository, or the job name of the batch job that updated the repository.

## STATSTIME

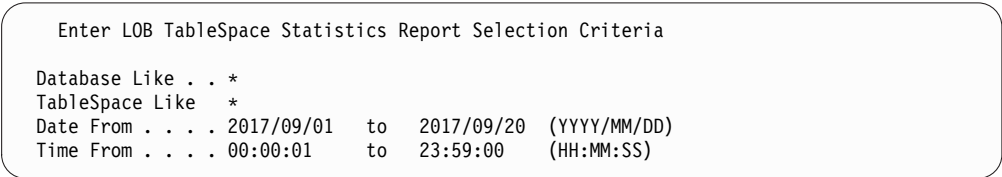
If RUNSTATs updated the table space statistics, this is the date and time when the last invocation of RUNSTATs updated the repository with statistics. If RUNSTATs has not been run, this column contains the default value of 0001-01-01.00.00.00.000000.

When you finish reviewing the report, press PF3 to return to the Statistics Report and Maintenance screen.

## SYSLOBSTATS

You can use this option to retrieve a statistics report on the SYSLOBSTATS table.

When you type 11 in the option line to get a statistics report on SYSLOBSTATS, the window shown in the following figure is displayed:



```
Enter LOB TableSpace Statistics Report Selection Criteria

Database Like . . *
TableSpace Like *
Date From . . . . 2017/09/01   to   2017/09/20   (YYYY/MM/DD)
Time From . . . . 00:00:01    to   23:59:00    (HH:MM:SS)
```

*Figure 201. Enter LOB TableSpace Statistics Report Selection Criteria window*

This window allows you to enter filtering criteria to display only the statistics of interest. The fields in this window are described in the following section:

### Database Like

Type in a database name or mask.

### TableSpace Like

Type in a table space name or mask.

### Date From/To

Type in a date range in format YYYY/MM/DD that you want to include. This date represents the date that the statistics were gathered.

### Time From/To

Type in a time stamp range in format HH:MM:SS that you want to include. This time represents the time that the statistics were gathered.

Press Enter to continue. The report that is shown in the following figure is generated:

```

AUTOTOOL V4R2 ----- Statistics Report ----- 2017/09/20 13:34:17
Option ==>                                         Scroll ==> CSR
-----
DB2 Subsystem ID: SS01      Current SQLID:          User: TWUSR
                        Statistics Table: SYSLOBSTATS

Database Like . . *
TableSpace Like *
Date From . . . 2017/09/01 to 2017/09/20 (YYYY/MM/DD)
Time From . . . 00:00:01 to 23:59:00 (HH:MM:SS)
-----
                                Row 1 of 66      +
DBNAME-- NAME---- -----STATSTIME----- --AVGSIZE-- -FREESPACE- ORGRAT
NMHQA40 TSQA4009 2017-09-18-23.25.40.000000      10         136     100
NMHQA40 TSQA4009 2017-09-14-03.10.55.000000      10         136     100
NMHQA40 TSQA4009 2017-09-14-02.13.09.000000      10         136     100
NMHQA40 TSQA4009 2017-09-12-12.59.12.000000      10         136     100
NMHQA40 TSQA4009 2017-09-12-08.11.10.000000      10         136     100
NMHQA40 TSQA4009 2017-09-12-06.18.59.000000      10         136     100
NMHQA40 TSQA4009 2017-09-07-19.22.06.000000      10         136     100
NMHQA40 TSQA4009 2017-09-06-10.31.13.000000      10         136     100
NMHQA40 TSQA4009 2017-09-06-04.12.27.000000      10         136     100
NMHQA40 TSQA4009 2017-09-06-03.50.44.000000      10         136     100
NMHQA40 TSQA4009 2017-09-01-23.19.15.000000      10         136     100

```

Figure 202. Statistics Report screen: SYSLOBSTATS

The Statistics Report screen allows you to view the statistics from the selected table. The fields in this screen are described in the following section:

**DB2 Subsystem ID**

The current DB2 subsystem ID.

**Current SQLID**

The current SQL ID.

**User** The current user.

**Statistics Table**

The catalog table on which the report is generated.

**Database Like**

The database name or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**TableSpace Like**

The table space name or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**Date From/To**

This field shows the date range that you entered on the previous screen. You can change it on this screen to change or refine the report output. This date represents the date that the statistics were gathered.

**Time From/To**

This field shows the time range that you entered on the previous screen. You can change it on this screen to change or refine the report output. This time represents the time that the statistics were gathered.

**DBNAME**

The name of the database.

**NAME**

The name of the table space.

**STATSTIME**

If RUNSTATs updated the table space statistics, this is the date and time

when the last invocation of RUNSTATs updated the repository with statistics. If RUNSTATs has not been run, this column contains the default value of 0001-01-01.00.00.00.000000.

#### **AVGSIZE**

The average size of a LOB, in bytes, in the LOB table space.

#### **FREESPACE**

The number of kilobytes of available space in the LOB table space.

#### **ORGRATIO**

The percentage of organization in the LOB table space. A value of 100 indicates perfect organization of the LOB table space. A value of 1 indicates that the LOB table space is disorganized. A value of 0 indicates that the LOB table space is totally disorganized.

When you finish reviewing the report, press PF3 to return to the Statistics Report and Maintenance screen.

### **TRIGGERS**

You can use this option to retrieve a statistics report on exception triggers (a table that keeps track of each trigger generated by exception processing).

When you type 12 in the option line to get a statistics report on exception triggers (a table that keeps track of each trigger generated by exception processing), the window shown in the following figure is displayed:

Enter Exception Triggers Report Selection Criteria

Excp Profile Like *					
Excp Creator Like *				Jobname Like *	
Date From . . . .	2017/09/01	to	2017/09/20	(YYYY/MM/DD)	
Time From . . . .	00:00:01	to	23:59:00	(HH:MM:SS)	

*Figure 203. Enter Exception Triggers Report Selection Criteria panel*

This window allows you to enter filtering criteria to display only the statistics of interest. The fields in this window are described in the following section:

#### **Excp Profile Like**

Enter an exception profile name or mask.

#### **Excp Creator Like**

Enter a creator name or mask.

#### **Jobname Like**

Enter a job name or mask.

#### **Date From/To**

Type in a date range in format YYYY/MM/DD that you want to include. This date represents the date the statistics were gathered.

#### **Time From/To**

Type in a timestamp range in format HH:MM:SS that you want to include. This time represents the time the statistics were gathered.

When you have completed the fields, press Enter. The report that is shown in the following figure is generated. Scroll right to see all the columns.

```

AUTOTOOL V4R2 ----- Trigger Report ----- 2017/09/20 13:36:15
Option ==>                                     Scroll ==> CSR
-----
DB2 Subsystem ID: SS01      Current SQLID:          User: TWUSR
Excp Profile Like *
Excp Creator Like *        Jobname Like *
Date From . . . . 2017/09/01 to 2017/09/20 (YYYY/MM/DD)
Time From . . . . 00:00:01 to 23:59:00 (HH:MM:SS)
-----
Row 1 of 16      +>
(Exception Profile) NAME----- CREATOR- JOBNAME- -----STATTIME-----
MONB8503          HAAQA   CSHAA1   2017-09-14-03.51.51.000000
MONB8503          HAAQA   CSHAA1   2017-09-14-03.51.51.000000
MONB8503          HAAQA   CSHAA1   2017-09-07-20.50.30.000000
MONB8503          HAAQA   CSHAA1   2017-09-07-20.50.30.000000
MONB8503          HAAQA   CSHAA1   2017-09-06-05.06.10.000000
MONB8503          HAAQA   CSHAA1   2017-09-06-05.06.10.000000
MONB8503          HAAQA   CSHAA3   2017-09-19-00.41.41.000000
MONB8503          HAAQA   CSHAA3   2017-09-19-00.41.41.000000
MONB8503          HAAQA   CSHAA3   2017-09-14-04.44.53.000000
MONB8503          HAAQA   CSHAA3   2017-09-14-04.44.53.000000
MONB8503          HAAQA   CSHAA3   2017-09-12-07.34.56.000000
MONB8503          HAAQA   CSHAA3   2017-09-12-07.34.56.000000

```

Figure 204. Trigger Report panel

The Statistics Report screen allows you to view the statistics from the selected DB2 Automation Tool repository table. The fields in this screen are described in the following section:

**Row n of nnn**

Displays the current row and the total number of rows in the profile list. Adjacent to this field is a scroll indicator: > means scroll right for more data; < > means scroll left or right for data; < means scroll left for more data. A plus sign means scroll down for more data; a minus sign means scroll up for more data.

**DB2 Subsystem ID**

The current DB2 subsystem ID.

**Current SQLID**

The current SQL ID.

**User**

The current user ID.

**Excp Profile Like**

The exception profile name or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**Excp Creator Like**

The exception profile creator name or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**Jobname Like**

The job name or mask you specified is shown here. You can change it on this screen to change or further refine the report output.

**Date From/To**

This field shows the date range you entered on the previous screen. You can change it on this screen to change or refine the report output. This date represents the date the statistics were gathered.

**Time From/To**

This field shows the time range you entered on the previous screen. You



can change it on this screen to change or refine the report output. This time represents the time the statistics were gathered.

**(Exception Profile) NAME**

The name of the exception profile.

**CREATOR**

The user ID of the exception profile creator.

**JOBNAME**

The job name of the batch job that updated the repository.

**STATSTIME**

If RUNSTATs updated the table space statistics, this is the date and time when the last invocation of RUNSTATs updated the repository with statistics. If RUNSTATs has not been run, this column contains the default value of 0001-01-01.00.00.00.000000.

**CATALOG\_TABLE**

The type of statistics that was specified appears in this column.

**CATALOG\_COLUMN**

The catalog column that contained the statistic or the DB2 Automation Tool statistic is displayed in this column.

**COND**

The comparator that was used for the condition.

**EXCEPTION\_VALUE**

The exception value that was specified, if any.

**USER\_VALUE**

The actual value that triggered the exception condition. For SYSCOPY conditions and CHGD\_SINCE\_LAST\_IC conditions, this column contains UNKNOWN; these conditions are evaluated at run time via SQL or other means and the values are not returned to DB2 Automation Tool.

**TYPE** The object type.

**DBNAME**

The database name.

**TSNAME**

The table space name.

**Part#** The partition number, if partitioned.

**IXCREATO**

If the object was an index and the exception condition was index related, this field contains the index creator.

**IXNAME**

If the object was an index and the exception condition was index related, this field contains the index name.

**IXSPACE**

If the object was an index and the exception condition was index related, this field contains the indexspace name.

**TBCREATO**

If the exception condition was related to a table and/or column exception condition, this field contains the table creator.

**TBNAME**

If the exception condition was related to a table and/or column exception condition, this field contains the table name.

**COLNAME**

If the exception condition was related to a column exception condition, this field contains the column name that was evaluated for the condition.

When you finish reviewing the report, press PF3 to return to the Statistics Report and Maintenance screen.

## Determining the number of rows in the repository

You can use this option to determine the number of rows that are in the DB2 Automation Tool repository.

### Procedure

1. On the Statistics Reports and Maintenance panel, type C in the **Option** line and press Enter. The window shown in the following figure is displayed. This window shows how many rows are in the statistics tables and the time stamp of the last time the repository was updated with statistics.

```
Count HAA Repository Statistics/Triggers

There are 119,322
rows in the HAA statistics/trigger tables.

The last time the HAA statistics/trigger tables
were updated on DB2 Subsystem SS01 is
2017-09-19-00.41.41.000000
```

*Figure 205. Statistics repository information*

2. Press Enter to return to the Statistics Reports and Maintenance panel.

## Deleting rows in the repository

You can maintain the statistics repository by deleting old rows.

### Procedure

1. Type D in the **Option** line on the Statistics Reports and Maintenance panel and press Enter.
2. On the Enter Maintenance Deletion Criteria window, enter the number of days that you want to keep in the repository and press Enter. All rows in the table older than the specified number of days are deleted.

## Porting repository statistics from one DB2 subsystem to another

You can use the HAARSTAT job that is provided in SHAASAMP to unload DB2 Automation Tool repository RUNSTATS statistics from one DB2 subsystem and load another DB2 subsystem with the statistics.

## About this task

You can also use this job to migrate statistics between DB2 versions; for example, you can migrate the statistics repository from a DB2 V9 subsystem to a DB2 V10 subsystem.

## Procedure

Edit and run the HAARSTAT sample job; the instructions are contained in the member. Information about the number of unloaded repository RUNSTATS statistics rows is displayed during the unload phase. Information is also provided about the number of RUNSTATS statistics rows that are loaded during the load phase.



# Chapter 10. Building jobs using job profiles

| Job profiles combine object profiles, utility profiles, and exception profiles into a  
| set.

You can combine multiple object profiles with multiple utility profiles, and can specify the job step order for the generated job. If no exception profile is included in the job profile, then each utility is run unconditionally on each object on the object list. In addition, you can customize other job settings to produce a job built to your specifications. You can also use job groups in a job profile to perform a combination of maintenance functions within a single job profile.

| If a job profile is built for active or passive autonomic action, the job profile must  
| contain an exception profile.

## Creating a job profile

Creating a job profile involves defining the profile and then selecting the object, utility, and exception profiles to be included.

### Procedure

1. On the DB2 Automation Tool main menu, enter 4 in the **Option** field and press Enter.
2. Specify selection criteria in the **Profile Like** and **Creator Like** fields and press Enter. If profiles exist that meet your selection criteria, they are listed on the Jobs Profile Display, as shown in the following figure:

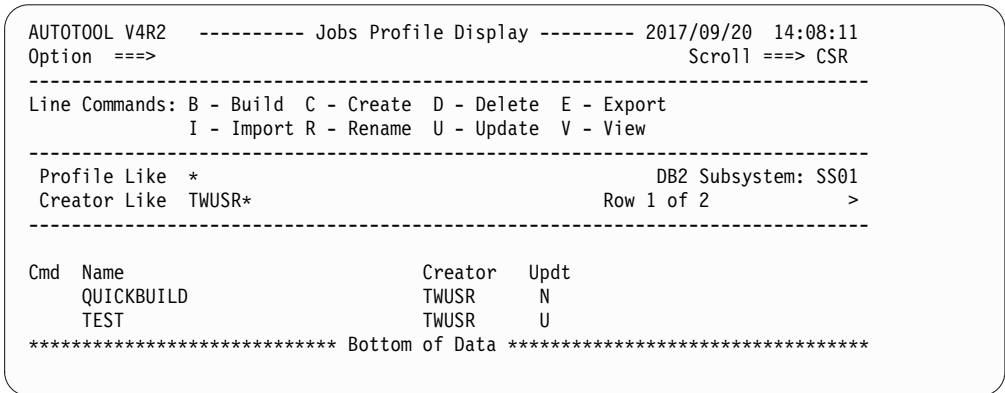


Figure 206. Jobs Profile Display

3. On the Jobs Profile Display, enter C in the **Cmd** field and press Enter. The window that is shown in the following figure is displayed:

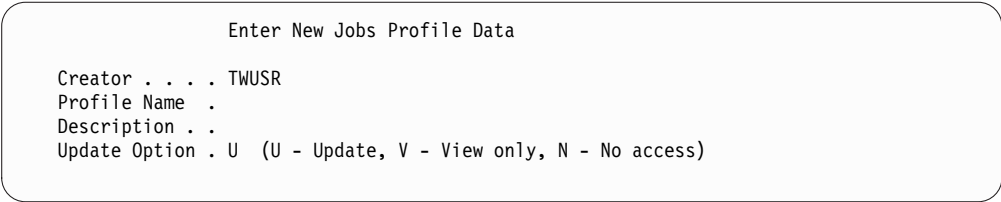


Figure 207. Enter New Jobs Profile Data window

4. On the Enter New Jobs Profile Data window, enter the new profile creator, a profile description, and the profile update option in the fields on the window. The **Creator** field contains your user ID, but can be modified.
5. After you complete these fields, press Enter. The panel that is shown in the following figure is displayed. This panel is used to specify job generation options for the profile.

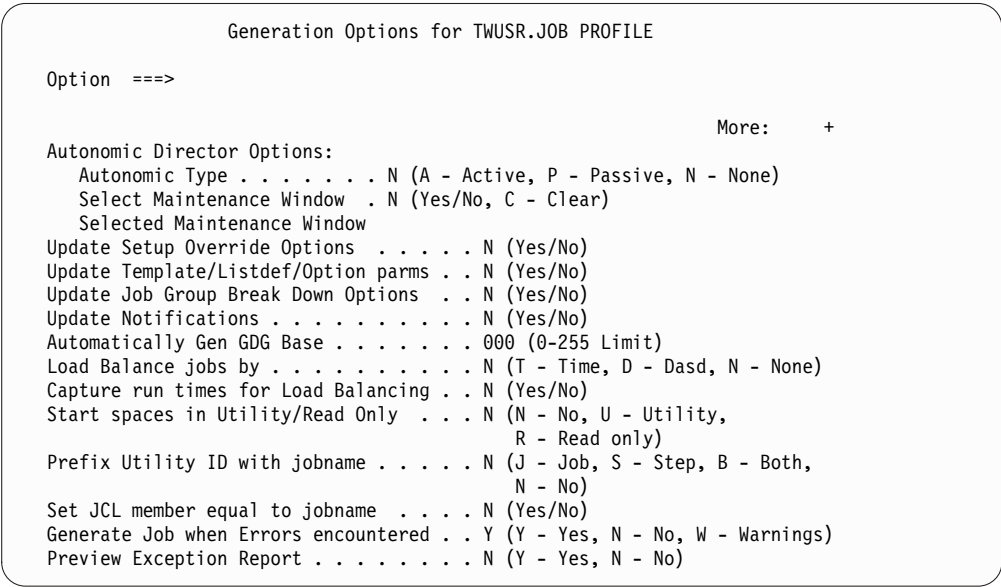


Figure 208. Specifying job generation options

## What to do next

Review and update the job generation options.

## Updating job generation options

Job generation options allow you to customize portions of the job when the job profile is built.

### Procedure

A portion of the Generation Options window is shown in the following figure:

#### Generation Options for TWUSR.HAA V42

Option ==>

More: +

##### Autonomic Director Options:

```

Autonomic Type . . . . . N (A - Active, P - Passive, N - None)
Select Maintenance Window . N (Yes/No, C - Clear)
Selected Maintenance Window
Update Setup Override Options . . . . . N (Yes/No)
Update Template/Listdef/Option parms . . N (Yes/No)
Update Job Group Break Down Options . . N (Yes/No)
Update Notifications . . . . . N (Yes/No)
Automatically Gen GDG Base . . . . . 000 (0-255 Limit)
Load Balance jobs by . . . . . N (T - Time, D - Dasd, N - None)
Capture run times for Load Balancing . . N (Yes/No)
Start spaces in Utility/Read Only . . . N (N - No, U - Utility,
                                           R - Read only)
Prefix Utility ID with jobname . . . . . N (J - Job, S - Step, B - Both,
                                           N - No)
Set JCL member equal to jobname . . . . N (Yes/No)
Generate Job when Errors encountered . . Y (Y - Yes, N - No, W - Warnings)
Preview Exception Report . . . . . N (Y - Yes, N - No)

```

Figure 209. Generation Options window

The Generation Options window allows you to set specific options that affect how the DB2 Automation Tool jobs are built. The following describes the options that you can set:

#### Autonomic Director options:

**Note:** The Autonomic Director Options fields can be edited only when DB2 Automation Tool is purchased and installed as part of the DB2 Utilities Solution Pack. Autonomics Director automates the execution of utilities on objects based on user-defined criteria within a predefined maintenance window.

#### Autonomic Type

Use the **Autonomics Type** field to specify the type of autonomic build.

- Type A to specify active autonomics. Active autonomics creates an action from the output of the build that is scheduled to be run when a maintenance window opens.
- Type P to specify passive autonomics. Passive autonomics creates an action from the output of the build, but the action does not run when a maintenance window opens. However, you can still review the actions, objects, and symptoms that generated the actions on the autonomic panels. Passive autonomics is intended primarily for testing purposes.
- Type N to generate standard DB2 Automation Tool builds of utility JCL.

#### Select Maintenance Window

The **Select Maintenance Window** field allows you to select the maintenance window in which the output from an autonomic build is scheduled to run. A maintenance window must be specified for active or passive autonomics. To select a maintenance window, type Y in this field and press Enter. To clear the current maintenance window, type C and press Enter.

#### Selected Maintenance Window

If a maintenance window was selected, this field contains the name of the maintenance window.

**Update Setup Override Options**

To override the options that are configured in the DB2 Shared Profile Support setup panel, type Y in this field and press Enter.

**Update Template/Listdef/Option parms**

To define parameters for DB2 LISTDEF and TEMPLATE utility control statements, type Y in this field and press Enter.

**Update Job Group Break Down Options**

To specify how many objects are placed in a job group or step, and other job breakdown options, type Y in this field and press Enter.

**Update Notifications**

Type Y in this field to select an event notification profile to use for this job profile. When you select an event notification profile from the job generation options, it is assigned to the job profile and overrides any default event notification profile that was selected by using option 10 - Event Notifications from the DB2 Automation Tool Main Menu.

**Automatically Gen GDG Base**

This field allows DB2 Automation Tool to automatically create a GDG base for image copy data sets if the base does not exist. Type a GDG limit in this field. If you specify a GDG limit in this field and also specify the TEMPLATE option for COPY utilities, the GDG base creation step is only included if the GDG base does not exist. If you type 0, GDG bases are not automatically created. If your site is not SMS-managed, and you are required to include a model DSCB in your JCL, then the model DSCB name must be entered in the Enter DB2 System Parameters screen.

**Load Balance jobs by**

Use this field to specify how DB2 Automation Tool load balances utilities. Type T to load balance by time; you can use this option only for COPY, COPYTOCOPY, REORG, and MODIFY jobs and only if DB2 Automation Tool previously captured run times for load balancing. If there are no statistics, balancing by data set is done. Type D to load balance utilities by DASD. This option uses physical object size from the ICF catalog, where total space allocated for the object data set is used in the load balancing algorithm. The default is N, or no load balancing.

**Capture run times for Load Balancing**

Type Y in this field to save COPY, COPYTOCOPY, REORG, and MODIFY utility runtime statistics for use in load balancing.

**Start spaces in Utility/Read Only**

Indicate how spaces are to be started before the utilities are run. Type U in this field to start spaces with utility-only access. Type R to start spaces with read-only access. Type N to start spaces with read/write access. Spaces are restarted with read/write access after the utilities are complete.

**Prefix Utility ID with jobname**

Specify whether the utility ID is prefixed with job name, step name, both, or none. Type J to specify job; the utility ID is JOBNAME.UTILID Type S to specify step; the utility ID is STEPNAME.UTILID Type B to specify both; the utility ID is JOBNAME.STEPNAME.UTILID. Type N to specify none; only the UTILID is used.

**Set JCL member equal to jobname**

If you want to name the JCL member that is generated by DB2 Automation Tool the same as the job name in the job card, type Y in this field.



**Generate Job when Errors encountered**

Indicate how you want DB2 Automation Tool to proceed if errors are encountered during job generation. Type Y to generate the job even if errors (return code 8) or warnings (return code 4) are encountered. Type W to allow job generation when warnings are encountered, but not when errors are encountered. If you type N, no JCL is generated if errors or warnings are encountered.

**Preview Exception Report**

Type Y in this field to preview the objects that would be triggered by exception processing without generating JCL. When this option is set to Y, the build JCL is generated as a batch job. When the batch build job is run, exception processing triggers objects as usual. However, no utility JCL is generated and the SYSOUT DD in the job output displays the triggered objects report. This option allows you to create a job profile that contains only object profiles and exception profiles, but still see which objects get triggered by exception processing.

**Evaluate Multiple Exception Profiles**

Indicate how you want multiple exception profiles in a jobs profile evaluated. Type A to process all exception profiles together as one conglomerate exception profile. All specified exceptions are merged into one exception profile and all AND exception conditions in all the profiles must be met in order for an object to be triggered. Type 0 to process each exception profile one at a time. Only exception conditions within each profile are evaluated. Conditions in other exception profiles are not taken into account. Exception conditions that are met in any one of the exception profiles trigger an object.

**Recall Migrated Spaces**

Type Y to have migrated spaces recalled during the job build. When spaces have been migrated to tape, HRECALLs are issued when the job is built. The recalls are organized for maximum tape mounting efficiency. HSM queues the requests and recalls all the spaces that exist on same backup tape with one tape mount.

**Use DSNACCOX Exception Table**

Type Y to exclude objects by using the information from the DSNACCOX exception table. The DSNACC.EXCEPT\_TBL is an optional, user-populated table that contains objects that are to be excluded from utility processing. ERP applications, such as SAP, take advantage of the exception table to exclude certain table spaces from being selected for RUNSTATS, even though these table spaces might have certain true exception profile criteria. If you specify Y in this field, during the BUILD phase, DB2 Automation Tool looks at the DSNACC.EXCEPT\_TBL table (if it exists) to avoid placing the inserted object names in the generated utility jobs. For more information about creating and populating the table, refer to the DB2 Utility Guide for your version of DB2. Only the following QueryType values are supported by DB2 Automation Tool:

COPY REORG RUNSTATS

SAP creates and inserts rows for SAP objects and utilities to be bypassed.

**Include Job Registration Step**

Type Y to include the registration step for job tracking in your generated jobs.

**Utility work dataset high level**

Type a high-level qualifier to be used with utility work data sets. This field is optional. If a value is not specified, temporary data sets are used.

**Utility work dataset second qualifier**

Type a second qualifier to be used with utility work data sets. This field is optional. If you specify a value in this field, you must also specify a value for the Utility work dataset high level qualifier. If specified, a value in this field overrides the default of job name for the second qualifier.

**Pre-Generation User Exit Name**

If you want to invoke a user exit before the JCL and control card generation stage of the build process, enter the member name of the load module. The load module must be accessible to DB2 Automation Tool.

**Post-Generation User Exit Name**

If you want to invoke a user exit after the JCL and control card generation stage of the build process, enter the member name of the load module. The load module must be accessible to DB2 Automation Tool.

**Control Card Dataset**

If you want DB2 Automation Tool to write build control cards to members of a partitioned data set based upon the step name, type the data set name. The generated JCL will include these members via SYSIN DD. The data set must be a PDS and must exist.

**Control Card Member Name Prefix**

Use this field to specify the first 5 characters of member names that are created in the control card data set. If you specify a 1-3 character prefix, a 5-character string representing the job number and step number is generated. If a 4-5 character prefix is specified, a 3 or 4 character string consisting of alphanumeric characters is generated.

**Retrieve Jobcard**

This field allows you to specify a data set containing a customized job card and comments that DB2 Automation Tool can include in the generated jobs. Type the data set name and member name (if a PDS). The data set can include one job card and as many comment cards as you want. DB2 Automation Tool generates a unique job name by incrementing the last character of the job name that is provided in the job card.

**Jobname Template Override Byte**

Use this field to specify how DB2 Automation Tool generates unique job names.

If the job name is unique, then multiple jobs can run concurrently. This can help you if you have a small batch window to run all maintenance-type utilities in as small a window as possible for applications that require high availability.

The template job name, which is supplied in the job card, affects the character substitution process, as it establishes the starting point for the sequence of characters that get generated in the resulting job names. Each character in the original job name is replaced by the values you specify in the Override byte field.

If an override byte is left blank, the character in that position of the original job name is used.

Type T in up to 2 bytes to replace the job name characters with the object type of the first object of the job. If you specify one T, the result is T for table space or I for index space; if you specify two Ts, the result is TS for table space or IX or indexspace.

Type O in up to all 8 bytes to replace the job name with the object name of the first object in the job.

Type the hash sign (#) to increment a numerical value in the specified position by 1.

Type the percent sign (%) to increment an alphanumeric value by 1. Values that are used are A - Z and 0 - 9; no special characters are used.

**Note:** If you set the eighth byte to %, and more job names are required than can be generated by using A-Z and 0-9 in the eighth byte, DB2 Automation Tool increments the seventh byte by one and begins again. For example, if you set the override to ABCDEFG%, the job naming starts with ABCDEFGA, and continues to ABCDEFG9. If more jobs are required, the seventh character is incremented (G to H in this case). The job naming continues with ABCDEFHA and continues from there.

Type P in up to 4 bytes to replace the job name characters with the partition number of the first object of the job. If in an object profile all partitions of a space are selected, either individually or wildcarded, the partition variable lists the first partition (0001). If all the partitions of a space are not selected, the lowest-numbered partition included is the partition variable. For non-partitioned spaces, the result is 0000.

Type D in up to all 8 bytes to replace the job name with the database name of the first object in the job.

### Static Job Build Dataset and Member

If specified, these fields override the JCL generation data set and member name specified at build time. These fields are dependent on the **Set JCL member equal to jobname** field; if set to Yes, and the static job build data set name is provided, the member name must be left blank. If the **Set JCL member equal to jobname** field is set to No and the static job build data set name is provided, a valid member name must be provided. The data set entered in this field must exist. The member does not have to exist; if it does not exist, it will be created when the job is generated.

## What to do next

When you finish entering the job generation options, press PF3. The next step is to add object, utility, or exception profiles to the job profile, or to add a new group to the job profile.

### Related tasks:

“Adding object profiles” on page 355

One or more object profiles can be added to the job profile.

“Adding exception profiles” on page 355

One or more exception profiles can be added to the job profile. If a job profile is built for active or passive autonomic action, the job profile must contain an exception profile.

“Adding utility profiles” on page 356

One or more utility profiles can be added to the job profile.

“Adding job groups” on page 356

You can use job groups in a job profile to perform a combination of maintenance functions within a single job profile. Each group of object, exception, and utility profiles within a job profile can be thought of as a separate job profile that executes independently of the other groups within the job profile.

## Overriding job setup options

Some job parameter options that have been configured on the Setup panels can be overridden.

### About this task

When a job is built, some job parameters are derived from defaults that are input on the DB2 Shared Profile Support - Update Parameters for DB2 Subsystem screen. If needed, these values can be overridden a per job basis by updating the job profile and accessing the Override Setup Options for *profile\_name* screen.

### Procedure

To override these parameters, type Y in the Update Setup Override Options field on the Generation Options window. The following window is displayed: This window lets you alter these setup values for only the selected job profile. Any

Override Setup Options for TWUSR.HAA V42

Option	====>	Current Setup values	Scroll ==> CSR Override values
			More: +
Work File Unit	. . .	SYSDA (SYSDA, DISK, etc.) . .	
Sort Work File Unit	:	SYSDA (SYSDA, DISK, etc.) . .	
Job Track DB2 SubSys	:	ST42 . . . . .	
Max Prim Space Alloc	:	999999 (1-999999) T (T,C,M)	
Secondary Alloc Perc	:	010 . . (1-999)% of Prim Space	
Utility REGION Size	:	0008 . (0-2047) M - (Megab)	M
DB2 Fetch Buffer Size	:	0004 . (1-256) M - (Megab)	M
Parallel MVS Cat LOCs	:	25 . . . (1-99) . . . . .	
Term Utility if ABEND	:	N . . . (Yes/No) . . . . .	
Generate STEPLIB DDs	:	Y . . . (Yes/No) . . . . .	
Gen Copy DSNs in GMT	:	Y . . . (Yes/No) . . . . .	
Exp IXs w/DEFN NO TSs	:	N . . . (Yes/No) . . . . .	
Event Notifications	:	Y . . . (Yes/No) . . . . .	
Altered Obj Adjustmnt	:	A . . . (All/Part) . . . . .	
Build Info Msg DD	:	HAAERROR (8 Character Name) . .	
Build Warn Msg DD	:	HAAERROR (8 Character Name) . .	
Build Error Msg DD	:	HAAERROR (8 Character Name) . .	

Entering the following fields will override the calculated amount of Sort Work DD's space quantities and/or the number of DD's generated in the job

Prim SortWork Space	:	. (1-99999) C (Cyls) . .
Second SortWork Space	:	. (1-99999) C (Cyls) . .
Nbr of SortWork DDs	:	. . . (1-99) . . . . .

A blank Current Setup value indicates no value specified on Setup panel.

Figure 210. Override Setup Options window

value can be overridden. The setup values are shown on the left, and you can enter new values on the right side of the window. When you alter these values, the new values are used when the job is built. The changes remain in effect for all future builds of the job profile until you remove the override.

For specific information about these values, refer to “Entering job generation defaults and other product parameters” on page 95.

## Specifying LISTDEF, TEMPLATE and OPTIONS utility control statements

DB2 Automation Tool can build LISTDEF, TEMPLATE and OPTIONS utility control statements.

### About this task

DB2 Automation Tool can build syntax for the following utility control statements:

- The LISTDEF control statement defines a list of objects and assigns a name to the list.

**Restriction:** LISTDEFS will not be generated for DB2 Recovery Expert image copy utility jobs.

- The TEMPLATE utility control statement lets you allocate data sets, without using JCL DD cards, during the processing of LISTDEF list. TEMPLATE syntax can only be built for COPY, COPYTOCOPY, and REORG TABLESPACE utilities.

**Restriction:** TEMPLATE syntax cannot be generated for DB2 Recovery Expert image copy utility jobs.

- The OPTIONS utility control statement specifies processing options that are applicable across many utility executions in a job step.

### Procedure

To specify LISTDEF, TEMPLATE or OPTIONS syntax, on the Generation Options window, type Y in the Update Template/Listdef/Option parms field and press Enter. The window in the following figure appears:

This window allows you to specify the options described in the following section:

Utility Parms for TWUSR.HAA 41		
Option	====>	
Generate Templates. . . . .	Y	(Yes/No)
Generate Listdefs . . . . .	Y	(Yes/No)
Generate OPTION Statement:		
Preview Only . . . . .	N	(Yes/No)
Continue on Item Error . . . .	N	(Yes/No)
Return Code 0 on Warnings. . .	N	(Yes/No)

Figure 211. Utility parms window

#### Generate Templates

Type Y in this field to generate COPY, COPYTOCOPY, or REORG TABLESPACE utility control statements using the TEMPLATE syntax. Y is also required in this field if you are specifying LISTDEFS for any other utility.

#### Generate Listdefs

Type Y in this field to generate utility control statements using LISTDEFS. If you want to use LISTDEFS, you must also specify Y in the Generate Templates field.

#### Preview Only

Type Y in this field to execute in PREVIEW mode. PREVIEW mode checks for syntax errors in all utility control statements, but normal utility

execution does not take place. If syntax is valid, the utility expands all LISTDEF lists and TEMPLATE DSNs that appear in SYSIN and prints results to the SYSPRINT data set.

#### Continue on Item Error

Type Y in this field to continue processing if an error message with return code 8 is received. This event does not include abnormal terminations (ABENDS).

#### Return Code 0 on Warnings

Type Y in this field to lower the final return code of a single utility invocation that ends in a return code 4 to a return code of 0. Use this field to force a return code of 0 for warning messages.

#### CAUTION:

**Specifying this option should generally be avoided. Warning messages document situations which generally should not be disregarded. Use this option only when return code 4 is expected, is acceptable, and other mechanisms are in place to validate the results of a utility execution.**

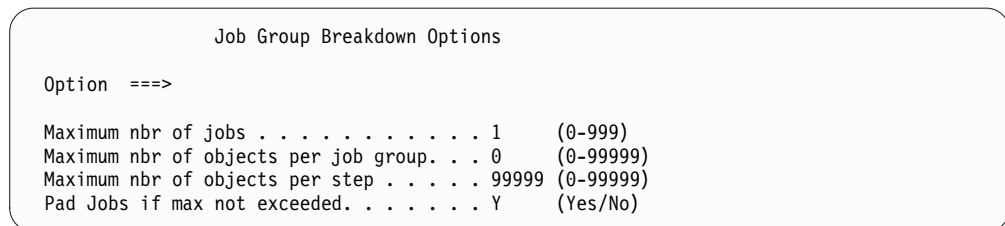
## Specifying job group breakdown options

The Job Group Breakdown Options window allows you to set specific options that affect how each job group is built. You can specify how many objects are included per job group or job step, the maximum number of jobs built per job group, and whether jobs should be padded if the maximum is not reached.

### About this task

**Important:** Because each job group is treated as an individual job profile and results in a separate job, these breakdown options are applied to each job group.

To access these options, on the Generation Options window, type Y in the **Update Job Group Break Down Options** field and press Enter. The Job Group Breakdown Options window appears, as shown in the following figure:



Option	Value	Range
Maximum nbr of jobs . . . . .	1	(0-999)
Maximum nbr of objects per job group. . .	0	(0-99999)
Maximum nbr of objects per step . . . . .	99999	(0-99999)
Pad Jobs if max not exceeded. . . . .	Y	(Yes/No)

Figure 212. Job Group Breakdown Options window

This window allows you to specify the options described in the following section:

#### Maximum nbr of jobs

Type in the maximum number of unique jobs that you want to be generated per job group. If you type 0, DB2 Automation Tool will determine the appropriate number of unique jobs based on the value in the Maximum nbr of objects per job field.

DB2 Automation Tool honors the job breakdown options unless the z/OS limit on steps overrides them. If the given constraints (such as one object per step or the z/OS limit on the number of steps allowed per job) force DB2 Automation Tool to generate more than this maximum, DB2 Automation Tool will create more than the maximum. You must adjust

your settings to maintain this maximum. You can allow a higher maximum number of jobs (DB2 Automation Tool can pad with IEFBR14 dummy jobs to make up the difference if not needed) or allow more objects per step.

**Note:** If you specify one member with multiple jobs, you will not be able to use the restartability feature.

#### **Maximum nbr of objects per job group**

If you want to limit the number of objects included in each job group, enter the limit here. You can use this field with the Maximum nbr of jobs field to control how many jobs are generated per job group.

#### **Maximum nbr of objects per step**

If you want to specify how many objects are included in each job step, enter the limit here. Type 0 to allow DB2 Automation Tool to determine the number of objects in each step. Type 9999 to include all objects in a single step.

**Note:** To generate image copies of directory and catalog spaces to stacked tape, this field must be set to 1.

#### **Pad Jobs if max not exceeded**

Y in this field specifies that when the number of jobs generated is less than the maximum number of jobs specified in the Maximum nbr of jobs field, additional dummy jobs are created to meet the maximum number. For example, if the max number of jobs is 10 and only eight jobs are generated, two dummy jobs will also be generated. The dummy jobs contain JCL for the IEFBR14 program.

## **Adding object profiles**

One or more object profiles can be added to the job profile.

### **Procedure**

1. On the Adding Profiles to the Job Profile window, type Y in the **Add Objects Profiles** field and press Enter.
2. On the Objects Profile Display, enter selection criteria in the **Profile Like** and **Creator Like** fields and press Enter. If profiles exist that meet your selection criteria, they are listed on the Objects Profile Display.
3. Enter S in the **Cmd** field next to the object profile that you want to include in the job profile and press Enter. A message is displayed confirming that the profile that you selected has been added to the job profile.
4. Select additional object profiles as required.
5. When you finish selecting object profiles, press PF3. The Update Jobs Profile Display is displayed, showing the object profiles that you selected.

## **Adding exception profiles**

One or more exception profiles can be added to the job profile. If a job profile is built for active or passive autonomic action, the job profile must contain an exception profile.

### **Procedure**

1. On the Adding Profiles to the Job Profile window, type Y in the **Add Exception Profiles** field and press Enter.

2. On the Exceptions Profile Display, enter selection criteria in the **Profile Like** and **Creator Like** fields and press Enter. If profiles exist that meet your selection criteria, they are listed on the Exceptions Profile Display.
3. Enter S in the **Cmd** field next to the exceptions profile that you want to include in the job profile and press Enter. A message is displayed confirming that the profile that you selected has been added to the job profile.
4. Select additional exception profiles as required.
5. When you finish selecting exception profiles, press PF3. The Update Jobs Profile Display is displayed, showing the exception profiles that you selected.

## Adding utility profiles

One or more utility profiles can be added to the job profile.

### Procedure

1. On the Adding Profiles to the Job Profile window, type Y in the **Add Utilities Profiles** field and press Enter.
2. On the Utilities Profile Display, enter selection criteria in the **Profile Like** and **Creator Like** fields and press Enter. If profiles exist that meet your selection criteria, they are listed on the Utilities Profile Display.
3. Enter S in the **Cmd** field next to the utility profile that you want to include in the job profile and press Enter. A message is displayed confirming that the profile that you selected has been added to the job profile.
4. Select additional utility profiles as required.
5. When you finish selecting utility profiles, press PF3. The Update Jobs Profile Display is displayed, showing the utility profiles that you selected.

## Adding job groups

You can use job groups in a job profile to perform a combination of maintenance functions within a single job profile. Each group of object, exception, and utility profiles within a job profile can be thought of as a separate job profile that executes independently of the other groups within the job profile.

### About this task

Before you create and use job groups, note the following:

- When a job profile is created, a default job group name of DEFAULT GROUP #1 is assigned. If no other job groups are created in the job profile, all profiles within the existing job profile are part of the default job group.
- The **Excp Rule - Accepted** and **Excp Rule - Rejected** fields on the Update Jobs Profile Display allows you to control which utility profile applies to the accepted and rejected objects returned from exception processing. The exception rules that are defined in a job group override the exception rule that is defined in a utility profile.
- When a job profile contains multiple job groups, job generation and breakdown options are applied to each group individually.
- Each job group in a job profile generates a single job when the job profile is built.

### Example

You can use a single job profile to generate different image copy utility JCL for a set of table spaces based on a set of exceptions. Some of the table spaces might



meet the exception criteria; those spaces would require a full image copy utility generated. The remaining table spaces that do not meet the exception criteria for a full image copy could have an incremental image copy utility generated. One job profile that uses a job group and the exception rules fields in the job profile can generate the JCL for both utilities.

## Adding a job group to a job profile

### About this task

When a job profile is created, a default job group name of DEFAULT GROUP #1 is assigned. If no other job groups are created in the job profile, all profiles within the existing job profile are part of the default job group. You can change the name of the default group profile or any job group added to the job profile.

### Procedure

1. On the Adding Profiles to the Job Profile window, type Y in the **Add A Group** field and press Enter. The Update Jobs Profile Display is displayed, with a message that explains how job options apply to multiple job groups. Press Enter to continue.
2. Optional: The new job group is named DEFAULT GROUP #n. You can change it by editing the field.
3. In the **Cmd** field next to the new job group, enter A to add object, utility, and exception profiles to the group.
4. When you finish adding all of the profiles that you want to include in the group, ensure that the utilities are in the order that you want the job steps to be generated. Use the Order column to rearrange the order.
5. If you included an exception profile and want to associate a particular utility profile in the group with the objects that are accepted or rejected by exception processing, enter the corresponding utility profile number in the **Excp Rule - Accp** or **Excp Rule - Rjct** fields. For more information, press PF1 for help.
6. When you are finished editing the job group, press PF3 to save and exit.

## Viewing the profiles included in the job profile

You can use the Update Jobs Profile Display to see the object, utility, and exception profiles that are included in the job profile, and how the profiles are grouped.

The Update Jobs Profile Display is shown in the following figure:

```
AUTOTOOL V4R2 ----- Update Jobs Profile Display ----- 2017/09/20 14:50:07
Option ==> Scroll ==> CSR
-----
Line Commands: V - View A - Add D - Delete U - Update R - Repeat
               G - show/hide Group
-----
Creator: TWUSR          Profile: JOB PROFILE          User: TWUSR
                   DB2 Subsystem: SS01
-----
Share Option U (U - Update,      Description
                V - View,
                N - No)
Update Job Generation Options N (Yes/No) Row 1 of 4      >
-----
      Excp Rule
Cmd  Order  Accp Rjct  Type  Name                      Creator
    1      1      GRP  DEFAULT GROUP #1          HAA
    1      1      OBJS OBJECT PROFILE          TWUSR
    2      2      EXCP EXCEPTION PROFILE        TWUSR
    3      3      UTIL UTILITY PROFILE          TWUSR
***** Bottom of Data *****
```

Figure 213. Update Jobs Profile Display

The **Type** field identifies the type of profile. The following profile types are valid:

- GRP is a job group profile.
- OBJS is an object profile.
- UTIL is a utility profile.
- EXCP is an exception profile.
- CHGA is a DB2 Change Accumulation Tool generated utility profile.

You can add, delete, update, or view the profiles in the job profile by using the appropriate line commands.

## Updating job generation options

Job generation options can be modified whenever a job profile is updated.

### About this task

Type Y in the Update Job Generation Options field and press Enter. The Generation Options window is displayed. For information about setting these options, refer to “Updating job generation options” on page 346.

When you have entered the job generation options, press PF3 to return to the Update Jobs Profile Display.

---

## Updating a job profile

You can update a job profile at any time to add or delete profiles or to change job generation options.

### Procedure

1. On the DB2 Automation Tool main menu, enter 4 in the **Option** field and press Enter.
2. Specify selection criteria and press Enter.
3. On the Jobs Profile Display, enter U in the Cmd line next to the profile you want to update and press Enter.

**Note:** If you update a profile created under a previous version of DB2 Automation Tool, the Profile Conversion Warning window is displayed. Refer to “Updating a profile from a previous version of DB2 Automation Tool” on page 405 for information about converting profiles.

4. On the Update Jobs Profile Display, use line commands to add or delete profiles, or update job generation options by entering Y in the **Update Job Generation Options** field.

---

## Building a job

When you build a job, DB2 Automation Tool either constructs a JCL job to run utilities on the objects that are specified in the object profile, or schedules autonomic actions to be run during the next maintenance window. If you included an exception profile in the job profile, DB2 Automation Tool checks for exceptions during the job build. If a job profile is built for active or passive autonomic action, the job profile must contain an exception profile.

### About this task

To build a job, access the Jobs Profile Display. Then type B in the Cmd line next to the profile you want to build. When you press Enter, the window shown in the following figure is displayed:

```
Build Job for TWUSR.JOB PROFILE

Build Online or Batch. . 0 (0 - Online, B - Batch)
Schedule Job . . . . . N (Yes/No)   Update options . . N (Yes/No)

JCL Output Options:
Edit Generated Job . . . Y (Yes/No)
Build job in Data set. . TWUSR.DAT.TEST
                        Member . . SAMPLE

Job Cards:
==> //TWUSRS JOB TWUSR,CLASS=A,NOTIFY=&SYSUID
==> /*
==> /*
==> /*
```

Figure 214. Build Job window

The following describes the fields in the Build Job window:

#### Build Online or Batch

Indicate when you want to build the job. Type one of the following:

- Type O for online. When you choose to build the job online, DB2 Automation Tool checks the objects, checks for exceptions, and builds the utility job immediately.
- Type B for batch. When you choose this option, DB2 Automation Tool builds a job that, when executed, builds the utility job.

**Note:** If the job contains an exceptions profile that instructs DB2 Automation Tool to run RUNSTATS before processing exceptions (Use Stats From field set to U), you must build the job in batch.

#### Schedule Job

Type Y in the Schedule Job field to indicate that the resulting JCL job is to be scheduled to the DB2 administrative task scheduler. Entering Y in the

Update Options field and pressing Enter displays a panel to define DB2 administrative task scheduler options.

#### Update Options

To set options for the administrative task scheduler, enter Y in this field and press Enter.

#### Edit Generated Job

Type Y if you want to edit the job after it has been generated. The job appears in an edit session after it has been generated. If you type N, after job generation the Jobs Profile Display reappears.

#### Build job in Dataset

Enter the fully qualified data set name (without quotes) where you want to save the generated job. This data set must exist and can be sequential or a PDS. In online mode, this data set will hold the generated utility job. In batch mode, this data set will hold the batch JCL to generate the utility job.

#### Member

If the data set to hold the generated job is a PDS, enter a member name for the job output here. If the member does not exist, DB2 Automation Tool will create it.

#### Job Cards

Enter a valid job card for your site on any of the four Job Card lines. Job card information can be provided as standard JCL or another compatible control language.

## Scheduling the job for the DB2 administrative task scheduler

When building a DB2 Automation Tool job profile, you can specify to schedule the utility job via the DB2 administrative task scheduler.

The Schedule DB2 Admin Task panel allows you to define the options for a task to be scheduled to run via the DB2 administrative task scheduler.

The Schedule DB2 Admin Task panel is shown in the following figure:

```
AUTOTOOL V4R2 ----- Schedule DB2 Admin Task ----- 2017/09/20 14:55:08
Option ==>                                     Scroll ==> CSR
                                           DB2 Subsystem: SS01
Task Name . . . . AUTOMATION TOOL UTIL: &JOBNAME >
Task Description >

Begin Timestamp . . &CURRENT (DB2 Timestamp)
End Timestamp . . . 2017-09-20-14.55.08.959073 (DB2 Timestamp)
Max Invocations . . 1 (Integer, Blank)
SSID . . . . . SS01 (Blank for any datasharing member)
Job Wait . . . . . Y (Y - Yes, N - No, P - Purge)
Execution Threads . 001 (Integer)

Invocation Options:
Interval (minutes) (Integer, Blank)
-Or-
Trigger:
Task Name . . . >
Cond . . . . . (GT,GE,EQ,LT,LE,NE)
Code . . . . . (Integer, Blank)
-Or-
Point in Time . . >
```

Figure 215. Schedule DB2 Admin Task panel

The following describes the fields on the Schedule DB2 Admin Task panel:

**Task Name**

(Required) Enter a unique task name to differentiate this from other DB2 administrative task scheduler tasks. The following variables are allowed to ensure unique task names when multiple jobs are created:

- &JOBNAME resolves to the actual job name for the JCL job.
- &PROFILE resolves to the job profile name.
- &SEQ resolves to a sequential number that is incremented when referenced.
- &TIMESTAMP resolves to the DB2 timestamp returned from the CURRENT TIMESTAMP when the job is added to the DB2 administrative task scheduler.

**Task Description**

Enter a description for the task.

**Begin Timestamp**

If you want the task to execute at a specific starting time, enter it in the format CCYY-MM-DD-HH.MM.SS.thmiju. If not specified, the task may be executed immediately. The variable &CURRENT can be specified to use the current timestamp when the job is added to the DB2 administrative task scheduler. &CURRENT can be combined with any valid DB2 timestamp expression to specify a future time. For example:

```
&CURRENT + 5 DAYS  
&CURRENT + YEAR
```

**End Timestamp**

If you want the task to end at a specific time, enter it in the format CCYY-MM-DD-HH.MM.SS.thmiju. If not specified, the task may be executed as scheduled indefinitely. The variable &CURRENT can be specified to use the current timestamp when the job is added to the DB2 administrative task scheduler. &CURRENT can be combined with any valid DB2 timestamp expression to specify a future time. For example:

```
&CURRENT + 5 DAYS  
&CURRENT + YEAR
```

**Max Invocations**

Enter the maximum number of times this task can be executed. If not specified, there is no limit to the number of executions.

**SSID** Enter a particular subsystem that should execute the task. If not specified, the task may execute on any member of a data sharing group.

**Job Wait**

Indicate whether the job can be executed synchronously. Valid values are:

- Y: Synchronous execution
- N: Asynchronous execution
- P: Synchronous execution, after which the job status in z/OS is purged.

**Execution Threads**

Enter the number of parallel tasks to schedule.

**Invocation Options**

Select one of the following invocation options.

**Interval (minutes)**

Specify the time in minutes to execute a repeating task.

### Trigger

These fields allow you to define the parameters that cause the task to be triggered.

#### Task Name

Specify another DB2 administrative task scheduler task that, when complete, triggers the execution of this task.

**Cond** Specify the type of comparison to be made on the condition code of the triggered task. If not specified, the task is triggered upon completion of the trigger task without regard to its condition code.

**Code** Specify the condition code to compare to determine if task gets triggered.

### Point in Time

Specify a point-in-time string in UNIX cron format that indicates one or more specific times to begin task execution. The format is:  
minute hour day\_of\_the\_month month\_of\_the\_year day\_of\_the\_week

where:

- *minute* can be 0-59
- *hour* can be 0-23
- *day\_of\_the\_month* can be 1-31
- *month\_of\_the\_year* can be 1-12 or upper-, lower-, or mixed-case three-character strings, based on the English name of the month: jan, feb, mar, apr, may, jun, jul, aug, sep, oct, nov, or dec
- *day\_of\_the\_week* can be 1-7 or upper-, lower-, or mixed-case three-character strings, based on the English name of the day: mon, tue, wed, thu, fri, sat, or sun

Each field must be separated by a blank. For more information on the unix CRON format for the DB2 administrative task scheduler, refer to the DB2 Administration Guide for your version of DB2.

When finished, press Enter, then PF3. The Build Job window is displayed; the Schedule Job field is set to Y.

## Reviewing build process messages

After a job is built, you can optionally view messages resulting from the build or a job/step/object summary.

### About this task

The Build Process Message Display shows the messages produced during the job build.

### Procedure

1. When you build the job online, after the job has been built, the window shown in the following figure is displayed:

```
Messages Generated for TWUSR.JOB PROFILE

      43 Informational,          0 Warning, and          0 Error
Messages were generated while building the job online for
Job Group . . . DEFAULT GROUP #1
of Jobs Profile TWUSR.JOB PROFILE

View messages? . . . . Y (Yes/No)
View job summary?. . . N (Yes/No)
```

*Figure 216. Messages Generated for window*

2. On the Messages Generated for window, type Y in the View messages field and press Enter. The Build Process Message Display is shown in the following figure:

```

AUTOTOOL V4R2 ----- Build Process Message Display ----- 2017/09/20 14:58:56
Option ==> Scroll ==> CSR
-----
DB2 Subsystem ID: SS01      Current SQLID:      User:      TWUSR
                                Row 1 of 50  +>
                                43 Informational      0 Warning      0 Error Messages
                                Order messages by S (S - Sequence, T - Type)
-----
HAAB027I Jobs Generation Options follow:
HAAB214I Autonomics Director Options:
HAAB214I Autonomic Type.....None
HAAB214I Autonomic Maintenance Window .....
HAAB221I Explode IXs with DEFINE NO TSs.....N
HAAB222I Altered Object Adjustment.....P
HAAB028I Maximum Number of Jobs.....1
HAAB029I Maximum Number of Objects per Job.....0
HAAB375I Maximum Number of Objects per Step.....99999
HAAB376I Pad Jobs if Max not Exceeded.....Y
HAAB030I Automatically generate GDG Base.....000
HAAB031I Load Balance Jobs by.....N
HAAB032I Capture Run Times for Load Balancing.....N
HAAB033I Process Spaces in Utility (UT) Mode.....N
HAAB034I Prefix Utility ID with Jobname.....N
HAAB035I Set JCL Member Name to Jobname.....N
HAAB036I Generate Job When Errors Encountered.....Y
HAAB338I Preview Exception Report.....N
HAAB106I Evaluate Multiple Exception Profiles.....All together
HAAB112I Recall Migrated Spaces.....N
HAAB113I Use DSNACCOX Exception Table.....N
HAAB410I Include Job Registration Step.....Y
HAAB203I Rebind Dependent Plans / Packages.....N
HAAB037I Utility Dataset High Level Qualifier.....TEST
HAAB039I Retrieve Jobcard and Comments from Dataset
HAAB040I Dataset:
HAAB041I Member:
HAAB042I Jobname Template " - - - - - "
HAAB176I Generate Templates.....Y
HAAB177I Generate Listdefs.....Y
HAAB178I Preview Only.....N
HAAB179I Continue on Item Error.....N
HAAB180I Return Code 0 on Warnings.....N

HAAB049I Using JOBS profile TWUSR.JOB PROFILE that
          Excp Rule
          Order Accp Rjct Type Creator.Profile Name
HAAB050I          GRP HAA.DEFAULT GROUP #1
HAAB050I 1 OBJS TWUSR.OBJECT PROFILE
HAAB050I 2 EXCP TWUSR.EXCEPTION PROFILE
HAAB050I 3 UTIL TWUSR.UTILITY PROFILE

IX Creator IndexSpc
Msg ID TS Database TableSpc Part# Message
HAAB075I TS DLCDB ACTOUT 00000 Utility JCL has been created for this LOB T
HAAB075I TS DLCDB ACTSTMT 00000 Utility JCL has been created for this LOB T
HAAB075I TS DLCDB LN40B9FP 00000 Utility JCL has been created for this LOB T
HAAB075I TS DLCDB LN40BZBX 00000 Utility JCL has been created for this LOB T
HAAB007I 00025 Objects were triggered by Exception Processing
***** Bottom of Data *****

```

Figure 217. Build Process Message Display

You can customize the display of the messages by using the Order messages by field at the top of the panel. Type S to have the build messages displayed in sequential order (the order in which the messages were issued by the build process). Type T to sort messages by type; all informational messages will be displayed first, followed by all warning messages, and then followed by all error messages.



The first part of the Build Process Message Display lists informational messages about the job generation options and profiles in use. Any warning or error messages appear after the informational messages. The following describes the fields in Build Process Message screen:

#### nn Informational nn Warning nn Error messages

This header line lists the number of informational, warning, and error messages issued by DB2 Automation Tool.

#### Msg ID

The message number. The build messages are documented in "Messages" on page 543.

#### IX Creator/IndexSpc/TS Database TableSpace Name Part#

For messages related to specific objects, this area lists the table space or index creator and name; database and partition number if applicable.

#### Message

This area contains the informational, warning, or error message issued.

- When you have finished reviewing the messages, press PF3 to continue. When you press PF3, if the job generation options are set to Generate job when errors encountered = No or Warnings, the following window, shown in the following figure, might appear:

This window gives you the opportunity to cancel the job or to continue

Continue building TWUSR.JOB PROFILE

Continue Building Job ?

Y (Yes,No)

Press ENTER to process or PF3 to Cancel

Figure 218. Continue building confirmation window

building the job. If you enter N and press Enter, the Jobs Profile Display appears and the message HAAM242I - Building of Jobs Profile profile\_creator.profile\_name has been canceled appears.

## Reviewing jobs, steps and objects

The Build Jobs Display allows you to see a tree structure of jobs, utility steps, and objects as they will be generated in the build output.

### Procedure

- On the Messages Generated for window, type Y in the **Do you wish to view job summary field** and press Enter. The Build Jobs Display is shown in the following figure:

```

AUTOTOOL V4R2  ----- Build Jobs Display -----  2017/09/20  15:01:29
Option  ==>                                     Scroll ==>  CSR
-----
      Commands: Explode - Explode all  Implode - Implode all
Line Commands: E - Explode I - Implode                                DB2 Subsystem: SS01
-----
Cmd Jobname  Stepname  Type DB Name  Creator   Name              Part
TWUSRS                               Number of steps=002
***** Bottom of Data *****

```

Figure 219. Build Jobs Display

This panel allows you to see at a glance the jobs, their associated job steps, and the objects to be processed in each step. You can use the EXPLODE primary command to expand all jobs to show all steps and objects, and the IMplode primary command to collapse the structure. For example if you enter the EXPLODE command in the Option line, the previous example is exploded as follows:

```

AUTOTOOL V4R2      ----- Build Jobs Display -----      2017/09/20 15:02:35
Option ==>                                Scroll ==> CSR
-----
      Commands: Explode - Explode all  Implode - Implode all
Line Commands: E - Explode I - Implode                                DB2 Subsystem: SS01
-----
Cmd Jobname  Stepname  Type DB Name  Creator  Name  Part
TWUSRS
      REG00101 Register      Number of steps=002      Number of objects=025
      TS  DLCDB  xxxxxxxx  ACTGRP      0000
      TS  DLCDB  xxxxxxxx  ACTI1FWB     ALL
      TS  DLCDB  xxxxxxxx  ACTOUT      0000
      TS  DLCDB  xxxxxxxx  ACTSTMT     0000
      TS  DLCDB  xxxxxxxx  ARCHIV11    0000
      TS  DLCDB  xxxxxxxx  DLCLP11     0000
      TS  DLCDB  xxxxxxxx  DLCTS       0000
      TS  DLCDB  xxxxxxxx  DLCUTS11    0000
      TS  DLCDB  xxxxxxxx  DRCOPY11    0000
      TS  DLCDB  xxxxxxxx  ETRIGS31    0000
      TS  DLCDB  xxxxxxxx  EVALS       0000
      TS  DLCDB  xxxxxxxx  EXCPTN11    0000
      TS  DLCDB  xxxxxxxx  JOBS11      0000

```

Figure 220. Build Jobs Display - Explode command results

The following section describes the fields that are on this panel.

**Jobname**

The job name.

**Stepname**

The step name.

**Type** If text appears in this column on a job line, the text provides information about the number of steps in the job. If text appears on a stepname line, the text provides information about the type of step and the number of objects in the step. For object lines, the type of object (TS or IX) is listed in this column.

**DB Name**

For object lines, the name of the database.

**Creator**

The creator name (for indexes only).

**Name** The table space or indexspace name.

**Part** If the object is partitioned, the partition number.

- When you have finished reviewing the information on this panel, press PF3 to continue. The Jobs Profile Display is displayed, or if you specified to edit the JCL, the job appears in an edit session.

## Reviewing the job output

After building a job, you can review the output in an edit session.

If you choose to edit the generated job, the job appears in an edit session as shown in the following figure:

```

***** ***** Top of Data *****
000001 //TWUSRS JOB TWUSR,CLASS=A,NOTIFY=&SYSUID
000002 //*
000003 //*
000004 //*
000005 //*
000006 /*** * * * *
000007 //*
000008 //* Job Generated by IBM DB2 Automation Tool V4R2.01
000009 //*
000010 //* DB2 SSID: SS01
000011 //* SQLID:
000012 //* Profile: TWUSR.JOB PROFILE
000013 //* Desc:
000014 //* User: TWUSR
000015 //* Date: Wednesday September 20, 2017
000016 //* Time: 15:08:36.87
000017 //*
000018 /*** * * * *
000019 //*
000020 /*** * * * *
000021 //*
000022 //* Step: REGISTER
000023 //*
000024 //* Desc: This step will communicate with the Execution
000025 //* facility and register this job as active.
000026 //*
000027 //* Input: JOB_TRACK_SSID - Execution Facility STC Subsystem
000028 //* DB2_SUBSYSTEM - DB2 Subsystem Id -
000029 //* CLIENT - Invoking B2 Tool Product
000030 //* PROFILE - Executing Profile Name
000031 //* CREATOR - Executing Profile Creator
000032 //* ID - Currently the Jobname
000033 //* ABEND - Generated Unique Identifier for job
000034 //* WTO - Issue Write to Operators messages
000035 //*
000036 /*** * * * *
000037 //*
000038 //REG00101 EXEC PGM=HAAREGST,REGION=0008M
000039 //STEPLIB DD DSN=RSQA.HAA420.IBMTAPE.SHAALOAD,DISP=SHR
000040 // DD DSN=RSQA.HAA420.IBMTAPE.SFECLOAD,DISP=SHR
000041 // DD DSN=RSRTE.EMC.LINKLIB,DISP=SHR
000042 // DD DSN=SS01.SDSNEXIT,DISP=SHR
000043 // DD DSN=DSN.VC10.SDSNLOAD,DISP=SHR
000044 //DB2PARMS DD DSN=RSQA.HAA420.IBMTAPE.CONTROL,DISP=SHR
000045 //DLCPARMS DD *
000046 JOB_TRACK_SSID (ST42) -
000047 DB2_SUBSYSTEM (SS01) -
000048 CLIENT (HAA) -
000049 USERIND (HAA) -
000050 VERSION (V4R2M0) -
000051 PROFILE ('JOB PROFILE') -
000052 CREATOR (TWUSR) -
000053 PROFILE_ID (D32B3EEAF1B5F9C2) -
000054 JOB_ID (D32B3FCABB445DC8) -
000055 ABEND (NO) -
000056 WTO (YES) -

```

Figure 221. Generated job in edit session - Part 1

```

000057 //REG#OBJT DD *
000058 REGISTER OBJECTS (
000059 RO '21 TS DLCDB ACTGRP '
000060 RO '21 TS DLCDB ACTI1FWB ALL '
000061 RO '21 TS DLCDB ACTOUT '
000062 RO '21 TS DLCDB ACTSTMT '
000063 RO '21 TS DLCDB ARCHIV11 '
000064 RO '21 TS DLCDB DLCLP11 '
000065 RO '21 TS DLCDB DLCTS '
000066 RO '21 TS DLCDB DLCUTS11 '
000067 RO '21 TS DLCDB DRCOPY11 '
000068 RO '21 TS DLCDB ETRIGS31 '
000069 RO '21 TS DLCDB EVALS '
000070 RO '21 TS DLCDB EXCPTN11 '
000071 RO '21 TS DLCDB JOBS11 '
000072 RO '21 TS DLCDB LN40BZBX '
000073 RO '21 TS DLCDB LN40B9FP '
000074 RO '21 TS DLCDB NOTIFY42 '
000075 RO '21 TS DLCDB OBJECT13 '
000076 RO '21 TS DLCDB OBJEXT31 '
000077 RO '21 TS DLCDB OBJINFO '
000078 RO '21 TS DLCDB PAGELOG3 '
000079 RO '21 TS DLCDB PROFIL11 '
000080 RO '21 TS DLCDB RSTATS13 '
000081 RO '21 TS DLCDB STMON41 '
000082 RO '21 TS DLCDB SYSCPY11 '
000083 RO '21 TS DLCDB UTILITY13 '
000084 )
000085 /*
000086 /** * * * * *
000087 /*
000088 /* Step: QUI00102
000089 /*
000090 /* Desc: This step will invoke the IBM Quiesce Utility
000091 /*
000092 /** * * * * *
000093 /*
000094 //QUI00102 EXEC PGM=DSNUTILB,REGION=0008M,COND=(4,LT),
000095 // PARM=(SS01)
000096 /*
000097 //STEPLIB DD DSN=RSQA.HAA420.IBMTAPE.SHAALOAD,DISP=SHR
000098 // DD DSN=RSQA.HAA420.IBMTAPE.SFECLOAD,DISP=SHR
000099 // DD DSN=RSRTE.EMC.LINKLIB,DISP=SHR

```

Figure 222. Generated job in edit session - Part 2

```

000100 //          DD DSN=SS01.SDSNEXIT,DISP=SHR
000101 //          DD DSN=DSN.VC10.SDSNLOAD,DISP=SHR
000102 //SYSPRINT DD SYSOUT=*
000103 //SYSOUT   DD SYSOUT=*
000104 //UTPRINT   DD SYSOUT=*
000105 //*
000106 //SYSIN     DD *
000107     LISTDEF QUI01002
000108         INCLUDE TABLESPACE DLCDB.ACTGRP
000109         INCLUDE TABLESPACE DLCDB.ACTI1FWB
000110         INCLUDE TABLESPACE DLCDB.ACTOUT
000111         INCLUDE TABLESPACE DLCDB.ACTSTMT
000112         INCLUDE TABLESPACE DLCDB.ARCHIV11
000113         INCLUDE TABLESPACE DLCDB.DLCLP11
000114         INCLUDE TABLESPACE DLCDB.DLCTS
000115         INCLUDE TABLESPACE DLCDB.DLCUTS11
000116         INCLUDE TABLESPACE DLCDB.DRCOPY11
000117         INCLUDE TABLESPACE DLCDB.ETRIGS31
000118         INCLUDE TABLESPACE DLCDB.EVALS
000119         INCLUDE TABLESPACE DLCDB.EXCPTN11
000120         INCLUDE TABLESPACE DLCDB.JOBS11
000121         INCLUDE TABLESPACE DLCDB.LN40BZBX
000122         INCLUDE TABLESPACE DLCDB.LN40B9FP
000123         INCLUDE TABLESPACE DLCDB.NOTIFY42
000124         INCLUDE TABLESPACE DLCDB.OBJECT13
000125         INCLUDE TABLESPACE DLCDB.OBJEXT31
000126         INCLUDE TABLESPACE DLCDB.OBJINFO
000127         INCLUDE TABLESPACE DLCDB.PAGELOG3
000128         INCLUDE TABLESPACE DLCDB.PROFIL11
000129         INCLUDE TABLESPACE DLCDB.RSTATS13
000130         INCLUDE TABLESPACE DLCDB.STMON41
000131         INCLUDE TABLESPACE DLCDB.SYSCPY11
000132         INCLUDE TABLESPACE DLCDB.UTILITY13
000133
000134     QUIESCE LIST QUI01002
000135         WRITE    YES
000136
000137 //*
***** ***** Bottom of Data *****

```

Figure 223. Generated job in edit session - Part 3

You can review, edit and submit the job from the edit session.

## Building a job in batch

When you choose to build a job in batch, DB2 Automation Tool creates a build job that calls its build program, HAA@BULD. The job profile name is passed in to the build program on the job control cards. You can place the build job into the DB2 administrative task scheduler immediately before executing the utility job that it will generate. This allows DB2 Automation Tool to pick up any changes to objects in the object profile before the utility is executed.

### About this task

**Note:** If the job contains a utility profile that specifies RUNSTATs *and* any exception profile, the job must be built in batch.

### Procedure

1. Select B to build the job in batch and press Enter. The following window is displayed:

Build Job for TWUSR.JOB PROFILE

You have selected your job to be built in a batch mode. The batch generation JCL will be stored in data set TWUSR.DAT.TEST(SAMPLE). Please specify in the data set and member below where you want the JCL built by the batch module to be placed.

Schedule Job . . . . N (Yes/No)    Update options . . N (Yes/No)

Build job in Data set . TWUSR.DAT.TEST  
                           Member . .

Jobcard data to be used on the generated job:  
 ==> //TWUSRBAT JOB TWUSR,CLASS=A,NOTIFY=&SYSUID  
 ==> /\*\*  
 ==> /\*\*  
 ==> /\*\*

Figure 224. Build Job window for batch builds

2. On this window, type in the data set name (and member name, if the data set is a PDS) to hold the utility job that will be generated by the batch JCL job. You must also enter a valid job card to be included in the utility JCL.
3. If you want to schedule the build with the DB2 administrative task scheduler, enter Y in the Schedule Job field and enter Y in the corresponding Update options field. When you press Enter, the Schedule DB2 Admin Task panel is displayed.
4. Press Enter to process the job.

**Note:** During the build process, you can add a parameter to ISPSTART to define an alternate return code value if the maximum number of jobs steps is exceeded. To use this feature, add the following to ISPSTART  
 PGM(HAA@BULD):  
 PARM(USERJOBS=*nn*)

where *nn* is the return code.

For example, to set the return code to 06 when max number of jobs is exceeded:

ISPSTART PGM(HAA@BULD) PARM(USERJOBS=06)

## Scheduling the batch build of the job profile for the DB2 administrative task scheduler

You can specify to schedule the batch build of the job via the DB2 administrative task scheduler.

On the Build Job profile window, you can specify to build the job profile in batch, and then also specify to schedule the batch build in the Schedule Job fields. When you press Enter, the Schedule DB2 Admin Task panel is displayed.

This panel allows you to define the options for the scheduled task that will run the batch build, and is shown in the following figure:

```

AUTOTOOL V4R2 ----- Schedule DB2 Admin Task ----- 2011/07/08 10:35:18
Option ==> Scroll ==> CSR

Task Name . . . . DB2 AUTOMATION TOOL UTIL: &JOBNAME >
Task Description >

Begin Timestamp . . &CURRENT (DB2 Timestamp)
End Timestamp . . . 2011-07-08-10.30.11.938819 (DB2 Timestamp)
Max Invocations . . 1 (Integer, Blank)
SSID . . . . . SS1A (Blank for any datasharing member)
Job Wait . . . . . Y (Y - Yes, N - No, P - Purge)
Execution Threads. . 001 (Integer)

Invocation Options:
Interval (minutes) (Integer, Blank)
-Or-
Trigger:
Task Name . . . >
Cond . . . . . (GT,GE,EQ,LT,LE,NE)
Code . . . . . (Integer, Blank)
-Or-
Point in Time . . >

```

Figure 225. Schedule DB2 Admin Task panel

The following describes the fields on the Schedule DB2 Admin Task panel:

#### Task Name

(Required) Enter a unique task name to differentiate this from other DB2 administrative task scheduler tasks. The following variables are allowed to ensure unique task names when multiple jobs are created:

- &JOBNAME resolves to the actual job name for the JCL job.
- &PROFILE resolves to the job profile name.
- &SEQ resolves to a sequential number that is incremented when referenced.
- &TIMESTAMP resolves to the DB2 timestamp returned from the CURRENT TIMESTAMP when the job is added to the DB2 administrative task scheduler.

**Tip:** Because trigger task names cannot contain variables, you should avoid using variables in the task name if the utility job generated by the batch build will be triggered based on batch build task.

#### Task Description

Enter a description for the task.

#### Begin Timestamp

If you want the task to execute at a specific starting time, enter it in the format CCYY-MM-DD-HH.MM.SS.thmiju. If not specified, the task may be executed immediately. The variable &CURRENT can be specified to use the current timestamp when the job is added to the DB2 administrative task scheduler. &CURRENT can be combined with any valid DB2 timestamp expression to specify a future time. For example:

```

&CURRENT + 5 DAYS
&CURRENT + YEAR

```

#### End Timestamp

If you want the task to end at a specific time, enter it in the format CCYY-MM-DD-HH.MM.SS.thmiju. If not specified, the task may be executed as scheduled indefinitely. The variable &CURRENT can be

specified to use the current timestamp when the job is added to the DB2 administrative task scheduler. &CURRENT can be combined with any valid DB2 timestamp expression to specify a future time. For example:

&CURRENT + 5 DAYS  
&CURRENT + YEAR

**Max Invocations**

Enter the maximum number of times this task can be executed. If not specified, there is no limit to the number of executions.

**SSID** Enter a particular subsystem that should execute the task. If not specified, the task may execute on any member of a data sharing group.

**Job Wait**

Indicate whether the job can be executed synchronously. Valid values are:

- Y: Synchronous execution
- N: Asynchronous execution
- P: Synchronous execution, after which the job status in z/OS is purged.

**Execution Threads**

Enter the number of parallel tasks to schedule.

**Invocation Options**

Select one of the following invocation options.

**Interval (minutes)**

Specify the time in minutes to execute a repeating task.

**Trigger**

These fields allow you to define the parameters that cause the task to be triggered.

**Task Name**

Specify another DB2 administrative task scheduler task that, when complete, triggers the execution of this task.

**Cond** Specify the type of comparison to be made on the condition code of the triggered task. If not specified, the task is triggered upon completion of the trigger task without regard to its condition code.

**Code** Specify the condition code to compare to determine if task gets triggered.

**Point in Time**

Specify a point-in-time string in UNIX cron format that indicates one or more specific times to begin task execution. The format is:  
minute hour day\_of\_the\_month month\_of\_the\_year day\_of\_the\_week

where:

- *minute* can be 0-59
- *hour* can be 0-23
- *day\_of\_the\_month* can be 1-31
- *month\_of\_the\_year* can be 1-12 or upper-, lower-, or mixed-case three-character strings, based on the English name of the month: jan, feb, mar, apr, may, jun, jul, aug, sep, oct, nov, or dec
- *day\_of\_the\_week* can be 1-7 or upper-, lower-, or mixed-case three-character strings, based on the English name of the day: mon, tue, wed, thu, fri, sat, or sun



Each field must be separated by a blank. For more information on the unix CRON format for the DB2 administrative task scheduler, refer to the DB2 Administration Guide for your version of DB2.

When finished, press Enter, then PF3. The Build Job window is displayed; the Schedule Job field is set to Y.

## Scheduling the job for the DB2 administrative task scheduler

When building a DB2 Automation Tool job profile, you can specify to schedule the utility job via the DB2 administrative task scheduler.

The Schedule DB2 Admin Task panel allows you to define the options for a task to be scheduled to run via the DB2 administrative task scheduler.

The Schedule DB2 Admin Task panel is shown in the following figure:

```

AUTOTOOL V4R2  ----- Schedule DB2 Admin Task ----- 2017/09/20 14:55:08
Option  ==>
                                Scroll ==> CSR
                                DB2 Subsystem: SS01
Task Name . . . . AUTOMATION TOOL UTIL: &JOBNAME          >
Task Description                                     >

Begin Timestamp . . &CURRENT                               (DB2 Timestamp)
End Timestamp . . . 2017-09-20-14.55.08.959073 (DB2 Timestamp)
Max Invocations . . 1                                     (Integer, Blank)
SSID . . . . . SS01                                       (Blank for any datasharing member)
Job Wait . . . . . Y                                     (Y - Yes, N - No, P - Purge)
Execution Threads . 001                                   (Integer)

Invocation Options:
Interval (minutes)                                     (Integer, Blank)
-Or-
Trigger:
Task Name . . .                                         >
Cond . . . . . (GT,GE,EQ,LT,LE,NE)
Code . . . . . (Integer, Blank)
-Or-
Point in Time . . .                                     >

```

Figure 226. Schedule DB2 Admin Task panel

The following describes the fields on the Schedule DB2 Admin Task panel:

### Task Name

(Required) Enter a unique task name to differentiate this from other DB2 administrative task scheduler tasks. The following variables are allowed to ensure unique task names when multiple jobs are created:

- &JOBNAME resolves to the actual job name for the JCL job.
- &PROFILE resolves to the job profile name.
- &SEQ resolves to a sequential number that is incremented when referenced.
- &TIMESTAMP resolves to the DB2 timestamp returned from the CURRENT TIMESTAMP when the job is added to the DB2 administrative task scheduler.

### Task Description

Enter a description for the task.

### Begin Timestamp

If you want the task to execute at a specific starting time, enter it in the

format CCYY-MM-DD-HH.MM.SS.thmiju. If not specified, the task may be executed immediately. The variable &CURRENT can be specified to use the current timestamp when the job is added to the DB2 administrative task scheduler. &CURRENT can be combined with any valid DB2 timestamp expression to specify a future time. For example:

&CURRENT + 5 DAYS  
&CURRENT + YEAR

#### **End Timestamp**

If you want the task to end at a specific time, enter it in the format CCYY-MM-DD-HH.MM.SS.thmiju. If not specified, the task may be executed as scheduled indefinitely. The variable &CURRENT can be specified to use the current timestamp when the job is added to the DB2 administrative task scheduler. &CURRENT can be combined with any valid DB2 timestamp expression to specify a future time. For example:

&CURRENT + 5 DAYS  
&CURRENT + YEAR

#### **Max Invocations**

Enter the maximum number of times this task can be executed. If not specified, there is no limit to the number of executions.

**SSID** Enter a particular subsystem that should execute the task. If not specified, the task may execute on any member of a data sharing group.

#### **Job Wait**

Indicate whether the job can be executed synchronously. Valid values are:

- Y: Synchronous execution
- N: Asynchronous execution
- P: Synchronous execution, after which the job status in z/OS is purged.

#### **Execution Threads**

Enter the number of parallel tasks to schedule.

#### **Invocation Options**

Select one of the following invocation options.

##### **Interval (minutes)**

Specify the time in minutes to execute a repeating task.

##### **Trigger**

These fields allow you to define the parameters that cause the task to be triggered.

##### **Task Name**

Specify another DB2 administrative task scheduler task that, when complete, triggers the execution of this task.

**Cond** Specify the type of comparison to be made on the condition code of the triggered task. If not specified, the task is triggered upon completion of the trigger task without regard to its condition code.

**Code** Specify the condition code to compare to determine if task gets triggered.

##### **Point in Time**

Specify a point-in-time string in UNIX cron format that indicates one or more specific times to begin task execution. The format is:  
minute hour day\_of\_the\_month month\_of\_the\_year day\_of\_the\_week

where:

- *minute* can be 0-59
- *hour* can be 0-23
- *day\_of\_the\_month* can be 1-31
- *month\_of\_the\_year* can be 1-12 or upper-, lower-, or mixed-case three-character strings, based on the English name of the month: jan, feb, mar, apr, may, jun, jul, aug, sep, oct, nov, or dec
- *day\_of\_the\_week* can be 1-7 or upper-, lower-, or mixed-case three-character strings, based on the English name of the day: mon, tue, wed, thu, fri, sat, or sun

Each field must be separated by a blank. For more information on the unix CRON format for the DB2 administrative task scheduler, refer to the DB2 Administration Guide for your version of DB2.

When finished, press Enter, then PF3. The Build Job window is displayed; the Schedule Job field is set to Y.

## Batch job output

Sample output from a job built in batch is shown in this topic.

Refer to the following figure:

```

000001 //TWUSRS JOB TWUSR,CLASS=A,NOTIFY=&SYSUID
000002 //*
000003 //*
000004 //*
000005 //*
000006 /*** * * * *
000007 //*
000008 //* Job Generated by IBM DB2 Automation Tool V4R2.01
000009 //*
000010 //* DB2 SSID: SS01
000011 //* SQLID:
000012 //* Profile: TWUSR.JOB PROFILE
000013 //* Desc:
000014 //* User: TWUSR
000015 //* Date: Wednesday September 20, 2017
000016 //* Time: 17:27:17.47
000017 //*
000018 /*** * * * *
000019 //*
000020 /*** * * * *
000021 //*
000022 //* Step: HAA@BULD
000023 //*
000024 //* Desc: This job will generate the JCL for jobs profile
000025 //* TWUSR.JOB PROFILE in a batch mode.
000026 //* The generated job will be placed in data set
000027 //* TWUSR.DAT.TEST(OUTPUT).
000028 //*
000029 //* Return Codes:
000030 //*
000031 //* (00) - Job was built successfully with no warnings or errors
000032 //*
000033 //* (04) - Job was built with warning messages and the Build Job on
000034 //* Errors indicator was a "Y" or "W"
000035 //*
000036 //* (06) - Job was not built - Exception processing did not flag
000037 //* any objects to process.
000038 //*
000039 //* (08) - Job was built with error messages and the Build Job on
000040 //* Errors indicator was a "Y"
000041 //*
000042 //* (12) - Job was not built - Errors were detected and the Build Job
000043 //* on Errors indicator was not a "Y"
000044 //*
000045 //* Note: Build Job on Errors is an option in the Jobs Profile
000046 //* Options screen. This option has the following values:
000047 //* "Yes" - Build job on Errors or Warnings
000048 //* "No" - Do not build job on Errors or Warnings
000049 //* "Warnings" - Build job only if highest severity is a
000050 //* warning message.
000051 //*
000052 /*** * * * *
000053 //* Create temp data set to bypass enqueue failure in ISPF
000054 /*** * * * *
000055 //PROFILE EXEC PGM=IEFBR14
000056 //TEMP DD DSN=&&TEMP,DISP=(NEW,PASS,DELETE),
000057 // UNIT=SYSDA,SPACE=(TRK,(1,1,5)),
000058 // DCB=ISP.SISPTENU
000059 //*
.
.
// Processing DDs
.
.
```

Figure 227. Sample output from batch build: Part 1

```

000107 //HAA#DATA DD *
000108     GENERATE_UTILITY_JOB (
000109         DB2_SUBSYSTEM      SS01
000110         USER_INDICATOR     HAA
000111         PROFILE_NAME       'JOB PROFILE'
000112         PROFILE_CREATOR    TWUSR
000113         PROFILE_DESCRIPTION ' '
000114         EXECUTION_LIB_2    RSQA.HAA420.IBMTAPE.SHAALOAD
000115         EXECUTION_LIB_4    RSQA.HAA420.IBMTAPE.SFECLOAD
000116         EXECUTION_LIB_5    RSRTE.EMC.LINKLIB
000117         DEBUG_MODE         OFF
000118         PREVIEW_EXCP_REPORT NO
000119         GEN_TO_DATASET     TWUSR.DAT.TEST
000120         GEN_TO_MEMBER      OUTPUT
000121         EVENT_NOTIFICATION_NAME 'TEST'
000122         EVENT_NOTIFICATION_CREATOR TWUSRA
000123         JOB_CARD_1_1       '//TWUSRBAT JOB TWUSR,CLASS=A,NOTIFY=&SYS'
000124         JOB_CARD_1_2       'UID'
000125         JOB_CARD_2_1       '//*'
000126         JOB_CARD_3_1       '//*'
000127         JOB_CARD_4_1       '//*'
000128     )
000129 /*

```

*Figure 228. Sample output from batch build: Part 2*

The HAA#DATA DD contains control cards that are input to the build. The control cards describe the DB2 subsystem, profile source, job cards and member name to be used for output. The DEBUG\_MODE parameter is automatically set to OFF. This parameter is used for troubleshooting, and should be changed only upon instruction from IBM Customer Support.

## Batch build error reporting

When a job is built in batch, the error messages are output to the HAAERROR DD generated by the batch build program.

The following is an example of message output:

```

HAAB048I DB2 SubSystem ID:SS2; DB2 Version:0810; SQLID:; ZUSER:TUSER
HAAB027I Jobs Generation Options follow:
HAAB028I Maximum Number of Jobs.....1
HAAB029I Maximum Number of Objects per Job.....0
HAAB030I Automatically generate GDG Base.....000
HAAB031I Load Balance Jobs by.....N
HAAB032I Capture Run Times for Load Balancing.....N
HAAB033I Process Spaces in Utility (UT) Mode.....N
HAAB034I Prefix Utility ID with Jobname.....N
HAAB035I Set JCL Member Name to Jobname.....N
HAAB036I Generate Job When Errors Encountered.....Y
HAAB106I Evaluate Multiple Exception Profiles.....All together
HAAB112I Recall Migrated Spaces.....N
HAAB113I Use DSNACCOR Exception Table.....N
HAAB203I Rebind Dependent Plans / Packages.....N
HAAB037I Utility Dataset High Level Qualifier.....TEST
HAAB039I Retrieve Jobcard and Comments from Dataset
HAAB040I   Dataset:
HAAB041I   Member:
HAAB042I Jobname Template " - - - - - "
HAAB176I Generate Templates.....Y
HAAB177I Generate Listdefs.....Y
HAAB178I Preview Only.....N
HAAB179I Continue on Item Error.....N
HAAB180I Return Code 0 on Warnings.....N

HAAB049I Using JOBS Profile      TUSER.##V42 TEST                that i
HAAB050I   OBJS Profile        TUSER.#V42 TEST TS ONLY
HAAB050I   UTIL Profile        TUSER.#MY CLIST

HAAB025I Build JCL will be written to TUSER.DAT.TEST.
HAAB026I Build JCL member "BATCHBLD" successfully written.
***** BOTTOM OF DATA *****

```

*Figure 229. Message output from batch build*

The build error messages are documented in “Messages” on page 543.

Return codes generated by a batch job build are described in the following table:

*Table 21. Batch job build return codes*

Return code	Job Built	Result
00	Yes	Job was built successfully with no warnings or errors.
04	Yes	Job was built with warning messages and the Generate Job when Errors encountered field was a “Y” or “W”.
06	No	Job was not built because exception processing did not flag any objects to process.
08	Yes	Job was built with error messages and the Generate Job when Errors encountered field was a “Y”.
12	No	Job was not built because errors were detected and the Generate Job when Errors encountered field was not a “Y”.

## Exception profile batch reporting

When a job is built in batch, a report of exception processing is produced in two SYSOUT DDs.

The first report appears in the EXCEPTNS DD and shows the values of the exception conditions in all the exception profiles included in the job profile:

Use Statistics from the HAA REPOSITORY

Combine IX/TS Exceptions when evaluating an IX triggering a TS Condition: N

Catalog Table	Column	Cond	Value	And Or	Type
DAY OF WEEK	MONDAY	EQ		AND	NOVAL

Catalog Table	Column	Cond	Value	And Or	Type
DAY OF WEEK	TUESDAY	EQ		OR	NOVAL

\*\*\*\*\* BOTTOM OF DATA \*\*\*\*\*

The second report is in the TRIGGERS DD and shows how the settings in the exception profiles trigger the objects. If no objects are triggered, the report states that "0 objects are triggered."

IBM Shared Profile Support -- Print Exception Triggers -- V04.20 Run Date 2011/06/17 Run Time 20:18:45

1 Triggers created...

Statistics Type	Column	Type	Cond	Exception Value
DAY OF WEEK	TUESDAY	NOVAL	EQ	

DBNAME	TSNAME	RUNSTATS Column	RUNSTATS Index	TBOWNER	IXCRTR	PART#	RUNSTATS Value
						00000	TUESDAY

\*\*\*\*\* BOTTOM OF DATA \*\*\*\*\*

## How job step and LISTDEF names are generated

This topic explains how job step and LISTDEF names are generated when a job is built.

DB2 Automation Tool generates job step names as follows:

SSSJJJNN

Where:

- SSS is a three-character step identifier. For example, RTS is used for REORG TABLESPACE.
- JJJ is a three-digit hexadecimal sequential job number.
- NN is a two-digit hexadecimal sequential step number.

As a general rule, LISTDEF names begin with a utility identifier followed by a unique number. LISTDEF names are not standardized across utilities, due to differences within each utility.

## Restarting failed jobs

It is possible to restart DB2 Automation Tool jobs that abended using the restart feature.

This capability relies on a job tracking task to track jobs and their completion codes. You must implement the job tracking task as described in Chapter 3, "Customizing DB2 Automation Tool," on page 61 and "Add the IEFACRT exit to the SMFPRMxx member of SYS1.PARMLIB" on page 18 in order to use the restart feature.

**Note:** Job restartability is not possible if the job you want to restart is in a member that contains multiple jobs.

## How DB2 Automation Tool restarts jobs

The job tracking task keep information about the execution of each job step in its own repository. If a job abends during execution, DB2 Automation Tool tracks the failure and can restart the job at the appropriate point.

For example: you build a job, submit it, and it abends. You can see the results in the Execution Reports Job Display, in the following figure. Note the return code of 8:

```
AUTOTOOL V4R2 ---- Execution Reports Job Display ---- 2017/09/20 17:41:13
Option ==> Scroll ==> CSR
-----
Line Commands: B - Build D - Delete O - Objects R - Restart S - Steps
Profile Like * DB2 Subsystem: SS01
Creator Like * Database Like * Row 1 of 7 +>
Space Type = A (I - Index, T - Tablespace, A - Any)
Space Like * Date From 09/01/2017 to 09/20/2017
Time From 00:01:00 to 23:00:00
Partition = 4 (0-4096, * - All, blank)
Jobname Like * View Type J (J - Jobs, O - Objects)
Jobnum Like *
-----
Cmd Jobname Jobnum Completion Reason Code Creator Profile ID
CRTIXR1 J0652223 R0000 00000000 MYQA1 D313CB55654850D4
CRTIXR1 J0809126 R0000 00000000 MYQA1 D32315949EB134C2
CRTIXR2 J0652224 R0000 00000000 MYQA1 D313CB6A550862D6
CRTIXR2 J0809130 R0000 00000000 MYQA1 D32315A95CC4FDC6
CRTIXR3 J0652225 R0000 00000000 MYQA1 D313CB97B8FD2AD1
CRTIXR3 J0809132 R0000 00000000 MYQA1 D32315BDA53B0BC3
```

Figure 230. Execution Reports Job Display

If you select the same job profile for a build, DB2 Automation Tool knows that an abend occurred the last time this profile was built and submitted. Before you are allowed to build the JCL again, you can decide how to proceed:

- You can restart the existing JCL. DB2 Automation Tool adds the RESTART parameter to utility steps that abended with a completion code of 04x, so the job can pick up from where it abended.
- You can also ignore the previous abend and allow DB2 Automation Tool to rebuild the JCL.

## How to use the restartability feature

The DB2 Automation Tool restartability feature can be used when you attempt to build a job profile, but the previous execution of the job failed.

### About this task

In that instance, the window shown in the following figure appears:



Rebuild Job for HAAQA.CRT REPAIR3

One or more of the jobs generated from this profile did not execute properly. This job needs to be restarted or you can force completion of this job. Job information is as follows:

Job Name . . . . :

CRTPR3

Job Number : J0700256

Step Name . . . . :

REP00102

Completion Code : R0008

Job Id . . . . . :

C89DF30588C80231

Generated Dataset:

RSQA.HAA310.JCLDA1A.RITA

Generated member :

CRTPR3

Restart or Force Completion

R (R - Restart, F - Force Completion)

Terminate existing Utility ID

N (Yes/No)

Submit Job . . . . .

N (Yes/No)

Build job in Dataset

RSQA.HAA310.JCLDA1A.RITA

Member

Figure 231. Rebuild job window

The following describes the job information:

**Job Name**

The job name.

**Job Number**

The job number.

**Step Name**

The job step name that failed.

**Completion Code**

The job step completion code.

**Job ID**

An internal job identification used by DB2 Automation Tool to track the job results.

**Generated Dataset**

The data set name the JCL was generated to.

**Generated member**

The member name that contains the JCL.

You can specify how to process the abended job using the following fields:

**Restart or Force completion**

Type R to restart the job from the proper point. DB2 Automation Tool will 1) insert a RESTART=REGISTER statement on the job card and 2) move the registration step needed by the job tracking task prior to the step that failed, allowing the job to be tracked when re-executed. Type F to force a new build of the job. When you specify F, the abended job is cleared from the job tracking task's registry, and you can rebuild the job again.

**Terminate existing utility ID**

Type Y to terminate the existing utility ID. If you are attempting to restart a utility, terminating the utility ID will not allow the utility to restart. Refer to the DB2 Utility Guide and Reference for your version of DB2 for more information about restartability and the utility ID.

**Submit job**

Type Y to submit the job automatically after viewing the job in an edit session.

**Build job in Dataset**

Specify a data set name that you want to save the restarted job JCL in.

**Member**

Specify the member name for the restart JCL. You should use a different member name than was used for the original JCL.

---

## Chapter 11. Running utilities autonomically using the DB2 Autonomics Director

If you purchased DB2 Automation Tool as part of the DB2 Utilities Solutions Pack, you can use the DB2 Autonomics Director stored procedures and repository to facilitate automation of ongoing database monitoring and maintenance tasks for your applications. The DB2 Automation Tool Autonomic Console panels contains extended functionality to allow you to set up and control autonomic running of your utilities.

Use the Autonomic Console panels to:

- Create and schedule the maintenance windows in which utilities are permitted to run.
- View the exceptions (also called symptoms) and utilities (also call actions) that are generated by an autonomic build.
- Review autonomic utility execution output.
- Identify which application objects are most important and run first when a maintenance window opens.
- Evaluate your maintenance window workload.

Autonomic actions are generated when DB2 Automation Tool job profiles that are configured for active or passive autonomics are built. Active autonomics creates an action from the output of the build that is scheduled to be run when the maintenance window opens. Passive autonomics creates an action from the output of the build, but the action does not run when the maintenance window opens. However, you can still review the actions, objects, and symptoms that generated the actions on the autonomic panels.

Like the DB2 Automation Tool utility JCL build process, the autonomic build process resolves wildcarded and dependent objects, gathers object information, and evaluates exception criteria. However, instead of writing JCL, the autonomic build process updates several DB2 repository tables, as follows:

- Utility actions on the objects are written to an Autonomics Director actions table.
- Exception criteria that triggered the action is written to an Autonomics Director symptoms table.

To allow the DB2 Autonomics Director stored procedure to run the actions in the actions table, you must define a maintenance window. A maintenance window is a specific time period that allows the actions to be run on your objects. Once a maintenance window is associated with the job profile, an autonomic build can be run.

When the associated maintenance window opens, the Autonomics Director stored procedure retrieves actions from the table and starts running them, until it runs out of actions to perform or the maintenance window closes.

On the DB2 Automation Tool Main Menu, enter 13 in the Option line. The Autonomic Console is displayed as shown in the following figure:

|  
|  
|

```

AUTOTOOL V4R2 ----- Autonomic Console ----- 2017/09/14 17:54:09
Option ==>
-----

Options: 1 - Autonomic Object Prioritization
         2 - Autonomic Maintenance Windows
         3 - Autonomic Execution History
         4 - Autonomic Actions
         5 - Autonomic Statistics Monitor Profiles
         6 - Symptom Registry Editor
         7 - Action Registry Editor

-----

DB2 Subsystem ID: SS01      User: TWUSR   - Configuration ID: HAA
-----

```

Figure 232. Autonomic Console panel

## Prerequisites

The DB2 Autonomics Director functionality is only available when DB2 Automation Tool is purchased and installed as part of the DB2 Utilities Solution Pack. If DB2 Automation Tool is purchased as a stand-alone product, the ability to run an autonomic DB2 Automation Tool build or use other Autonomics Director functionality is disabled. However, you can still use the Autonomic Console to manage and view autonomic statistics executions and results.

If you want to use the DB2 administrative task scheduler to schedule maintenance windows, it must be configured and active on the DB2 subsystems on which you are running DB2 Automation Tool. For information about configuring the task scheduler, refer to the DB2 Administration Guide for your version of DB2.

Additional software and authorization requirements might apply; refer to “Verify that your environment meets software requirements” on page 16.

## Supported utilities

- CHECK DATA
- COPY (full or incremental)
- COPYTOCOPY
- Table space REORG
- Creating a mapping table (as part of a table space REORG)
- Dropping a mapping table (as part of a table space REORG)
- Index REORG
- QUIESCE
- MODIFY
- REPAIR
- RECOVER
- RUNSTATS

The following utilities are not supported:

- Image copies from system level backups taken by DB2 Recovery Expert.
- Space reallocation
- Data page verification reporting

## Creating a maintenance window

Maintenance windows define the time periods in which actions (utilities) might be run on objects. Maintenance windows are required for active autonomic builds.

### About this task

You should create a maintenance window before you update your job profile, as a maintenance window cannot be created while you are updating a job profile.

### Procedure

1. On the DB2 Automation Tool main menu, enter 13 in the **Option** field and press Enter.
2. On the Autonomic Console panel, enter 2 in the **Option** field and press Enter.
3. On the Autonomic Maintenance Window panel, enter D in the **Source** field, and enter selection criteria in the **Window Like** field. Press Enter.
4. Enter C in the **Cmd** line and press Enter.
5. On the Create Maintenance Window panel, in the **Window Name** field, enter a name for the maintenance window and enter a description in the **Window Description** field. Press Enter. A message prompts you to enter a time period.
6. To create a time period, press Enter. The Create Timeperiod window is displayed, as shown in the following figure:

```
                                Create Timeperiod

Window Name . . . . CUSTOMER DATABASE MAINTENANCE
Window Description
SSID . . . . . SS01
-----
Window Start:
Day of Week . . . . . (0-6, Sun-Sat, *)
Month . . . . . (1-12, Jan-Dec, *)
Day of Month . . . . . (1-31, *)
Time of Day . . . . . 00:00 (HH:MM)
Options:
Duration . . . . . 0001:00:00 (HHHH:MM:SS)
Overrun . . . . . 0000:05:00 (HHHH:MM:SS)
Max Tasks . . . . . 5 (Integer)
```

Figure 233. Create Timeperiod window

7. Enter the time period in which you want to allow autonomic actions to run and other options for the window. All fields are required. When you complete all of the fields, press Enter.
8. The information that you entered creates a single time period for the maintenance window. The time period is displayed on the Create Maintenance Window panel, as shown in the following figure:

```

AUTOTOOL V4R2 ----- Create Maintenance Window ----- 2014/08/14 19:05:09
Option ==> Scroll ==> CSR
-----
Line Commands: V - View C - Create D - Delete R - Repeat U - Update
               S - Schedule Timeperiod X - Unschedule Timeperiod
-----
Window Name . . . . CUSTOMER DATABASE MAINTENANCE
Window Description
SSID . . . . . SS01 (Blank for any datasharing member)
                                     Row 1 of 1
-----
      Day of      Day of Time of
Cmd Week  Month Month  Day    Duration  Overrun  MaxTasks  Scheduled
  SAT    *    *    23:00  0002:00:00 0000:05:00      5 NO
***** Bottom of Data *****

```

HAA597I - Timeperiod has been successfully created.

Figure 234. New time period entered in the maintenance window

9. Press Enter to continue.
10. Use the line commands to create more time periods, or to modify or delete time periods as desired. You can have as many time periods in a maintenance window as you want.

## Scheduling a maintenance window

Once you have created a maintenance window and at least one time period for the maintenance window, you must schedule the maintenance window. DB2 Automation Tool makes it easy to schedule a maintenance window using the DB2 administrative task scheduler.

### About this task

The steps in this task describe how to use DB2 Automation Tool's panels to schedule a maintenance window.

### Procedure

1. On the DB2 Automation Tool main menu, enter 13 in the **Option** field and press Enter.
2. On the Autonomic Console panel, enter 2 in the **Option** field and press Enter.
3. On the Autonomic Maintenance Window panel, enter D in the **Source** field, and enter selection criteria in the **Window Like** field. Press Enter.
4. Enter S in the **Cmd** line next to the maintenance window that you want to schedule and press Enter.
5. If two or more time periods are defined in the maintenance window, the Schedule Maintenance Window panel is displayed with a message that prompts you to select a time period. Select a time period by entering S in the Cmd line and press Enter.
6. On the Schedule DB2 Admin Task panel, the Task Name field contains the maintenance window name, and the Task Description field contains a DB2 Automation Tool generated task description. In addition, the Point in Time field contains a cron string representation of the time period in the maintenance window that will be scheduled. The Schedule DB2 Admin Task panel is shown

in the following figure:

```

AUTOTOOL V4R2 ----- Schedule DB2 Admin Task ----- 2014/08/18 14:22:52
Option ==> Scroll ==> CSR
DB2 Subsystem: SS01
Task Name . . . . CUSTOMER DATABASE MAINTENANCE >
Task Description SYSAUTO.TIME_PERIOD 272 >

Begin Timestamp . . . . . (DB2 Timestamp)
End Timestamp . . . . . (DB2 Timestamp)
Max Invocations . . . . . (Integer, Blank)
SSID . . . . . (Blank for any datasharing member)
Job Wait . . . . . Y (Y - Yes, N - No, P - Purge)
Execution Threads . 001 (Integer)

Invocation Options:
Interval (minutes) . . . . . (Integer, Blank)
-Or-
Trigger:
Task Name . . . . . >
Cond . . . . . (GT,GE,EQ,LT,LE,NE)
Code . . . . . (Integer, Blank)
-Or-
Point in Time . . 00 23 * * SAT >

```

Figure 235. Schedule DB2 Admin Task panel

7. Complete the remainder of the fields as required.
8. When you have completed all the fields, press PF3 (END). The DB2 Admin Task Scheduler panel is displayed with a message that confirms that the task has been scheduled.

## Assigning a maintenance window to a job profile

Active autonomic builds of a job profile require that a maintenance window be assigned to the job profile. Follow the steps in this topic to assign a maintenance window to a job profile.

### Procedure

1. On the DB2 Automation Tool main menu, enter 4 in the **Option** field and press Enter.
2. On the Jobs Profile Display, enter selection criteria in the **Profile Like** and **Creator Like** fields and press Enter.
3. Enter U in the **Cmd** line next to the job profile that you want to update and press Enter.
4. On the Update Jobs Profile Display, enter Y in the **Update Job Generation Options** field and press Enter.
5. On the Generation Options window, complete the following fields:
 

```

Autonomic Director Options:
Autonomic Type . . . . . N (A - Active, P - Passive, N - None)
Select Maintenance Window . N (Yes/No, C - Clear)
Selected Maintenance Window N/A

```

**Autonomic Type** must be set to A or P before you can select a maintenance window. Enter A for active autonomics. Active autonomics creates an action from the output of the build that is scheduled to be run when the maintenance window opens. Enter P for passive autonomics. Passive autonomics creates an action from the output of the build, but the action does not run when the maintenance window opens. However, you can still review the actions, objects,

and symptoms that generated the actions on the autonomic panels. Passive autonomics is intended primarily for testing purposes.

6. After you specify the autonomic type, enter Y in the **Select Maintenance Window** field and press Enter. The Autonomic Maintenance Window panel is displayed.
7. On the Autonomic Maintenance Window, enter selection criteria in the **Window Like** field and press Enter.
8. Enter S in the **Cmd** line next to the maintenance window profile that you want to select and press Enter. The Generation Options panel is displayed with the name of the selected maintenance window in the **Selected Maintenance Window** field.

---

## Building a job profile for autonomic execution

Once a maintenance window has been assigned to the job profile, you must build the job profile to generate the autonomic actions that will be run during the maintenance window. The job profile must contain an exception profile to be autonomically built.

### Procedure

1. On the DB2 Automation Tool main menu, enter 4 in the **Option** field and press Enter.
2. On the Jobs Profile Display, enter selection criteria in the **Profile Like** and **Creator Like** fields and press Enter.
3. Enter B in the **Cmd** line next to the job profile that you want to build and press Enter.
4. On the Autonomic Build window, complete the fields. You can build the job online or generate the job build as a batch build. You can also schedule the build using the DB2 administrative task scheduler. For more information, see “Building a job” on page 359 and “Building a job in batch” on page 369
5. After you complete the fields, press Enter.

---

## Reviewing autonomic execution history

You can review the output and the actions that were generated by autonomic builds and the utilities run by Autonomics Director during a scheduled maintenance window by using the autonomic execution history panels. You can use line commands view the objects that were triggered for autonomic action and review the results of autonomic utility execution.

### Procedure

1. On the DB2 Automation Tool main menu, enter 13 in the **Option** field and press Enter.
2. On the Autonomic Console, enter 3 in the **Option** field and press Enter.
3. On the Autonomic Execution History panel, enter Y in the **Show Automation Tool Build** field or the **Show Autonomic Director** field or both, and press Enter. The Autonomic Execution History panel is refreshed with a list of autonomic procedures that were run, listed in the PROC\_NAME column as follows:
  - AUTONOMIC BUILD: Build of a job profile that is configured for autonomics (active or passive).



- AUTONOMIC DIRECTOR: Autonomics Director execution of the actions that were generated by an autonomic build.
4. To view the output from the autonomic procedures:
    - a. Enter 0 next to a procedure and press Enter. The Autonomic Execution Output panel is displayed. This panel shows error messages that were issued during the procedure and the stored procedure output.
    - b. When you have finished reviewing the output, press PF3 (END).
  5. To view autonomic actions generated by an autonomic build or Autonomics Director execution:
    - a. Enter A next to a procedure and press Enter. If autonomic actions were generated, the Autonomic Actions panel is displayed. This panel shows the actions generated by object.
    - b. When you have finished reviewing the actions, press PF3 (END).

## Reviewing autonomic actions and symptoms

Once a job profile is autonomically built, you can review the actions that were generated by the autonomic build and the exceptions or symptoms that triggered the action, as well as manage actions.

### Procedure

1. On the DB2 Automation Tool main menu, enter 13 in the **Option** field and press Enter.
2. On the Autonomic Console, enter 4 in the **Option** field and press Enter.
3. On the Autonomic Actions panel, enter T in the **Source** field and press Enter.
4. To view actions for specific objects, enter object selection criteria in the **Target Qualifier** and **Target Object** fields and press Enter. A list of the actions for the objects that meet your selection criteria is displayed, as shown in the following figure:

```

AUTOTOOL V4R2 ----- Autonomic Actions ----- 2017/09/15 11:15:25
Option ==> Scroll ==> CSR
-----
Commands: REFRESH - Refresh action status.
Line Commands: D - Delete Action G - Group O - Output P - Options
               S - Symptoms T - change action Type
-----
Target Qualifier NMHA*
Target Object TS734802
Source T (S - AutoStats, T - Automation Tool)
Status * (C - Completed, E - Error, I - Inprogress, O - Open, * - All)
DB2 Subsystem: SS01 Row 1 of 68 +>
-----

```

Cmd	Target Qualifier	Target Object	Target Part	Priority	Action	Status
	NMHA7348	TS734802	0005	9	RUNSTATS	OPEN
	NMHA7348	TS734802	0002	9	RUNSTATS	OPEN
	NMHA7348	TS734802	0001	9	RUNSTATS	OPEN
	NMHA7348	TS734802	0005	9	QUIESCE	OPEN
	NMHA7348	TS734802	0004	9	QUIESCE	OPEN
	NMHA7348	TS734802	0004	9	RUNSTATS	OPEN
	NMHA7348	TS734802	0003	9	QUIESCE	OPEN

Figure 236. Autonomic Actions

This panel shows the action (utility) that was run (or will be run) by object. You can filter the view by the status of the action by changing the value in the

**Status** header field. You can review the status of the action, the object priority (if set), the return code from the action, and other information. Scroll right to see all the fields.

## What to do next

- To change the type of action (active to passive or passive to active), enter **T** next to an action and press Enter. Enter **Y** on the Confirm Action Type Change confirmation dialog to confirm the change.
- To delete an action, enter **D** next to the action and press Enter. Enter **Y** on the Confirm Action Delete confirmation dialog to confirm the change.
- To view the exceptions (symptoms) that triggered the action for an object, enter **S** next to an action and press Enter. The Autonomic Symptoms panel is displayed, which shows the exception that was specified and that triggered the utility, along with the actual trigger value that was found.
- To view the output from the action or the control cards that were generated for the utility, follow these steps.

**Note:** Some autonomic builds generate several individual actions as a group to run a utility. For example, a REORG might generate three individual actions: create a temporary mapping table, the REORG, and drop the temporary mapping table. When an action requires several individual actions, the Autonomic Action Group panel is displayed first, with each action listed separately. For each of those individual actions, you can view the output or the options that were specified in control cards for each individual action from this panel.

- To view the output from the action, enter **0** next to an action and press Enter. The Autonomic Execution Output panel is displayed. This panel shows error messages that were generated during the action, and the output from the stored procedure. The following figure shows a portion of output from a CHECK DATA utility:

```

AUTOTOOL V4R2 ----- Autonomic Execution Output ----- 2017/09/20 10:44:17
Option ==> Scroll ==> CSR
DB2 Subsystem: SS01 Row 1 of 22 +
-----
Error Messages

No Error Messages

Stored Procedure Output

1DSNU000I 230 12:40:00.76 DSNUGUTC - OUTPUT START FOR UTILITY, UTILID = A114
5
DSNU1045I 230 12:40:00.86 DSNUGTIS - PROCESSING SYSIN AS UNICODE UTF-8
0DSNU050I 230 12:40:00.87 DSNUGUTC - CHECK DATA TABLESPACE NMHA7348.TS73480
2 PART 3 SHRLEVEL REFERENCE SCOPE
PENDING AUXERROR REPORT LOBERROR REPORT XMLERROR REPORT EXCEPTIONS 0
DSNU737I !SS01 230 12:40:00.87 DSNUKINP - TABLESPACE 'NMHA7348.TS734802' PART
ITION '3' IS NOT
CHECK PENDING
DSNU749I 230 12:40:00.87 DSNUK001 - CHECK DATA COMPLETE,ELAPSED TIME=00:00:
00
DSNU010I 230 12:40:00.87 DSNUGBAC - UTILITY EXECUTION COMPLETE, HIGHEST RET

```

Figure 237. Autonomic Execution Output panel

- To view the options that are specified on the control cards, enter **P** next to an action and press Enter. The Autonomic Action Options panel shows the control cards that were generated to run the utility. The following figure

shows the control cards from the same CHECK DATA utility:

```
AUTOTOOL V4R2 ----- Autonomic Action Options ----- 2017/09/20 10:45:03
Option ==> Scroll ==> CSR
DB2 Subsystem: SS01 Row 1 of 11
-----
Options

CHECK DATA
TABLESPACE NMHA7348.TS734802 PART 0003
SHRLEVEL REFERENCE
SCOPE PENDING
AUXERROR REPORT
LOBERROR REPORT
XMLERROR REPORT
EXCEPTIONS 0

***** Bottom of Data *****
```

Figure 238. Autonomic Action Options panel

## Prioritizing objects for autonomic actions

You can define priorities for autonomic actions by object. DB2 Autonomics Director uses the object priority to help determine the order that objects are processed in a maintenance window, allowing you to ensure that your business critical objects are processed first.

### About this task

If object priorities are defined, they apply to all DB2 Autonomics Director actions. Object priorities are not directly associated with maintenance windows or with job profiles.

### Procedure

1. On the DB2 Automation Tool main menu, enter 13 in the **Option** field and press Enter.
2. On the Autonomic Console, enter 1 in the **Option** field and press Enter.
3. On the Autonomic Object Prioritization panel, enter C in the **Cmd** field and press Enter.
4. On the Create Autonomic Object Prioritization Entry window, enter the following:
  - a. Enter a database name and table space or index space name in the **Object Database Name** or **Object Name** fields. You can use wildcarding in the form of an asterisk (\*) at the end of the fields. The wildcard pattern is restricted to a single asterisk that must be at the end of the database or object name. An asterisk means zero or more matching characters.

**Note:** The object priorities are analyzed by most restrictive pattern match first. For example, for an object named DB.ABC, and if two object priority entries exist as follows:

```
DB*= Priority 5
DB.AB* = Priority 4
```

The object DB.ABC would be assigned priority 4.

- b. Specify the type of object in the **Object Type** field.
- c. Specify the priority in the **Object Weight** field. The highest priority is 1; you can specify an integer between 1-2147483647.

To cancel an entry, press PF3 (END)

- 5. When you have completed the fields, press Enter. A message is displayed that confirms the addition of the object priority entry.
- 6. Use the line commands to create more object priority entries or to modify or delete entries as desired. You can define as many object priority entries as you want.

## Reviewing maintenance window workload

Once a maintenance window has been defined and scheduled, you can select the window to review and manage the objects and actions (utilities) that are scheduled to run when the window is open. Both active and passive actions are displayed. You can delete an action or toggle an action from active and passive or passive to active by using a line command. You can also review the utility control cards and the exceptions (symptoms) that triggered the utility to be run.

### Procedure

- 1. On the DB2 Automation Tool main menu, enter 13 in the **Option** field and press Enter.
- 2. On the Autonomic Console, enter 2 in the **Option** field and press Enter.
- 3. On the Autonomic Maintenance Window panel, enter D in the **Source** field, and enter selection criteria in the **Window Like** field. Press Enter.
- 4. Enter W in the **Cmd** line next to the maintenance window that you want to review and press Enter. A list of the open actions on the objects that meet your selection criteria is displayed, as shown in the following figure:

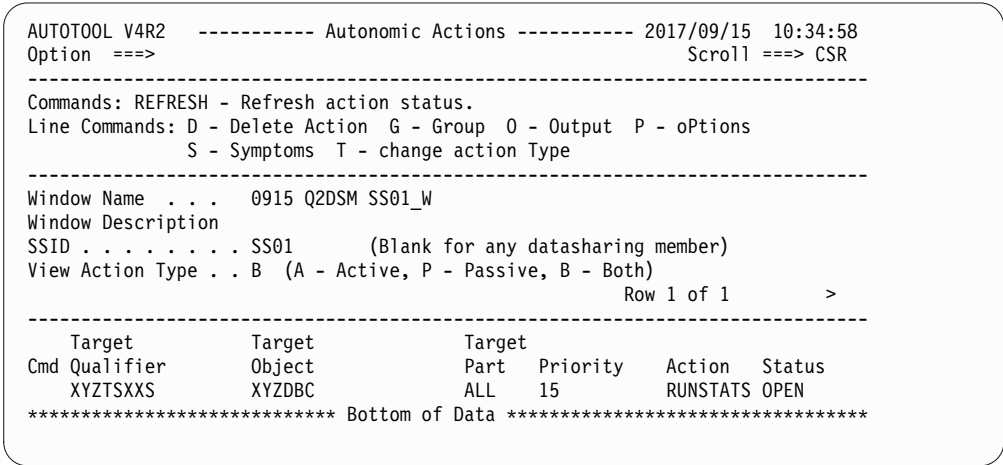


Figure 239. Autonomic Actions

This panel shows the action (utility) that is scheduled to run when this maintenance window is open, by object. Scroll right to see all the fields.

- 5. To change the type of action (active to passive or passive to active), enter **T** next to an action and press Enter. Enter **Y** on the Confirm Action Type Change confirmation dialog to confirm the change.
- 6. To view the output from the action or the control cards that were generated for the utility, follow these steps.

- To view the output from the action, enter **O** next to an action and press Enter. The Autonomic Execution Output panel is displayed. This panel shows error messages that were generated during the action, and the output from the stored procedure.
  - To view the options that are specified on the control cards, enter **P** next to an action and press Enter. The Autonomic Action Options panel shows the control cards that were generated to run the utility.
  - To view the exceptions (symptoms) that triggered the action for an object, enter **S** next to an action and press Enter. The Autonomic Symptoms panel shows the exception that was specified and that triggered the utility, and the actual trigger value that was found.
7. To delete an action, enter **D** next to the action and press Enter. Enter **Y** on the Confirm Action Delete confirmation dialog to confirm the change.



---

## Chapter 12. Configuring and using event notification profiles

You can configure DB2 Automation Tool to send notifications by email, text message, or WTO when DB2 Automation Tool job profiles are built in batch. You specify the type of notification and the recipient's information in an event notification profile and associate the notifications profile with a job profile. You can also configure the notification profile to send notifications only when the job build returns a specific return code.

### About event notifications

Event notification profiles contain information about the type of notification that is sent (email, text, or WTO), and the type of events that you want be notified about.

### System requirements

The following requirements must be met to use event notifications:

- The customization steps to configure event notifications must be completed. See “Worksheets: Gathering parameter values for DB2 Automation Tool” on page 20
- TCP/IP and SMTP must be installed and configured on z/OS.
- The SMTP server configuration file statement IPMAILERADDRESS must be configured to your current SMTP mail server.

For more information, refer to the information in the IBM Knowledge Center about customizing a TCP/IP connection for z/OS.

---

## Creating an event notification profile

Creating an event notification profile consists of defining the profile, specifying the events that trigger notification, and specifying the type of notification to be sent.

### Procedure

1. On the DB2 Automation Tool main menu, enter 10 in the **Option** field and press Enter.
2. On the Event Notification panel, specify selection criteria and press Enter. If profiles exist that meet your selection criteria, they are listed on the Event Notification panel.
3. On the Event Notification panel, enter C in the **Cmd** field and press Enter.
4. On the Enter New Notification Profile window, enter the profile creator, a profile description, and the profile update option in the fields on the window. The **Creator** field contains your user ID, but can be modified.
5. After you complete these fields, press Enter.
6. On the Update Event Notifications panel, enter A in the **Cmd** line and press Enter. The Update Notification Events window is displayed, as showing in the following figure:

Update Notification Events

Option ==>

Type . . (E - Email, T - Text)

From . .

To . .

WTO . . N (Yes/No)

Batch Job Build Events

Batch Build Process Begins N (Yes/No)

Batch Build Process Ends N (Yes/No)

Condition = (<, >, =, <=, >=) Return Code 0 (0-9999)

Figure 240. Update Notification Events window

7. On the Update Notification Events window, specify the settings for this event.
  - In the **Type** field, specify E for email or T for text notifications.
  - In the **From** field, specify an email address from where the notification is sent.
  - In the **To** field, specify the recipient's email address or mobile phone number.
  - To receive a WTO in addition to email or text notifications, enter Y in the **WTO** field.
  - In the **Batch Job Build Events** fields, specify the event, condition, and return code that you want to receive notifications for.
8. When you have finished entering the fields, press Enter.
9. Press PF3. The Update Event Notifications panel is displayed and a message confirms that the event has been successfully added.
10. Add more events using the A line command, or press PF3 (END) to save the profile and exit.

**Related tasks:**

“Viewing a profile” on page 399

You can view your own profile or one created by another user if the profile was created with a Share option of View or Update.

“Deleting a profile” on page 399

You can delete profiles created under your user ID, regardless of the Share option. You can also delete a profile created by another user if the profile was created with a Share option of Update.

“Renaming a profile” on page 400

You can use the Rename line command to change the name or creator of a profile. DB2 Automation Tool automatically updates any job profiles that use that profile to reflect the new profile name.

---

## Specifying the default event notification profile

You can select any notification profile to be your default notification profile. The default notification profile is used for jobs that are submitted under your user ID that do not have a notification profile specified.

### Procedure

1. On the DB2 Automation Tool main menu, enter 10 in the **Option** field and press Enter.



2. On the Event Notification panel, specify selection criteria and press Enter. If profiles exist that meet your selection criteria, they are listed on the Event Notification panel.
3. On the Event Notification panel, enter S in the **Cmd** field next to the profile that you want to make the default notification profile. Press Enter. A message is displayed confirming that the profile that you selected is now the default notification profile.

## Results

On the Event Notifications panel, the default profile is listed in the **Default Profile** field. This profile is used as the notification profile for all job profiles built with your user ID.

### Related tasks:

“Removing the default event notification profile”

If you do not want a default notification profile to be associated with all job profiles built under your user ID, remove the default notification profile by following these steps.

---

## Removing the default event notification profile

If you do not want a default notification profile to be associated with all job profiles built under your user ID, remove the default notification profile by following these steps.

### Procedure

1. On the DB2 Automation Tool main menu, enter 10 in the **Option** field and press Enter.
2. On the Event Notification panel, specify selection criteria and press Enter. If profiles exist that meet your selection criteria, they are listed on the Event Notification panel.
3. On the Event Notification panel, enter REMOVE in the **Option** field and press Enter.
4. On the Confirm Removal window, enter Y in the **Remove** field and press Enter. A message is displayed confirming that the default notification profile has been removed.

### Related tasks:

“Specifying the default event notification profile” on page 396

You can select any notification profile to be your default notification profile. The default notification profile is used for jobs that are submitted under your user ID that do not have a notification profile specified.



---

## Chapter 13. Managing profiles

DB2 Automation Tool's profiles can be easily managed using line commands. You can view, delete, and rename object profiles, utility profiles, exception profiles, job profiles, and event notification profiles.

In addition, object, utility, exception, and job profiles can be imported and exported to data sets or other subsystems. You can unload and load many object, utility, exception, and job profiles at once using a batch program.

---

### Viewing a profile

You can view your own profile or one created by another user if the profile was created with a Share option of View or Update.

#### About this task

To view a profile:

#### Procedure

1. Access the profile list for the profile type that you want to view.
2. Type V in the Cmd line next to the profile you want to view.

#### Results

On the screen that appears, you can view profile details, but cannot make any changes. For utility profiles, you can only view the utility options for those utilities that are included in the profile.

---

### Deleting a profile

You can delete profiles created under your user ID, regardless of the Share option. You can also delete a profile created by another user if the profile was created with a Share option of Update.

#### About this task

**Note:** Deleting a job profile does not delete the object, utility, or exception profiles associated with the job profile.

#### Procedure

1. Access the profile list for the type of profile that you want to delete.
2. Type D in the Cmd line next to the profile you want to delete and press Enter. If the profile you selected for deletion is not included in any job profiles, the window shown in the following figure is displayed:

Confirm deletion

Confirm delete of profile TWUSR.HAA-5706

Delete N (Yes/No)

Figure 241. Deletion confirmation screen

3. If the profile is included in a job profile, a warning window is displayed to confirm deletion of the profile. The window lists the number of job profiles in which the profile that is being deleted is included. Type Y in the Delete field and press Enter.
4. A message is displayed that confirms the profile deletion.

## Renaming a profile

You can use the Rename line command to change the name or creator of a profile. DB2 Automation Tool automatically updates any job profiles that use that profile to reflect the new profile name.

### About this task

You can rename profiles created under your user ID, regardless of the Share option. You can also rename a profile created by another user if the profile was created with a Share option of Update.

### Procedure

1. Access the profile list for the profile type that you want to delete.
2. Type R in the Cmd line next to the profile you want to rename. When you press Enter, the window shown in the following figure is displayed:

Rename JOBS Profile

Existing Profile:

Creator . . . : TWUSR

Profile Name : HAA 42

Description . :

-----

New Profile:

Creator . . . : TWUSR

Profile Name : HAA 42

Description . :

Figure 242. Rename profile window

3. Do one of the following:
  - To cancel the rename, press PF3 on the Rename Profile window.
  - To rename the profile, type the new profile name in the Profile Name field. You can also change the creator and the description by entering new values in the Creator and Profile Description fields. When you press enter, a confirmation window, shown in the following figure, is displayed:

CONFIRM RENAME

Confirm rename of JOBS profile

From:

TWUSR.HAA 42

To:

TWUSR.HAA 42 TEST RENAME

Rename N (Yes/No)

Figure 243. Rename profile window

Type Y in the Rename field to rename the profile.

- If the profile is included in a job profile, a warning window is displayed to confirm the rename. The window lists the number of job profiles in which the profile that is being renamed is included. Type Y in the Rename field and press Enter.
- A message is displayed that confirms the profile rename.

## Viewing job profiles that use a profile

If you want to see which job profiles are using a specific object, utility, or exception profile, you can use line commands.

### Procedure

- Type J in the Cmd line next to an object, utility, or exception profile and press Enter. The Jobs Display panel appears, as shown the following figure:  
This panel shows all job profiles that include the selected profile.

HAA\$JPRJ V4R2

----- Jobs Display -----

2017/09/20 18:10:47

Option ==>

Scroll ==> CSR

Line Commands: V - View

Profile Name: OBJECT PROFILE

DB2 Subsystem: SS01

Creator Name: TWUSR

Type: OBJS

Row 1 of 1

>

Cmd

Name

Creator

Updt

JOB PROFILE

TWUSR

U

\*\*\*\*\* Bottom of Data \*\*\*\*\*

Figure 244. Jobs Display screen

- To view the contents of a job profile, enter V next to the job profile. The View Jobs Profile Display is displayed. You can view all profile information and settings, but cannot make changes.

## Importing and exporting profiles

DB2 Automation Tool allows you to set up profiles on one subsystem and then export the profiles either to a data set or directly to another subsystem. You can then import the profiles to the same subsystem and rename them, or import them to another subsystem.

### About this task

Profiles can also be imported and exported via a batch job. Refer to “Loading and unloading profiles in batch” on page 406.

**Attention:** We do not recommended importing a profile that was exported from a more recent maintenance level of DB2 Automation Tool than the maintenance level of DB2 Automation Tool that you want to import the profile to. Because internal changes to profiles may be implemented between maintenance releases, unpredictable results may occur.

## Exporting profiles

Once you configure a profile on one subsystem, you can then export the profile either to a data set or directly to another subsystem.

### About this task

To export a profile:

### Procedure

1. Type E in the line command area next to the profile you want to export and press Enter. The Export Options window is displayed, as shown in the following figure:

Export Options

AUTOTOOL V4R2 2017/09/20 18:12:41

Option ==> Scroll ==> CSR

-----

Export SSID . . . . . SS01 Row 1 of 1 >

-----or-----

Export to Data Set . . N (Yes/No)

Create Export Data Set N (Yes/No)

Data set Name . . . . . TWUSR.DAT.EXPORT

Member . . . . . TSTGROUP (Required if DSN is a PDS)

-----

Typ Name Creator Upd Status

OBJ OBJECT PROFILE TWUSR U OK

\*\*\*\*\* Bottom of Data \*\*\*\*\*

Figure 245. Export Options window

2. On the Export Options window, fill in the fields. The following describes the fields on the Export Options window:

**Export SSID**

Enter the SSID where you want to export the profile. If you do not export to a data set, the new profile will be directly exported to this subsystem.

**Export to Dataset**

If you want to export the profile to a data set, type Y in this field.

**Create Export Dataset**

If you want to export the profile to a data set, indicate if DB2 Automation Tool should create the data set for you. Type Y in this field to have DB2 Automation Tool create the data set. Type N to use an existing data set. Existing data sets must be FB type data sets with an LRECL of 4096.

**Dataset Name**

If you want to export the profile to a data set, type the data set name in this field.

**Member**

If you want to export the profile to a PDS, type the member name in this field.

- Typ** The type of profile you are exporting. This field is read only. Valid types are OBJ, UTL, EXC, or JOB.
- Name** The name of the profile that you are exporting.
- Creator**  
The creator ID of the profile that you are exporting.
- Upd** The update option of the profile that you are exporting.
- Status**  
This field displays the status of the listed profile.
- OK: The profile is ready to be exported
  - Warning - Profile no longer exists: This message might appear if you are exporting a job profile, and one of the object, utility, or exception profiles contained in the job profile has been deleted, but is still included in the job profile.
  - Warning - User not authorized to export: This message appears when a profile's Share Option is set to None, and your user ID is not the profile creator ID. You cannot export the profile unless the Share option was set to Update or View by the profile creator.
  - Warning - Version incompatibility: This message appears when a profile was created under a different version of DB2 Automation Tool. The profile cannot be exported.
3. Press Enter. One of the following occurs:
- If you are exporting to another subsystem, when you press Enter, the Import Options window is displayed. You can then import the profile on that subsystem.
  - If you are exporting to a data set, a confirmation window is displayed; press Enter and the profile is exported.

## Importing profiles

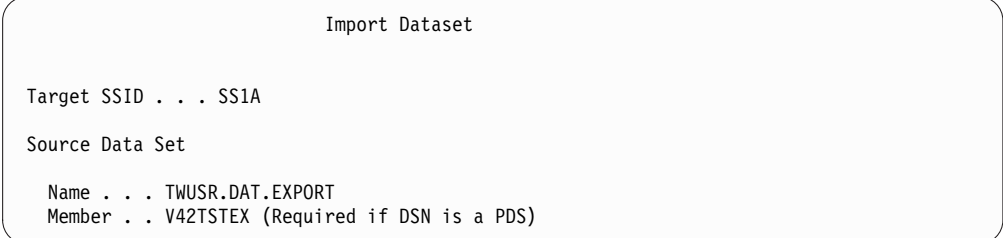
You can import profiles either from a data set, or directly from another subsystem.

### From a data set

When you export a profile to a data set, you can then import the profile from the data set to the same subsystem or to another subsystem.

### About this task

To import from a data set, type I in the line command area of any profile display (Objects Profile Display, Utilities Profile Display, Exceptions Profile Display, or Jobs Profile Display). When you press Enter, the Import Dataset window appears, as shown in the following figure:



Import Dataset

Target SSID . . . SS1A

Source Data Set

Name . . . TWUSR.DAT.EXPORT

Member . . V42STEX (Required if DSN is a PDS)

*Figure 246. Import Data set Window*

The following describes the fields on the Import Data set window:

**Target SSID**

Enter the SSID where you want to import the profile.

**Source Data Set Name**

Enter the name of the data set that contains the profiles you want to import.

**Source Data Set Member**

If the source data set is a PDS, type the member name in this field.

When you press Enter, the Import Options window is displayed.

**Directly from another subsystem**

Upon import, DB2 Automation Tool checks for the existence of the profile on the target subsystem. If the profile already exists with the same creator and profile name, a warning message appears. You must then specify whether to overwrite the existing profile or to change the imported profile's name or creator.

**About this task**

**Note:** A profile's Share option setting affects whether you can import or overwrite profiles on a target subsystem; you cannot import or overwrite profiles that you do not have access to.

The Import Options window appears, as shown in the following figure:

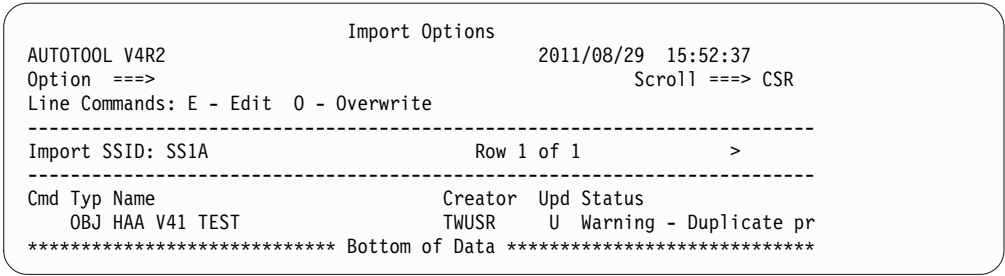


Figure 247. Import Options window

The following describes the fields on the Import Options window:

**Import SSID**

This read-only field contains the SSID to which profile will be imported.

**Cmd**

This field is used when profile conflicts exist; refer to the Status field description for further information.

**Typ**

The type of profile you are importing. This field is read only. Valid types are OBJ, UTL, EXC, or JOB.

**Name**

The name of the profile that you are importing.

**Creator**

The creator ID of the profile that you are importing.

**Updt**

The update option of the profile that you are importing.

**Status**

This field displays the status of the listed profile.

- OK: The profile is ready to be imported.



- OK. Overwrite duplicate profile: The profile is a duplicate of a profile that already exists on the subsystem. The existing profile will be overwritten by the imported profile.
- Warning - Profile not exported: This message might appear if you attempted to export a profile that no longer exists or that cannot be exported because the profile's share option is set to N.
- Warning - User not authorized to overwrite existing profile: This message appears when the existing profile's share option is set to View, and your user ID is not the existing profile's creator ID. You cannot overwrite the existing profile unless the Share option was set to Update by the profile creator.
- Warning - Duplicate profile found. Enter "O" to overwrite or "E" to edit: This message appears when a profile with the same creator and profile name already exists on the subsystem. You must either rename the imported profile or specify to overwrite the existing profile; otherwise, the existing profile remains on the target subsystem as is.
  - If you type O to overwrite, the profile that currently exists on the subsystem will be overwritten with the imported profile. When you press Enter, the message "OK. Overwrite duplicate profile" appears in the Status column.
  - If you type E to Edit the profile, when you press Enter, the Edit Profile window appears. On this window, change the creator name and/or the profile name to make it unique on the subsystem. When you press Enter, the Import Options window appears. If the conflict has been resolved, the Status field changes to OK and the new creator ID and/or profile name appear.

You can globally change the creator of the profiles in the list to be imported using a primary command. To do this, type `CREATOR creator_name` in the Option line and press Enter. The creator column changes to reflect the new creator name. If the creator change results in a duplicate profile name on the subsystem, you will receive a warning message in the Status field. You can individually edit the creator name, overwrite the existing profile, or use the `CREATOR` command to assign a different unique creator.

When profiles are ready to import, press Enter. A confirmation message appears; press Enter to proceed with the import or press PF3 to continue editing the profile information.

If you press Enter, the profiles are imported and a message appears to confirm successful import.

If you press PF3 to edit, the Import Options window reappears and you may make additional changes.

To cancel the import, press PF3 or type CANCEL in the option line on the Import Options window.

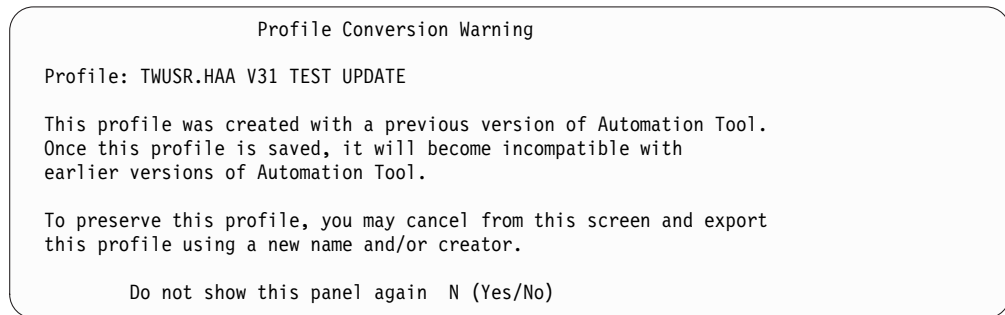
---

## Updating a profile from a previous version of DB2 Automation Tool

Profiles created under DB2 Automation Tool V3.1 may be opened in DB2 Automation Tool V4.2; however, once a profile is saved under V4.2, it is no longer compatible with V3.1.

If you update a profile that was created under DB2 Automation Tool V3.1, the following window is displayed:

Figure 248. Profile Conversion Warning window



This profile was created under V3.1 of DB2 Automation Tool. You can open the profile in DB2 Automation Tool V4.2; however, once the profile is saved under V4.2, it will no longer be compatible with DB2 Automation Tool V3.1.

To preserve the profile, exit this window. Then export the profile under another creator name or profile name and open (update) the exported profile in DB2 Automation Tool V4.2.

When you are updating V4.2 profiles and you enter Y in the **Do not show this panel again** field, the warning window will no longer be displayed.

It is recommended that you back up all DB2 Automation Tool V3.1 profiles during migration.

---

## Loading and unloading profiles in batch

Several batch jobs are provided that allow you to unload profiles. The unloaded profiles can then be loaded onto the same DB2 subsystem or another DB2 subsystem with the same or different creator.

In addition, you can change the profile update option for all the imported profiles. The JCL for the jobs is provided in *haahilol.SHAASAMP*. Detailed instructions for editing the JCL are included in the JCL comments.

- HAAPROFL: This job unloads all profiles -- object, utility, exception, and job profiles -- with the same creator ID. This utility is useful for porting profiles from one DB2 subsystem to another.
- HAAPROFJ: This job unloads all job profiles and all object, utility, and exception profiles that are included in those job profiles. You can specify a creator and/or profile name, both of which can be wildcarded.

**Note:** Do not use these jobs for unloading or loading profiles created in an earlier version of DB2 Automation Tool.

When HAAPROFL and HAAPROFJ are executed, the shared profile support tables that are unloaded and loaded are:

- *creator\_name*.PROFILES\_V11
- *creator\_name*.EXCEPTIONS\_V11
- *creator\_name*.JOBS\_V11

- *creator\_name*.JOBS\_OPTIONS\_V12
- *creator\_name*.OBJECTS\_V11
- *creator\_name*.UTILITIES\_V11

**Note:** If you receive the message The input DB2 Subsystem ID is invalid; processing terminated, the DB2 subsystem for the load and/or unload has not been defined in the control file.



---

## Chapter 14. Using Quick Build

The Quick Build feature allows you to quickly generate a utility job for specified objects. The intent of Quick Build is to allow you to easily create a simple job, such as for a one-time REPAIR to reset a table space's CHECK PENDING status.

Quick Build essentially uses the same screens as when building object, utility, and job profiles. The difference is that the job is *not* saved as a profile, and as such cannot be retrieved or edited as a profile once you finish the Quick Build process. However, you can always save and edit the generated JCL if desired.

You can use Quick Build to create a job without having to create an object or utility profile. In addition, you can initiate a Quick Build from the Objects Profile Display or the Utilities Profile Display using line commands.

Exception processing cannot be specified when using Quick Build.

---

### About Quick Build

The topic explains general features of Quick Build.

You can access Quick Build from the DB2 Automation Tool main menu, the Objects Profile Display, or the Utilities Profile Display.

During the Quick Build, you may notice messages that indicate the *creator\_name*.QUICKBUILD profile has been saved. DB2 Automation Tool temporarily saves the data in order to facilitate processing. However, the profile generated during Quick Build is not a true profile and is not accessible from any of the profile screens. If you want to save a profile for future use, use the Jobs Profile option of DB2 Automation Tool instead of Quick Build.

---

### Quick Build from the DB2 Automation Tool Main Menu

The table that follows describes the screens in order that they appear when selecting option 5, Quick Build, from the DB2 Automation Tool Main Menu. For details on these screens, refer to the corresponding documentation section listed in the information column.

*Table 22. Quick Build from the DB2 Automation Tool Main Menu.*

Screen	Purpose	For more information
Tablespace/Index/Volume selection window	Specify the type of objects you want to include in the job	
Object selection screen (Tablespace/ Index/Volume selection)	Select the objects	"Adding table spaces from a list" on page 107 "Adding indexes from a list" on page 118 "Adding spaces on specific volumes from a list" on page 121
Update Object Profile Display	Confirm the object list; press PF3 when finished	"Updating an object profile" on page 133

Table 22. Quick Build from the DB2 Automation Tool Main Menu (continued).

Screen	Purpose	For more information
Utility Profile Options	Specify the utilities to be included	"Creating a utility profile" on page 139
Appropriate utility options screen(s) (These screens show up automatically if you've never set the utility options before; otherwise you must specify to update the options)	Specify options for the utilities	Refer to the topic on the specific utility that you are including.
Generation Options for <i>creator_name</i> .QUICKBUILD	Set job generation options. Press PF3 when finished.	"Updating job generation options" on page 346
Build Job for <i>creator_name</i> .QUICKBUILD	Specify build options (online or batch and data set information) and job card information. Press Enter when finished.	"Building a job" on page 359
If build in batch specified, additional batch window	Specify the data set in which you want the output from the batch build placed. Press Enter when finished.	"Building a job in batch" on page 369
If scheduling a job with the DB2 administrative task scheduler, the Schedule DB2 Admin Task panel	Specify task options for this job	"Scheduling the job for the DB2 administrative task scheduler" on page 360
Edit session or back to DB2 Automation Tool Main Menu		

## Quick Build from the Objects Profile Display

When you use the Q line command next to an object profile on the Objects Profile Display, the object selection screens are bypassed. Quick Build uses the objects specified in the selected object profile.

The remainder of the Quick Build screens appear as described in the following table. For details on these screens, refer to the corresponding documentation section.

Table 23. Quick Build from the Objects Profile Display

Screen	Purpose	For more information
Utility Profile Options	Specify the utilities to be included	"Creating a utility profile" on page 139
Appropriate utility options screen(s) (These screens show up automatically if you've never set the utility options before; otherwise you must specify to update the options)	Specify options for the utilities	Refer to the topic on the specific utility that you are including.
Generation Options for <i>creator_name</i> .QUICKBUILD	Set job generation options. Press PF3 when finished	"Updating job generation options" on page 346

Table 23. Quick Build from the Objects Profile Display (continued)

Screen	Purpose	For more information
Build Job for <i>creator_name</i> .QUICKBUILD	Specify build options (online or batch and data set information) and job card information. Press Enter when finished.	"Building a job" on page 359
If build in batch specified, additional batch window	Specify the data set in which you want the output from the batch build placed. Press Enter when finished.	"Building a job in batch" on page 369
If scheduling a job with the DB2 administrative task scheduler, the Schedule DB2 Admin Task panel	Specify task options for this job	"Scheduling the job for the DB2 administrative task scheduler" on page 360
Edit session or back to DB2 Automation Tool Main Menu.		

## Quick Build from the Utilities Profile Display

When you use the Q line command next to a utility profile on the Utilities Profile Display, the utility selection screens are bypassed. Quick Build uses the utilities specified in the select utility profile.

The remainder of the Quick Build screens appear as described in the following table. For details on these screens, refer to the corresponding documentation section.

Table 24. Quick Build from the Utilities Profile Display

Screen	Purpose	For more information
Tablespace/Index/Volume selection window	Specify the type of objects you want to include in the job	"Adding objects" on page 133
Enter Tablespaces Like to Display/ Enter Indexes Like to Display/ Enter Volumes Like to Display	Enter selection criteria for the object list	"Adding table spaces" on page 106 "Adding indexes" on page 117 "Adding spaces on specific volumes" on page 120
Object selection screen (Tablespace/ Index/Volume selection)	Select the objects	"Adding table spaces from a list" on page 107 "Adding indexes from a list" on page 118 "Adding spaces on specific volumes from a list" on page 121
Update Object Profile Display	Confirm the object list; press PF3 when finished	"Updating an object profile" on page 133
Generation Options for <i>creator_name</i> .QUICKBUILD	Set job generation options. Press PF3 when finished	"Updating job generation options" on page 346

*Table 24. Quick Build from the Utilities Profile Display (continued)*

Screen	Purpose	For more information
Build Job for <i>creator_name</i> .QUICKBUILD	Specify build options (online or batch and data set information) and job card information. Press Enter when finished.	"Building a job" on page 359
If build in batch specified, additional batch window	Specify the data set in which you want the output from the batch build placed. Press Enter when finished.	"Building a job in batch" on page 369
If scheduling a job with the DB2 administrative task scheduler, the Schedule DB2 Admin Task panel	Specify task options for this job	"Scheduling the job for the DB2 administrative task scheduler" on page 360
Edit session or back to DB2 Automation Tool Main Menu.		



## Chapter 15. Using the execution reports feature

The execution reports feature allows you to track the results of DB2 Automation Tool-submitted jobs. If a job abends, details such as location and cause are easy to identify. You can also rebuild or restart a job from the Execution Reports Job Display.

Execution reporting relies on a job tracking task to track jobs and their completion codes. To use the restart feature, you must implement the job tracking task as described in Chapter 3, “Customizing DB2 Automation Tool,” on page 61 and “Add the IEFACRT exit to the SMFPRMxx member of SYS1.PARMLIB” on page 18.

### Viewing jobs

You can view a list of the results of DB2 Automation Tool-submitted jobs by using the Execution Reports Job Display. This panel contains details about the job steps and the objects in the job, and allows you to rebuild a job or restart a job that did not complete successfully.

#### Procedure

1. On the DB2 Automation Tool main menu, enter 6 in the **Option** field press Enter.
2. On the Execution Reports Job Display, enter J in the **View Type** field. You can also enter more selection criteria in the header fields. Press Enter.
3. The Execution Reports Job Display lists the jobs that were processed by DB2 Automation Tool and that meet the specified selection criteria. The following figure shows the Execution Reports Job Display:

```
AUTOTOOL V4R2 ---- Execution Reports Job Display ---- 2014/06/25 12:58:55
Option ==> Scroll ==> CSR
-----
Line Commands: B - Build D - Delete O - Objects R - Restart S - Steps
Profile Like * DB2 Subsystem: SS01
Creator Like PD* Database Like * Row 1 of 21 +>
Space Type = A (I - Index, T - Tablespace, A - Any)
Space Like * Date From 01/01/2013 to 04/18/2014
Time From 00:01:00 to 23:00:00
Partition = 4 (0-4096, * - All, blank)
Jobname Like * View Type J (J - Jobs, O - Objects)
Jobnum Like *
-----

Cmd Jobname Jobnum Completion Reason Code Creator Profile ID
PDUSERAA J0953825 R0004 00000000 PDUSER CB44BF11AE7544AE
PDUSERAZ J0953838 R0012 00000000 PDUSER CB44BF7013DBBA20
PDUSERAZ J0953844 R0000 00000000 PDUSER CB44BF7013DBBA20
PDUSERAZ J0953907 R0000 00000000 PDUSER CB44C48D736DA8A2
PDUSERAZ J0953908 R0000 00000000 PDUSER CB44C4C6CDBBC7B0
PDUSERAZ J0953914 R0004 00000000 PDUSER CB44C5423EF2AC30
PDUSERAZ J0953916 R0000 00000000 PDUSER CB44C5792EF49E22
```

Figure 249. Execution Reports Job Display

## What to do next

You can use the line commands that are described in the following table to process a job or to review related information about a job:

*Table 25. Execution reports line commands*

Line command	Description
B	Rebuild the job. For more information, see “Building a job” on page 359. If the previous execution of the job did not successfully complete, DB2 Automation Tool asks if you want to rebuild the job with a RESTART parameter, or rebuild the job. For more information, see “Restarting failed jobs” on page 379.
D	Delete a job from the Execution Reports repository. <b>Note:</b> This does not delete the job from SDSF or other job handling facility.
O	Select a job to see the objects that are processed by that job.
S	Select a job to see the job steps and completion codes for each step.

## Viewing objects

You can view a list of the objects that were processed by DB2 Automation Tool-submitted jobs by using the Execution Reports Object Display. This panel contains details about the objects that were processed, and allows you to select the objects to view all the jobs that processed them.

### Procedure

1. On the DB2 Automation Tool main menu, enter 6 in the **Option** field press Enter.
2. On the Execution Reports Job Display, enter 0 in the **View Type** field. You can also enter more selection criteria in the header fields. Press Enter.
3. The Execution Reports Object Display lists the objects that were processed by DB2 Automation Tool and that meet the specified selection criteria. The following figure shows the Execution Reports Object Display:

```

AUTOT00L V4R2 ---- Execution Reports Object Display ---- 2014/06/25 15:36:08
Option ==> Scroll ==> CSR
-----
Line Commands: S - Select

Profile Like * DB2 Subsystem: SS01
Creator Like PD* Database Like * Row 1 of 6
Space Type = A (I - Index, T - Tablespace, A - Any)
Space Like * Date From 01/01/2013 to 04/18/2014
Time From 00:01:00 to 23:00:00
Partition = 4 (0-4096, * - All, blank)
Jobname Like * View Type 0 (J - Jobs, 0 - Objects)
Jobnum Like *
-----

Cmd Type Database Name Space Name Partition
IX H7241DB H7241XB2 4
IX H7241DB H7241XC2 4
TS H7241DB H7241TSA 4
TS H7241DB H7241TSB 4
TS H7241DB H7241TSC 4
TS NMHACHNG TSCHNG01 4
***** Bottom of Data *****

```

Figure 250. Execution Reports Object Display

4. To view job information for an object, enter S next to the object and press Enter. The Object Job Display shows all the jobs that acted upon the object, including the completion and reason codes. The following figure shows the Object Job Display:

```

AUTOT00L V4R2 ----- Object Job Display ----- 2014/06/25 14:54:25
Option ==> Scroll ==> CSR
-----
Line Commands: D - Delete 0 - Objects S - Steps
-----
Database Name H7241DB DB2 Subsystem: SS01
Space Name H7241XB2
Space Type IX Row 1 of 6 >
-----

Cmd Jobname Jobnum Completion Reason Code Creator Profile ID
PDUSERAZ J0681457 R0000 00000000 PDUSER CB1E9D32F528C5A0
PDUSERAZ J0681485 R0008 00000000 PDUSER CB1E9F78F7C433B0
PDUSERAZ J0681491 R0000 00000000 PDUSER CB1E9F78F7C433B0
PDUSERAZ J0681567 R0000 00000000 PDUSER CB1EA67A4D6E5C30
PDUSERAZ J0681571 R0000 00000000 PDUSER CB1EA6BE4E226427
PDUSERAZ J0681618 R0000 00000000 PDUSER CB1EA8AE88CD08A1
***** Bottom of Data *****

```

## What to do next

On the Object Job Display, you can use the line commands that are described in the following table to process a job or to review related information about the job:

Table 26. Object job line command descriptions

Line command	Description
D	Delete a job from the Execution Reports repository. <b>Note:</b> This does not delete the job from SDSF or other job handing facility.

Table 26. Object job line command descriptions (continued)

Line command	Description
O	Select a job to see all of the objects that were processed by that job.
S	Select a job to see the job steps in the job and the completion codes for each step.

## Viewing objects that were processed by a job

The Job Object Display lists all the objects that were processed by a DB2 Automation Tool job.

### Procedure

1. On the Execution Reports Job Display or the Object Job Display, enter 0 next to a job and press Enter.
2. The Job Object Display, which is shown in the following figure, lists all the objects that were processed by the selected job.

AUTOTOOL V4R2		----- Job Object Display -----		2014/09/23 12:39:1
Option ==>				Scroll ==> CSR
Jobname: CRTIXR1		DB2 Subsystem: SS01		
Jobnum : J0136630		Row 1 of 22		+
Type	Database Name	Space Name	Partition	
IX	NMHAQA25	I2501011	0	
IX	NMHAQA25	I2502011	ALL	
IX	NMHAQA25	I2502012	0	
IX	NMHAQA40	I4001011	4	
IX	NMHAQA40	I4001011	1	
IX	NMHAQA40	I4001011	5	
IX	NMHAQA40	I4001011	2	
IX	NMHAQA40	I4001011	3	
IX	NMHAQA40	I4001012	3	
IX	NMHAQA40	I4001012	4	
IX	NMHAQA40	I4001012	5	
IX	NMHAQA40	I4001012	1	
IX	NMHAQA40	I4001012	2	
IX	NMHAQA40	I4001013	0	

## Viewing job steps in a job

The Job Step Display lists the job steps in a job and displays the step completion codes, CPU and elapsed time, and other processing-related information.

### Procedure

1. On the Execution Reports Job Display or the Object Job Display, enter S next to a job and press Enter.
2. The Job Step Display, which is shown in the following figure, lists all the job steps for the selected job, and includes information such as the job step completion code.

```

AUTOTOOL V4R2 ----- Job Step Display ----- 2014/06/25 16:49:46
Option ==> Scroll ==> CSR
-----
Jobname: PDWITTAZ DB2 Subsystem: DA1A
Jobnum : J0681457 Row 1 of 7 >
-----
Step# Stepname Completion Reason Code Start Time
1 REG00101 R0000 00000000 2013-03-26-16.12.55.880000
2 IMC00102 R0000 00000000 2013-03-26-16.12.55.950000
3 PRN00103 R0000 00000000 2013-03-26-16.13.00.350000
4 PRS00103 R0000 00000000 2013-03-26-16.13.00.420000
5 RTS00104 R0000 00000000 2013-03-26-16.13.00.860000
6 PRN00105 R0000 00000000 2013-03-26-16.13.15.120000
7 PRS00105 R0000 00000000 2013-03-26-16.13.15.150000
***** Bottom of Data *****

```

## Deleting a job from the execution reports repository

You can delete a job from the execution reports repository by using a line command. The job is deleted from the execution reports repository, but is not deleted from SDSF queues.

### Procedure

1. On the Execution Reports Job Display or the Object Job Display, enter D next to a job and press Enter.
2. The Confirm Deletion window, which is shown in the following figure, prompts you to confirm deletion:

```

Confirm Deletion

Confirm delete of job PDUSERAA J0953825

Delete Y (Yes/No)

Turn delete confirmation off N (Yes/No)

```

3. To confirm deletion, enter Y in the **Delete** field and press Enter. You can turn off deletion confirmation for subsequent jobs by entering Y in the **Turn delete confirmation off** field.



---

## Chapter 16. Using the DB2 Command Processor

The DB2 Command Processor allows you to enter and issue DB2 commands for a specified subsystem, and review the output and messages from the command execution on an output panel. The output from the command can also be captured in a SYSOUT data set by issuing the PRINTX command while the output is displayed.

---

### Accessing the DB2 Command Processor

The DB2 Command Processor can be accessed from the DB2 Automation Tool main menu or can be invoked from any DB2 Automation Tool panel that contains a command line.

#### Before you begin

To use the DB2 Command Processor from DB2 Automation Tool panels, ensure that the HAACP CLIST member has been copied to your site's CLIST library. Refer to customization instructions for additional information.

#### About this task

- From any DB2 Automation Tool panel, enter TSO HAACP.
- From the DB2 Automation Tool main menu, type 7 and press Enter.

The DB2 Command Processor panel, shown in the following figure, is displayed:

```
FECDBC ----- DB2 Command Processor ----- 2011/08/30 12:33:21
Command ==>                                     Scroll ==> CSR
SSID ==> SS1A                                     ? (or clear) to see a selection list
History Size Limit ==> 20                         0-999
Datasharing Member ==>                           ? to see a selection list for this SSID

Commands: HIST (PF4); HRETP (PF6); ? (PF13); HRETN (PF18); HCLEAR (PF24)
-----
Row 1 of 57 +
*** Enter Command Below: *****
```

Figure 251. DB2 Command Processor panel

### Fields on the DB2 Command Processor panel

This topic describes the fields on the DB2 Command Processor panel.

The fields on the DB2 Command Processor Panel are as follows:

**SSID** Enter the SSID on which you want to issue the command. The subsystem entered must be defined in the DB2 control data set in the DB2 Automation Tool setup. For a list of valid subsystems, clear the field and enter a question mark (?). Refer to “The SSID selection function” on page 92 for information on this feature.

### History Size Limit

Enter the maximum number of prior commands to be saved in the command history. To disable the command history, enter 0 in this field.

### Datasharing Member

If the SSID specified in the SSID field is a member of a data sharing group, and you want to direct the DB2 command to another member of the same data sharing group, enter the group member in this field. For a list of members in the data sharing group, enter a question mark (?) in this field.

## The SSID selection function

The DB2 command processor provides a list of active DB2 subsystems that exist in the active DB2 control data set.

To access this panel, enter a ? in the SSID field and press Enter. The SSID Selection panel is displayed, as shown in the following figure:

```
FECSLST ----- SSID Selection ----- 2011/08/30 12:35:45
Option ===> Scroll ==> CSR

Select with S line command or just place cursor and press ENTER; To Exit: PF3
-----
Cmd SSID Status                                Row 1 of 10                                CPOS
  DACM Active
  SS1A Active
***** Bottom of Data *****
```

Figure 252. SSID Selection panel

This panel lists all active DB2 subsystems that have been defined in the DB2 control data set, which is configured in the System Parameters section of DB2 Automation Tool setup. To select a subsystem, type S next to the SSID and press Enter, or place your cursor in the desired row and press Enter. To cancel, press PF3.

## The datasharing member selection function

If you enter a ? in the Datasharing Member field on the DB2 Command Processor panel, a list of active DB2 subsystems that exist in the active DB2 control data set is displayed.

To access this panel, enter a ? in the Datasharing Member field and press Enter. The Datasharing Member Selection panel is displayed, as shown in the following figure:



```

FECDDGP ----- Datasharing Member Selection ----- 2011/08/30 12:39:32
Option ==> Scroll ==> CSR
Select with S line command or place cursor and press ENTER;
-----
                                Row 1 of 4
Cmd DB2      ID  SUBSYS CMDPREF  STATUS  DB2 SYSTEM
  MEMBER                                     LVL NAME
-----
      D8A2MEM  1  D8A    !D8A    ACTIVE  810 RS22
      D8B2MEM  2  D8B    !D8B    ACTIVE  810 RS23
      D8C2MEM  3  D8C    !D8C    ACTIVE  810 RS22
      D8D2MEM  4  D8D    !D8D    ACTIVE  810 RS23
***** Bottom of Data *****

```

Figure 253. SSID Selection panel

This panel list all datasharing members of the selected DB2 subsystem. To select a data sharing member, type S next to the member and press Enter, or place the cursor in the desired row and press Enter. The member name is transferred to the Datasharing Member field on the DB2 Command Processor panel, and all commands issue will be routed to that member.

To cancel from this panel, press PF3.

## Commands on the DB2 Command Processor panel

These commands are available on the DB2 Command Processor panel. Enter a command on the Command line and press Enter, or use the corresponding PF key.

**HIST** (PF4) The **HIST** (history) command displays a list of the most recently issued commands; the commands can be selected for execution. The maximum number of prior commands saved in the history is controlled by the value entered in the History Size Limit field.

### HRETP

(PF6) The **HRETP** command populates the input command area with the next most recent command issued. You can repeat the HRETP command to cycle through the command list, from the most recent command to the oldest.

**?** (PF13) Entering '?' in the command line displays a list of DB2 commands. If you select a command, a syntax diagram for the command is inserted about the input area on the DB2 Command Processor panel.

### HRETN

(PF18) The **HRETN** command populates the input command area with the oldest command issued that is on the history list. For example, say the history contains the issued commands in this order: 1, 2, 4, 5, 3. HRETN will issue command 3. You can repeat the HRETN command to cycle through the command list, from the oldest command to the most recent.

### HCLEAR

(PF24) The **HCLEAR** command clears the history database.

### PRINTX

The **PRINTX** command can be used to write the output from a DB2 command that is displayed on the panel to a SYSOUT file. The output is created using the default output class defined on the system. If you do not know where your SYSOUT output is written to, check the HELD and OUTPUT queues with jobname=your user ID, or ask your systems programmer.

## Entering DB2 commands

There are several ways to enter DB2 commands on the DB2 Command Processor panel.

### About this task

To enter DB2 commands:

- Type the command in the command input area.
- Retrieve a prior command from the command history. You can optionally edit the command before submitting it.
- Enter '?' in the Command line to review a list of supported commands for the version of DB2 associated with the SSID.

```
FECDDP ----- DB2 Command List ----- 2011/08/30 12:42:05
Option ==> Scroll ==> CSR

Select with S line command or just place cursor and press ENTER; To Exit: PF3
-----
                                Row 1 of 47                                +
Cmd Data
ACCESS DATABASE
ALTER BUFFERPOOL
ALTER GROUPBUFFERPOOL
ALTER UTILITY
ARCHIVE LOG
CANCEL THREAD
DISPLAY ARCHIVE
DISPLAY BUFFERPOOL
DISPLAY DATABASE
DISPLAY DDF
DISPLAY FUNCTION SPECIFIC
DISPLAY GROUP
DISPLAY GROUPBUFFERPOOL
DISPLAY LOCATION
DISPLAY LOG
DISPLAY PROCEDURE
DISPLAY PROFILE
DISPLAY RLIMIT
DISPLAY THREAD
DISPLAY TRACE
DISPLAY UTILITY
MODIFY TRACE
RECOVER BSDS
```

Figure 254. DB2 Command List panel

Enter S next to a command to select it, or place the cursor on the line of the desired command and press ENTER. When you select a command, a syntax diagram for the command is retrieved and placed before the command input area on the DB2 Command Processor panel. You can use the diagram as a reference while typing your command. For example, if you select the ALTERBUFFERPOOL command, the following panel is displayed:

```

FECDBC ----- DB2 Command Processor ----- 2011/08/30 12:43:31
Command ==>                                     Scroll ==> CSR
SSID ==> SS1A                                ? (or clear) to see a selection list
History Size Limit ==> 20                    0-999
Datasharing Member ==>                      ? to see a selection list for this SSID

Commands: HIST (PF4); HRETP (PF6); ? (PF13); HRETN (PF18); HCLEAR (PF24)
-----
*** Input area below syntax diagram *****
>>-ALTER BUFFERPOOL--(bpname)----->
|_VPSIZE(integer)_|
>--+-----+-----+----->
|_VPSEQT(integer)_| |_VPPSEQT(integer)_|
>--+-----+-----+----->
|_VPXPSEQT(integer)_| |_DWQT(integer)_|
>--+-----+-----+----->
|_VDWQT(integer1,integer2)_| |_PGSTEAL(_____)_|
|_FIFO_|
|_NONE_|
>--+-----+-----+----->
|_PGFIX(_____)_| |_AUTOSIZE(_____)_|
|_YES_|
|_NO_|
|_YES_|
|_NO_|

*** Enter Command Below: *****

```

Figure 255. Syntax retrieved to the DB2 Command Processor panel

Scroll down to reach the command input area.

**Note:** The syntax diagrams are provided for your convenience. The definitive source for syntax diagrams is the DB2 command reference for your version of DB2.

## Reviewing command results

After the DB2 command is submitted, the command results are displayed on the DB2 Command Output panel.

The DB2 Command Output panel is shown in the following figure:

```

FECDCO ----- DB2 Command Output ----- 2011/08/30 12:52:13
Option ==> Scroll ==> CSR
----- CPOS
Row 1 of 25
DSNT360I !SS1A *****
DSNT361I !SS1A * DISPLAY DATABASE SUMMARY
          * GLOBAL
DSNT360I !SS1A *****
DSNT362I !SS1A DATABASE = ABPRLDB1 STATUS = RW
          DBD LENGTH = 8066
DSNT397I !SS1A
NAME      TYPE PART  STATUS          PHYERRLO PHYERRHI CATALOG  PIECE
-----
ABPRLPR1 TS      0001 RW
ABPRLPR1 TS      RW
ABPRLPR2 TS      0001 RW
          -THRU 0002
ABPRLPR2 TS      RW
ABPRLPR3 TS      0001 RW
          -THRU 0003
ABPRLPR3 TS      RW
ABPRLPR4 TS      0001 RW
          -THRU 0004
ABPRLPR4 TS      RW
ABPRLPR5 TS      0001 RW
          -THRU 0005
ABPRLPR5 TS      RW
***** DISPLAY OF DATABASE ABPRLDB1 ENDED *****
DSN9022I !SS1A DSNTDDIS 'DISPLAY DATABASE' NORMAL COMPLETION

```

Figure 256. DB2 Command Output panel

Refer to the DB2 command reference for your version of DB2 for information about the contents of the command output.

While the output is displayed, you can issue the PRINTX command to send the output to a SYSOUT data set.

---

## Chapter 17. Using Dataset Manager

Dataset Manager is a powerful, flexible tool that enables you to view, evaluate, and relocate DB2 data sets.

When you move data sets using Dataset Manager, you can change the characteristics of the target data set, as well as the location. Dataset Manager takes care of the tasks required when a DB2 data set is moved, such as stopping and starting the associated database and updating the DB2 catalog.

Dataset Manager supports all types of data set allocations, including storage group, user-defined, and data sets managed using SMS. The following types of moves are supported:

- Move a user-defined data set to a storage group
- Move a user-defined data set to the same VCAT or from one VCAT to a different VCAT
- Move a storage group-defined data set to a user-defined VCAT
- Move a storage group-defined data set to the same storage group or a different storage group

You can modify the following data set characteristics when moving a data set:

- The primary allocation and secondary allocation values
- The target volume(s) when moving a non SMS-managed user-defined data set
- The SMS class information when moving a user-defined data set

The online displays offer various levels of information about the data sets, from the database level down to the individual extent level. You select the desired data sets to be moved, either interactively from within TSO/ISPF or by using the batch function.

If an error occurs when moving a data set, Dataset Manager backs out the move request and returns the data set to its state prior to the move request.

---

### Authorizations required

To use Dataset Manager, you must have the required authorizations.

The authorizations required are:

- DB2 authority to STOP, ALTER, and START objects that will be moved.
- z/OS authorization to create and delete the data set names being moved.
- z/OS authorization to create and update data sets generated by DSM that use the following naming convention:

*tsouserid.HAAMOVE.\**

For batch moves, DSM generates a sequential data set that contains the move JCL using this naming convention.

For online moves, DSM generates a data set using this naming convention that contains the results of the online move. This data set is created so that results can be viewed via ISPF browse and then retained for tracking purposes.

To cover both move types, have your system security group grant or allow create and update authority on the data set naming convention.

---

## Using Dataset Manager's online interface

Dataset Manager's ISPF screens enable you to select desired data sets to be relocated and to specify the target data set characteristics to be used when the data set is moved.

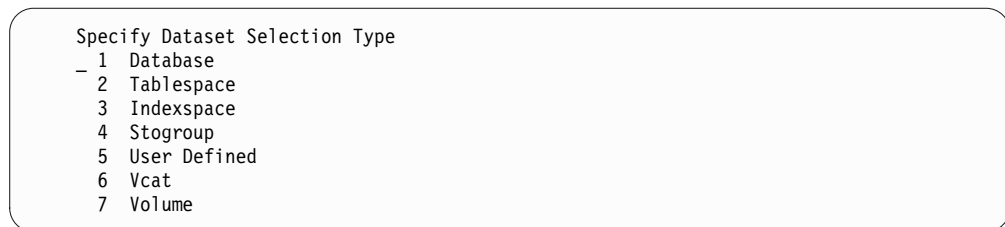
### About this task

Once data sets are selected and data set characteristics specified, you can choose to process the move requests online or in batch. Online moves are executed within your TSO/ISPF address space. When batch processing is selected, the execution JCL is generated with necessary move utility control cards. You can then view and modify the JCL generated prior to submitting the job in batch.

Using the Dataset Manager user interface is highly recommended to build your move data set requests, but it is not required to generate the JCL for batch execution. Refer to “Using Dataset Manager in batch” on page 463 for information about creating JCL and control cards to use Dataset Manager in batch.

To begin using the online interface for Dataset Manager, type 8 in the Option line on the DB2 Automation Tool Main Menu and press Enter.

The Specify Dataset Selection type window appears as shown in the following figure:



```
Specify Dataset Selection Type
- 1 Database
  2 Tablespace
  3 Indexspace
  4 Stogroup
  5 User Defined
  6 Vcat
  7 Volume
```

*Figure 257. Specify Dataset Selection type window*

On this window, specify how you want to select the data sets. Data sets that reside on the DB2 subsystem listed on the DB2 Automation Tool Main Menu can be selected.

- Type 1 to select data sets by database or database creator.
- Type 2 to select data sets by table space.
- Type 3 to select data sets by index space.
- Type 4 to select data sets by storage group.
- Type 5 to select user-defined data sets using a VCAT.
- Type 6 to select user- and DB2-defined data sets using a VCAT.
- Type 7 to select data sets by volume.

---

## Using function keys with Dataset Manager

Program function keys facilitate movement between objects on object selection screens and help you quickly access the move queue. When these keys are available, they are listed on the bottom of the object selection screen.

These keys allow you to scroll between objects without having to press PF3 to return to a previous screen and then select another object. For example, say that Database A and Database B are listed on the DSM Database Summary screen. If you select Database A from this screen, the DSM Database Spacenames screen appears listing all of Database A's data sets. To view Database B's data sets, use the PF18 key ("next DB"). The database name in the Database header field changes to Database B, and the spaces belong to Database B are listed.

In addition, you can use the PF4 key from all Dataset Manager object selection screens to access the move queue. If objects have been added to the move queue, the DSM Move Dataset Queue screen appears. You can also enter the QEDIT command in the option line to access the move queue.

Table 27 summarizes the function key capabilities:

*Table 27. Function key capabilities*

Key	Function
PF4	View the contents of the move queue.
PF17 Prev <i>object</i>	Move to the previous object.
PF18 Next <i>object</i>	Move to the next object.
PF19 First <i>object</i>	Move to the first object.
PF20 Last <i>object</i>	Move to the last object.

## Selecting data sets from databases

You can select a database to move all the specific data sets from a database, or drill down to view specific data sets for your selection.

### About this task

To select data sets from the database level, type 1 on the Specify Dataset Selection Type input line and press Enter. The Specify Database Selection window appears.

The Specify Database Selection window, shown in the following figure, lets you narrow the list of databases that appears on the next panel. Enter a database name, creator, or both in the Database and Database Creator fields. Selection criteria (\*) are allowed.

**Note:** The Database Creator field allows up to 128 bytes. To scroll this field, place the cursor in the field and use the PF11 key to scroll right and the PF10 key to scroll left.

Specify Database Selection

Database	*		
Database Creator	PDTRC*	>	

*Figure 258. Specify Database Selection window*

When you press Enter, the panel shown in the following figure is displayed:

```

AUTOTOOL V4R2 ----- DSM Database Summary ----- 2011/08/30 14:10:59
Option ==> Scroll ==> CSR
-----
Line Commands: S - View Spacenames Q - Add to MoveQ PF4 View MoveQ
D - Del from MoveQ
-----
SSID: SS1A Database: * Creator: PDMER* >
-----
Cmd DBName Creator TSct ISct DSNct AvgExt MaxExt SpcUse SpaceUse SpaceAlc
DBGPRI01 PDUSRAA 3 4 7 0 0.0% 0K 0K
EXCPDB PDUSRAA 1 0 1 1.0 1 100.0% 576.0K 576.0K
PDUSRABP PDUSRAA 1 1 2 0 0.0% 0K 0K
PDUSRAX PDUSRAA 1 1 2 0 0.0% 0K 0K
***** Bottom of Data *****

```

Figure 259. DSM Database Summary panel

The DSM Database Summary panel lists the databases that meet your selection criteria. On this panel, you can select a database to move all data sets associated with the database, or you can drill down to select specific table space or index space data sets.

The following section describes the fields on the DSM Database Summary panel.

**SSID** The DB2 subsystem ID.

**Database**

The database name or mask you specified appears here. This field is read only.

**Creator**

The database creator name or mask you specified appears here. This field is read only.

**DBName**

The name of the database. If one or more data sets in the database are in the move queue, this field is highlighted. If all data sets in the database are in the move queue, an asterisk (\*) appears next to the database name. If some of the data sets in the database are in the move queue, a plus sign (+) appears next to the database name.

**Creator**

The user ID of the creator of the database. If all data sets in the database are in the move queue, this field is highlighted.

**TSct** The number of table spaces in the database.

**ISct** The number of index spaces in the database.

**DSNct**

The total number of data sets allocated for both the table spaces and index spaces in the database.

**AvgExt**

The average number of extents taken per data set.

**MaxExt**

The highest number of extents taken to date by a data set in the database.

**SpcUse**

The percentage of space allocated that is currently used by data sets owned by the database. The value is derived by totaling all space used for all data sets within the database and dividing it by all space allocated for the



database. Space used is derived from data set high used RBA. Space allocated is derived from data set high allocated RBA.

**SpaceUse**

The amount of space in use by all data sets in the database, in kilobytes (K), megabytes (M), gigabytes (G), or terabytes (T).

**SpaceAlc**

The amount of space allocated by the data sets in the database, in kilobytes (K), megabytes (M), gigabytes (G), or terabytes (T).

**UsrDef**

The number of user-managed data sets in the database.

**StgDef**

The number of DB2-managed data sets in the database.

**DBid** The database identifier.

The line commands that can be used on the DSM Database Summary screen are described in the following table:

*Table 28. DSM Database Summary screen line commands*

Line command	Description
S	View the spaces in the database.
Q	Add the database to the move queue; all data sets associated with the database will be selected. After you add a database to the move queue, enter QEDIT in the command line to view the list of data sets to be moved.
D	Delete all database data sets from the data set move queue. This command may be used on multiple lines on the screen.

## Working with table space and index space data sets

You can select a table space or index space to move all the data sets from the space, or drill down to view specific data sets to select.

The DSM Database Spacenames screen, shown in the following figure, lists the table spaces and index spaces for the selected database. You can select a space to move all data sets associated with the space, or you can drill down to select specific data sets or index space data sets.

```

AUTOTOOL V4R2 ----- DSM Database Spacenames ----- 2011/08/30 14:13:40
Option ==> Scroll ==> CSR
Line Commands: S - View Spacename Q - Add to MoveQ D - Del from Moveq
----- >
SSID: SS1A Database: DBGPRI01 Creator: PDUSRAA >
-----
Cmd Spacenam Creator Type DSNct AvgExt MaxExt SpcUse SpaceUse SpaceAlc
TSDEPT PDUSRAA TS 1 0.0 0 0.0% 0K 0K
TSEMP PDUSRAA TS 1 0.0 0 0.0% 0K 0K
TSHIRE PDUSRAA TS 1 0.0 0 0.0% 0K 0K
DEPT PDUSRAA IS 1 0.0 0 0.0% 0K 0K
DEPTX PDUSRAA IS 1 0.0 0 0.0% 0K 0K
EMPX PDUSRAA IS 1 0.0 0 0.0% 0K 0K
SSRNUMBE PDUSRAA IS 1 0.0 0 0.0% 0K 0K
***** Bottom of Data *****
PF4 View MoveQ PF17 Prev DB PF18 Next DB PF19 First DB PF20 Last DB

```

Figure 260. DSM Database Spacenames screen

The following section describes the fields on DSM Database Spacenames screen.

**SSID** The DB2 subsystem ID.

**Database**

The database name or mask you specified appears here. This field is read only.

**Creator**

The database creator name or mask you specified appears here. This field is read only.

**Spacenam**

The name of the space. If one or more data sets in the space are in the move queue, this field is highlighted. If all data sets in the space are in the move queue, an asterisk (\*) appears next to the space name. If some of the data sets in the space are in the move queue, a plus sign (+) appears next to the space name.

**Creator**

The user ID of the creator of the space. If all data sets in the space are in the move queue, this field is highlighted.

**Type** The object type: TS for simple table space, PTTS for partitioned table space, IS for index space, or PTIS for partitioned index space.

**DSNct**

The total number of data sets allocated for the space.

**AvgExt**

The average number of extents taken per data set.

**MaxExt**

The highest number of extents taken to date by a data set in the space.

**SpcUse**

The percentage of space allocated that is currently used by data sets owned by the index space. The value is derived by totaling all space used for all data sets within the index space and dividing it by all space allocated for the data sets. Space used is derived from data set high used RBA. Space allocated is derived from data set high allocated RBA.

**SpaceUse**

The amount of space in use by the data sets in the space, in kilobytes (K), megabytes (M), gigabytes (G), or terabytes (T).

**SpaceAlc**

The amount of space allocated by all the data sets in the space, in kilobytes (K), megabytes (M), gigabytes (G), or terabytes (T).

**UsrDef**

The number of user-managed data sets in the space.

**StgDef**

The number of DB2-managed data sets in the space

**OBid** The data object identifier.

**PSid** The page set ID.

The line commands that can be used on the DSM Database Spacenames screen are described in the following table:

*Table 29. DSM Database Spacenames screen line commands*

Line command	Description
S	View the data sets for the space.
Q	Add the space to the move queue; all data sets associated with the space will be selected. After you add a space to the move queue, enter QEDIT in the command line to view the list of data sets to be moved.
D	Delete all the space's data sets from the data set move queue. This command may be used on multiple lines on the screen.

## Working with data sets for a selected space

You can select specific data sets to move or view extents for a data set.

The DSM Spacename Datasets screen, shown in the following figure, lists all the data sets that make up the selected space. You can select one or more data sets to move, or you can drill down to see extent information for the data set.

```

AUTOTOOL V4R2  ----- DSM Spacename Datasets -----  2011/08/30  14:15:06
Option ==>                                           Scroll ==> CSR
Line Commands: S - View Dataset  Q - Add to MoveQ  D - Del from MoveQ
----->
SSID: SS1A          Database: DBGPRI01          Spacename: TSDEPT
-----
Cmd  Dsn  Vcatname Stogroup Exts VLct Volume SpcUse SpaceUse SpaceAlc Qty  Pqty
0001 SS1A  SYSDEFLT  0    0 MIGRAT  0.0%    0K    0K CYL  -1
***** Bottom of Data *****

PF4 View MoveQ  PF17 Prev SP  PF18 Next SP  PF19 First SP  PF20 Last SP

```

*Figure 261. DSM Spacename Datasets screen*

The following section describes the fields on the DSM Spacename Datasets screen.

**SSID** The DB2 subsystem ID.

**Database**

The database name or mask you specified appears here. This field is read only.

**Spacename**

The name of the space.

**Dsn** The data set number. This field is highlighted and an asterisk (\*) appears next to the Dsn if the data set is in the move queue.

**Vcatname**

The volume catalog name.

**Stogroup**

The storage group, if the data set is DB2-managed.

**Exts** The number of extents that the data set has taken.

**VLct** The number of volumes on which the data set resides.

**Volume**

The volume serial number on which the data set resides.

**SpcUse**

The percentage of space allocated that is currently used the data set. The value is derived by dividing space used by space allocated. Space used is obtained from data set high used RBA. Space allocated is obtained from data set high allocated RBA.

**SpaceUse**

The amount of space in use by the data set, in kilobytes (K), megabytes (M), gigabytes (G), or terabytes (T).

**SpaceAlc**

The amount of space allocated by the data set, in kilobytes (K), megabytes (M), gigabytes (G), or terabytes (T).

**Qty** The unit of space allocation. TRK is tracks, CYL is cylinders.

**Pqty** The primary space allocation amount, in the specified units.

**Sqty** The secondary space allocation amount, in the specified units.

**TrksAlc**

The number of tracks allocated for the data set.

**HURBA\_Dec**

The high used RBA for the data set, in decimal format.

**HARBA\_Dec**

The high allocated RBA for the data set, in decimal format.

**HURBA\_Hex**

The high used RBA for the data set, in hexadecimal format.

**HARBA\_Hex**

The high allocated RBA for the data set, in hexadecimal format.

The line commands that can be used on the DSM Spacename Datasets screen are described in the following table:

*Table 30. DSM Spacename Datasets screen line commands*

Line command	Description
S	View data set extent information.
Q	Add the data set to the move queue. After you add a data set to the move queue, enter QEDIT in the command line to view the list of data sets to be moved.

Table 30. DSM Spacename Datasets screen line commands (continued)

Line command	Description
D	Delete the data set from the data set move queue. This command may be used on multiple lines on the screen.

## Viewing extent information for a data set

Before moving a data set, you can view its extents using the DSM Dataset Extents panel.

The DSM Dataset Extents panel, shown in the following figure, displays information about the selected data set's extents.

```

AUTOTOOL V4R2  ----- DSM Dataset Extents -----  2011/08/30  14:16:28
Option  ==>                               Scroll ==> CSR
----->
Database: EXCPDB          Spacename: EXCPTS          DSN: 0001
-----
Eid Volume ATyp  AQty      LRBA_Dec      HRBA_Dec      LRBA_Hex      HRBA_Hex
001 DBP121 TRKS    12           0          589823         0          8FFFF
***** Bottom of Data *****

PF4 View MoveQ   PF17 Prev DSN   PF18 Next DSN   PF19 First DSN   PF20 Last DSN

```

Figure 262. DSM Dataset Extents panel

The following section describes the fields on the DSM Datasets Extents panel.

### Database

The database name.

### Spacename

The name of the space.

**Dsn** The data set number.

**Eid** The extent number.

### Volume

The volume on which the extent resides.

**ATyp** The unit of space allocation. TRK is tracks, CYL is cylinders.

**AQty** The amount of space allocated by the extent, in the specified units.

### LRBA\_Dec

The low relative byte address of the extent, in decimal format.

### HRBA\_Dec

The high relative byte address of the extent, in decimal format.

### LRBA\_Hex

The low relative byte address of the extent, in hexadecimal format.

### HRBA\_Hex

The high relative byte address of the extent, in hexadecimal format.

### StrtCCHH

The starting cylinder, cylinder, head, head address of the extent.

### EndCCHH

The ending cylinder, cylinder, head, head address of the extent.

When you have finished viewing information on this panel, press PF3 to return to the DSM Spacename Datasets panel.

# Selecting data sets from table spaces

You can select a table space to move all the data sets from the space, or drill down to view specific data sets for the space.

## About this task

To select data sets from the table space level, type 2 on the Specify Dataset Selection Type input line and press Enter. The Specify Tablespace Selection window appears.

The Specify Tablespace Selection window, shown in the following figure, lets you narrow the list of table spaces that appears on the next panel. Enter a table space name, table space creator, database name, or a combination of any of these fields. Selection criteria (\*) are allowed.

**Note:** The Tablespace Creator field allows up to 128 bytes. To scroll this field, place the cursor in the field and use the PF11 key to scroll right and the PF10 key to scroll left.

Specify Tablespace Selection

Tablespace

\*

Tablespace Creator

PDUSRA\*

>

Database

\*

Figure 263. Specify Tablespace Selection window

When you press Enter, the panel shown in the following figure is displayed:

AUTOTOOL V4R2    -----    DSM Tablespaces    -----    2011/08/30    14:20:09

Option ==>    Scroll ==> CSR

Line Commands: S - View Datasets    Q - Add to MoveQ    PF4 View MoveQ

D - Del from MoveQ

----->

SSID: SS1A    Tablespace: \*    Creator: PDUSRA\*    >

-----

Cmd	TSName	Creator	DBName	Dsnc	AvgExt	MaxExt	SpcUse	SpaceUse	SpaceAlc
	CMP00102	PDUSRAA	PDUSRAX	1	0.0	0	0.0%	0K	0K
	CMP00502	PDUSRAA	PDUSRABP	1	0.0	0	0.0%	0K	0K
	DEPTREMP	PDUSRAA	DSN01186	1	0.0	0	0.0%	0K	0K
	DEPTREXC	PDUSRAA	DSN01185	1	0.0	0	0.0%	0K	0K
	EMPREXCP	PDUSRAA	DSN01187	1	0.0	0	0.0%	0K	0K
	EXCPTS	PDUSRAA	EXCPDB	1	1.0	1	100.0%	576.0K	576.0K
	STMN41	PDUSRAA	DLCDB	1	1.0	1	100.0%	144.0K	144.0K
	TSDEPT	PDUSRAA	DBGPRI01	1	0.0	0	0.0%	0K	0K
	TSEMP	PDUSRAA	DBGPRI01	1	0.0	0	0.0%	0K	0K
	TSHIRE	PDUSRAA	DBGPRI01	1	0.0	0	0.0%	0K	0K

\*\*\*\*\* Bottom of Data \*\*\*\*\*

Figure 264. DSM Tablespaces panel

The DSM Tablespaces panel lists the table spaces that meet your selection criteria. On this panel, you can select a table space to move all data sets associated with the space, or you can drill down to select specific data sets.

The following section describes the fields on the DSM Tablespaces panel:

**SSID** The DB2 subsystem ID.

**Tablespace**

The table space name or mask you specified appears here. This field is read only.

**Creator**

The table space creator name or mask you specified appears here. This field is read only.

**TSname**

The name of the table space. This field is highlighted if one or more data sets in the table space are in the move queue. If one or more data sets in the table space are in the move queue, this field is highlighted. If all data sets in the table space are in the move queue, an asterisk (\*) appears next to the table space name. If some of the data sets in the table space are in the move queue, a plus sign (+) appears next to the table space name.

**Creator**

The user ID of the creator of the table space. If all data sets in the table space are in the move queue, this field is highlighted.

**DBname**

The database name that owns the table space.

**DSNct**

The total number of data sets allocated for the table space.

**AvgExt**

The average number of extents for a single data set owned by the table space.

**MaxExt**

The maximum number of extents for a single data set owned by the table space.

**SpcUse**

The percentage of space allocated that is currently used by data sets owned by the table space. The value is derived by totaling all space used for all data sets within the table space and dividing it by all space allocated for the data sets. Space used is derived from data set high used RBA. Space allocated is derived from data set high allocated RBA.

**SpaceUse**

The amount of space in use by all data sets owned by the table space, in kilobytes (K), megabytes (M), gigabytes (G), or terabytes (T).

**SpaceAlc**

The amount of space allocated by all data sets owned by the table space, in kilobytes (K), megabytes (M), gigabytes (G), or terabytes (T).

**UsrDef**

The number of user-managed data sets in the database.

**StgDef**

The number of DB2-managed data sets in the database.

**Type**

The object type. TS is a simple table space. PTTS is a partitioned table space.

**DBid**

The database identifier of the data base owning the table space.

**OBid**

The table space object identifier.

**PSid** The table space pageset object identifier.

The line commands that can be used on the DSM Tablespaces panel are shown in the following table:

*Table 31. DSM Tablespaces panel line commands*

Line command	Description
S	View the data sets owned by the selected table space.
Q	Add the table space to the move queue; all data sets associated with the table space will be selected. After you add a table space to the move queue, enter QEDIT in the command line (or press PF4) to view the list of data sets to be moved. This command may be used on multiple lines on the panel.
D	Delete all table space data sets in the data set move queue. This command may be used on multiple lines on the panel.

## Selecting data sets from index spaces

You can select an index space to move all the data sets from the space, or drill down to view specific data sets for the space.

### About this task

To select data sets from the index space level, type 3 on the Specify Dataset Selection Type input line and press Enter. The Specify Indexspace Selection window appears.

The Specify Indexspace Selection window, shown in the following figure, lets you narrow the list of index spaces that appears on the next panel. Enter a index space, index name, index creator, or database name, or a combination of any of these fields. Selection criteria (\*) are allowed.

**Note:** The Indexname and Index Creator fields allow up to 128 bytes. To scroll these fields, place the cursor in the field and use the PF11 key to scroll right and the PF10 key to scroll left.

A screenshot of a terminal window titled "Specify Indexspace Selection". It contains four input fields: "Indexspace" with an asterisk, "Indexname" with "DSN\*" and a greater-than sign, "Index Creator" with an asterisk and a greater-than sign, and "Database" with an asterisk.

```
Specify Indexspace Selection
Indexspace      *
Indexname       DSN*      >
Index Creator   *         >
Database        *
```

*Figure 265. Specify Indexspace Selection window*

When you press Enter, the panel shown in the following figure is displayed:.



```

AUTOTOOL V4R2 ----- DSM Indexspaces ----- 2011/08/30 14:56:16
Option ==> Scroll ==> CSR
Line Commands: S - View Datasets Q - Add to MoveQ PF4 View MoveQ
D - Del from MoveQ
-----+>
SSID: SS1A Indexname: DSN* > Creator: * >
-----+>

```

Cmd	ISName	Creator	DBName	DsNct	AvgExt	MaxExt	SpcUse	SpaceUse	SpaceAlc
	DSNACX01	SYSIBM	DSNDB06	1	4.0	4	100.0%	4.9M	4.9M
	DSNADH01	SYSIBM	DSNDB06	1	2.0	2	100.0%	2.1M	2.1M
	DSNADX01	SYSIBM	DSNDB06	1	2.0	2	100.0%	2.1M	2.1M
	DSNAGH01	SYSIBM	DSNDB06	1	2.0	2	100.0%	5.6M	5.6M
	DSNAGX01	SYSIBM	DSNDB06	1	1.0	1	100.0%	11.2M	11.2M
	DSNAPH01	SYSIBM	DSNDB06	1	1.0	1	100.0%	2.1M	2.1M
	DSNAPX01	SYSIBM	DSNDB06	1	1.0	1	3.3%	48.0K	1.4M
	DSNARL01	SYSIBM	DSNRLST	1	1.0	1	100.0%	720.0K	720.0K
	DSNATX01	SYSIBM	DSNDB06	1	2.0	2	100.0%	4.9M	4.9M
	DSNATX02	SYSIBM	DSNDB06	1	1.0	1	100.0%	8.4M	8.4M
	DSNATX03	SYSIBM	DSNDB06	1	2.0	2	100.0%	6.3M	6.3M
	DSNATX04	SYSIBM	DSNDB06	1	2.0	2	100.0%	6.3M	6.3M
	DSNAUH01	SYSIBM	DSNDB06	1	2.0	2	100.0%	2.1M	2.1M
	DSNAUX02	SYSIBM	DSNDB06	1	1.0	1	100.0%	2.1M	2.1M
	DSNCAX01	SYSIBM	DSNDB06	1	1.0	1	.4%	20.0K	4.2M
	DSNCCX01	SYSIBM	DSNDB06	1	3.0	3	.5%	48.0K	9.1M
	DSNCCX02	SYSIBM	DSNDB06	1	5.0	5	.7%	48.0K	6.3M
	DSNCDX01	SYSIBM	DSNDB06	1	2.0	2	.4%	20.0K	4.2M
	DSNCDX02	SYSIBM	DSNDB06	1	1.0	1	.4%	20.0K	4.2M
	DSNCHX01	SYSIBM	DSNDB06	1	1.0	1	100.0%	4.2M	4.2M
	DSNCNX01	SYSIBM	DSNDB06	1	1.0	1	100.0%	1.4M	1.4M
	DSNCNX02	SYSIBM	DSNDB06	1	1.0	1	100.0%	1.4M	1.4M

Figure 266. DSM Indexspaces panel

The DSM Indexspaces panel lists the index spaces that meet your selection criteria. On this panel, you can select an index space to move all data sets associated with the space, or you can drill down to select specific data sets.

The following section describes the fields on the DSM Indexspaces panel:

**SSID** The DB2 subsystem ID.

#### Indexspace

The index space name or mask you specified appears here. This field is read only.

#### Creator

The index space creator name or mask you specified appears here. This field is read only.

#### ISName

The name of the index space. If one or more data sets in the index space are in the move queue, this field is highlighted. If all data sets in the index space are in the move queue, an asterisk (\*) appears next to the index space name. If some of the data sets in the index space are in the move queue, a plus sign (+) appears next to the index space name.

#### Creator

The user ID of the creator of the index space. If all data sets in the index space are in the move queue, this field is highlighted.

#### DBName

The database name that owns the index space.

#### DSNct

The number of data sets in the index space.

**AvgExt**

The average number of extents for a single data set owned by the index space.

**MaxExt**

The maximum number of extents for a single data set owned by the index space.

**SpcUse**

The percentage of space allocated that is currently used by data sets owned by the index space. The value is derived by totaling all space used for all data sets within the index space and dividing it by all space allocated for the data sets. Space used is derived from data set high used RBA. Space allocated is derived from data set high allocated RBA.

**SpaceUse**

The amount of space in use by all data sets owned by the index space, in kilobytes (K), megabytes (M), gigabytes (G), or terabytes (T).

**SpaceAlc**

The amount of space allocated by all data sets owned by the index space, in kilobytes (K), megabytes (M), gigabytes (G), or terabytes (T).

**UsrDef**

The number of user-managed data sets in the index space.

**StgDef**

The number of DB2-managed data sets in the index space.

**Type**

The object type. IS is a simple index space. PTIS is a partitioned index space.

**Indexname**

The name of the index residing in the index space.

**Tablename**

The table name associated with the index.

**Tcreator**

The creator of the table associated with the index.

**DBid**

The database identifier of the data base owning the index space.

**OBid**

The index object identifier.

**PSid**

The index space pageset object identifier. This is the ISOBID.

The line commands that can be used on DSM Indexspaces panel are described in the following table:

*Table 32. DSM Indexspaces panel line commands*

Line command	Description
S	View the data sets owned by the selected index space.
Q	Add the index space to the move queue; all data sets associated with the index space will be selected. After you add an index space to the move queue, enter QEDIT in the command line (or press PF4) to view the list of data sets to be moved. This command may be used on multiple lines on the panel.
D	Delete all index space data sets from the data set move queue. This command may be used on multiple lines on the panel.

## Selecting data sets from storage groups

You can select a storage group to move all the data sets from the storage group, or drill down to view specific data sets.

### About this task

To select data sets beginning at the storage group level, type 4 on the Specify Dataset Selection Type input line and press Enter. The Specify Storage Group window appears.

The Specify Storage Group window, shown in the following figure, lets you narrow the list of storage groups that appears on the next panel. Enter a storage group name in the Storage Group field. Selection criteria (\*) are allowed.

**Note:** The Storage Group field allows up to 128 bytes. To scroll this field, place the cursor in the field and use the PF11 key to scroll right and the PF10 key to scroll left.

Specify Storage Group

Storage Group S\* >

Figure 267. Specify Storage Group window

When you press Enter, the panel shown in the following figure is displayed:

AUTOTOOL V4R2 ----- DSM Stogroup Summary ----- 2011/08/30 14:59:11											
Option ==> Scroll ==> CSR											
Line Commands: S - View Database PF4 View MoveQ											
----- +>											
SSID: SS1A	Stogroup: S* >										
-----	-----										
Cmd	Stogroup	Creator	StgVcat	SMS	VLct	DBct	TSct	ISct	DSNct	SpcUse	SpaceUse
SG1084	RSTEST	SS1A	Y	*	0	0	0	0	0	0.0%	0K
SGAINLAB	CSKUAN	SS1A	N	1	1	3	0	3	0.0%	0K	
SGAINLOB	CSMINIA	SS1A	N	1	1	2	0	2	0.0%	0K	
SGALA01	PDPRIID	SS1A	Y	*	0	0	0	0	0.0%	0K	
SGARY65	ARYTEST	SS1A	Y	*	1	1	0	1	0.0%	0K	
SGAU3909	CSKUAN	SS1A	N	1	1	4	0	20	0.0%	0K	
SGAU3911	CSKUAN	SS1A	N	1	1	6	0	10	0.0%	0K	
SGAU8202	CSKUAN	SS1A	N	1	1	1	0	5	0.0%	0K	
SGAUA203	CSMINIA	SS1A	N	1	1	1	0	0	0.0%	0K	
SGAUB701	CSKUAN	SS1A	N	1	0	0	0	0	0.0%	0K	
SGAUH306	CSKUAN	SS1A	N	1	1	6	0	10	0.0%	0K	
SGAUH309	CSKUAN	SS1A	N	1	1	1	0	5	0.0%	0K	
SGAUI402	CSKUAN	SS1A	N	1	1	6	0	10	0.0%	0K	
SGAUY203	CSKUAN	SS1A	N	1	1	1	0	5	0.0%	0K	
SGD00D1	PDDUDE	SS1A	Y	*	1	1	0	1	0.0%	0K	
SGH30961	CSHAA2	SS1A	Y	*	1	1	0	1	100.0%	48.0K	
SGH30965	CSKUAN	SS1A	N	1	1	1	0	5	100.0%	240.0K	
SGHAQA28	CSKUAN	SS1A	N	1	1	6	0	10	31.9%	460.0K	
SGHAQA32	CSKUAN	SS1A	N	1	1	4	0	20	100.0%	14.1M	
SGHAQA33	CSKUAN	SS1A	N	1	1	1	0	5	100.0%	5.9M	
SGLA0101	CSCARLA	SS1A	N	1	1	2	0	0	0.0%	0K	
SGPITT01	ARYTEST	SS1A	Y	*	0	0	0	0	0.0%	0K	
SGRE0101	ARYTEST	SS1A	Y	*	1	1	0	1	0.0%	0K	

Figure 268. DSM Stogroup Summary panel

The DSM Stogroup Summary panel lists the storage groups that meet your selection criteria. On this panel, you can select a storage group to view all the databases using the storage group.

The following describes the fields on the DSM Stogroup Summary panel.

**SSID** The DB2 subsystem ID.

**Stogroup**

This header field shows the storage group name or mask you entered on the previous window.

**Stogroup**

The storage group name.

**StgVcat**

The VCAT on which the storage group resides.

**SMS** This column contains Y if the device is SMS-managed or N if the device is not SMS-managed.

**VLct** If the storage group is SMS-managed, this column contains \*; otherwise, this column contains the number of volumes used for the storage group.

**DBct** The number of databases using the storage group.

**TSct** The number of table spaces in the storage group.

**ISct** The number of index spaces in the storage group.

**DSNct**

The number of data sets in the storage group.

**SpcUse**

The percentage of space allocated that is currently used by data sets within the storage group. The value is derived by totaling all space used for all data sets within the storage group and dividing it by all space allocated for the data sets. Space used is derived from data set high used RBA. Space allocated is derived from data set high allocated RBA.

**SpaceUse**

The amount of space in use by the storage group, in kilobytes (K), megabytes (M), gigabytes (G), or terabytes (T).

**SpaceAlc**

The amount of space allocated by the storage group, in kilobytes (K), megabytes (M), gigabytes (G), or terabytes (T).

**AvgExt**

The average number of extents taken for a single data set in the storage group.

**MaxExt**

The maximum number of extents taken for a single data set in the storage group.

**Creator**

The name of the storage group creator.

The line command that can be used on the DSM Stogroup Summary panel is described in the following table:

Table 33. DSM Stogroup Summary panel line command

Line command	Description
S	View the databases using the storage group.

## Selecting databases in a storage group

You can select a data base in a storage group and move all the data sets from the database, or drill down to view specific data sets.

The DSM Stogroup DB Summary panel, shown in the following figure, lists the databases in the selected storage group. You can select a database to move all data sets associated with the database, or you can drill down to select specific data sets or index space data sets.

```

AUTOTOOL V4R2  ----- DSM Stogroup DB Summary -----  2011/08/30  15:13:01
Option  ==>                               Scroll ==> CSR
Line Commands: S - View Spacenames  Q - Add to MoveQ  D - Del from MoveQ
-----
SSID: SS1A                Stogroup: SGAINLAB >
-----
Cmd  DBName  Creator  TSct  ISct  DSNct  AvgExt  MaxExt  SpcUse  SpaceUse  SpaceAlc
DBAINLAB CSKUAN      3    2    5          0    0.0%      0K      0K
***** Bottom of Data *****
PF4 View MoveQ  PF17 Prev STG  PF18 Next STG  PF19 First STG  PF20 Last STG

```

Figure 269. DSM Stogroup DB Summary panel

The following section describes the fields on the DSM Stogroup DB Summary panel.

**SSID** The DB2 subsystem ID.

### Stogroup

This header field shows the storage group name you selected on the previous panel.

### DBName

The name of the database. If one or more data sets in the database are in the move queue, this field is highlighted. If all data sets in the database are in the move queue, an asterisk (\*) appears next to the database name. If some of the data sets in the database are in the move queue, a plus sign (+) appears next to the database name.

### Creator

The user ID of the database creator. If all data sets in the database are in the move queue, this field is highlighted.

**TSct** The number of table spaces in the database.

**ISct** The number of index spaces in the database.

### DSNct

The total number of data sets allocated for the space.

### AvgExt

The average number of extents taken per data set.

### MaxExt

The highest number of extents taken to date by a data set in the database.

**SpcUse**

The percentage of space allocated that is currently used by data sets owned by the database. The value is derived by totaling all space used for all data sets within the database and dividing it by all space allocated for the database. Space used is derived from data set high used RBA. Space allocated is derived from data set high allocated RBA.

**SpaceUse**

The amount of space in use by the data sets in the database, in kilobytes (K), megabytes (M), gigabytes (G), or terabytes (T).

**SpaceAlc**

The amount of space allocated by all the data sets in the database, in kilobytes (K), megabytes (M), gigabytes (G), or terabytes (T).

**UsrDef**

The number of user-managed data sets in the database.

**StgDef**

The number of DB2-managed data sets in the database

**DBid** The database identifier.

The line commands that can be used on DSM Stogroup DB Summary panel are described in the following table:

*Table 34. DSM Stogroup DB Summary panel line commands*

Line command	Description
S	View the spaces in the database.
Q	Add the database to the move queue; all data sets associated with the database will be selected. After you add a database to the move queue, enter QEDIT in the command line (or press PF4) to view the list of data sets to be moved. This command may be used on multiple lines on the panel.
D	Delete all of the database data sets from the data set move queue. This command may be used on multiple lines on the panel.

---

## Selecting user-defined data sets using the VCAT

This topic explains how to select user-defined data sets using the VCAT name.

**About this task**

To select user-defined DB2 data sets from a VCAT name, type 5 on the Specify Dataset Selection Type input line and press Enter. The Specify User Defined Selection window appears.

The Specify User Defined Selection window, shown in the following figure, lets you narrow the list of VCAT names that appears on the next panel. Enter a VCAT group in the Using Vcat name field. Selection criteria (\*) are allowed.



Figure 270. Specify User Defined Selection window

When you press Enter, the panel shown in the following figure is displayed:

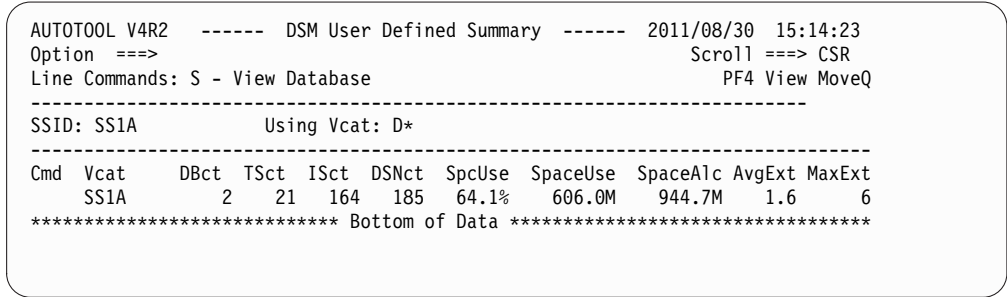


Figure 271. DSM User Defined Summary panel

The DSM User Defined Summary panel lists the VCATs that meet your selection criteria. On this panel, you can select a VCAT to view all the databases on the VCAT.

The following section describes the fields on the DSM User Defined Summary panel.

**SSID** The DB2 subsystem ID.

**Using Vcat**

This header field shows the VCAT name you entered on the previous window.

**Vcat** The volume catalog on which the user-defined data sets reside.

**DBct** The number of databases with user-defined data sets using the VCAT.

**TSct** The number of table spaces with user-defined data sets using the VCAT.

**ISct** The number of index spaces with user-defined data sets using the VCAT.

**DSNct**

The total number of data sets allocated for the databases on the VCAT.

**SpcUse**

The percentage of space allocated that is currently used by user-defined data sets using the VCAT. The value is derived by totaling all space used for applicable data sets and dividing it by all space allocated for the data sets. Space used is derived from data set high used RBA. Space allocated is derived from data set high allocated RBA.

**SpaceUse**

The amount of space in use by all user-defined data sets on the VCAT, in kilobytes (K), megabytes (M), gigabytes (G), or terabytes (T).

**SpaceAlc**

The amount of space allocated by user-defined data sets on the VCAT, in kilobytes (K), megabytes (M), gigabytes (G), or terabytes (T).

**AvgExt**

The average number of extents taken for a single user-defined data set on the VCAT.

### MaxExt

The maximum number of extents taken for a single user-defined data set on the VCAT.

The line command that can be used on the DSM User Defined Summary panel is described in the following table:

Table 35. DSM User Defined Summary panel line command

Line command	Description
S	View the databases with user-defined data sets on this VCAT.

## Selecting databases with user-defined data sets

The DSM User Defined Databases panel lists the databases that contain user-defined data sets.

You can select a database to move all data sets associated with the database, or you can drill down to select specific data sets in the database.

```
AUTOT00L V4R2  ----- DSM User Defined Databases ----- 2011/08/30 15:15:46
Option  ==>                                     Scroll ==> CSR
Line Commands: S - View Spacenames  Q - Add to MoveQ  D - Del from MoveQ
----->
SSID: SS1A          Using Vcat: SS1A
-----
Cmd  DBName  Creator  TSct  ISct  DSNct  AvgExt  MaxExt  SpcUse  SpaceUse  SpaceAlc
DSNDB06  SYSIBM    21    164   185    1.6     6   64.1%   606.0M   944.7M
***** Bottom of Data *****

PF4 View MoveQ  PF17 Prev Vct  PF18 Next Vct  PF19 First Vct  PF20 Last Vct
```

Figure 272. DSM User Defined Databases panel

The following sections describes the fields on the DSM User Defined Databases panel.

**SSID** The DB2 subsystem ID.

### Using Vcat

This header field shows the VCAT name you selected on the previous panel.

### DBName

The name of the database. If one or more data sets in the database are in the move queue, this field is highlighted. If all data sets in the database are in the move queue, an asterisk (\*) appears next to the database name. If some of the data sets in the database are in the move queue, a plus sign (+) appears next to the database name.

### Creator

The user ID of the database creator. If all data sets in the database are in the move queue, this field is highlighted.

**TSct** The number of table spaces in the database with user-defined data sets.

**ISct** The number of index spaces in the database with user-defined data sets.

### DSNct

The total number of user-defined data sets allocated for the database.



**AvgExt**

The average number of extents taken per data set.

**MaxExt**

The highest number of extents taken to date by a data set in the database.

**SpcUse**

The percentage of space allocated that is currently used by data sets owned by the database. The value is derived by totaling all space used for all data sets within the database and dividing it by all space allocated for the database. Space used is derived from data set high used RBA. Space allocated is derived from data set high allocated RBA.

**SpaceUse**

The amount of space in use by the data sets in the database, in kilobytes (K), megabytes (M), gigabytes (G), or terabytes (T).

**SpaceAlc**

The amount of space allocated by the data sets in the database, in kilobytes (K), megabytes (M), gigabytes (G), or terabytes (T).

**UsrDef**

The number of user-managed data sets in the database.

**StgDef**

The number of DB2-managed data sets in the database

**DBid** The database identifier.

The line commands that can be used on the DSM User Defined Databases panel are described in the following table:

*Table 36. DSM User Defined Databases panel line commands*

Line command	Description
S	View the database's user-defined data sets using the VCAT.
Q	Add all the database's user-defined data sets using the VCAT to the move queue. After you add a database to the move queue, enter QEDIT in the command line (or press PF4) to view the list of data sets to be moved. This command may be used on multiple lines on the panel.
D	Delete all of the database's user-defined data sets using the selected VCAT from the data set move queue. This command may be used on multiple lines on the panel.

## Selecting user- and DB2-defined data sets using the VCAT

This topic explains how to select both user- and DB2-defined data sets using the VCAT name.

### About this task

To select both user-defined and DB2-defined data sets from a VCAT name, type 6 on the Specify Dataset Selection Type input line and press Enter. The Specify Vcat Selection window, shown in the following figure, is displayed.

The Specify Vcat Selection window lets you narrow the list of VCAT names that appears on the next panel. Enter a VCAT name in the Vcat name field. Selection

criteria (\*) are allowed.

Specify Vcat Selection

Vcat name    DA\*

Figure 273. Specify Vcat Selection window

When you press Enter, the panel shown in the following figure is displayed:

AUTOTOOL V4R2    -----    DSM Vcat Summary    -----    2011/08/30    15:18:13  
Option    ==>    Scroll    ==>    CSR

-----

Line Commands: S - View Database    PF4 View MoveQ  
-----    >

SSID: SS1A    Vcat: DA\*

-----

Cmd	Vcat	DBct	TSct	ISct	DSNct	SpcUse	SpaceUse	SpaceAlc	AvgExt	MaxExt
	SS1A	1204	2765	4436	9187	89.4%	11.8G	13.2G	0.7	197

\*\*\*\*\* Bottom of Data \*\*\*\*\*

Figure 274. DSM Vcat Summary panel

The DSM Vcat Summary panel lists the VCAT names that meet your selection criteria. On this panel, you can select a VCAT to view the databases on the VCAT and their storage group and user-defined DB2 data sets.

The following section describes the fields on the DSM Vcat Summary panel.

**SSID**    The DB2 subsystem ID.

**Vcat**    This header field shows the VCAT name you entered on the previous window.

**Vcat**    The volume catalog name.

**DBct**    The number of databases using the VCAT.

**TSct**    The number of table spaces using the VCAT.

**ISct**    The number of index spaces using the VCAT.

**DSNct**

The total number of data sets allocated for the databases on the VCAT.

**SpcUse**

The percentage of space allocated that is currently used by data sets using the VCAT. The value is derived by totaling all space used for all applicable data sets and dividing it by all space allocated for the data sets. Space used is derived from data set high used RBA. Space allocated is derived from data set high allocated RBA.

**SpaceUse**

The amount of space in use by all data sets using the VCAT, in kilobytes (K), megabytes (M), gigabytes (G), or terabytes (T).

**SpaceAlc**

The amount of space allocated by data sets using the VCAT, in kilobytes (K), megabytes (M), gigabytes (G), or terabytes (T).

**AvgExt**

The average number of extents taken per data set.

**MaxExt**

The maximum number of extents taken for a single DB2 data set using the VCAT.

**UsrDef**

The number of user-managed data sets using the VCAT.

**StgDef**

The number of DB2-managed data sets using the VCAT

The line command that can be used on the DSM Vcat Summary panel are described in the following table:

*Table 37. DSM Vcat Summary panel line command*

Line command	Description
S	View the databases containing data sets using this VCAT.

## Selecting databases using a specified VCAT

The DSM Vcat Database panel lists the databases that are using the specified VCAT. You can select a database to move all data sets associated with the database, or you can drill down to select specific data sets in the database.

The following figure shows the DSM Vcat Databases panel:

```

AUTOTOOL V4R2 ----- DSM Vcat Databases ----- 2011/08/30 15:25:04
Option ==> Scroll ==> CSR
-----
Line Commands: S - View Spacenames Q - Add to MoveQ D - Del from MoveQ
-----
SSID: SS1A Vcat: SS1A
-----
Cmd DBname Creator TSct ISct DSNct AvgExt MaxExt SpcUse SpaceUse SpaceAlc
ABP1043D TSBAC 1 3 22 0 0.0% 0K 0K
ABP1092D CSJENN 1 1 2 0 0.0% 0K 0K
ABP1092G PDRICK 1 1 2 0 0.0% 0K 0K
ABP1092R PDRICK 1 1 16 0 0.0% 0K 0K
ABP21DB CSJENN 21 31 52 0 0.0% 0K 0K
ABP21TDB CSJENN 1 0 1 0 0.0% 0K 0K
ABPBC01 ABPSTC 21 31 52 0.0 1 100.0% 720.0K 720.0K
ABPBC01T ABPSTC 1 0 1 0 0.0% 0K 0K
ABPDK01T ABPSTC 1 0 1 1.0 1 100.0% 48.0K 48.0K
ABPDK02T ABPSTC 1 0 1 1.0 1 100.0% 48.0K 48.0K
ABPDK21T ABPSTC 1 0 1 0 0.0% 0K 0K
ABPDK22 ABPSTC 21 31 52 0 0.0% 0K 0K
ABPDK22T ABPSTC 1 0 1 0 0.0% 0K 0K
ABPDKD1 ABPSTC 21 31 52 1.0 1 100.0% 36.6M 36.6M
ABPDKDB ABPSTC 22 31 53 1.0 1 94.4% 35.2M 37.3M
ABPHASHD PDRICK 1 1 2 1.5 2 99.0% 73.8M 74.5M
ABPPDZ01 PDZAKI 1 1 2 0 0.0% 0K 0K
ABPRH22 ABPSTC 21 30 30 0 0.0% 0K 0K
ABPRH22M ABPSTC 1 0 1 0 0.0% 0K 0K
ABPRLDB1 CSJENN 5 0 15 0 0.0% 0K 0K
ABPRSDB1 PDKILIA 5 5 30 1.0 1 93.6% 24.4M 26.0M
PF4 View MoveQ PF17 Prev Vct PF18 Next Vct PF19 First Vct PF20 Last Vct

```

*Figure 275. DSM Vcat Databases panel*

The following section describes the fields on the DSM Vcat Databases panel.

**SSID** The DB2 subsystem ID.

**Vcat** This header field shows the VCAT name you selected on the previous panel.

**DBname**

The name of the database. If one or more data sets in the database are in the move queue, this field is highlighted. If all data sets in the database are in the move queue, an asterisk (\*) appears next to the database name. If some of the data sets in the database are in the move queue, a plus sign (+) appears next to the database name.

**Creator**

The user ID of the database creator. If all data sets in the database are in the move queue, this field is highlighted.

**TSct** The number of table spaces in the database.

**ISct** The number of index spaces in the database.

**DSNct**

The total number of data sets allocated for both the table spaces and index spaces in the database.

**AvgExt**

The average number of extents taken per data set.

**MaxExt**

The highest number of extents taken to date by a data set in the database.

**SpcUse**

The percentage of space allocated that is currently used by data sets owned by the database. The value is derived by totaling all space used for all data sets within the database and dividing it by all space allocated for the database. Space used is derived from data set high used RBA. Space allocated is derived from data set high allocated RBA.

**SpaceUse**

The amount of space in use by all data sets in the database, in kilobytes (K), megabytes (M), gigabytes (G), or terabytes (T).

**SpaceAlc**

The amount of space allocated by the data sets in the database, in kilobytes (K), megabytes (M), gigabytes (G), or terabytes (T).

**UsrDef**

The number of user-managed data sets in the database.

**StgDef**

The number of DB2-managed data sets in the database.

**DBid** The database identifier.

The line commands that can be used on the DSM Vcat Databases panel are described in the following table:

*Table 38. DSM Vcat Databases panel line commands*

Line command	Description
S	View the spaces in the database.
Q	Add the database's data sets using the VCAT to the move queue; all data sets associated with the database will be selected. After you add a database to the move queue, enter QEDIT in the command line (or press PF4) to view the list of data sets to be moved. This command may be used on multiple lines on the panel.

Table 38. DSM Vcat Databases panel line commands (continued)

Line command	Description
D	Delete all of the database's data sets using the selected VCAT from the data set move queue. This command may be used on multiple lines on the panel.

## Selecting data sets by volume

You can select a volume to move all the data sets from the volume, or drill down to view specific data sets on the volume.

### About this task

To select data sets by volume name, type 7 on the Specify Dataset Selection Type input line and press Enter. The Specify Volume Name window appears.

The Specify Volume Name window, shown in the following figure, lets you narrow the list of volumes that appears on the next panel. Enter a volume name in the Volume field. Selection criteria (\*) are allowed.

A screenshot of a software window titled "Specify Volume Name". It contains a single text input field with the text "Volume D\*" entered inside it.

Figure 276. Specify Volume Name window

When you press Enter, the panel shown in the following figure is displayed:

```

AUTOTOOL V4R2 ----- DSM Volume Summary ----- 2011/08/30 15:27:07
Option ==> Scroll ==> CSR
Line Commands: S - View Volume Q - Add to MoveQ PF4 View MoveQ
D - Del from MoveQ
-----+>
SSID: SS1A Volume: D*
-----

```

Cmd	Volume	Addr	Type	Sta	Mnt	Alc	SMS	DSNct	PctUse	FreeCyls	FreeExts	FreeMax
	DBF103	A12E	3390	ONL	PRV	N	Y	1087	42.8%	636	19	629
	DBF102	A12D	3390	ONL	PRV	N	Y	1061	10.1%	1000	38	988
	DBF106	A131	3390	ONL	PRV	N	Y	1050	10.1%	1000	1	1000
	DBF101	A12C	3390	ONL	PRV	N	Y	1030	8.8%	1015	23	981
	DBF105	A130	3390	ONL	PRV	N	Y	1021	11.0%	990	3	981
	DBF100	A12B	3390	ONL	PRV	N	Y	984	9.8%	1003	59	976
	DBP167	A51E	3390	ONL	PRV	Y	Y	361	90.8%	2996	803	280
	DBP16B	A505	3390	ONL	PRV	Y	Y	357	87.7%	4010	511	290
	DBP169	7200	3390	ONL	PRV	Y	Y	336	88.4%	3479	690	259
	DBP136	761B	3390	ONL	PRV	Y	Y	298	90.9%	302	335	35
	DBP15B	A4A9	3390	ONL	PRV	Y	Y	243	89.6%	345	203	46
	DBP142	7651	3390	ONL	PRV	Y	Y	232	91.7%	277	213	54
	DBP14F	765E	3390	ONL	PRV	Y	Y	230	89.1%	364	193	110
	DBP164	A217	3390	ONL	PRV	Y	Y	216	89.4%	1052	412	30
	DBP134	7619	3390	ONL	PRV	Y	Y	210	95.1%	162	208	18
	DBP120	A488	3390	ONL	PRV	Y	Y	203	92.9%	234	246	40
	DBP161	A27F	3390	ONL	PRV	Y	Y	202	89.1%	362	187	77
	DBP148	7657	3390	ONL	PRV	Y	Y	202	90.0%	334	295	46
	DBP153	A4AE	3390	ONL	PRV	Y	Y	198	89.6%	346	306	79
	DBP147	7656	3390	ONL	PRV	Y	Y	192	90.0%	331	340	23
	DBP14C	765B	3390	ONL	PRV	Y	Y	187	92.1%	263	268	17
	DBP12F	760E	3390	ONL	PRV	Y	Y	187	91.1%	295	244	31

Figure 277. DSM Volume Summary panel

The DSM Volume Summary panel lists the volumes that meet your selection criteria. On this panel, you can select a volume to move all data sets associated with the volume, or you can drill down to select specific data sets on the volume.

The following section describes the fields on DSM Volume Summary panel.

**SSID** The DB2 subsystem ID.

#### Volume

This header field shows the volume name or mask you entered on the previous window.

#### Volume

The volume name. If one or more data sets on the volume are in the move queue, this field is highlighted. If all data sets on the volume are in the move queue, an asterisk (\*) appears next to the volume name. If some of the data sets on the volume are in the move queue, a plus sign (+) appears next to the volume name.

**Addr** The volume address. If all data sets on the volume are in the move queue, this field is highlighted.

**Type** The device type.

**Sta** The volume status. Possible values are:

- ONL: Volume is online
- OFF: Volume is offline
- GOF: Volume is currently going offline

**Mnt** The volume mount status. Possible values are:

- PRV: Volume is mounted as private.
- PUB: Volume is mounted as public.

- STR: Volume is mounted as storage.
- Alc** The volume allocation status. Possible values are:
- Y: The volume is currently allocated.
  - N: The volume is not currently allocated.
- SMS** Whether the device is SMS managed:
- Y: The device is SMS-managed.
  - N: The device is not SMS-managed.
- DSNct**  
The total number of data sets on the volume owned by the DB2 subsystem being viewed.
- PctUse**  
The percentage of total space on the volume that is currently allocated and in use by all data sets allocated on the volume.
- FreeCyls**  
The total number of free cylinders available on the volume.
- FreeExts**  
The total number of free extents available on the volume.
- MaxExt**  
The largest free extent on the volume, in cylinders.
- TotCyls**  
The total number of cylinders on the volume.

The line commands that can be used on the DSM Volume Summary panel are described in the following table:

*Table 39. DSM Volume Summary panel line commands*

Line command	Description
S	View the data sets on the volume.
Q	Add all DB2 subsystem data sets on the volume to the move queue. After you add the volume data sets to the move queue, enter QEDIT in the command line (or press PF4) to view the list of data sets to be moved. This command may be used on multiple lines on the panel.
D	Delete all of the DB2 subsystem's data sets on the volume from the data set move queue. This command may be used on multiple lines on the panel.

## Selecting data sets on a volume

You can select one or more the data sets that reside on a volume to be moved, or you can drill down to see extent information for the data sets.

The DSM Volume Datasets panel, shown in the following figure, lists all the data sets that reside on the selected volume.

```

AUTOTOOL V4R2 ----- DSM Volume Datasets ----- 2011/08/30 15:32:43
Option ==> Scroll ==> CSR
Line Commands: S - View Dataset Q - Add to MoveQ D - Del from MoveQ
-----+>
SSID: SS1A Volume: DBF103 DSN Count: 1087
-----+>

```

Cmd	DBName	Spacenam	Dsn	Type	Exts	VLct	FVol	SpcUse	SpaceUse
	GARYDB	PART15Y7	0002	NCAT	1	1	DBF103	100.0%	720.0K
	GARYDB	PBGTABLE	0001	IS	1	1	DBF103	100.0%	720.0K
	GARYDB	PBGTS01	0001	PTTS	3	1	DBF103	100.0%	265.8M
	GARYDB	PBRTABLE	0003	PTIS	1	1	DBF103	100.0%	720.0K
	GARYDB	PBRTS01	0002	PTTS	1	1	DBF103	100.0%	720.0K
	GARYDB	TS4PARTS	0001	PTTS	1	1	DBF103	100.0%	48.0K
	GARYMT	FLSHTST1	0001	NCAT	1	1	DBF103	100.0%	48.0K
	GARYMT	FLSHTST5	0001	NCAT	1	1	DBF103	100.0%	48.0K
	GARYPART	TS0500	0007	NCAT	1	1	DBF103	100.0%	48.0K
	GARYPART	TS0500	0010	NCAT	1	1	DBF103	100.0%	48.0K
	GARYPART	TS0500	0015	NCAT	1	1	DBF103	100.0%	48.0K
	GARYPART	TS0500	0016	NCAT	1	1	DBF103	100.0%	48.0K
	GARYPART	TS0500	0018	NCAT	1	1	DBF103	100.0%	48.0K
	GARYPART	TS0500	0023	NCAT	1	1	DBF103	100.0%	48.0K
	GARYPART	TS0500	0024	NCAT	1	1	DBF103	100.0%	48.0K
	GARYPART	TS0500	0030	NCAT	1	1	DBF103	100.0%	48.0K
	GARYPART	TS0500	0034	NCAT	1	1	DBF103	100.0%	48.0K
	GARYPART	TS0500	0039	NCAT	1	1	DBF103	100.0%	48.0K
	GARYPART	TS0500	0041	NCAT	1	1	DBF103	100.0%	48.0K
	GARYPART	TS0500	0044	NCAT	1	1	DBF103	100.0%	48.0K
	GARYPART	TS0500	0050	NCAT	1	1	DBF103	100.0%	48.0K
	GARYPART	TS0500	0052	NCAT	1	1	DBF103	100.0%	48.0K

```

PF4 View MoveQ PF17 Prev Vol PF18 Next Vol PF19 First Vol PF20 Last Vol

```

Figure 278. DSM Volume Datasets panel

The following section describes the fields on the DSM Volume Datasets panel.

**SSID** The DB2 subsystem ID.

#### Volume

This header field shows the volume name you selected on the previous window.

#### DSN Count

The total number of data sets on the volume owned by the DB2 subsystem being viewed.

#### DBName

The name of the database. This field is highlighted and an asterisk (\*) appears next to the database name if the data set is in the move queue.

#### Spacenam

The name of the space.

**Dsn** The data set number.

**Type** The object type: TS for simple table space, PTTS for partitioned table space, IS for index space, or PTIS for partitioned index space.

**Exts** The number of extents that the data set has taken.

**VLct** The number of volumes on which the data set resides.

**FVol** The volume on which the data set resides; if a multi-volume data set, this field contains only the first volume.

#### SpcUse

The percentage of space allocated that is currently used by the data set.



The value is derived by dividing space used by space allocated. Space used is obtained from data set high used RBA. Space allocated is obtained from data set high allocated RBA.

**SpaceUse**

The amount of space in use by the data set, in kilobytes (K), megabytes (M), gigabytes (G), or terabytes (T).

**SpaceAlc**

The amount of space allocated by the data set, in kilobytes (K), megabytes (M), gigabytes (G), or terabytes (T).

**Vcat** The volume catalog on which the data set resides.

**Stogroup**

The storage group, if the data set is DB2-managed.

**QTY** The unit of space allocation. TRK is tracks, CYL is cylinders.

**Pqty** The primary space allocation amount, in the specified units.

**Sqty** The secondary space allocation amount, in the specified units.

**TrksAlc**

The number of tracks allocated for the data set.

**HURBA\_Dec**

The high used RBA for the data set, in decimal format.

**HARBA\_Dec**

The high allocated RBA for the data set, in decimal format.

**HURBA\_Hex**

The high used RBA for the data set, in hexadecimal format.

**HARBA\_Hex**

The high allocated RBA for the data set, in hexadecimal format.

The line commands that can be used on the DSM Volume Datasets panel are described in the following table:

*Table 40. DSM Volume Datasets panel line commands*

Line command	Description
S	View data set extent information.
Q	Add the data set to the move queue. After you add a data set to the move queue, enter QEDIT in the command line (or press PF4) to view the list of data sets to be moved. This command may be used on multiple lines on the panel.
D	Delete the data set from the data set move queue. This command may be used on multiple lines on the panel.

## Using the move queue

The DSM Move Dataset Queue panel lists the data sets you have selected to move. This panel allows you to specify the new location and reallocations (if any) to be made during the move.

On this panel, you can:

- Specify where you want to move the data sets, either using VCAT or storage group

- Specify new primary or secondary quantities to reallocate space for the data sets
- Select to process the move in batch or online
- Select a data set to change individual values for the move

The data sets listed remain in the move queue until you process the move (batch or online), or until you return to the Specify Database Selection window.

You can add more data sets from any of the Dataset Manager panels and return to the move queue by entering the QEDIT command in the option line, or using the PF4 key.

The following figure shows the DSM Move Dataset Queue:

```

AUTOTOOL V4R2  -----  DSM Move Dataset Queue -----  2011/08/30  15:36:41
Option  ==>
Line Commands: S - Update entry  D - Del from queue
-----
Update Column      From      >  To      >  Dsn Count ==> 7
Where Like DB      SP              DSN              Reset Queue ==> (S)
Process Queue _  B - Batch  O - Online
Allow STG Vols to be specified N (Yes/No)
-----
Cmd  DBname  Spacenam  Dsn  Type  Vcat  Stogroup  Pqty_KB  Sqty_KB  Vlct
DBGPRI01  DEPT  0001  IS  _____  SYSDEFLT  0  0  0
DBGPRI01  DEPTX  0001  IS  _____  SYSDEFLT  0  0  0
DBGPRI01  EMPX  0001  IS  _____  SYSDEFLT  0  0  0
DBGPRI01  SSRNUMBE 0001  IS  _____  SYSDEFLT  0  0  0
DBGPRI01  TSDEPT 0001  TS  _____  SYSDEFLT  0  0  0
DBGPRI01  TSEMP  0001  TS  _____  SYSDEFLT  0  0  0
DBGPRI01  TSHIRE 0001  TS  _____  SYSDEFLT  0  0  0
***** Bottom of Data *****

```

Figure 279. DSM Move Dataset Queue

The following describes the fields on the DSM Move Dataset Queue panel.

#### Update Column From/To

Use this field to change the location and space allocation of the target data sets. Refer to “Using the Update Column and Where fields to change target allocations” on page 456 for information on using this field.

#### DSN Count

The total number of data sets in the move queue.

#### Where Like DB = \_\_\_\_\_ SP = \_\_\_\_\_ DSN =

Use these field in conjunction with the Update Column From/To fields to selectively apply changes to the data sets. Refer to “Using the Update Column and Where fields to change target allocations” on page 456 for information on using this field.

#### Reset Queue

Type S in this field and press Enter to remove all data sets from the move queue.

#### Process Queue

Indicate how you want to process the move: B for batch or O for online.

**Allow STG Vols to be specified**

Use this option to enable and disable the ability to specify target volume names when the target data set is DB2-managed.

- N: (Default) If N is specified, you cannot specify volume names for target data sets that are DB2-managed.
- Y: If Y is specified, you can specify specific target volumes within the target stogroup for any target data set that is DB2-managed. Confirmation displays will be issued if volume(s) specified do not exist in the target stogroup assigned to the DB2-managed target data set.

**DBname**

The name of the database.

**Spacenam**

The name of the space.

**Dsn**

The data set number.

**Type**

The object type: TS for simple table space, PTTS for partitioned table space, IS for index space, or PTIS for partitioned index space.

**Vcat**

The volume catalog on which the data set resides, if it is a user-managed data set.

**Stogroup**

The storage group in which the data set resides, if it is a DB2-managed data set.

**Pqty\_KB**

The primary space allocation amount in kilobytes.

**Sqty\_KB**

The secondary space allocation amount in kilobytes.

**Vlct**

The number of volumes on which the data set resides.

**Fvol**

The volume on which the data set resides; if a multi- volume data set, this field contains only the first volume.

**SMStorC**

If the data set is SMS-managed, its SMS storage class.

**SMSMgmtC**

If the data set is SMS-managed, its SMS management class.

**MSDataC**

If the data set is SMS-managed, its SMS data class.

**Exts**

The number of data set extents.

**Qty**

The unit of space allocation. TRK is tracks, CYL is cylinders.

**Pqty**

The primary space allocation amount, in the specified units.

**Sqty**

The secondary space allocation amount, in the specified units.

**SpcUse**

The percentage of the allocated data set that is in use.

**SpUse\_KB**

The number of 1024-byte units of space in use by the data set.

**SpAlc\_KB**

The number of 1024-byte units of space allocated for the data set.

**SpUse\_PG**

The number of 4K pages in use by the data set.

**SpAlc\_PG**

The number of 4K pages allocated for the data set.

**HURBA\_Dec**

The high used RBA for the data set, in decimal format.

**HARBA\_Dec**

The high allocated RBA for the data set, in decimal format.

**HURBA\_Hex**

The high used RBA for the data set, in hexadecimal format.

**HARBA\_Hex**

The high allocated RBA for the data set, in hexadecimal format.

## Using the Update Column and Where fields to change target allocations

The Update Column and Where fields allow you to change the location and space allocation of the target data sets.

### About this task

To change these values, use the following steps:

### Procedure

1. Type the column name you want to change in the Update Column field. Refer to Table 41 on page 457 for valid column abbreviations that can be used. For VCAT-defined data sets, you can change the Vcat, Fcol, Pqty\_KB, Sqty\_KB, and the SMSStorC, SMSMgmtC, and SMSDataC columns. For storage group-defined data sets, you can change the Stogroup, Pqty\_KB, and Sqty\_KB columns; the Fvol column can be changed for DB2-managed data sets if the Allow STG Vols to be specified field is set to Y.
2. Type the old column value in the From field. To change the column value regardless of the original value, type '\*' in this field.
3. Type the new column value in the To field. When altering primary and secondary quantities, you can enter a percentage to allow DSM to determine the new quantity.
4. If you want to apply these changes only to specific data sets, use the Where Like fields to specify the data sets. Masking using an asterisk or percent sign is allowed.
  - a. Type the database name in the Where Like DB = field. You must supply the database name if SP or DSN is specified.
  - b. Type the space name in the Like SP field. You must supply the space name if the DSN is specified.
  - c. Type the DSN number in the DSN field to apply changes to specific data sets only. If you do not specify the data set, the changes will be applied to all data sets in the move queue.
5. Press Enter. The new target values appear in the \*CHANGED data line beneath the selected data set(s) detail line.

## Results

### Column abbreviations supported on the Move Dataset Queue panel

When using the Update Column fields, use the supported column abbreviations described in the following table.

Table 41. Valid Update Column field abbreviations

Column	Abbreviation
Vcat	VC or 1
Stogroup	ST or 2
Pqty_KB	PQ or 3
Sqty_KB	SQ or 4
Fvol	FV or 5
SMSSstorC	SC or 6
SMSMgmtC	MC or 7
SMSDataC	DC or 8

### Using percentages for primary and secondary space allocations

When allocating space, you can specify a new quantity as a percentage of space initially allocated, currently allocated, or currently used.

#### About this task

Enter the percentages as follows:

Table 42. Quantity specifications for space allocation

Enter	Result
$n\%-nnnn\%$	Change primary or secondary quantity to $n\%$ of current primary or secondary quantity allocation values.
$n\%-nnnn\%A$	Change primary or secondary quantity to $n\%$ of current data set allocated size value.
$n\%-nnnn\%U$	Change primary or secondary quantity to $n\%$ of current data set used size value.

**Note:** If the calculated quantity results in a value less than 12 or greater than 4,194,304, the value is ignored.

For example, if you want to change the primary space allocations for the target data set to 110% of the space the data set currently uses, do the following:

#### Procedure

1. Enter the following in the Update Column fields: Update Column PQ\_\_\_\_\_ From \*\_\_\_\_\_ To 110%U\_\_\_\_
2. Press Enter.
3. The primary quantities are changed as follows: Note the \*CHANGED indicator and the new primary quantity:

Cmd	DBname	Spacename	Dsn	Type	Vcat	Stogroup	Pqty_KB	Sqty_KB	Vlct	Fvol
-	ADHDBEMP	ADHEMPTS	001	TS		48	144	48	1	ABC001
	*CHANGED						1584			
-	ADHDBEMP	ADHEMPIX	001	IS		SYSDEFLT	48	96	1	ABC001
	*CHANGED						264			

## Line commands

The line commands that can be used on this panel are described in the following table.

Table 43. Move Dataset Queue panel line commands

Line command	Description
S	Select a data set to update target information for the data set.
D	Delete a data set from the queue.

## Updating target information for a data set

The Update Move Dataset Entry panel allows you to change characteristics of the selected data set.

Refer to the following figure

```

AUTOTOOL V4R2 ----- Update Move Dataset Entry ----- 2011/08/30 15:39:05
Option ==>
Source DSN: SS1A.DSNDBC.DBGPRI01.DEPT.I0001.A001          1 of 7
                Source      Target      Source Dataset Information
Using Vcat . . . . . :                               Alloc Type
Stogroup . . . . . : SYSDEFLT >                      > Alloc PQty              0
                               Alloc SQty              0
Primary QTY in KB . . : 0                               Space Used Pct          .0%
Secondary QTY in KB . : 0                               Space Used KB           0
                               Space Alloc KB           0
Volume Count . . . . : 0                               Space Used Pages        0
First Volume . . . . . :                               Space Alloc Pages       0
Update Mult-Vol List . . . . . :                               Extents                 0
                               High Used RBA dec 0
SMS Storage Class . . :                               High Alc RBA dec 0
SMS Management Class . :                               High Used RBA hex 0
SMS Data class . . . :                               High Alc RBA hex 0

PF7 Prev  PF8 Next  PF10 First  PF11 Last  PF6 Copy Prev Target Values

```

Figure 280. Update Move Dataset Entry panel

The following describes the fields on the Update Move Dataset Entry panel.

### Source DSN

The fully qualified name of the selected source data set.

### n of nnn

The relative data set number within the Move Dataset Queue and the total number of data sets within the Move Dataset Queue.

**Vcat** If you want a DB2-managed data set to be user-managed, or you want to move a user-managed data set to a new volume, enter the volume catalog name in the Target field.

### Stogroup

If you want a user-managed data set to be DB2-managed, or you want to

move a DB2-managed data set to a new storage group, enter the new storage group in the Stogroup Target field.

**Primary QTY in KB**

To change the primary allocation quantity, enter the new quantity (in KB) in the Primary QTY in KB Target field.

**Secondary QTY in KB**

To change the secondary allocation quantity, enter the new quantity (in KB) in the Secondary QTY in KB Target field.

**Volume Count**

The number of volumes on which the data set currently resides.

**First Volume**

To change the volume where the data set is located (or in the case of a multi-volume data set, the first volume only) enter the new volume in the Volume Target field.

**Update Mult-Vol List**

For multi-volume data sets, you can update the list of volumes available for the data set. Type Y in this field to view or update the volume list.

**SMS Storage Class**

If the data set is SMS managed, you can change its class or classes by typing in the new class in the Target field.

**SMS Management Class**

If the data set is SMS managed, you can change its class or classes by typing in the new class in the Target field.

**SMS Data class**

If the data set is SMS managed, you can change its class or classes by typing in the new class in the Target field.

**Source Dataset Information**

This area of the panel displays information about the data set allocations, space usage, and extents. This information is read only.

## Updating a data set volume list

The Update Dataset Volume List panel allows you to specify volumes on which a multi-volume data set may reside when the data set is moved or reallocated.

This panel, shown in the following figure, appears when you enter Y in the Update Mult-Vol List field on the Update Move Dataset Entry panel, and the target allocation type is user-defined (Vcat).

```
AUTOTOOL V4R2 ----- Update Dataset Volume List ----- 2011/08/30 15:43:00
Option ==>
```

```
Source DSN: SS1A.DSNDBC.DBGPRI01.DEPT.I0001.A001
```

```
-----
```

```
Modify Volume List and press ENTER , when complete press PF3
```

```
TCK002  _____
_____
_____
_____
_____
_____
_____
```

Figure 281. Update Dataset Volume List panel

The source DSN is listed at the top of the panel. Add volumes by typing the volume name in the provided input areas. Press Enter, then PF3 to return to the Update Move Dataset Entry panel.

## Submitting the job to move the data sets

When you are ready to submit the job to move the data sets, specify the value in the Process move queue field to generate the job in batch or online.

### Submitting the move in batch

This topic describes the steps to submit a data set move job in batch.

#### About this task

When you specify to submit the job in batch, the window shown in the following figure is displayed:

```
Move Dataset in Batch Confirmation

You have requested to execute BATCH moves for all modified datasets
contained in the move dataset queue.

When the JCL generated is executed all datasets moved will be STOPPED
using the DB2 STOP command. When a dataset move has completed it will
be started using the DB2 START command.

Supply a valid JCL jobcard, then select the desired processing option
and press ENTER to continue.

1 Generate JCL for Batch execution and enter ISPF EDIT
2 Terminate the Move request and return

//JOB CARD JOB TUSER,CLASS=A,NOTIFY=&SYSUID

Optional dataset prefix USER1
```

Figure 282. Move Dataset in Batch Confirmation window



To generate the JCL for batch execution, specify a valid job card in this window. Optionally, enter a data set prefix for DB2 Automation Tool to use when allocating the data set to contain the move JCL; the default high level qualifier is your TSO user ID. Type 1 in the processing option field. When you press Enter, the move job appears in an edit session, from which you can submit the job. When finished, press PF3 to continue.

To cancel JCL generation, type 2 in the processing option field and press Enter. The JCL is not generated, and the DSM Move Dataset Queue panel reappears.

## Submitting the move online

This topic explains how to submit a data set move job online.

When you specify to submit the job online, the window shown in the following figure is displayed:

Move Datasets Online Confirmation

You have requested to execute ONLINE moves for all modified datasets contained in the move dataset queue. The moves will be executed online, from within your TSO/ISPF session.

During move execution all datasets moved will be STOPPED using the DB2 STOP command. Each dataset will be stopped for the amount of time it takes to move the individual dataset. The dataset will be started using the DB2 START command once the move has completed.

Select desired processing option and press ENTER to continue.

1 Execute the ONLINE Dataset Move

2 Terminate the Move request and return

Optional dataset prefix USER1

*Figure 283. Move Dataset Online Confirmation window*

To cancel the online move, type 2 in the processing option field and press Enter. The DSM Move Dataset Queue panel is displayed.

To execute the online data set move, type 1 in the processing option field. Optionally, enter a data set prefix for DB2 Automation Tool to use when allocating a data set used for move messages; the default high level qualifier is your TSO user ID. When you press Enter, the move is processed online.

After the move is processed, a report appears in a browse window showing the results of the move. The following figure shows a sample report.

```

BROWSE      TUSERA.HAAMOVE.ONLINE.DT021204.TM114925      Line 00000000 Col 001 080
Command ==>                                         Scroll ==> PAGE
***** Top of Data *****

HADM0020 - 13:33:48.099 PROCESSING OF INPUT PARAMETERS HAS STARTED
HADM0010 - INPUT PARAMETERS LOCATED ARE AS FOLLOWS:
          DB2SSID(SS01)
          PLANNAME(HAAT2V21)
          MAXMOVERS(02)
          MOVEDATASET (
          SOURCEDSN SS01.DSNDBC.ADHDBASE.ADHMAPIX.I0001.A001
          INDEXNAME TUSER.ADHMAPIX
          TARGETSTOGROUP SYSDEFLT
          TARGETQTY KILOBYTES
          TARGETPQTY 00000048
          TARGETSQTY 00000048
          )
HADM0022 - 13:33:48.147 PROCESSING OF INPUT PARAMETERS ENDED SUCCESSFULLY

*****
***** EXECUTION SUMMARY LOG FOR ALL DATASETS BEING MOVED, DATASET MOVE COUNT=00
*****
HADM0034 - 13:33:48.258 MOVE PROCESSING STARTED
HADM0030 - 13:33:48.279 ID=0001 ASSIGNED TO DSN=SS01.DSNDBC.ADHDBASE.ADHMAPIX.I0
HADM0031 - 13:33:48.279 ID=0001 MOVE STARTED DSN=SS01.DSNDBC.ADHDBASE.ADHMAPIX.I
HADM0032 - 13:33:50.201 ID=0001 MOVE ENDED SUCCESSFULLY DSN=SS01.DSNDBC.ADHDBASE
HADM0033 - 13:33:50.201 EXECUTION COMPLETE ALL DSNs SUCCESSFULLY PROCESSED

*****
***** EXECUTION DETAIL LOG FOR ID=0001 DSN=SS01.DSNDBC.ADHDBASE.ADHMAPIX.I0001.
*****
HADM0050 - 13:33:48.279 ID=0001 MOVE IN PROGRESS DSN=SS01.DSNDBC.ADHDBASE.ADHMAP
HADM0064 - 13:33:48.548 ID=0001 TARGETDSN=SS01.DSNDBC.ADHDBASE.ADHMAPIX.I0001.A0
HADM0060 - 13:33:48.772 ID=0001 STOP COMMAND SUCCESSFUL DB=ADHDBASE SP=ADHMAPIX
HADM0065 - 13:33:48.990 ID=0001 TARGETDSN DEFINE SUCCESSFUL TDSN=SS01.DSNDBC.ADH
HADM0062 - 13:33:49.295 ID=0001 SOURCEDSN RENAME SUCCESSFUL SDSN=SS01.DSNDBC.ADH
HADM0080 - 13:33:49.410 ID=0001 SOURCEDSN COPY STARTED
HADM0081 - 13:33:49.424 ID=0001 SOURCEDSN COPY SUCCESSFUL
HADM0063 - 13:33:49.738 ID=0001 TARGETDSN RENAME SUCCESSFUL TDSN=SS01.DSNDBC.ADH
HADM0067 - 13:33:49.879 ID=0001 SOURCEDSN DELETE SUCCESSFUL SDSN=SS01.DSNDBC.ADH
HADM0075 - 13:33:50.035 ID=0001 ALTER STOGROUP SUCCESSFUL STOGROUP=SYSDEFLT
HADM0061 - 13:33:50.049 ID=0001 START COMMAND SUCCESSFUL DB=ADHDBASE SP=ADHMAPIX
HADM0053 - 13:33:50.132 ID=0001 EXECUTION ELAPSED TIME=00:00:01.853 CPU TIME=00:
HADM0051 - 13:33:50.132 ID=0001 RCPUTIME=00:00:00.56173 WCPUTIME=00:00:00.00035
HADM0054 - 13:33:50.132 ID=0001 RECORDS READ=000000012 RECORDS WRITTEN=000000012
HADM0055 - 13:33:50.132 ID=0001 MOVE SUCCESSFULLY COMPLETED
***** Bottom of Data *****

```

Figure 284. Move results report

Press PF3 to return to Dataset Manager.

## Restoring DB2 data sets in case of ABEND

If an ABEND occurs during the data set move, data sets may be left with invalid names. This topic explains how to rename the data sets.

If a job using Dataset Manager to resize DB2 objects is canceled or ABENDs, the table spaces, partitions, or index spaces may be left with invalid names for their underlying VSAM files. While resizing a DB2 VSAM data set, the actual data set names are:

- h1q.DSNDBx.databasesname.spacename.INEWx.A00y
- h1q.DSNDBx.databasesname.spacename.IOLDx.A00y

"NEWx" is the expanded newly allocated space, "OLDx" is the current production space, and the copy is taking place from OLDx to NEWx.

If the job is canceled or ABENDs, the data set names will remain as shown. These data sets names are not accessible by DB2. To restore accessibility to the spaces, use IDCAMS to rename:

```
hlq.DSNDBx.databasesname.spacename.IOLDx.A00y
```

to

```
hlq.DSNDBx.databasesname.spacename.I000x.A00y
```

After renaming the files and starting the spaces, they will be accessible to DB2.

---

## Using Dataset Manager in batch

This section describes how to build the JCL and control cards required for batch execution without using the Dataset Manager online interface.

The number of data sets moved in a single batch job should be 450 or less. If you need to relocate more than 450 data sets, use multiple jobs.

### Creating the JCL

The JCL requirements for batch data set moves is explained in this topic.

The JCL is shown in the following figure:

```
//JOBNAME JOB , 'MYNAME', CLASS=A, MSGCLASS=X
//*
//EXECMOVE EXEC PGM=HAA$DMN, REGION=0M, DYNAMNBR=1000
//STEPLIB DD DISP=SHR, DSN=HAA.INSTALL.LOADLIB
//DB2PARMS DD DISP=SHR, DSN=HAA.ISPF.CONTROL.FILE
//SYSABEND DD SYSOUT=*
//*
//HADMPARM DD *
< INPUT CONTROL CARDS >
/*
//
```

*Figure 285. Sample JCL for Dataset Manager batch execution*

### Job card

You must enter a valid job card for your site.

### EXEC statement

On the EXECMOVE EXEC statement, the REGION=0M and DYNAMNBR=1000 parameters must be specified.

### DD statements

The following DD statements are required:

- The STEPLIB data set name must be set to the DB2 Automation Tool installation load library name.
- The DB2PARMS data set name must be set to the DB2 Automation Tool ISPF control file used for the DB2 subsystem that owns the data sets being moved.
- The SYSABEND DD should be set to an appropriate SYSOUT class for your site.

- The HADMPARM DD contains the input parameters (control cards) for the move utility. The format of the parameters is discussed in the next section.

## Specifying the move utility parameters

The input control cards specify the execution parameters to be used by the move utility.

The two types of parameters to be placed in the control cards are as follows.

- *Global parameters* allow you to specify the DB2 subsystem owning the data sets, the DB2 Automation Tool plan name to be used for execution SQL processing, and other options. Global parameters are specified once and should be specified first in your input control card data set.
- *Data set-related parameters* allow you to specify the data sets to be relocated and set the new data set characteristics. Data set-related parameters can be specified repetitively for each data set you would like to move during the execution of the batch job.

### Global parameters

The global parameters for the move utility must appear first in the control cards and are listed in the table.

The example in the following figure shows the global parameters:

```
//HADMPARM DD *
DB2SSID(DSN1)
PLANNAME(HAAPLAN2)
```

Figure 286. Sample global parameters for batch move

The following table describes the global parameters.

Table 44. Global parameter descriptions

Parameter	Description	Required parameter?	Default
DB2SSID (cccc)	Specify the DB2 subsystem identifier owning the data sets to be moved.	Yes	None
PLANNAME (ccccccc)	Specify the plan name of the second Automation Tool plan created during the installation of Automation Tool on the DB2 subsystem owning the data sets being moved.	Yes	None
CHECKPARMS (YES NO)	This parameter allows you to execute the move utility to check input parameter syntax only. After completing syntax checking, execution will terminate. Specify YES or NO.	No	NO

Table 44. Global parameter descriptions (continued)

Parameter	Description	Required parameter?	Default
MAXMOVERS ( <i>nn</i> )	This parameter allows you to specify the level of execution concurrency to be used when moving more than one data set in a single batch job execution. The default value used for batch execution is 5. Any value between 1 and 20 may be specified. The move utility will execute multiple move requests concurrently when executed.	No	5
STOPWAITTIME ( <i>nnn</i> )	This parameter controls how long the move utility will attempt to stop an individual data set using the STOP DATABASE command before terminating the attempted move of the data set. Parameter is optional. Value is specified in seconds. Valid values are 030 to 999. If parameter is omitted a default value of 30 seconds will be used.	No	30

### Move data set parameters

To specify the move of a selected data set, use the MOVEDATASET keyword for each data set to be moved, followed by additional keywords to describe the data set and its characteristics to the move utility.

The following table describes the data set parameters.

Table 45. Data set parameter descriptions

Parameter	Description	Required Parameter?
MOVEDATASET	This parameter signals the start of a move data set request for a single data set. It must be followed by a '('. Following this main keyword, define other keywords for the move request. After all keywords for the data set, specify ')' to terminate the MOVEDATASET keyword.	Yes
SOURCEDSN <i>dataset_name</i>	Specify the data set name to be moved. You must specify the CLUSTER (DSNDBC) name.	Yes
PARTITIONED YES NO	Specify whether the data set being moved is a data set of a partitioned table space or partitioned indexspace. If the data set is part of a partitioned space, specify YES. If the parameter is omitted, a default value of NO will be used.	No

Table 45. Data set parameter descriptions (continued)

Parameter	Description	Required Parameter?
INDEXNAME <i>authid.indexname</i>	If the data set being moved is a data set owned by a index, you must specify the authid and index name. The value provided must be specified using the format <i>authid.indexname</i> . The <i>authid</i> value provided is the authid of the index. The <i>indexname</i> is the 1 to 18 character index name used when the indexspace was created. These values are located in SYSIBM.SYSINDEXES.	No
TARGETVCAT <i>vcat name</i>	Specify the VCAT name to be used for the data set. This keyword is optional, but either this keyword or the TARGETSTOGROUP keyword must be supplied. If the target data set being created (moved) as a result of the move request is user-defined (not using a storage group) you must use this keyword and specify the VCAT name to be used for the data set after the move is complete. You must specify this keyword and the VCAT name even if moving a VCAT data set and not changing the VCAT. The TARGETVCAT and TARGETSTOGROUP keywords are mutually exclusive.	If target is user-defined
TARGETSTOGROUP <i>storage group name</i>	Specify the storage group name to be used for the data set. This keyword is optional, but either this keyword or the TARGETVCAT keyword must be supplied. If the target data set being created as a result of the move request is storage group-defined, you must use this keyword to specify the storage group to be used for the data set. You must specify this keyword even if moving a storage group defined data set to the same storage group. The TARGETSTOGROUP and TARGETVCAT keywords are mutually exclusive.	If target is storage-group defined
TARGETQTY KILOBYTES	Specify the space quantity type. KILOBYTES is currently the only valid quantity type.	Yes

Table 45. Data set parameter descriptions (continued)

Parameter	Description	Required Parameter?
TARGETPQTY <i>number of kilobytes</i>	Specify the number of kilobytes to be used as the primary space quantity when the data set is moved. A kilobyte is 1024 bytes.	Yes
TARGETSQTY <i>number of kilobytes</i>	Specify the number of kilobytes to be used as the secondary space quantity when the data set is moved. A kilobyte is 1024 bytes. This parameter can be set to zero.	Yes
TARGETVOLUMES ' <i>volname1 volname2 volname3 volname4 ...</i> '	Specify the volumes to be used for the data set when the data set is moved. This parameter may only be used if the TARGETVCAT parameter is specified. It is only applicable when the target data set to be created will be user-defined. If any TARGETSMS parameters are used for the target data set, omit this parameter. The number of volumes which can be specified is 1 to 59. The volume names supplied must be specified within single quotes. If you need to specify a large number of volumes, use multiple TARGETVOLUMES parameter lines, for example:  TARGETVOLUMES 'VOL001 VOL002 VOL003 VOL004 VOL005' TARGETVOLUMES 'VOL006 VOL007 VOL008'	If target is user-defined
TARGETSTORAGECLASS SMS <i>storage class name</i>	Specify the SMS storage class to be used for the data set when the data set is moved. This parameter can only be supplied if the data set being created as a result of the move is user-defined. This parameter cannot be used if TARGETVOLUMES is used. This parameter is optional. Use this parameter when moving to a user-defined VCAT and you want the new data set to be SMS-managed and allocated using the SMS storage class specified.	If target is user-defined and SMS-managed

Table 45. Data set parameter descriptions (continued)

Parameter	Description	Required Parameter?
TARGETMANAGEMENTCLASS SMS management class	Specify the SMS management class to be used for the data set when the data set is moved. This parameter can only be supplied if the data set being created as a result of the move is user defined. This parameter cannot be used if TARGETVOLUMES is used. This parameter is optional. Use this parameter when moving to a user-defined VCAT and you want the new data set to be SMS-managed and allocated using the SMS management class specified.	If target is user-defined and SMS-managed
TARGETDATACLASS SMS data class	Specify the SMS data class to be used for the data set when the data set is moved. This parameter can only be supplied if the data set being created as a result of the move is user defined. This parameter cannot be used if TARGETVOLUMES is used. This parameter is optional. Use this parameter when moving to a user-defined VCAT and you want the new data set to be SMS managed and allocated using the SMS data class specified.	If target is user-defined and SMS-managed

Multiple MOVEDATASET requests can be specified in the control cards. An example of the format is shown in the following figure:



```

MOVEDATASET (
SOURCEDSN DSN1.DSNDBC.DATABASE.TS000001.I0001.A001
  TARGETVCAT DSN1
  TARGETVOLUMES 'VOL010 '
  TARGETQTY KILOBYTES
  TARGETPQTY 00002160
  TARGETSQTY 00000240
)
MOVEDATASET (
SOURCEDSN DSN1.DSNDBC.DATABASE.TS000002.I0001.A008
  PARTITIONED YES
  TARGETVCAT NEWVCAT
  TARGETSTORCLASS DB2CLS1
  TARGETQTY KILOBYTES
  TARGETPQTY 00030000
  TARGETSQTY 00000300
)
MOVEDATASET (
SOURCEDSN DSN1.DSNDBC.DATABASE.INDX0002.I0001.A001
  INDEXNAME MYID.INDX0002INDEX
  TARGETSTOGROUP STGRP1
  TARGETQTY KILOBYTES
  TARGETPQTY 00000900
  TARGETSQTY 00000900
)
MOVEDATASET (
SOURCEDSN DSN1.DSNDBC.DATABASE.INDX0099.I0001.A029
  PARTITIONED YES
  INDEXNAME MYID.INDX0099INDEX
  TARGETSTOGROUP STGRPX
  TARGETQTY KILOBYTES
  TARGETPQTY 00040000
  TARGETSQTY 00015000
)

```

*Figure 287. Sample JCL for multiple MOVEDATASET requests*

## Return codes

When executing in batch, the move utility generates a return code indicating the results of execution.

Whether executing in online or batch, output message reporting always occurs to the SYSOUT class specified in your job card.

Each move request contains summary and detail reporting indicating the success or failure of the individual move request. Review the output from batch and online execution to ensure execution was what you expected. All messages produced within the output are documented in “Messages” on page 543.

When executing in batch, the return codes used for move utility step completion are defined in the following table:

*Table 46. Batch execution move utility return codes*

Return code	Definition
00	All data set moves were successfully completed.
04	Execution failed. Errors in the input parameter controls cards were encountered.

Table 46. Batch execution move utility return codes (continued)

Return code	Definition
08	Execution failed. At least one data set incurred an error during execution.
12	Execution failed. At least one data set incurred an error during execution.

## Example

This JCL example moves four data sets, two table space data sets and two index data sets.

The example in the following figure illustrates moving table space and index space data sets. It shows how to move to a storage group and user-defined VCAT names.

```
//MYJOB      JOB  , 'MYNAME' , CLASS=A, MSGCLASS=X
//*
//EXECMOVE EXEC PGM=HAA$DMMN, REGION=0M, DYNAMNBR=1000
//STEPLIB    DD   DISP=SHR, DSN=HAA.INSTALL.LOADLIB
//DB2PARMS   DD   DISP=SHR, DSN=HAA.ISPF.CONTROL.FILE
//SYSABEND   DD   SYSOUT=*
//*
//HADMPARM   DD   *
DB2SSID(DSN1)
PLANNAME(HAAPLAN2)
MOVEDATASET (
  SOURCEDSN DSN1.DSNUBC.DATABASE.TS000001.I0001.A001
  TARGETVCAT DSN1
  TARGETVOLUMES 'VOL010 '
  TARGETQTY KILOBYTES
  TARGETPQTY 00002160
  TARGETSQTY 00000240
)
MOVEDATASET (
  SOURCEDSN DSN1.DSNUBC.DATABASE.TS000002.I0001.A008
  PARTITIONED YES
  TARGETVCAT NEWVCAT
  TARGETSTORCLASS DB2CLS1
  TARGETQTY KILOBYTES
  TARGETPQTY 00030000
  TARGETSQTY 00000300
)
MOVEDATASET (
  SOURCEDSN DSN1.DSNUBC.DATABASE.INDX0002.I0001.A001
  INDEXNAME MYID.INDX0002INDEX
  TARGETSTOGROUP STGRP1
  TARGETQTY KILOBYTES
  TARGETPQTY 00000900
  TARGETSQTY 00000900
)
MOVEDATASET (
  SOURCEDSN DSN1.DSNUBC.DATABASE.INDX0099.I0001.A029
  PARTITIONED YES
  INDEXNAME MYID.INDX0099INDEX
  TARGETSTOGROUP STGRPX
  TARGETQTY KILOBYTES
  TARGETPQTY 00040000
  TARGETSQTY 00015000
)
/*
//
```

The data sets being moved exist on DB2 subsystem DSN1.

The planname used for the second planname during DB2 Automation Tool installation was HAAPLAN2.

All data set moves will be executed concurrently. MAXMOVERS default of 5 will be used.

The first MOVEDATASET source data set is a table space data set. It belongs to a simple table space. It is being moved to a user-defined VCAT and placed on a single volume that is non-SMS managed. The VCAT name is not being changed.

The second MOVEDATASET source data set is a partitioned table space data set. It is being moved to a user-defined VCAT and placed in the SMS storage class named DB2CLS1. Its VCAT name is being changed to NEWVCAT. The eighth partition of the table space is being moved.

The third MOVEDATASET source data set is an index data set that belongs to a simple index space. It is being moved to a DB2 storage group named STGRP1, which is not SMS managed.

The fourth MOVEDATASET source data set is an index data set that belongs to a partitioned index space. It is being moved to a DB2 storage group named STGRPX, an SMS-managed storage group. The 29th partition of the index is being moved.



---

## Chapter 18. Deprecated: Using the data page display

DB2 Automation Tool analyzes DB2 databases and lets you edit pages to correct invalid internal data pages and indexes. DB2 Automation Tool provides quick recovery through direct intervention, allowing you to bring your system online within minutes.

**Attention:** DB2 Automation Tool's data page display functions are deprecated in V4.2. Although these features remain in the current version, they will not be enhanced and may be removed in a future release.

Through a menu-driven interface, DB2 Automation Tool you can perform the functions in the following list.

- Displays the contents of a table space
- Lets you select the corresponding data sets and partitions
- Checks the status and stops the table space if it is active
- Allows you to directly edit the offending page
- Warns you that page changes will be applied to the database
- Prompts you to start the table space again
- Uses a log to allow you to undo changes
- Can generate a verification report to check the validity of a table space's pages (non-LOB table spaces only)

**CAUTION:**

**The edit portion of this feature is a powerful tool and should be managed carefully. Misuse of this feature can cause loss of data, damaged pages, or other serious consequences.**

---

### Selecting DB2 objects for page editing

You can start using data page display by entering selection criteria to list a particular table space or index, or you can enter a data set name to directly access a data set.

#### Procedure

1. Select option 9 from the IBM DB2 Automation Tool main menu and press Enter. The Object Selection panel is displayed.
2. Select or identify the data set that you want to edit in one of the following ways. You can use wild cards (\*, %, \_) in the name fields, except when searching by data set.

**Note:** The Creator (table), Table, Creator (index) and Index fields allow up to 128 bytes. To scroll these fields, place the cursor in the field and use the PF11 key to scroll right and the PF10 key to scroll left.

- You can search for a table space or table. Enter a name in the Creator/Table fields to get a list of tables; enter a name in the Database/Tablespace fields to get a list of table spaces.
- To search for indexes, enter a name in either of the Creator/Index fields.
- If you know the name of the data set, search by name in the Dataset field.

3. Press Enter.

## Results

One of the following panels is displayed:

- For databases or table spaces, the Tablespace Selection panel is displayed.
- For table names, or when you specify a creator name and no other selection criteria, the Table Selection panel is displayed.
- For indexes, the Index Selection panel is displayed.
- For data sets, the Tablespace or Index Page Display is displayed.

## Table spaces

This topic explains how to select table spaces,

### About this task

When you request a list of table spaces, the Tablespace Selection screen appears, as shown in the following figure:

```
AUTOTOOL V4R2  ----- Tablespace Selection ----- 2011/08/30 16:12:09
Option ==>                                         Scroll ==> CSR
-----
Line Commands: S - Select Object  R - Object Report  V - Validate
Database: DBGPRI01 Tablespace: TSDEPT Row 1 of 1      >
DB2 Subsystem: SS1A
-----
Cmd Dbname  Tsname  Creator  Dbid  Obid  Psid Bpool  Parts Lockrule
DBGPRI01 TSDEPT PDUSRAA 1787  1    2 BP0    0    A
***** Bottom of Data *****
```

Figure 288. Tablespace Selection screen

You can use one of the following line commands:

- Type S to select the table space with which you want to work
- Type R to generate an object report for the table space.
- Type V to generate a page validation report.

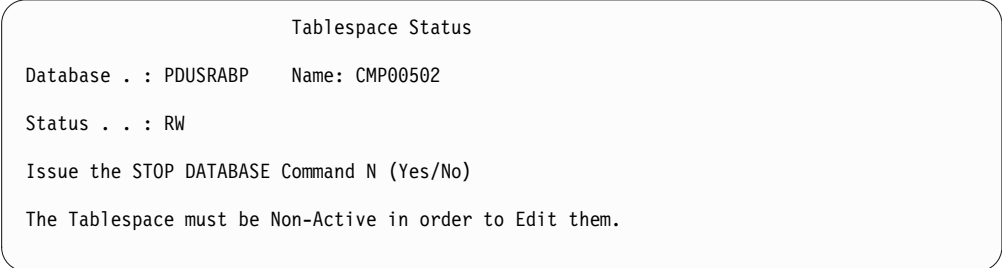
When you type S and press Enter, the Tablepart Selection screen, shown in the following figure, is displayed:

```
AUTOTOOL V4R2  ----- Tablepart Selection ----- 2011/08/30 16:20:31
Option ==>                                         Scroll ==> CSR
-----
Line Commands: S - Select Dataset/Partition
-----
Database . . . : PDUSRABP Tablespace: CMP00502 DB2 Subsystem: SS1A
Select by RID PANELID Row 1 of 1      >
-----
Cmd Part# Dataset Pqty Sqty
-N/A- SS1A.DSNDBC.PDUSRABP.CMP00502.I0001.A001 3 3
***** Bottom of Data *****
```

Figure 289. Tablepart Selection screen

For partitioned table spaces or indexes, one partition is displayed per line on the Tablepart Selection screen. If the space is not partitioned, only one line appears on this screen, and N/A appears in the Part# column.

If you know the RID you want to view, enter it in the Select by RID field and press Enter. Otherwise, type S next to the partition that you want to view. If the database is active, the Tablespace Status window, shown in the following figure, is displayed. This window allows you to stop the database if you are planning to edit the table space.

A screenshot of a 'Tablespace Status' window. The window has a title bar that says 'Tablespace Status'. Inside, it displays the following text: 'Database . : PDUSRABP Name: CMP00502', 'Status . . : RW', 'Issue the STOP DATABASE Command N (Yes/No)', and 'The Tablespace must be Non-Active in order to Edit them.'

```
Tablespace Status

Database . : PDUSRABP   Name: CMP00502

Status . . : RW

Issue the STOP DATABASE Command N (Yes/No)

The Tablespace must be Non-Active in order to Edit them.
```

*Figure 290. Tablespace Status window*

If you want to view the data set page without changing it, leave the N in the Issue the STOP DATABASE Command field and press Enter. The Tablespace Page Display appears.

If you want to edit the data set page, type Y in the Issue the STOP DATABASE Command field and press Enter. The database is stopped and the Tablespace Page Display appears.

## Tables

This topic explains how to select tables.

### About this task

When you request a list of tables, the Table Selection screen is displayed, as shown in the following figure:

```

AUTOTOOL V4R2 ----- Table Selection ----- 2011/08/30 16:24:12
Option ==> Scroll ==> CSR
-----
Line Commands: S - Select Table Row 1 of 111 +>
-----
Table: P* > Creator * >
DB2 Subsystem: SS1A
-----
Cmd Creator Name Dbname Tsname Dbid Obid Colcount
AATRG1 PRI2A CKZSS1A1 XFSRI## 426 489 3
AATRG1 PRI2B CKZSS1A1 XFSRI## 426 494 2
AATRG1 PROJ CKZSS1A1 XFCRI5## 426 244 8
AATRG1 PROJ1 CKZSS1A1 XFCRIE## 426 282 8
AATRG1 PROJACT CKZSS1A1 XFCRI4## 426 243 5
AATRG1 PROJACT1 CKZSS1A1 XFCRID## 426 281 5
AATRGD PRI2A CKZSS1AD XFSRI## 2668 247 3
AATRGD PRI2B CKZSS1AD XFSRI## 2668 248 2
AATRGD PROJ CKZSS1AD XFCRI5## 2668 182 8
AATRGD PROJ0 CKZSS1AD XF0RIE## 2668 271 8
AATRGD PROJ1 CKZSS1AD XFCRIE## 2668 176 8
AATRGD PROJACT CKZSS1AD XFCRI4## 2668 181 5
AATRGD PROJACT0 CKZSS1AD XF0RID## 2668 270 5
AATRGD PROJACT1 CKZSS1AD XFCRID## 2668 175 5
ARYTEST POLICY_INFO DSN01046 POLICYRI 1561 3 5
ARYTEST POLICY_INFO2 DSN00165 POLICYRI 598 3 4
ARYTEST POLICY_INFO3 TESTDB0C TESTTS0C 901 4 5
ARYTEST PROJECT_47 TESTDB47 TSTTS47A 2652 7 8
BASRC1 PROJ CKZQA1B1 XFCRI5## 2669 241 8
BASRC1 PROJ0 CKZQA1B1 XF0RIE## 2669 408 8
BASRC1 PROJ1 CKZQA1B1 XFCRIE## 2669 235 8
BASRC1 PROJACT CKZQA1B1 XFCRI4## 2669 240 5

```

Figure 291. Table Selection screen

Type S to select the table with which you want to work. When you press Enter, the Tablespace Selection screen appears. Type S to select the table space with which you want to work, or type R to generate an object report for the table space. When you type S and press Enter, the Tablepart Selection screen, shown in the following figure, is displayed:

```

AUTOTOOL V4R2 ----- Tablespace Selection ----- 2011/08/30 16:29:06
Option ==> Scroll ==> CSR
-----
Line Commands: S - Select Object R - Object Report V - Validate
Database: CKZSS1A1 Tablespace: XFSRI## Row 1 of 1 >
DB2 Subsystem: SS1A
-----
Cmd Dbname Tsname Creator Dbid Obid Psid Bpool Parts Lockrule
CKZSS1A1 XFSRI## CSCHEW 426 478 479 BP0 0 A
***** Bottom of Data *****

```

Figure 292. Tablepart Selection screen

For partitioned table spaces or indexes, one partition is displayed per line on the Tablepart Selection panel. If the space is not partitioned, only one line appears on this screen, and N/A appears in the Part# column.

Type S next to the partition that you want to view. If the database is active, the Tablespace Status window, shown in the following figure, is displayed. This window allows you to stop the database if you are planning to edit the table space.



Tablespace Status	
Database . : CKZSS1A1	Name: XFSRI##
Status . . : RW	
Issue the STOP DATABASE Command N (Yes/No)	
The Tablespace must be Non-Active in order to Edit them.	

Figure 293. Tablespace Status window

If you want to view the data set page without changing it, leave the N in the Issue the STOP DATABASE Command field and press Enter. The Tablespace Page Display appears.

If you want to edit the data set page, type Y in the Issue the STOP DATABASE Command field and press Enter. The database is stopped and the Tablespace Page Display appears.

## Indexes

This topic explains how to select indexes.

### About this task

When you request a list of indexes, the Index Selection panel appears, as shown in the following figure:

AUTOTOOL V4R2 ----- Index Selection ----- 2011/08/31 11:58:05				
Option ==>		Scroll ==> CSR		
Line Commands: S - Select Index		Row 1 of 1 >		
Index . :	>	Creator: TWUSR*	>	DB2 Subsystem: SS01
Cmd	Name	Creator	Tbname	Tbcreator Uniquerule
	DAHIX	TWUSR	DAHTB	TWUSR U
***** Bottom of Data *****				

Figure 294. Index Selection panel

Type S next to the index with which you want to work. When you press Enter, the Indexpart Selection panel, shown in the following figure, is displayed:

AUTOTOOL V4R2 ----- Indexpart Selection ----- 2011/08/31 11:58:42				
Option ==>		Scroll ==> CSR		
Line Commands: S - Select Dataset/Partition				
Creator: TWUSR		Index: DAHIX	Row 1 of 1 >	
DB2 Subsystem: SS1A				
Cmd	Part#	Dataset	Pqty	Sqty
	-N/A-	SS1A.DSNDDBC.DAHDB.DAHIX.I0001.A001	-1	-1
***** Bottom of Data *****				

Figure 295. Indexpart Selection panel

For partitioned indexes, one partition is displayed per line on the Indexpart Selection panel. If the index is not partitioned, only one line appears on this panel, and N/A appears in the Part# column.

Type S next to the partition that you want to view. If the database is active, the Tablespace Status window, shown in the following figure, is displayed. This window allows you to stop the database if you are planning to edit the index.

```
AUTOTOOL V4R2 ----- Tablespace Status ----- 2011/08/31 12:04:09

Database ==> DAHDB      Name ==> DAHIX

Status    ==> RW

Issue the STOP DATABASE Command ==> N (Y - Yes, N - No)
```

*Figure 296. Tablespace Status window*

If you want to view the data set page without changing it, leave the N in the Issue the STOP DATABASE Command field and press Enter. The Tablespace Page Display is displayed.,

If you want to edit the data set page, type Y in the Issue the STOP DATABASE Command field and press Enter. The database is stopped and the Index Page Display is displayed.

---

## Navigating through a page display

When you have selected the data set you want to view or edit, the Table or Index Page Display is displayed.

The Tablespace and Index Page Display screens are identical, except for the commands available on each. The following figure shows the Tablespace Page Display:

```

AUTOTOOL V4R2 ----- Tablespace Page Display ----- 2011/08/31 12:04:24.97
Option ==> Scroll ==> CSR
-----
Commands: EDIT LOGPAGE FORMAT
-----
Database . . : DAHDB          Tablespace: DAHTS          DB2 Subsystem: SS1A
Dataset . . : SS1A.DSNDBC.DAHDB.DAHTS.I0001.A001
Navigation P      (P - Page, R - Row)          Encoding: EBCDIC
Page Number 0      (of Page(s) 179          ) Mapid 1
Hexadecimal 0      (of Page(s) B3          ) XMapid 1
-----
000000 10002F3E 8F77AA00 00000038 076E0002 *.>.*
000010 000000B4 00D60000 00000000 00002011 *.0.*
000020 06211040 18178254 C4C1F1C1 00011000 *..b.SS1A.*
000030 00040000 00000000 00010003 00000000 *.>.*
000040 00250004 00080000 20110621 10401843 *.>.*
000050 2683E2E8 E2C4C5C6 D3E3C4C1 F1C14040 *.cSYSDEFLTSS1A*
000060 4040002F 3E8FE411 00000000 00000000 *...U.*
000070 00000000 00000000 00000000 00000000 *.>.*
000080 00000000 00000000 00000000 00000000 *.>.*
000090 00000000 00000000 00000000 00000000 *.>.*
0000A0 00000000 00000000 00000000 00000000 *.>.*
0000B0 00000000 00000000 00000000 00000000 *.>.*
0000C0 00000000 00000000 00000000 00000000 *.>.*
0000D0 00000000 00000000 00000000 00000000 *.>.*
0000E0 00000000 00000000 00000000 00000000 *.>.*
0000F0 00000000 00000000 00000000 00000000 *.>.*
000100 00000000 00000000 00000000 00000000 *.>.*
000110 00000000 00000000 00000000 00000000 *.>.*
000120 00000000 00000000 00000000 00000000 *.>.*

```

Figure 297. Tablespace Page Display

The top portion of the screen displays information about the data page. It also contains navigation fields that allow you to move around the page.

## Using the navigation field

You can browse through data pages by using the Navigation field on the Tablespace Page Display and Index Page Display.

### About this task

The navigation commands are as follows:

- To browse by page number, use the following steps:
  1. Type P in the Navigation field in the center of the screen.
  2. Type a page number or hexadecimal number in their respective fields. The first matching page or hex number is shown at the top of your display. Use PF4 to move back and PF6 to move forward through the table space by page.
- To browse by row number, use the following steps:
  1. Type R in the Navigation field in the center of the screen. and press Enter.
  2. If you are not located on a data page, DB2 Automation Tool moves the page to the first data page. The first row in the page is highlighted and the cursor is positioned at the beginning of the row number.
  3. Use PF4 and PF6 to move back and forth through the table space by row. The Map ID field displays the row number where the cursor is positioned.

## Saving pages with the LOGPAGE command

When viewing a Tablespace or Index Page Update display, you can use the LOGPAGE command to save the page you are viewing to the data page display

log. If you later make changes to the page that you want to reverse, you can reapply the page that was saved in the log.

See “Working with the data page display logging facility” on page 489 for more information.

---

## Editing spaces

DB2 Automation Tool lets you edit pages to correct invalid internal data pages and indexes.

In order to edit pages, you must have EXECUTE authority on the DB2 Automation Tool Plan #4. Refer to Chapter 3, “Customizing DB2 Automation Tool,” on page 61 for information about the DB2 Automation Tool plans.

### CAUTION:

**This feature is a powerful tool and should be managed carefully. Remember that you are editing actual data, not row data. Misuse of this feature can cause loss of data, damaged pages, or other serious consequences.**

## Editing a page

The topic explains how to edit a page.

### Before you begin

Before you edit a space, the database that contains the space must be stopped so that changes can be written to the data set. When you select a data set for editing, if the database is active, the window shown in the following figure is displayed:

```
Tablespace Status

Database . : DAHDB      Name: DAHTS

Status . . : RW

Issue the STOP DATABASE Command N (Yes/No)

The Tablespace must be Non-Active in order to Edit them.
```

*Figure 298. Editing a page*

To stop the database, enter Y in the Issue the STOP DATABASE Command field and press Enter. DB2 Automation Tool does not continue until the DB2 STOP command completes, ensuring that your edited pages are accurately saved to DB2. When the STOP command completes, the Tablespace or Index Page Display appears, along with the message:

```
HAAM012I - STOP DATABASE Command Successful
```

Press Enter to remove the message from the screen.

### About this task

To edit table space or index pages:

## Procedure

1. Type Edit on the Option line of the Tablespace or Index Page Display screen to directly edit pages. The text display changes color to indicate that you are in Edit mode.
2. Type changes in hexadecimal directly over the existing page information. To edit column data in character format, type Format in the Option line and press Enter. Refer to “Editing table column data” for more information.
3. Press PF3 to exit. The Tablespace Status window, shown in the following figure, is displayed:

```
TABLESPACE STATUS

AUTOTOOL V4R2 ----- Tablespace Status ----- 2011/08/31 12:09:21

Database . : DAHDB      Name: DAHTS

Status . . : STOP

Issue the START DATABASE Command N (Yes/No)
```

Figure 299. Tablespace Status

4. Type Y to save your changes and start the database again. The Tablespace or Index Selection screen is displayed.

## Results

Any edits you make are recorded to a log file. See “Working with the data page display logging facility” on page 489 for more information on the data page display log.

## Editing table column data

You can change the table column data using character format by using the Format command on the Tablespace Page Display.

### About this task

**Note:** The Format command will only display and allow editing of EBCDIC characters. Mixed data, graphic data, and CLOB and LOB data types are not supported.

To edit the column data in character format:

## Procedure

1. On the Tablespace Page Display, enter R in the Navigation field and press Enter. DB2 Automation Tool points to the first row of table or index data.
2. Move the row you want to edit to the top of the scrollable page area by using the Navigation fields and/or the PF4 and PF6 keys.
3. Type Format in the Option line. The Column Selection panel, shown in the following figure, is displayed:

AUTOTOOL V4R2		----- Column Selection -----		2011/08/31 15:09:48	
Option ==>				Scroll ==> CSR	
-----		-----		-----	
Creator ==> TUSER		Table ==> ADHEMPTB		Row 1 of 4	
-----		-----		-----	
Cmd	NAME	COLNO	COLTYPE	LENGTH	SCALE NULLS HIGH2KEY L
-	EMP_ID	1	DECIMAL	5	0 N X'4040404040404040' X
-	LAST_NAME	2	CHAR	20	0 Y X'4040404040404040' X
-	FIRST_NAME	3	CHAR	10	0 Y X'4040404040404040' X
-	DEPT	4	DECIMAL	2	0 N X'4040404040404040' X
***** Bottom of Data *****					
Valid Line Commands: ( S - Select Column )					

Figure 300. Column Selection panel

The information in this panel is described in the following section:

- NAME**  
The column name.
- COLNO**  
The numeric place of the column in the table.
- COLTYPE**  
The type of column specified when the column was defined.
- LENGTH**  
The column length attribute, or if a decimal column, its precision.
- SCALE**  
The scale of decimal data. This column contains 0 if the column is not a decimal column.
- NULLS**  
Y indicates that the column can contain null values; N indicates the column cannot be null.
- HIGH2KEY**  
The second highest value of the column.
- LOW2KEY**  
The second lowest value of the column.
- UPDATES**  
Y indicates the column can be updated; N indicates the column cannot be updated.
- DEFAULT**  
The contents of this column are only meaningful if the TYPE column for the associated SYSTABLES row indicates that this is for a table or a temporary table. Refer to the DB2 Utility Guide and Reference for your version of DB2.
- KEYSEQ**  
The column's numeric position within the table's primary key. This column contains 0 if it is not part of the primary key.
- FOREIGNKEY**  
If a character column, then indicates the subtype of the data. B means bit data. If mixed data is allowed, then S indicates SBCS and any other value indicates mixed. If mixed data is not allowed, any value indicates SBCS.
- STATSTIME**  
If RUNSTATs updated the statistics, the data and time when the last

invocation of RUNSTATs updated the statistics. The default value is '0001-01-01.00.00.00.000000'. If an ALTER TABLE statement was run to change the length of a VARCHAR column, this value is '0001-01-02.00.00.00.000000', and RUNSTATS should be run to update the statistics.

#### COLCARDF

Estimated number of distinct values in the column.

#### DEFAULTVALUE

The contents of this column are only meaningful if the TYPE column for the associated SYSTABLES row indicates that this is for a table or a temporary table, and is related to the value in the DEFAULT column. Refer to the DB2 Utility Guide and Reference for your version of DB2.

4. To view or edit column data for the selected row, enter S next to the column name and press Enter. The Column Display, shown in the following figure, is displayed:

```

AUTOTOOL V4R2 ----- Column Display ----- 2011/08/31 13:12:01
Option ==> _____ Scroll ==> PAGE
-----
Creator ==> TUSER      Table ==> ADHEMPTB      Row 1 of 1
Column ==> FIRST_NAME

-----
NULL DATA
00 MARY
***** Bottom of Data *****

```

Figure 301. Column Display

5. You can overwrite the value in the DATA column to change the table data and change the NULL indicator value on this panel.
6. When you are finished modifying data, press Enter. The Column Selection panel is displayed.
7. You can select another column to edit, or press PF3 to return to the Tablespace Page Update panel.

## Results

When you are finished editing page or table column data, the panel shown in the following figure is displayed:

```

                                VERIFY UPDATES
AUTOTOOL V4R2 ----- Page Update Verify ----- 2008/07/03 16:41:40
Apply Page Changes ==> N (Y/N)
*** CAUTION ***                *** CAUTION ***
Page Changes will be Written to the Physical DB2 Dataset.
This will be done without DB2's knowledge.
Changes WILL NOT be reflected in the DB2 Log and
other DB2 Objects.
The Original Page will be Logged in the Log Database.
*** CAUTION ***                *** CAUTION ***

```

Figure 302. Verify Updates panel

## Applying page updates

This topic describes how to apply page updates.

## About this task

To save the changes to the page, type Y in the Apply Page Changes field and press Enter. The original page is saved in the log database.

To cancel changes, type N in the Apply Pages Changes field and press Enter. The Tablespace or Index Page Display is displayed. Any changes you made to the page are lost, and the page is reset to its original state.

---

## Reporting on objects

This topic explains how to generate a page validation report on objects. The report formats the header, spacemap, and data pages into a readable format.

## About this task

The Report Generation panel, shown in the following figure, is displayed if you typed R to generate a report next to an object.

```
AUTOTOOL V4R2  ----- Report Generation ----- 2011/08/31 12:16:59
Option ==>                                         Scroll ==> CSR
-----
Commands: BATCH Generate Batch Job                Row 1 of 8
DB2 Subsystem: SS1A
-----

VALIDATE_PAGE (
REPORT
SSID SS1A
TABLESPACE (
DAHDB.DAHTS
))

***** Bottom of Data *****
```

Figure 303. Page Display Report Generation panel

This panel shows the control cards that produce the report. This information may be changed.

Press Enter to generate the report online.

To generate the report in batch, enter **BATCH** in the Option line. The panel shown in the following figure is displayed:

```
Build Job

Edit Generated Job . . Y          (Yes/No)

Build job in Dataset  TWUSR.DAT.TEST
Member               BATCHGEN    Required if DSN is a PDS

Job Cards:
==> //TWUSRAA JOB TWUSR,CLASS=A,NOTIFY=&SYSUID
==> //*
==> //*
==> /*
```

Figure 304. Edit Generated Job

The following section describes the fields in the Edit Generated Job window.



**Edit Generated Job**

Type Y if you want to edit the job after it has been generated. The job appears in an edit session after it has been generated. If you type N, after job generation the Tablespace Selection Display reappears.

**Build job in Dataset**

Enter the fully qualified data set name where you want to save the generated job. This data set must exist and can be sequential or a PDS. This data set will hold the batch JCL to generate the report.

**Member**

If the data set to hold the generated job is a PDS, enter a member name for the job output here.

**Job Cards**

Enter a valid job card for your site on any of the four Job Card lines. Job card information can be provided as standard JCL or another compatible control language.

A sample portion of a report is shown in the following figure:

IBM\* Rocket\*\*

Licensed Materials - Property of IBM

5655-E37

(c) Copyright IBM Corp. 2001, 2011 All Rights Reserved.

(c) Copyright Rocket Software, Inc. 2001 - 2011 All Rights Reserved.

\*Trademark of International Business Machines

\*\*Trademark of Rocket Software, Inc.

Validating Input Control Cards...

VALIDATE\_PAGE (

REPORT SSID SS1A

TABLESPACE (

DAHDB.DAHTS

)

)

Control Cards are Valid - Continuing Processing...

Processing Object...

Database: DAHDB

Tablespace: DAHTS

Partition: 0

Tablespace Header Page

Flag Byte1: X'10'

Last Byte of Page Should be X'D5'

Log RBA/LRSN of the Last Page Update: X'002F3E8F77AA'

Page Number: X'00000000'

Page Number(Relative to 0): 0

Flag Byte2: X'38'

Header Page in Segmented Page Set

Full Page Set ID: X'076E0002' DBID: 1902 PSID: 2 OBID: 1

High Preformatted Page in Page Set/Partition: X'000000B4'

Release Mark: 0

Compression Data Dictionary Not Loaded in Tablespace

RECOVERed RBA: X'000000000000'

Subsystem Name: SS1A

4K Page Size

Number of Pages Per Segment: 4

*Figure 305. Sample report*

The report formats the header, spacemap, and data pages into a readable format. For information about using the information in this report, refer to the Utility Guide and Reference for your version of DB2.

---

## Page validation report

This topic explains how to generate a page validation report.

### About this task

The Report Generation panel appears, shown in the following figure, if you typed V to generate a page validation report.

**Note:** Validation of LOB table spaces is not supported.

```
AUTOTOOL V4R2  ----- Report Generation ----- 2011/08/31 12:29:26
Option  ==>                                     Scroll ==> CSR
-----
Commands: BATCH Generate Batch Job                      Row 1 of 8
DB2 Subsystem: SS1A
-----

VALIDATE_PAGE (
VALIDATE
SSID  SS1A
TABLESPACE (
DAHDB.DAHTS
))

***** Bottom of Data *****
```

*Figure 306. Page validation report, Report Generation panel*

This panel shows the control cards that produce the report. This information may be changed. You can restrict the scope of the report by adding the PART and/or PAGE keywords after the table space name, as follows:

```
VALIDATE_PAGE (
VALIDATE
SSID  SS1A
TABLESPACE (
RHDB02.RHTS02 PART 254 PAGE 4
))
```

Note that the added keywords must be capitalized.

You can also expand the scope by using wild cards in the table space name, such as:

```
VALIDATE_PAGE (
VALIDATE
SSID  SS1A
TABLESPACE (
RHDB02.*
))
```

Press Enter to generate the report online.

To generate the report in batch, enter BATCH in the Option line. The panel shown in the following figure is displayed:

Build Job

Edit Generated Job . . Y (Yes/No)

Build job in Dataset	TWUSR.DAT.TEST	
Member	BATCHGEN	Required if DSN is a PDS

Job Cards:  
==> //TWUSRAA JOB TWUSR,CLASS=A,NOTIFY=&SYSUID  
==> /\*\*  
==> /\*\*  
==> /\*\*

*Figure 307. Editing a generated job*

The following section describes the fields in the Edit Generated Job window.

### **Edit Generated Job**

Type Y if you want to edit the job after it has been generated. The job appears in an edit session after it has been generated. If you type N, after job generation the Tablespace Selection Display reappears.

### **Build job in Dataset**

Enter the fully qualified data set name where you want to save the generated job. This data set must exist and can be sequential or a PDS. This data set will hold the batch JCL to generate the report.

### **Member**

If the data set to hold the generated job is a PDS, enter a member name for the job output here.

### **Job Cards**

Enter a valid job card for your site on any of the four Job Card lines. Job card information can be provided as standard JCL or another compatible control language.

A sample report is shown in the following figure:

```
IBM* Rocket**
Licensed Materials - Property of IBM
5655-E37
(c) Copyright IBM Corp. 2001, 2011 All Rights Reserved.
(c) Copyright Rocket Software, Inc. 2001 - 2011 All Rights Reserved.
*Trademark of International Business Machines
**Trademark of Rocket Software, Inc.
```

Validating Input Control Cards...

```
VALIDATE_PAGE (
VALIDATE SSID SS1A
TABLESPACE (
DAHDB.DAHTS
)
)
Control Cards are Valid - Continuing Processing...
```

Processing Object...

```
Database: DAHDB
Tablespace: DAHTS
Partition: 0
```

Object Processing Completed...

SHARED PROFILE SUPPORT VALIDATION COMPLETED - RETURN CODE: 0

*Figure 308. Sample validation report*

For information about using the information in this report, refer to the Utility Guide and reference for your version of DB2.

---

## Working with the data page display logging facility

DB2 Automation Tool uses a logging facility that you can use to track and reverse edits made to database pages.

When you apply the changes to the database, DB2 Automation Tool saves the original page as a backup copy. You can also manually save a page you are viewing by using the LOGPAGE command. You must have ALTER access to the DB2 table space to access the log.

**Note:** Searching by data set name eliminates the need to use an active DB2 database, and therefore disables the data page display logging feature.

On the Object Selection panel, type Y in the Review/Apply Change Logs field and press Enter.

The Change Log Selection screen is displayed, as shown in the following figure:

```

AUTOTOOL V4R2      ----- Change Log Selection ----- 2011/08/31 12:35:09.11
Option ==>                                     Scroll ==> CSR
-----
Line Commands: S - View/Edit Log Page  A - Apply Page to Tablespace
               D - Delete Entry        R - Remove Object
DB2 Subsystem: SS1A                                Row 1 of 6                >
-----
Cmd  Sqldid  Dbname  Tsname/Index  Partition  Page Number
CSKUAN  RLKUANDB  IXTB01      0            0
        RLKUANTS  0            0
CSMINIA  DBAINLOB  TPAINLOB    1            0
CSSULM   HAADB003  BLOB SWLOBAUX  0            5
PDWITT   MJWDB10  MJWTS10      0            2
        0            2
***** Bottom of Data *****

```

Figure 309. Change Log Selection screen

A new entry is inserted into the log to maintain the original data page, instead of overwriting it. The data page information appears in descending order (newest to oldest).

**Note:** The original data page cannot be changed and is locked against updates. When you modify a page, a new log entry is created for the page.

The following section describes the fields on the Change Log Selection screen.

**SQLID**

The SQL ID of the user who changed the page.

**DBNAME**

The database name.

**TSNAME/INDEX**

The table space or index name.

**Partition**

The partition number; 0 if the space is not partitioned.

**Page Number**

The page number that is saved in the log.

**Create Timestamp**

The date and time the page was changed and saved to the log. LOG EDIT PAGE in this column means that the logged page was edited.

**Update Timestamp**

The date and time the logged page was edited. If the logged page was not edited, this timestamp is the same as the create timestamp.

**Updated By**

The user ID who updated the page.

**Page Size**

The page size.

**Alter Timestamp**

The timestamp of the last time the object was altered.

The valid line commands for manipulating log entries are described in the following table:

Table 47. Valid line commands

Line Command	Description
S (View/Edit Log Page)	Type S to select the logged data page for viewing or editing. When you press Enter, the Tablespace or Index Page Display screen appears. Type Edit in the Option line to edit the logged page. When editing a logged page, you can only edit the data in hexadecimal.
A (Apply Page to Table Space)	Type A to apply the logged page to the table space. This works as a rollback function, restoring your original data page to the table space.
D (Delete Entry)	Type D to delete the selected entry from the log.
R (Remove Object)	Type R to remove all log entries for the table space or index.





---

## Chapter 19. Generating DB2 High Performance Unload jobs

IBM DB2 High Performance Unload (DB2 HPU) is a high-speed DB2 utility for unloading DB2 tables from a table space or from an image copy. DB2 Automation Tool can generate DB2 HPU unload jobs through the Stand Alone Utilities option on the DB2 Automation Tool main menu. Tables can be unloaded to one or more data sets. You can unload all data, or filter the data to be unloaded by row or by column.

The following topics provide instructions for using DB2 Automation Tool to generate DB2 HPU unload utility jobs. For information about DB2 HPU job parameters, refer to the help panels or search the DB2 High Performance Unload documentation on the IBM Knowledge Center: (<http://www.ibm.com/support/knowledgecenter>).

### Software requirements

This feature requires the following software and hardware:

- IBM DB2 High Performance Unload for z/OS V5.1 or V4.3.
- DB2 Automation Tool V4.1 (with APAR PM70641) applied or later.
- The Tools Customizer customization steps for DB2 HPU support must be completed.

---

### Unloading all rows and columns from a table space

Use these steps to build a DB2 HPU job that unloads all rows and columns from a table space.

#### About this task

These steps describe how to configure and build a DB2 HPU job to unload all rows and columns from a table space. The data from all tables in the table space is unloaded to the DB2 HPU-required output data set, UNLDDN DD.

#### Procedure

1. On the DB2 Automation Tool Main Menu, specify the DB2 subsystem in the **DB2 Subsystem ID** field.
2. Enter 11 in the **Option** field and press Enter.
3. On the Stand Alone Utilities panel, enter 2 in the **Option** field and press Enter.
4. On the HPU Tablespace Selection panel, specify table space selection criteria in the header fields and press Enter. A list of table spaces that meet your selection criteria is displayed.
5. Enter S next to the table space that you want to unload and press Enter. The HPU Options panel is displayed, as shown in the following figure:

```

AUTOTOOL V4R2 ----- HPU Options ----- 2015/10/09 10:44:35
Option  ===>
-----
Database  Name: DSNDB06                                User: TWUSR
Tablespace Name: SYSDDF                                DB2 Subsystem ID: SS01
Creator   Name: SYSIBM      >
-----
More:      +

Build Unload Job . . . . N (Yes/No)
Utility ID . . . . . (16 Characters)

Optional Template Dataset and member name:
  Template Dataset
  Member name . .

Select Table and Columns Include      Update
UNLDDN Options . . . . N (Yes/No) . . N (Yes/No)
COPYDDN Options . . . . N (Yes/No) . . N (Yes/No)
Options Block . . . . . N (Yes/No)
DB2 . . . . . (blank, Y - Yes, N - No, F - Force)
LOCK . . . . . (blank, Y - Yes, N - No)

```

Figure 310. HPU Options panel

6. Optional: If you want to use an existing template for HPU instead of allowing DB2 Automation Tool to create the template, enter the template data set and member name in the **Template Dataset** and **Member name** fields. The template data set must already exist and the template members must follow DB2 syntax rules for the TEMPLATE control statement. Templates can be used for the UNLDDN, COPYDDN, OUTDDN, and LOADDDN DDs.
7. Optional: If you want to use an image copy as the source to unload the data, follow these steps.
  - a. On the HPU Options panel, enter Y in the COPYDDN Options Include and Update fields and press Enter.
  - b. On the COPYDDN Options or the TEMPLATE COPYDDN Options panel, specify the source of the image copy to be used for the unload job as follows:
    - To provide the image copy data set name, enter D in the **COPYDDN** field. If you are not using templates, enter the data set name in the **Data Set Name** field. If you are using templates, enter the template name in the **Template Name** field, or select a template name by entering Y in the **Select** field.
    - To use the latest image copy as the source, enter L in the **COPYDDN** field and press Enter.
    - To use an image copy older than the latest one, specify an integer of 2 or greater in the **COPYDDN** field and press Enter. For example, enter 2 to select the image copy that was taken before the latest image copy.
  - c. Press PF3 until the HPU Options panel is displayed.
8. Specify the UNLDDN DD options. This DD receives the unloaded data. On the HPU Options panel, enter Y in the **UNLDDN Options Include** and **Update** fields and press Enter.
  - If you are not using templates, do the following:
    - a. On the UNLDDN Options panel, enter a valid unit for the UNLDDN data set in the **Unit Type** field.
    - b. (Optional) Specify catalog options, SMS parameters, or tape parameters.
    - c. Enter Y in the **Update DSN create spec** field and press Enter.

- d. On the UNLDDN DSN Generation panel, enter the qualifier codes to specify the data set name for the UNLDDN data set. Press PF3 until the HPU Options panel is displayed.
- If you are using templates, the TEMPLATEDD Name Selection panel is displayed. Select a template name to be used for the UNLDDN and press PF3.
9. Optional: On the HPU Options panel, specify other DB2 HPU options.
10. Generate the unload job as follows:
  - a. On the HPU Options panel, enter Y in the **Build Unload Job** field and press Enter.
  - b. On the Build Job window, specify the data set and member name where the generated job is to be placed, and a valid job card. Press Enter. The job is generated and placed in the member that you specified.

## What to do next

To unload the table space, submit the generated job.

---

## Unloading selected rows and columns from a table space

Use these steps to build a DB2 HPU job that unloads selected rows and columns from a table space.

### About this task

When you select or filter data, an SQL SELECT statement is used to specify the data and to specify the output format. Each SELECT statement has its own output data set (OUTDDN).

### Procedure

1. On the DB2 Automation Tool Main Menu, specify the DB2 subsystem in the **DB2 Subsystem ID** field.
2. Enter 11 in the **Option** field and press Enter.
3. On the Stand Alone Utilities panel, enter 2 in the **Option** field and press Enter.
4. On the HPU Tablespace Selection panel, specify table space selection criteria in the header fields and press Enter. A list of table spaces that meet your selection criteria is displayed.
5. Enter S next to the table space that you want to unload and press Enter. The HPU Options panel is displayed, as shown in the following figure:

```

AUTOTOOL V4R2 ----- HPU Options ----- 2015/10/09 14:43:19
Option ==>
-----
Database Name: DSNDB06                                User: TWUSR
Tablespace Name: SYSDDF                                DB2 Subsystem ID: SS01
Creator Name: SYSIBM >
-----
More: +

Build Unload Job . . . . N (Yes/No)
Utility ID . . . . . (16 Characters)

Optional Template Dataset and member name:
  Template Dataset
  Member name . .

Select Table and Columns Include Update
UNLDDN Options . . . . N (Yes/No) . . N (Yes/No)
COPYDDN Options . . . . N (Yes/No) . . N (Yes/No)
Options Block . . . . . N (Yes/No)
DB2 . . . . . (blank, Y - Yes, N - No, F - Force)
LOCK . . . . . (blank, Y - Yes, N - No)

```

Figure 311. HPU Options panel

6. Optional: If you want to use an existing template for HPU instead of allowing DB2 Automation Tool to create the template, enter the template data set and member name in the **Template Dataset** and **Member name** fields. The template data set must already exist and the template members must follow DB2 syntax rules for the TEMPLATE control statement. Templates can be used for the UNLDDN, COPYDDN, OUTDDN, and LOADDDN DDs.
7. Optional: If you want to use an image copy as the source to unload the data, follow these steps.
  - a. On the HPU Options panel, enter Y in the COPYDDN Options Include and Update fields and press Enter.
  - b. On the COPYDDN Options or the TEMPLATE COPYDDN Options panel, specify the source of the image copy to be used for the unload job as follows:
    - To provide the image copy data set name, enter D in the **COPYDDN** field. If you are not using templates, enter the data set name in the **Data Set Name** field. If you are using templates, enter the template name in the **Template Name** field, or select a template name by entering Y in the **Select** field.
    - To use the latest image copy as the source, enter L in the **COPYDDN** field and press Enter.
    - To use an image copy older than the latest one, specify an integer of 2 or greater in the **COPYDDN** field and press Enter. For example, enter 2 to select the image copy that was taken before the latest image copy.
  - c. Press PF3 until the HPU Options panel is displayed.
8. To select the tables and columns to unload, on the HPU Options panel, enter Y in the **Select Table and Columns Include** and **Update** fields and press Enter.
9. On the HPU Table Selection panel, do the following steps for each table from which you want to select rows.
  - a. Enter S next to a table and press Enter. The Select Columns panel is displayed, as shown in the following figure:

```

AUTOTOOL V4R2 ----- Select Columns ----- 2013/07/23 21:12:57
Option ==> Scroll ==> CSR
Commands: EAC - Exclude all columns.
          IAC - Include all columns.
Creator: SYSIBM > Name: IPLIST >
Where Clause(s) A (A - And, O - Or) DB2 Subsystem: SS01
Row 1 of 3 >
-----
Select Column      Column
Order  Name      Type
1      LINKNAME   VARCHAR
2      IPADDR     VARCHAR
3      IBMREQD    CHARACTER
***** Bottom of Data *****

```

Figure 312. Select Columns panel

- b. On the Select Columns panel, modify the column order or remove columns by using the Select Order column or the primary commands that are listed on the panel. By default, all columns are selected for unloading in the displayed order.
- c. To use DB2 selection criteria to include or exclude rows, scroll right (PF11) to the Where Clause column.
- d. Enter a valid WHERE clause for that column to identify when the row is to be unloaded. When multiple WHERE conditions exist, they are either ANDed or ORed, based on the value in the **Where Clause(s)** header field.

**Note:** If you require a mixture of AND and OR conditions, you must enter them manually after the JCL is generated.

- e. When you finish selecting and ordering columns on the Select Columns panel, press Enter. The HPU Select Format panel is displayed, as shown in the following figure:

```

AUTOTOOL V4R2 ----- HPU Select Format ----- 2013/07/23 21:14:48
Option ==> Scroll ==> CSR
Creator: SYSIBM > DB2 Subsystem ID: SS01 User: TWUSR
Name: IPLIST >
More: +
Include      Update
OUTDDN Options . . . Y (Yes/No) . . N (Yes/No)
LOADDDN Options . . . N (Yes/No) . . N (Yes/No)
FORMAT . . . . . T (D - Delimited, T - dsnTiaul, E - External,
                   I - Internal, U - User, V - Variable)
DSNTIAUL STRICT . . . (blank, Y - Yes, N - No)
DELIMITED SEP . . . (blank, Single Character, or Hexadecimal value)
                   DELIM . . . (blank, Single Character, or Hexadecimal value)
                   NULL DELIM (blank, Y - Yes, N - No)
Variable . . . . . (blank, E - End, A - All)
Like Table . . . . . > (blank or valid table name)
Like Creator . . . . . > (blank or valid table creator)
ORIGINOBID . . . . . (blank or hexadecimal value)
or . . . . . (blank or decimal value)
OUTMAXROWS . . . . . (blank, 1 - 2147483647)
OUTFREQROWS . . . . . (blank, 1 - 2147483647)
Scheme . . . . . (blank, E - Ebcdic, A - Ascii, S - aSis,
                  U - Unicode)
CCSID SBCS . . . . . (blank or Integer)
MIXED . . . . . (blank or Integer)
DBCS . . . . . (blank or Integer)
OUTEXIT exit name . . (blank or exitname)
in . . . . . (blank, A - Asm, C - C, O - cObol2)

```

Figure 313. HPU Select Format panel

- f. On the HPU Select Format panel, update the options for the OUTDDN. Enter Y in the **OUTDDN Options Include** and **Update** fields and press Enter.
  - If you are not using templates, do the following:
    - 1) On the OUTDDN Options panel, enter a valid unit for the OUTDDN data set in the **Unit Type** field.
    - 2) (Optional) Specify catalog options, SMS parameters, or tape parameters.
    - 3) Enter Y in the **Update DSN create spec** field and press Enter.
    - 4) On the OUTDDN DSN Generation panel, enter the qualifier codes to specify the data set name for the OUTDDN data set. You must specify a unique data set name for each table to be unloaded. If a duplicate data set name is specified, an error message will be displayed after you exit this panel, prompting you to rename the data set.
    - 5) Press PF3 until the HPU Table Selection panel is displayed. When all required options are complete for the table to be unloaded, a Y is displayed in the **Sel** column next to the table.
    - 6) Repeat these steps for each table that you want to select rows and columns.
  - If you are using templates, the TEMPLATEDD Name Selection panel is displayed. Select a template name to be used for the OUTDDN and press Enter, then PF3. A message is displayed confirming the template name selection.
10. Optional: On the HPU Select Format panel, update other options as required.
11. Press PF3 until the HPU Options panel is displayed.
12. Optional: On the HPU Options panel, specify other DB2 HPU options.
13. Generate the unload job as follows:
  - a. Enter Y in the **Build Unload Job** field.
  - b. On the Build Job window, specify the data set and member name where the generated job is to be placed, and a valid job card.
  - c. Press Enter. The job is generated and placed in the member you specified.

## What to do next

To unload the tables, submit the generated job.

## Chapter 20. Generating IBM UNLOAD utility jobs

DB2 Automation Tool can generate JCL to unload tables using the IBM UNLOAD utility. You can use DB2 Automation Tool's ISPF interface to select the columns to be unloaded, rearrange column order, change the output length of a column, specify strip characters and selectively unload columns using WHERE clauses.

Data can be unloaded from the DB2 table level only. You can choose the table you want to unload from a selection list.

### Selecting a table to unload

Select a table to unload using these steps.

#### Procedure

1. On the DB2 Automation Tool Main Menu, enter the appropriate subsystem in the **DB2 Subsystem ID** field.
2. Enter 11 in the **Option** field and press Enter.
3. On the Stand Alone Utilities panel, enter 1 in the **Option** field and press Enter.
4. On the Table Selection panel, specify a table creator or table name or mask in the **Creator Like** and **Tables Like** fields and press Enter.
5. A list of tables that match your selection criteria is displayed. The following figure shows the Table Selection panel:

```

AUTOTOOL V4R2      ----- Table Selection ----- 2014/08/07 17:34:04
Option ==>                                         Scroll ==> CSR
-----
Line Commands: S - Select
-----
Creator   Like   PDUSE*           >           DB2 Subsystem: SS01
Tables    Like   *             >           Row 1 of 29      +>
-----
Cmd  Table Name      Creator   Database   Tablespace  OBID
-----
      ARCHIVES_V11    PDUSER    MHTEST     ARCHIV11    00125
      LPJOBS_V11      PDUSER    MHTEST     DLCLP11     00089
      LPSPACES_V11    PDUSER    MHTEST     DLCLP11     00095
      LPSTEPS_V11     PDUSER    MHTEST     DLCLP11     00092
      UTILITY_STATS_V11 PDUSER    MHTEST     DLCUTS11    00102
      DR_IMAGE_COPY_V11 PDUSER    MHTEST     DRCOPY11    00120
      ETRIGGER        PDUSER    MHTEST     ETRIGS31    00075
      EXCEPTIONS_V11  PDUSER    MHTEST     EXCPTN11    00030
      JOBS_OPTIONS_V12 PDUSER    MHTEST     JOBS11      00105
      JOBS_V11        PDUSER    MHTEST     JOBS11      00018
      JOB_TASKDEF_V41  PDUSER    MHTEST     JOBS11      00128
      JOB_VERSIONS_V11 PDUSER    MHTEST     JOBS11      00023
      OBJECTS_V13     PDUSER    MHTEST     OBJECT13    00008

```

Figure 314. Table Selection panel

Columns of detailed information can be reviewed for each table. Scroll right to see all the columns. The following provides column descriptions for the Table Selection screen.

#### Creator Like

The table creator name or mask you specified is shown here. You can change it on this panel to change or further refine the list of tables.

**Note:** This field allows up to 128 bytes. To scroll this field, place the cursor in the field and use the PF11 key to scroll right and the PF10 key to scroll left.

**Tables Like**

The table name or mask you specified is shown here. You can change it on this screen to change or further refine the list of tables.

**Note:** This field allows up to 128 bytes. To scroll this field, place the cursor in the field and use the PF11 key to scroll right and the PF10 key to scroll left.

**DB2 Subsystem**

The DB2 SSID.

**Row x of y**

Displays the current row and the total number of rows in the profile list. Adjacent to this field is a scroll indicator: > means scroll right for more data; < > means scroll left or right for data; < means scroll left for more data. A plus sign (+) means scroll down for more data; a minus sign (-) means scroll up for more data.

**Table Name**

The table name.

**Creator**

The user ID of the table creator.

**Database**

The database name.

**Tablespace**

The table space name.

**OBID** The data object identifier.

**Created Timestamp**

Timestamp for when the table was created.

**Altered Timestamp**

Timestamp for when the table was last altered.

6. To select a table, enter S in the **Cmd** field next to the table and press Enter. To cancel, press PF3 (END).

---

## Specifying UNLOAD criteria

The Select Columns panel allows you to select the columns to be unloaded from the table, rearrange column order, change the output length of a column, specify strip characters and selectively unload columns using WHERE clauses.

### Procedure

1. When you select a table to unload, the Select Columns panel appears, as shown in the following figure:



```

AUTOTOOL V4R2 ----- Select Columns ----- 2014/08/07 17:36:57
Option ==>                                     Scroll ==> CSR
  Commands: EAC - Exclude all columns.
            IAC - Include all columns.
  Creator: PDUSER > Name: ARCHIVES_V11 >
  Where Clause(s) A (A - And, O - Or) DB2 Subsystem: SS01
                                                    Row 1 of 22 +>
-----
Select Column      Column      Where Int Output Strip
Order Name          Type        Null Ext Length L/T/B/N
1   DB2_SSID        CHARACTER
2   ARCHLOG_NAME    CHARACTER
3   DR_ARCHLOG_NAME CHARACTER
4   PRODUCT_F MID   CHARACTER
5   COPY_IND        CHARACTER
6   START_TIME      CHARACTER
7   END_TIME        CHARACTER
8   START_RBA       CHARACTER
9   END_RBA         CHARACTER
10  START_LRSN      CHARACTER
11  END_LRSN        CHARACTER

```

Figure 315. Select Columns panel

2. The select order of the table's columns defaults to the order the columns are defined in DB2. To deselect a column, remove the number in the Select Order column. To change the order of the columns, rearrange the numbers listed in the Select Order column.

3. Specify the fields as follows:

**Creator**

The table creator name.

**Name** The table name.

**Where Clause(s)**

Specify how multiple WHERE clauses should be treated. Enter A to use AND conditions, or enter O to use OR conditions.

**DB2 Subsystem**

The DB2 SSID.

**Row n of nnn**

Displays the current row and the total number of rows in the profile list. Adjacent to this field is a scroll indicator: > means scroll right for more data; < > means scroll left or right for data; < means scroll left for more data. A plus sign means scroll down for more data; a minus sign means scroll up for more data.

**Select Order**

Specify the order in which you want the column unloaded. The default is the order in which the columns appear in the table. To deselect a column, remove the number from the Select Order column.

**Column Name**

The name of the column.

**Column Type**

The type of column.

**Where Null**

This column is blank if a column is defined as NOT NULL. If the column is nullable, it will be editable. Enter Y in this column to include a WHERE column name IS NULL clause. Enter N in this column to

include a WHERE column name IS NOT NULL clause. Leave this field set to '\*' to exclude a WHERE clause for this column.

#### **Int Ext**

If you want to change a column's unload format to EXTERNAL and the column is editable, enter E in the column. If the data type does not allow external format, the column is read-only.

#### **Output Length**

If you want to override the output length of the column, enter it in this field. If a length is entered on a column that has a fixed length and that length is less than the column length, the TRUNCATE keyword will automatically be generated.

#### **Strip L/T/B/N**

For columns that allow the STRIP function, indicate how the strip function is to be performed:

- L: Remove occurrences of blank or the specified strip character from the beginning of the data.
- T: Remove occurrences of blank or the specified strip character from the end of the data.
- B: Remove occurrences of blank or the specified strip character from the beginning and end of the data.
- N: Do not use the STRIP function. STRIP will not be performed on this column and any value entered in the Strip Char field will be ignored.

#### **Strip Char**

If using the STRIP function, specify a single-byte character that is to be stripped. If a single character is entered, then it will be used as the data to be stripped. If you specify a two-byte value in this field, these two bytes will be interpreted as a hexadecimal representation of the strip character to be used.

#### **Where Clause**

Specify any DB2 selection criteria to be entered against that column. When multiple WHERE conditions exist, they will either be AND or OR based on the value in the Where Clauses field.

**Note:** If you require a mixture of AND and OR conditions, you must enter them manually after the JCL is generated.

4. Press Enter after entering all the desired values.

---

## **Setting options for the UNLOAD**

The Unload Utility Options panel allows you to specify various options for the UNLOAD utility.

### **Procedure**

1. When you have finished selecting columns and setting other column-specific options, press Enter. The Unload Utility panel appears, as shown in the following figure:

```

AUTOTOOL V4R2 ----- Unload Utility Options ----- 2015/10/08 20:07:38
Option ==> Scroll ==> CSR

Commands: Save - Save current field values
          Default - Reset fields to system defaults

Table Creator: PDUSER > User: TWUSR
Table Name . : BMB_ARCHIV1_DB11 > DB2 Subsystem: SS01 More: +

Build Unload Job . . . N (Yes/No)
Optional Template Dataset and member name:
  Template Dataset
  Member name . .

Update Sysrec Options Y (Yes/No)
Include Syspunch . . . N (Yes/No) Update N (Yes/No)
Header . . . . . N (C - CONST, N - None, O - OBID)
  CONST . . . . .
Float . . . . . S (I - IEEE, S - S390)

Encoding . . . . . N (E - EBCDIC, A - ASCII,
                     U - UNICODE, N - None)

```

Figure 316. Unload Utility Options panel

## 2. Specify the fields as follows:

### Table Creator

The table creator name; this field is read only.

### Table Name

The table name; this field is read only.

**User** The current user ID.

### Build unload job

This field allows you to build the UNLOAD utility JCL. This field is initially set to Y; if the SYSREC data set options have been configured for this job, the field defaults to Y and you can build the job. When you press Enter, the Build Job window is displayed.

### Optional Template Dataset and member name

If you want to use an existing template for UNLOAD instead of allowing DB2 Automation Tool to create the template, enter the template data set and member name here. The template data set must already exist and the template members must follow DB2 syntax rules for the TEMPLATE control statement. Templates can be used for the SYSREC and SYSPUNCH DDs. If you specify to use templates, you will be prompted to select a template name on the TEMPLATEDD Name Selection panel when you update SYSREC or SYSPUNCH data set options.

### Update Sysrec Options

Type Y in this field and press Enter to set options for the SYSREC data set, into which the table is to be unloaded. This data set is required and options must be set; therefore the default is Y. Once you have set options for the SYSREC data set, set the Build unload job field to Y and press Enter to build the job.

### Include Syspunch

If you want to include the SYSPUNCH DD to receive LOAD utility control statements, type Y in this field and press Enter. You must

configure options for this DD; if the options have not yet been set, the Unload DSN options panel for the SYSPUNCH DD is displayed when you press Enter.

**Update**

To update data set options for the SYSPUNCH DD after they have been initially configured, type Y in this field and press Enter.

**Header**

Indicate if you want a header field at the beginning of the output records that can be used to associate an output record with the table from which it was unloaded.

- Type C to specify Constant. This option specifies that a constant string is to be used as the record header. If you choose this option, also enter a constant value in the CONST field.
- Type N (default) to specify no header.
- Type O to specify that the OBID for the table (a two-byte binary value) is to be placed in the first two bytes of the output records unloaded from the table.

**CONST**

If you specify C for the header field, enter the constant value here.

**Float** Specify the output format of the numeric floating-point data. This option applies to the binary output format only.

- Type I to specify IEEE format (also known as the binary floating point, or BFP).
- Type S (default) to specify S/390® internal format (also known as the hexadecimal floating point, or HFP).

**Encoding**

Specify how the output data of character type is to be encoded.

- Type E to convert character data to EBCDIC.
- Type A to convert character data to ASCII.
- Type U to convert character data (except for bit strings) to Unicode.
- Type N to preserve the encoding scheme of the source data.

**CCSID**

Specify the coded character set identifier(s) (CCSIDs) that are to be used for the data of the listed character type in the output records, including data that is unloaded in the external character formats.

**Nosubs**

Type Y in this field to specify that CCSID code substitution is not to be performed during unload processing. The default is N.

**Nopad**

Type Y in this field to specify that the variable-length columns in the unloaded records are to occupy the actual data length without additional padding. The default is N.

**Dec Float Round Mode**

(DB2 Version 9.1 or later) Specify the rounding mode to be used when DECFLOATs are manipulated. The following rounding modes are supported:

- C: Ceiling. Round toward positive infinity.
- D: Down. Round toward 0 (truncation).

- F: Floor. Round toward negative infinity.
- HD: Half Down. Round to the nearest number. If equidistant, round down.
- HE: Half Even. Round to the nearest number. If equidistant, round so that the final digit is even.
- HU: Half Up. Round to nearest. If equidistant, round up.
- U: Up. Round away from 0.
- N: (Default) None. The data will be rounded according to the DECFLOAT ROUNDING MODE set in DSNHDECP.

#### **Delimited**

Type Y in this field to indicate that the output data file is in a delimited format. When data is in a delimited format, all fields in the output data set are character strings or external numeric values. In addition, each column in a delimited file is separated from the next column by a column delimiter character. The default is N. If you specify Y, ensure the Column Delimiter, Character Delimiter, and Decimal Point fields are completed.

#### **Column Delimiter**

Specify the column delimiter that is used in the output file. The default is a comma (,).

#### **Character Delimiter**

Specify the character string delimiter that is used in the output file. The default is a double quotation mark (").

#### **Decimal Point**

Specify the decimal point character that is used in the output file. The default is a period (.).

#### **Shrlevel and Isolation**

Indicate whether other processes can access or update the table space or partitions while the data is being unloaded.

- Type C to specify change with isolation type CS. Indicates that the UNLOAD utility is to read rows in cursor stability mode.
- Type U to specify change with isolation type UR. Indicates that uncommitted rows, if they exist, are to be unloaded.
- Type R (default) to specify reference. Specifies that during the unload, rows of the tables can be read, but cannot be inserted, updated, or deleted by other DB2 threads.

#### **Skip Locked Data**

(DB2 Version 9.1 or later) Type Y in this field to indicate that the UNLOAD utility is to skip rows on which incompatible locks are held by other transactions. This option applies to row level or page level locks.

#### **Sample**

If you want only sampled rows of the table to be unloaded, enter the percentage of rows you want to sample. Sampling is applied to rows that are qualified by the WHEN selection conditions, if included. Valid values are integers from 0 to 100.

**Limit** Specify the maximum number of rows that are to be unloaded from a table. If the number of unloaded rows reaches the specified limit, a message is issued for the table, and no more rows are unloaded.

### Max Errors

Specify the number of records in error that are allowed. When the error count reaches this number, the UNLOAD utility issues a message and terminates with RC of 8.

- Optional: If you want to save the values you have entered for future use, enter SAVE in the **Option** field. To reset your values to system-installed defaults, enter DEFAULT in the **Option** field.
- When you have finished entering the appropriate values on this panel, press Enter.

---

## Specifying SYSREC and SYSPUNCH data set options

The Unload DSN options panel allows you to specify data set options for the SYSREC and SYSPUNCH data sets.

### About this task

The SYSREC data set is a single data set into which the data is to be unloaded. The SYSREC data set is required. The SYSPUNCH data set is optional and contains the generated LOAD utility control cards that can be used for reloading the data, if desired. The process for specifying options for these two data sets is the same.

### Procedure

- The Unload DSN Options panel is displayed when you specify to update options for either data set, as shown in the following figure:

```
AUTOTOOL V4R2 ----- UNLOAD DSN Options ----- 2014/08/07 17:49:32
Option ==>
Table Creator: PDUSER                >                User: TWUSR
Table Name  : ARCHIVES_V11          >                DB2 Subsystem: SS01
Update SYSREC DSN spec . N          (Yes/No)
Unit Type . . . . .                (CART - DISK - etc.)
Catalog Options
DISP=Status . . . . . M             (M - MOD, N - NEW, O - OLD, S - SHR)
Normal Termination . . C           (C - CATLG, D - DEL,
                                   K - KEEP, U - UNCATLG)
Abnormal Termination C             (C - CATLG, D - DEL,
                                   K - KEEP, U - UNCATLG)
Data Class . . . . .                (8 character class)
Storage Class . . . . .             (8 character class)
Management Class . . . . .         (8 character class)
Tape specific parameters Only needed if Unit Type is a Tape device:
Expiration date *or* . . .         (YYYYDDD - YYDDD)
Retention period . . . . .         (4 digit number)
```

Figure 317. UNLOAD DSN Options panel

- Specify the fields on this panel as follows:

#### Table Creator

The table creator name; this field is read only.

#### Table Name

The table name; this field is read only.

**User** The current user ID.

#### Update SYSREC|SYSPUNCH DSN spec

Type Y in this field and press Enter to set or change the data set specifications for the SYSREC or SYSPUNCH data set.

**Unit Type**

Enter a valid unit for the SYSREC or SYSPUNCH data set.

**Catalog Options**

This section allows you specify the disposition of the SYSREC or SYSPUNCH data set. These values will be used to build the DISP= portion of the data set DD.

**DISP=Status**

Specify the initial disposition or status of the data set.

**Normal Termination**

Specify the disposition of the data set upon normal termination of the job step.

**Abnormal Termination**

Specify the disposition of the data set upon abnormal termination of the job step.

**Data Class**

If your site uses SMS to manage data sets, type in the SMS data class.

**Storage Class**

If your site uses SMS to manage data sets, type in the SMS storage class.

**Management Class**

If your site uses SMS to manage data sets, type in the SMS management class.

**Expiration date -or- Retention period**

If the unit type specified in the Unit Type field is a tape device, enter either the tape expiration date in YYYYDDD format, or the tape retention period in number of days.

3. When you have finished entering the appropriate values on this panel, press PF3 (END) to return to the Unload Utility Options panel.

## **Building a data set name for the SYSREC or SYSPUNCH data sets**

DB2 Automation Tool offers a simple way to construct a data set name for the SYSREC or SYSPUNCH data sets.

**Procedure**

1. Type Y in the Update SYSREC|SYSPUNCH DSN spec field. The panel shown in the following figure is displayed:

```

AUTOTOOL V4R2 ----- SYSREC   DSN Generation ----- 2014/08/07 17:50:43
Option ==>
Table Creator: PDUSER           >           User: TWUSR
Table Name   : ARCHIVES_V11     >           DB2 Subsystem: SS01
UNLOAD UTILITY
Qualifier code      Free form literal          Show DSN N
Current dataset name generation qualifier string:

Valid dataset name generation codes are:
 1. Database          13. Month (MM)           27. Utility Name
 2. Space Name        14. Day (DD)             28. Job Name
 3. Partition/DSNUM   15. Julian Day (DDD)      29. Step Name
 8. Subsystem ID      16. Hours (HH)           33. Index Space Name
10. Time (HHMMSS)     17. Minutes (MM)         34. Table Space Name
11. Date (YYYYDDD)    18. Seconds (SS)         35. Substring Qualifier
12. Year (YYYY)       36. Use Freeform Literal

```

Figure 318. SYSREC|SYSPUNCH DSN Generation panel

- Specify the fields on the SYSREC|SYSPUNCH DSN Generation panel as follows:

#### Qualifier code

To include a qualifier, type its number in the Qualifier code field and press Enter. The qualifier string appears in the Current dataset name generation qualifier string field. You can also type the data set name directly in the string field.

#### Free form literal

After selecting the Use Freeform literal qualifier, you can enter an eight-character literal in this field. If you want the literal to be in its own substring, make sure to begin the literal with a period.

#### Show DSN

To view the string as it will be completed, type Y in the Show DSN field.

#### GDG Limit

If you want to set a specific GDG limit for this data set, enter it here. If no GDG limit is set on this panel (GDG limit field left blank), the GDG limit set in the job profile on the Generation Options panel applies. Valid values are from 1 to 255.

#### Current dataset name generation qualifier string

This field displays the qualifier string as it was input.

Commonly used qualifiers for data set names are listed on the bottom half of the panel. The following describes the valid data set name qualifiers that you can use on the SYSREC|SYSPUNCH DSN Generation panel:

#### Database

The database name.

#### Space Name

The table space or index name.

#### Partition/DSNUM

The partition number or data set number. When you choose this option, the Resulting DSN using Current Symbolic String window appears to prompt you to enter a valid character for the first position in the string.

#### Subsystem ID

The subsystem ID.



**Time (HHMMSS)**

The current time in the format shown.

**Date (YYYYDDD)**

The current date in the format shown.

**Year (YYYY)**

The year in the format shown.

**Month (MM)**

The month in the format shown.

**Day (DD)**

The day of the month in the format shown.

**Julian Day (DDD)**

The Julian day.

**Hours (HH)**

The current time in hours.

**Minutes (MM)**

The current time in minutes.

**Seconds (SS)**

The current time in seconds.

**Utility Name**

The utility name.

**Job Name**

The job name.

**Step Name**

The job step name.

**Index Space Name**

The index space name.

**Table Space Name**

The index space name.

**Substring Qualifier**

Select this option to specify one of the qualifiers and customize the substring. When you press Enter, the substring parameters window is displayed.

**Use freeform literal**

After selecting this qualifier, you can enter an eight-character literal in the Free Form literal field. If you want the literal to be in its own substring, make sure to begin the literal with a period.

For example, if you enter 1 (Database), 2 (Space Name), then 10 (Julian Day), the data set name appears as:

&DB..&SN..D&JDATE.

3. When finished, press PF3 (END) to continue.

## Using the substring function

You can use the substring qualifier function to customize a data set name.

When you choose the Substring Qualifier function to customize a qualifier substring, the window shown in the following figure is displayed:

Substring Parameters

Enter the Qualifier Code ==>

Enter Starting Position ==>

Enter Substring Length ==>

Figure 319. Substring Parameters window

You can choose to enter almost any of the qualifier codes and specify the string's starting position and length. For example, qualifier code 8 generates a string of "&SSID", a four-character subsystem name. However, if your site uses three-character SSIDs, the substring qualifier option can be used to specify the SSID and customize the string length, as shown in the following figure:

Substring Parameters

Enter the Qualifier Code ==> 8\_

Enter Starting Position ==> 1\_

Enter Substring Length ==> 3\_

Figure 320. Example: specifying the SSID substring length

The results are shown in the following figure:

Current dataset name generation qualifier string:  
&SSID(1,3).

Figure 321. Example: results of substring generation

## Resulting DSN using current symbolic string

Some substrings (such as time and date) require the addition of an alphanumeric or symbol in the beginning of the string.

When you select these substrings, the window shown in the following figure is displayed:

Resulting DSN using current symbolic string

Enter a Literal or Symbolic to Prefix the Invalid Dataset Node  
==>

Invalid Dataset Name:  
\* SS01.DATABASE.SPACENAM.2008143 \*

HAAM250E - Invalid data set node detected. First character not alphabetic or national.

Figure 322. Resulting DSN using current symbolic string window

This panel allows you to insert an alphanumeric or symbol to make the data set node name valid. When finished, press Enter.

## Viewing a sample string

You can view a sample string that would be generated by using your specification for a data set.

### About this task

To view the string as it will be completed, type Y in the Show DSN field. When you press Enter, the sample string appears, as shown in the following figure:

```
Resulting DSN using current symbolic string

Using the following sample data as input:

&JOBNAME  = 'JOBNAME '  &STEPNAME = 'STEPNAME'  &PART   = '00001'
&SSID     = 'SS01'      &UTIL    = 'UTILNAME'    &SN      = 'SPACENAM'
&DB       = 'DATABASE'
The date/time fields are set to the current time.

The generated dataset would be:

* DATABASE.SPACENAM.D00001.D2008155          *

Press ENTER or PF3 to continue
```

Figure 323. Viewing a sample string

Press PF3 (END) to return to the previous panel.

---

## Building the UNLOAD job

After you specify the UNLOAD utility settings, you must build the job.

### About this task

When you build the job, DB2 Automation Tool constructs JCL for a job that executes the UNLOAD utility.

The Build Job window, shown in the following figure, is displayed when you have finished entering UNLOAD options:

```
Build Job for PDUSER.ARCHIVES_V11

Edit Generated Job      Y              (Yes/No)
Schedule Job           . . . . N (Yes/No)  Update options . . N (Yes/No)

Build job in Data set  TWUSR.DAT.TEST
Member                UNLOAD1

Job Cards:
==> //JOB CARD JOB TWUSRA,CLASS=A,NOTIFY=&SYSUID
==> //*
==> //*
==> //*
```

Figure 324. Build Job window

The following describes the fields in the Build Job window:

### Edit Generated Job

Type Y if you want to edit the job after it has been generated. The job appears in an edit session after it has been generated.

### Schedule Job

Type Y in the Schedule Job field to indicate that the resulting JCL job is to be scheduled to the DB2 administrative task scheduler. Entering Y in the Update Options field and pressing Enter displays a panel to define DB2 administrative task scheduler options.

### Build job in Dataset

Enter the fully qualified data set name (without quotes) where you want to save the generated job. This data set must exist and can be sequential or a PDS. In online mode, this data set will hold the generated utility job. In batch mode, this data set will hold the batch JCL to generate the utility job.

### Member

If the data set to hold the generated job is a PDS, enter a member name for the job output here. If the member does not exist, DB2 Automation Tool will create it.

### Job Cards

Enter a valid job card for your site on any of the four Job Card lines. Job card information can be provided as standard JCL or another compatible control language.

## Scheduling the job for the DB2 administrative task scheduler

When building a DB2 Automation Tool job profile, you can specify to schedule the utility job via the DB2 administrative task scheduler.

The Schedule DB2 Admin Task panel allows you to define the options for a task to be scheduled to run via the DB2 administrative task scheduler.

The Schedule DB2 Admin Task panel is shown in the following figure:

```
AUTOTOOL V4R2  ----- Schedule DB2 Admin Task ----- 2017/09/20 14:55:08
Option  ==>
                                         Scroll ==> CSR
                                         DB2 Subsystem: SS01
Task Name . . . . AUTOMATION TOOL UTIL: &JOBNAME                >
Task Description                                         >

Begin Timestamp . . &CURRENT                                (DB2 Timestamp)
End Timestamp . . . 2017-09-20-14.55.08.959073 (DB2 Timestamp)
Max Invocations . . 1                                       (Integer, Blank)
SSID . . . . . SS01                                         (Blank for any datasharing member)
Job Wait . . . . . Y                                       (Y - Yes, N - No, P - Purge)
Execution Threads . 001                                     (Integer)

Invocation Options:
  Interval (minutes)                                     (Integer, Blank)
  -Or-
  Trigger:
    Task Name . . .                                         >
    Cond . . . . . (GT,GE,EQ,LT,LE,NE)
    Code . . . . . (Integer, Blank)
    -Or-
    Point in Time . . .                                     >
```

Figure 325. Schedule DB2 Admin Task panel

The following describes the fields on the Schedule DB2 Admin Task panel:

**Task Name**

(Required) Enter a unique task name to differentiate this from other DB2 administrative task scheduler tasks. The following variables are allowed to ensure unique task names when multiple jobs are created:

- &JOBNAME resolves to the actual job name for the JCL job.
- &PROFILE resolves to the job profile name.
- &SEQ resolves to a sequential number that is incremented when referenced.
- &TIMESTAMP resolves to the DB2 timestamp returned from the CURRENT\_TIMESTAMP when the job is added to the DB2 administrative task scheduler.

**Task Description**

Enter a description for the task.

**Begin Timestamp**

If you want the task to execute at a specific starting time, enter it in the format CCYY-MM-DD-HH.MM.SS.thmiju. If not specified, the task may be executed immediately. The variable &CURRENT can be specified to use the current timestamp when the job is added to the DB2 administrative task scheduler. &CURRENT can be combined with any valid DB2 timestamp expression to specify a future time. For example:

&CURRENT + 5 DAYS  
&CURRENT + YEAR

**End Timestamp**

If you want the task to end at a specific time, enter it in the format CCYY-MM-DD-HH.MM.SS.thmiju. If not specified, the task may be executed as scheduled indefinitely. The variable &CURRENT can be specified to use the current timestamp when the job is added to the DB2 administrative task scheduler. &CURRENT can be combined with any valid DB2 timestamp expression to specify a future time. For example:

&CURRENT + 5 DAYS  
&CURRENT + YEAR

**Max Invocations**

Enter the maximum number of times this task can be executed. If not specified, there is no limit to the number of executions.

**SSID** Enter a particular subsystem that should execute the task. If not specified, the task may execute on any member of a data sharing group.

**Job Wait**

Indicate whether the job can be executed synchronously. Valid values are:

- Y: Synchronous execution
- N: Asynchronous execution
- P: Synchronous execution, after which the job status in z/OS is purged.

**Execution Threads**

Enter the number of parallel tasks to schedule.

**Invocation Options**

Select one of the following invocation options.

**Interval (minutes)**

Specify the time in minutes to execute a repeating task.

**Trigger**

These fields allow you to define the parameters that cause the task to be triggered.

**Task Name**

Specify another DB2 administrative task scheduler task that, when complete, triggers the execution of this task.

**Cond** Specify the type of comparison to be made on the condition code of the triggered task. If not specified, the task is triggered upon completion of the trigger task without regard to its condition code.

**Code** Specify the condition code to compare to determine if task gets triggered.

**Point in Time**

Specify a point-in-time string in UNIX cron format that indicates one or more specific times to begin task execution. The format is:  
minute hour day\_of\_the\_month month\_of\_the\_year day\_of\_the\_week

where:

- *minute* can be 0-59
- *hour* can be 0-23
- *day\_of\_the\_month* can be 1-31
- *month\_of\_the\_year* can be 1-12 or upper-, lower-, or mixed-case three-character strings, based on the English name of the month: jan, feb, mar, apr, may, jun, jul, aug, sep, oct, nov, or dec
- *day\_of\_the\_week* can be 1-7 or upper-, lower-, or mixed-case three-character strings, based on the English name of the day: mon, tue, wed, thu, fri, sat, or sun

Each field must be separated by a blank. For more information on the unix CRON format for the DB2 administrative task scheduler, refer to the DB2 Administration Guide for your version of DB2.

When finished, press Enter, then PF3. The Build Job window is displayed; the Schedule Job field is set to Y.

---

## Chapter 21. Adding jobs to the DB2 administrative task scheduler

DB2 Automation Tool allows you to add batch builds and utility execution jobs to the DB2 administrative task scheduler. The interface allows you to schedule DB2 Automation Tool jobs and view their status and output.

The DB2 administrative task scheduler allows jobs to be scheduled for one or more executions based on a set of user-provided parameters. You can define a window of time in which to execute the job. Additional interval or trigger parameters may be specified to indicate when a job is executed within the defined window.

### Prerequisites

The following prerequisites must be in place:

- The DB2 administrative task scheduler must be configured and active on the DB2 subsystems on which you are running DB2 Automation Tool. For information about configuring the task scheduler, refer to the DB2 Administration Guide for your version of DB2.
- RACF must be configured to allow PassTickets for the DB2 administrative task scheduler task. For information about configuring RACF PassTickets, refer to the Security Server RACF Security Administrator's Guide for your version of z/OS or consult your site's security specialist.
- You must enable DB2 administrative task scheduler support using the Setup option from the DB2 Automation Tool main menu (select option 0, then option 3 - DB2 Shared Profile Support).

---

### Accessing the DB2 Admin Scheduler interface

To access the DB2 Admin Scheduler interface, from the IBM DB2 Automation Tool main menu, select option 12 - DB2 Admin Scheduler.

### About this task

When the DB2 Admin Task Scheduler panel is displayed, a message is displayed directing you to specify selection criteria. Enter selection criteria in the Task Name Like or Task Creator Like fields, or both. When you press Enter, the DB2 Admin Task Scheduler panel is updated with tasks meeting your selection criteria. An example is shown in following figure:

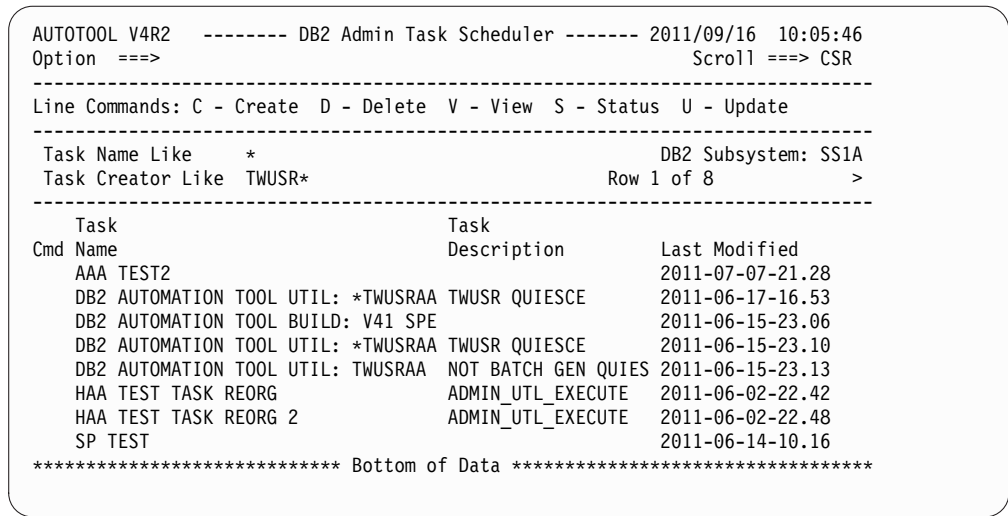


Figure 326. DB2 Admin Task Scheduler panel

The fields on the DB2 Admin Task Scheduler panel are:

**Task Name Like**

The task name or mask that is filtering the task list is displayed in this field. To view different tasks, change the name or mask and press Enter. Use the wildcard character (\*) alone to display all tasks. Enter one or more characters and the wildcard character (\*) to limit the list of tasks displayed to those containing the characters you specified.

**Task Creator Like**

The task creator or mask that is filtering the task list is displayed in this field. To view different tasks, change the name or mask and press Enter. Use the wildcard character (\*) alone to display all tasks. Enter one or more characters and the wildcard character (\*) to limit the list of tasks displayed to those containing the characters you specified.

**DB2 Subsystem**

Displays the current DB2 SSID.

**Row x of y**

Displays the current row and the total number of rows in the task list. Adjacent to this field is a scroll indicator: > means scroll right for more data; < > means scroll left or right for data; < means scroll left for more data. A plus sign (+) means scroll down for more data; a minus sign (-) means scroll up for more data.

**Task Name**

The task name.

**Task Creator**

The task creator.

**Task Userid**

The task user ID.

**Task Description**

The task description.

**Last Modified**

The timestamp that the task was created or last modified.

**Type** The type of task (JCL for JCL job or PROC for stored procedure).



**SSID** The DB2 SSID on which the task was specified to run; blank if not specified.

## What to do next

You can use the following line commands on this panel:

- C - Create a new task to be scheduled.
- D - Delete a task from the scheduler.
- V - View the selected task's details without making changes.
- S - Check the status of a task's execution. This command displays a message relaying the status of the task, or displays a panel that provides additional details about the task's execution.
- U - Update (change) the selected task's details. This line command is only available for DB2 Version 9.1 NFM or later subsystems.

---

## Creating a task

This topic describes how to create a task to be scheduled with the DB2 administrative task scheduler.

### Procedure

1. On the DB2 Admin Task Scheduler panel, enter C in the Cmd area and press Enter. The Create DB2 Admin Task panel is displayed, as shown in the following figure:

```
AUTOT00L V4R2 ----- Create DB2 Admin Task ----- 2011/09/03 21:59:53
Option   ==>                                         Scroll ==> CSR
                                         DB2 Subsystem: SS1A

Task Name . . . . . >
Task Description . . . . . >

Begin Timestamp . . 2011-09-04-00.22.41.000000 (DB2 Timestamp)
End Timestamp . . . 2011-09-07-00.39.41.000000 (DB2 Timestamp)
Max Invocations . . 2 (Integer, Blank)
SSID . . . . . (Blank for any datasharing member)

Invocation Options:
Interval (minutes) 1 (Integer, Blank)
-Or-
Trigger:
Task Name . . . . . >
Cond . . . . . (GT,GE,EQ,LT,LE,NE)
Code . . . . . (Integer, Blank)
-Or-
Point in Time . . . . . >

Execution Source:
JCL Dataset . . . . .
JCL Member . . . . . (If Partitioned Dataset)
Job Wait . . . . . P (Y - Yes, N - No, P - Purge)
-Or-
Procedure Schema . . . . . >
Procedure Name . . . . . >
Procedure Input . . . . . >
```

Figure 327. Create DB2 Admin Task panel

2. Complete the fields as follows:

**Task Name**

(Required) Enter a unique task name to differentiate this from other DB2 administrative task scheduler tasks. The following variables are allowed to ensure unique task names when multiple jobs are created:

- &SEQ resolves to a sequential number that is incremented when referenced.
- &TIMESTAMP resolves to the DB2 timestamp returned from the CURRENT TIMESTAMP when the job is added to the DB2 administrative task scheduler.

**Task Description**

Enter a description for the task.

**Begin Timestamp**

If you want the task to execute at a specific starting time, enter it in the format CCYY-MM-DD-HH.MM.SS.thmiju. If not specified, the task may be executed immediately. The variable &CURRENT can be specified to use the current timestamp when the job is added to the DB2 administrative task scheduler. &CURRENT can be combined with any valid DB2 timestamp expression to specify a future time. For example:

```
&CURRENT + 5 DAYS
&CURRENT + YEAR
```

**End Timestamp**

If you want the task to end at a specific time, enter it in the format CCYY-MM-DD-HH.MM.SS.thmiju. If not specified, the task may be executed as scheduled indefinitely. The variable &CURRENT can be specified to use the current timestamp when the job is added to the DB2 administrative task scheduler. &CURRENT can be combined with any valid DB2 timestamp expression to specify a future time. For example:

```
&CURRENT + 5 DAYS
&CURRENT + YEAR
```

**Max Invocations**

Enter the maximum number of times this task can be executed. If not specified, there is no limit to the number of executions.

**SSID** Enter a particular subsystem that should execute the task. If not specified, the task may execute on any member of a data sharing group.

**Invocation Options**

Select one of the following invocation options.

**Interval (minutes)**

Specify the time in minutes to execute a repeating task.

**Trigger**

These fields allow you to define the parameters that cause the task to be triggered.

**Task Name**

Specify another DB2 administrative task scheduler task that, when complete, triggers the execution of this task.

**Cond** Specify the type of comparison to be made on the condition code of the triggered task. If not specified, the task is triggered upon completion of the trigger task without regard to its condition code.

**Code** Specify the condition code to compare to determine if task gets triggered.

**Point in Time**

Specify a point-in-time string in UNIX cron format that indicates one or more specific times to begin task execution. The format is:

minute hour day\_of\_the\_month month\_of\_the\_year day\_of\_the\_week

where:

- *minute* can be 0-59
- *hour* can be 0-23
- *day\_of\_the\_month* can be 1-31
- *month\_of\_the\_year* can be 1-12 or upper-, lower-, or mixed-case three-character strings, based on the English name of the month: jan, feb, mar, apr, may, jun, jul, aug, sep, oct, nov, or dec
- *day\_of\_the\_week* can be 1-7 or upper-, lower-, or mixed-case three-character strings, based on the English name of the day: mon, tue, wed, thu, fri, sat, or sun

Each field must be separated by a blank. For more information on the unix CRON format for the DB2 administrative task scheduler, refer to the DB2 Administration Guide for your version of DB2.

**Execution Source**

These fields allow you to specify the location of the task execution JCL or stored procedure.

**JCL Dataset**

**JCL Member**

Enter the fully qualified data set and member name containing the execution JCL.

**Job Wait**

Indicate whether the job can be executed synchronously. Valid values are:

- Y: Synchronous execution
- N: Asynchronous execution
- P: Synchronous execution, after which the job status in z/OS is purged.

**Procedure schema**

**Procedure name**

Enter the stored procedure name and schema (qualifier or creator name).

**Procedure Input**

Enter the input parameters for the DB2 stored procedure. This parameter must be specified as a DB2 SELECT statement.

3. When you have completed the required fields, press Enter, then PF3. The DB2 Admin Task Scheduler panel is displayed. The task you created is listed on this panel.

## What to do next

You can check the status of the task, delete the scheduled task, or view the scheduled task settings.

---

## Checking the status of a task

Once a task has been created and scheduled, you can check the status of the task execution using line commands.

### Procedure

On the DB2 Admin Task Scheduler panel, enter S in the Cmd area next to a task and press Enter.

- If the task has not yet been executed, message HAAM722I is displayed.
- If the task has been executed, the following panel is displayed:

```
AUTOTOOL V4R2  ----- DB2 Admin Task Status ----- 2017/09/20 20:37:46
Option  ==>                                     Scroll ==> CSR
-----
Line Commands: S - Status Detail  O - View Output
-----
Task Name      AUTOMATION TOOL BUILD: COPY TE
Task Creator   PDUSR1                               DB2 Subsystem: SS1A
Max History    0010                                Row 1 of 1
-----
Cmd Userid  SSID  Status      Start Timestamp      End Timestamp
PDUSR1     SS1A  COMPLETED  2017-09-05-12.33.02.000000  2017-09-05-12.33.09
***** Bottom of Data *****
```

Figure 328. DB2 Admin Task Status panel

This panel lists each instance of the task that was run via the DB2 administrative task scheduler. Using this panel, you can see the result of each task execution. The following fields and columns appear on this panel:

**Task Name**

The task name.

**Task Creator**

The task creator.

**DB2 Subsystem**

The DB2 subsystem ID.

**Max History**

The maximum number of task executions retained. This value is set in the Shared Profile Parameters.

**Userid**

The user ID under which the task was executed.

**SSID**

The DB2 SSID on which the task was run.

**Status**

- One of the following:
- **RUNNING**: The task is currently running.
  - **COMPLETED**: The task has finished running.
  - **NOTRUN**: The task was not run at the schedule invocation time.
  - **UNKNOWN**: The scheduler shut down while the task was running.

**Start Timestamp**

The timestamp that the task was initiated.

**End Timestamp**

The timestamp that the task completed or ended.

**What to do next**

Use the following line commands to view the details or output of the task execution:

- S - View details of the task execution
- O - View job/stored procedure output. If the task is a JCL job, then SDSF output will be displayed. If the task is a stored procedure, then output parameters will be displayed.

**Note:** The O line command is not available for stored procedures on subsystems running DB2 versions prior to DB2 V9 NFM.

**Task status detail windows**

The DB2 Admin Task Status Detail window shows details of the instance of the task that was selected on the prior panel. The DB2 Admin Task Status Detail window is different for JCL task and stored procedures; these windows are described in this topic.

**Task status detail for JCL jobs**

The following figure shows the DB2 Admin Task Status Detail window for a JCL job:

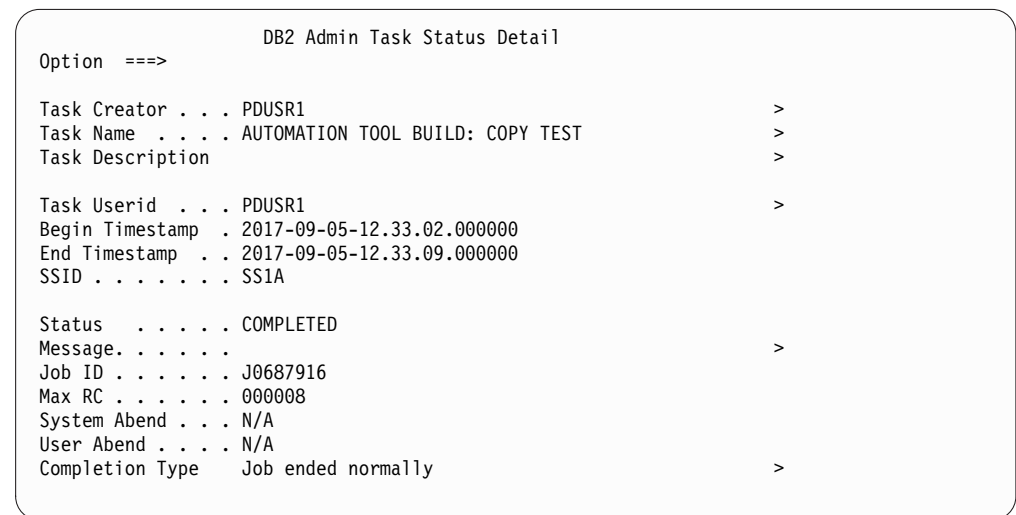


Figure 329. DB2 Admin Task Status Detail window for JCL jobs

The fields on this window display information about the task, as follows:

**Task Name**

The task name.

**Task Creator**

The task creator.

**Task Description**

The task description (if provided).

**Task Userid**

The user ID under which the task was executed.

**Begin Timestamp**

The timestamp that the task was initiated.

**SSID** The DB2 SSID on which the task was run.

**Status** One of the following:

- **RUNNING:** The task is currently running.
- **COMPLETED:** The task has finished running.
- **NOTRUN:** The task was not run at the scheduled invocation time.
- **UNKNOWN:** The scheduler shut down while the task was running.

**Message**

The error or warning message from the last time the task was run.

**Job ID**

The job ID that is assigned to the job submitted by the administrative scheduler.

**Max RC**

The highest return code from the job.

**System Abend**

If the job failed, the system abend code returned from the job.

**User Abend**

If the job failed, the user abend code returned from the job.

**Completion Type**

The completion type; one of the following:

- No completion information
- Job ended normally
- Job ended by completion code
- Job had a JCL error
- Job was canceled
- Job abended
- Converter abended while processing the job
- Job failed security checks
- Job failed in end-of-memory
- blank if the STATUS field does not contain COMPLETED or if the JCL job is run with JES3 in a z/OS 1.7 or earlier system

**Task status detail for stored procedures**

The following figure shows the DB2 Admin Task Status Detail window for stored procedures:

DB2 Admin Task Status Detail		
Task Creator . . .	PDUSRAA	>
Task Name . . . .	AUTOSTATS TEST MONITOR #3	>
Task Description	MONITOR DLCDB DATABASE	>
Task Userid . . .	PDUSRAA	>
Begin Timestamp .	2011-08-05-14.41.45.000000	
End Timestamp . .	2011-08-05-14.42.03.000000	
SSID . . . . .	SS1A	
Status . . . . .	COMPLETED	
Message. . . . .	DSNT400I SQLCODE = 000, SUCCESSFUL EXECUTION	>
SQLCode. . . . .	000000	
SQLState . . . . .	000000	
SQLErrp . . . . .	DSN	
SQLErrMC . . . . .		>

Figure 330. DB2 Admin Task Status Detail window for stored procedures

The fields on this window display information about the task, as follows:

**Task Name**

The task name.

**Task Creator**

The task creator.

**Task Description**

The task description (if provided).

**Task Userid**

The user ID under which the task was executed.

**Begin Timestamp**

The timestamp that the task was initiated.

**SSID** The DB2 SSID on which the task was run.

**Status** One of the following:

- **RUNNING:** The task is currently running.
- **COMPLETED:** The task has finished running.
- **NOTRUN:** The task was not run at the scheduled invocation time.
- **UNKNOWN:** The scheduler shut down while the task was running.

**Message**

The error or warning message from the last time the task was run.

**SQLCode**

The SQLCODE set by DB2 when the stored procedure was called by the DB2 administrative task scheduler.

**SQLState**

The SQLSTATE set by DB2 when the stored procedure was called by the DB2 administrative task scheduler.

**SQLErrp**

The SQLERRP set by DB2 when the stored procedure was called by the DB2 administrative task scheduler.

**SQLErrMC**

The SQLERRMC set by DB2 when the stored procedure was called by the DB2 administrative task scheduler.

## Task output panels

The DB2 Admin Task SYSOUT panel shows the output from the task execution. If the task was a JCL job, the output display shows the contents of the job's SYSOUT data set if the data set is still available in SDSF. If the data set is not available, the panel displays the message "No rows to display." If the task was a stored procedure, the panel displays the output parameters and results sets from the stored procedure.

### **SYSOUT panel for JCL jobs**

The following figure shows the DB2 Admin Task Status Detail window for a JCL job:



```

AUTOTOOL V4R2 ----- DB2 Admin Task SYSOUT ----- 2017/09/05 13:17:44
Option ==> Scroll ==> CSR
-----
Task Name      TEST EXECUTION JCL
Task Creator   TWUSR                               DB2 Subsystem: SS1A
JobID          J0211132                             Row 1 of 58      +>
-----
                J E S 2   J O B   L O G   --   S Y S T E M   R S 2 2   --   N O D

13.11.43 J0211132 ---- MONDAY,    05 SEP 2017 ----
13.11.43 J0211132 IRR010I USERID TWUSR   IS ASSIGNED TO THIS JOB.
13.11.45 J0211132 ICH70001I TWUSR   LAST ACCESS AT 13:10:45 ON MONDAY, SEPTEM
13.11.45 J0211132 $HASP373 TWUSRAPF STARTED - INIT 7   - CLASS A - SYS RS25
13.11.45 J0211132 IEF403I TWUSRAPF - STARTED - TIME=13.11.45
13.11.45 J0211132 RKTSW01I
-----
13.11.45 J0211132 RKTSW01I  JOBNAME STEPNAME PROCSTEP STEP   RC  CPU (Total
13.11.45 J0211132 RKTSW01I  TWUSRAPF CSVAPF00              1    00  00:00:00.0
13.11.45 J0211132 IEF404I TWUSRAPF - ENDED - TIME=13.11.45
13.11.45 J0211132 RKTSW01I  TWUSRAPF JOB TOTALS:              00:00:00.0
13.11.45 J0211132 $HASP395 TWUSRAPF ENDED
----- JES2 JOB STATISTICS -----
      05 SEP 2017 JOB EXECUTION DATE
          5 CARDS READ
          58 SYSOUT PRINT RECORDS
           0 SYSOUT PUNCH RECORDS
           4 SYSOUT SPOOL KBYTES
      0.00 MINUTES EXECUTION TIME
      1 //TWUSRAPF JOB , 'TWUSR', CLASS=A, MSGCLASS=X,
        //          NOTIFY=&SYSUID, REGION=6M
        /*JOBPARM SYSAFF=RS25
          IEF653I SUBSTITUTION JCL - , 'TWUSR', CLASS=A, MSGCLASS=X, NOTIFY=TWUSR, R
      2 //CSVAPF00 EXEC PGM=CSVAPF00
      3 //APFLIB DD DISP=SHR, DSN=HAA.WRK0410.LOADLIB
ICH70001I TWUSR   LAST ACCESS AT 13:10:45 ON MONDAY, SEPTEMBER 5, 2017
IEF236I ALLOC. FOR TWUSRAPF CSVAPF00
IGD103I SMS ALLOCATED TO DDNAME APFLIB
IEF142I TWUSRAPF CSVAPF00 - STEP WAS EXECUTED - COND CODE 0000
IGD104I HAA.WRK0410.LOADLIB                      RETAINED, DDNAME=APFLIB
RKTSW01I-----
- Step Termination Statistics
-
- Program Name          CSVAPF00                      HH:MM:SS.hh
- Step Name             CSVAPF00                      Elapsed Time  00:00:00.00
- Procedure Step
- Step Number           1                      TCB CPU Time  00:00:00.00
- Substep Number        0                      SRB CPU Time  00:00:00.00
- Return Code           00                     Other CPU Time 00:00:00.01
- Tape Mounts           0                      Total CPU Time 00:00:00.01
- Total I/O             0                      Connect Time/ms 0
-
- Region Size           6144K
-
- -----Below 16Meg-----
- Private Area          9192K                      Private Area  1368064K
- Max Allocated          4K                        Max Allocated 8K
- LSQA And SWA          240K                      LSQA And SWA  10464K
-
-----
IEF373I STEP/CSVAPF00/START 2017248.1311
IEF032I STEP/CSVAPF00/STOP 2017248.1311
CPU:      0 HR 00 MIN 00.00 SEC      SRB:      0 HR 00 MIN 00.00 SEC
VIRT:     4K SYS: 240K EXT:          8K SYS: 10464K
IEF375I JOB/TWUSRAPF/START 2017248.1311
IEF033I JOB/TWUSRAPF/STOP 2017248.1311
CPU:      0 HR 00 MIN 00.00 SEC      SRB:      0 HR 00 MIN 00.00 SEC
***** Bottom of Data *****

```

Figure 331. DB2 Admin Task Status Detail window for JCL jobs

The fields on this window display information about the task, as follows:

#### Task Name

The task name.

**Task Creator**

The task creator.

**DB2 Subsystem**

The DB2 SSID on which the task was run.

**JobID** The job ID that was assigned to the job submitted by the administrative scheduler.

The remainder of the panel contains the contents of the job's SYSOUT data set.

**SYSOUT panel for stored procedures**

**Note:** The output command is not available for stored procedures on subsystems running DB2 versions prior to DB2 V9 NFM. If you attempt to use the O line command on such a task, message HAAM763 is displayed.

The following figure shows the DB2 Admin Task SYSOUT panel for stored procedures:

```

AUTOTOOL V4R2  ----- DB2 Admin Task SYSOUT ----- 2017/09/05 12:53:06
Option ==>                                           Scroll ==> CSR
-----
Task Name      AUTOSTATS TEST RUNSTATS #2
Task Creator   PDUSRAA                               DB2 Subsystem: SS1A
JobID                                                  Row 1 of 3      >
-----
Parm  Type    Value
000002 INTEGER  283
000003 INTEGER   0
000004 VARCHAR
***** Bottom of Data *****

```

*Figure 332. DB2 Admin Task SYSOUT panel for stored procedures*

The fields on this window display information about the task, as follows:

**Task Name**

The task name.

**Task Creator**

The task creator.

**DB2 Subsystem**

The DB2 SSID on which the task was run.

**JobID** The job ID that was assigned to the job submitted by the administrative scheduler.

**Parm, Type, Value**

These columns display the output parameters, their types, and results (if any) from the stored procedure.

---

## Updating, viewing, or deleting a task

You can use line commands to view or delete an already defined task. You can also use a line command to update tasks that are scheduled on DB2 Version 9.1 NFM or later subsystems.

**Procedure**

- To update a task, on the DB2 Admin Task Scheduler panel enter U in the Cmd area next to the task and press Enter.

**Note:** The U (update) line command is only available for DB2 Version 9.1 NFM or later subsystems.  
The Update DB2 Admin Task panel is displayed, as shown in the following figure:

```

AUTOTOOL V4R2 ----- Update DB2 Admin Task ----- 2017/09/05 14:17:50
Option ==>
                                                    Scroll ==> CSR
                                                    DB2 Subsystem: SS01
Task Name . . . . TEST EXECUTION JCL
Task Description
Begin Timestamp . . 2017-09-05-13.29.41.000000 (DB2 Timestamp)
End Timestamp . . . 2017-09-05-13.32.41.000000 (DB2 Timestamp)
Max Invocations . . 2 (Integer, Blank)
SSID . . . . . (Blank for any datasharing member)

Invocation Options:
Interval (minutes) 1 (Integer, Blank)
-Or-
Trigger:
Task Name . . .
Cond . . . . . (GT,GE,EQ,LT,LE,NE)
Code . . . . . (Integer, Blank)
-Or-
Point in Time . .

Execution Source:
JCL Dataset . . . TWUSR.JCLLIB
JCL Member . . . APFAUTH2 (If Partitioned Dataset)
Job Wait . . . . Y (Y - Yes, N - No, P - Purge)
-Or-
Procedure Schema
Procedure Name
Procedure Input

```

Figure 333. Update DB2 Admin Task panel

This panel is the same as the panel used to create tasks, but you cannot change the task name or the execution source. For more information on this panel, refer to “Creating a task” on page 517.

- To view a task without changing it, on the DB2 Admin Task Scheduler panel enter V in the Cmd area next to the task and press Enter. The View DB2 Admin Task panel is displayed. You can review the task's execution settings, but cannot make any changes.
- To delete a task, on the DB2 Admin Task Scheduler panel enter D in the Cmd area next to the task and press Enter. The Confirm deletion window is displayed, as shown in the following figure:

```

Confirm deletion

Confirm delete of task: TEST EXECUTION JCL

Delete N (Yes/No)

```

Figure 334. Confirm deletion window

Enter Y in the Delete field and press Enter. The task is deleted.



---

## Chapter 22. Autonomic statistics using DB2 Automation Tool

DB2 Automation Tool's autonomic statistics functionality acts as an interface to DB2's autonomic statistics. DB2 supplies a set of procedures and catalog tables that allow you to ensure that statistics are up to date so DB2 can effectively optimize queries. Autonomic statistics also ensure that statistics are not recollected unnecessarily. The autonomic statistics functionality in the DB2 Automation Tool Autonomic Console provides an interface to these stored procedures, the catalog tables required to use them, and the DB2 administrative task scheduler.

### Overview: autonomic statistics

This section provides a condensed overview of autonomic statistics using DB2 stored procedures.

**Note:** This section is provided to aid in understanding DB2 Automation Tool's autonomic statistics functionality only. For more detailed information about DB2's autonomic statistics, refer to the IBM Knowledge Center.

The two DB2 stored procedures provided are ADMIN\_UTL\_MONITOR and ADMIN\_UTL\_EXECUTE. The DB2 administrative task scheduler is used to call these procedures.

The ADMIN\_UTL\_MONITOR procedure:

1. Detects objects with out-of-date statistics that require a RUNSTATS utility.
2. Writes an alert (a recommendation that RUNSTATS needs to be run) for the object to a SYSAUTOALERTS table.
3. Optionally executes RUNSTATS (ADMIN\_UTL\_EXECUTE) to resolve alerts.

The ADMIN\_UTL\_EXECUTE procedure:

1. During specified maintenance windows (defined in SYSAUTOTIMEWINDOWS), resolves as many alerts as it can by calling the RUNSTATS utility.
2. Writes the results of the alert resolution to a SYSAUTORUNS\_HIST history file.
3. Optionally, if any alerts remain unresolved, reschedules RUNSTATS (ADMIN\_UTL\_EXECUTE) to run in the next maintenance window.

The following catalog tables are used for autonomic statistics:

- SYSIBM.SYSTABLES\_PROFILES
- SYSIBM.SYSAUTOTIMEWINDOWS
- SYSIBM.SYSAUTOALERTS
- SYSIBM.SYSAUTORUNS\_HIST

### About DB2 Automation Tool's autonomic statistics interface

DB2 Automation Tool provides an ISPF interface and its own stored procedure to help you:

- Create a statistics monitor profile. This profile acts as input to ADMIN\_UTL\_MONITOR and defines the criteria under which statistics are considered out of date and defines the objects that you want to monitor for outdated statistics.
- Execute the statistics monitor profile (which calls the ADMIN\_UTL\_MONITOR stored procedure), either immediately or scheduled via the DB2 administrative task scheduler.
- After a statistics monitor profile has been executed, you can view alerts that were written during the execution, as well as view execution results and output if the alert was resolved immediately.
- Define the specified maintenance window in which RUNSTATS can be run to resolve alerts via ADMIN\_UTL\_EXECUTE.
- Schedule an execution of ADMIN\_UTL\_EXECUTE from within a specified maintenance window. This allows you to resolve alerts using the stored procedure outside of using the statistics monitor profiles.
- View history and output from all executions of the autonomic statistics stored procedures, and the alerts associated with them.

DB2 Automation Tool's interface with the DB2 administrative task scheduler is used for scheduling tasks.

At a minimum, to use DB2 Automation Tool's autonomic statistics functionality, you must:

- Ensure prerequisites are met (see the following section).
- Create statistics monitor profiles to define what statistics are considered outdated and optionally define which objects to check.
- Execute or schedule execution of a statistics monitoring profile.
- Create one or more maintenance windows for when a RUNSTATS could be run to resolve outdated statistics.

## Prerequisites

Using autonomic statistics requires the following:

- DB2 10 for z/OS or higher
- The following DB2 stored procedures must also be configured, and your authorization ID must have execute authority on them:
  - ADMIN\_UTL\_EXECUTE
  - ADMIN\_UTL\_MONITOR

---

## Creating a statistics monitor profile

The statistics monitor profile defines criteria against which object statistics can be evaluated, and can also filter the DB2 table spaces on which to monitor statistics. This topic explains how to create a statistics monitor profile.

### About this task

The criteria you define in the statistics monitor profile is used as input to DB2's ADMIN\_UTL\_MONITOR stored procedure.

## Procedure

1. On the DB2 Automation Tool main menu, enter 13 in the **Option** field and press Enter.
2. On the Autonomic Console, enter 5 in the **Option** field and press Enter.
3. Specify selection criteria in the **Profile Like** and **Creator Like** fields and press Enter. If profiles exist that meet your selection criteria, they are listed on the Statistics Monitor Profiles panel, as shown in the following figure:

Figure 335. Statistics Monitor Profiles panel

```

AUTOTOOL V4R2  ----- Statistics Monitor Profiles ----- 2017/09/20 20:59:12
Option ==> Scroll ==> CSR
-----
Line Commands: C - Create  D - Delete  E - Export  H - Execution History
               I - Import  U - Update  V - View   X - Execute
               S - Schedule R - Rename
-----
Profile Like  *                               DB2 Subsystem: SS01
Creator Like  PD*                             Row 1 of 3      >
-----

Cmd  Name                Creator  Updt
TEST1                PDUSR    U
TEST2                PDUSR    U
TEST3                PDUSR    U
***** Bottom of Data *****

```

4. Enter C in the **Cmd** field and press Enter. The Enter New Stats Monitor Profile Data window is displayed.
5. On the Enter New Stats Monitor Profile Data window, in the **Profile Name** field, enter a name for the statistics monitor profile and enter a description in the **Description** field. Press Enter. The Update Stats Monitor Profile panel is displayed, as shown in the following figure:

```

AUTOTOOL V4R2  ----- Update Stats Monitor Profile ----- 2014/08/16 11:38:18
Option ==> Scroll ==> CSR
-----
Creator: TWUSR      Profile: TEST STATS MONITOR PROFILE      User: TWUSR
                   DB2 Subsystem: SS01
-----
Description . . . . .
Share Option . . . . . U (U - Update, V - View, N - No)
-----
Stand Alone . . . . . N (Y - Yes, N - No)
Statistics Scope . . . B (B - Basic, P - Profile, C - Profile Consistency)
Sampling Rate . . . . . (1-100, Blank)
Sampling Threshold . . 500000 (Integer, Blank)
Number of Changes . . . 0 (Integer, Blank)
Number of Mass Deletes 0 (Integer, Blank)
Percent Changes . . . 20 (0.0 - 100.0, Blank)
Update Inconsistency Thresholds N (Y - Yes, N - No)
-----
Restrict Tablespace                                     >
Test Restrict Tablespace      N (Y - Yes, N - No)

```

Figure 336. Update Stats Monitor Profile panel

6. Complete the fields as required. When you have completed the fields, press PF3 (END).

## What to do next

Profiles can be updated, deleted, exported and imported, renamed and viewed in the same manner as DB2 Automation Tool object, exception, utility, and job profiles. Refer to Chapter 13, “Managing profiles,” on page 399 for additional information.

You can also use the following line commands:

- X - Execute the statistics monitor profile.
- S - Schedule the statistics monitor profile for execution via the DB2 administrative task scheduler.
- H - View the execution history for the selected statistics monitor profile. This option displays the same panel as in “Viewing execution history of autonomic statistics procedures” on page 537, but lists only executions of the selected statistics monitor profile.

## Specifying thresholds for inconsistent statistics

This panel allows you to specify thresholds for inconsistent statistics. Whenever one of these thresholds is exceeded, a RUNSTATS alert is written.

### About this task

Each threshold is a percentage difference when related statistics are compared. Unless otherwise specified, valid values for these thresholds are real numbers from 0.0 to 100.0 inclusive. These criteria are used as input to DB2's ADMIN\_UTL\_MONITOR stored procedure.

### Procedure

1. On the Update Stats Monitor Profile panel, enter Y in the **Update Inconsistency Thresholds** field and press Enter. The Update Inconsistency Threshold panel is displayed, as shown in the following figure:



```

AUTOTOOL V4R2 ----- Update Inconsistency Threshold ----- Top of data
Option ==> Scroll ==> CSR

Creator: TWUSR      Name: TEST STATS MONITOR      User: TWUSR
                  DB2 Subsystem: SS01

-----Statistic Threshold----- (0.0-100.0, Blank)
colgroup-card-greater-than-superset-colgroup-card      0.1
different-colgroup-card-from-coldist-and-index          0.1
different-colgroup-card-from-indexes                    0.1
different-single-col-colgroup-card-from-coldist-and-index 0.1
different-single-col-colgroup-card-from-indexes          0.1
drf-greater-than-tabcard                                0.1
drf-less-than-npages                                    0.1
frequency-out-of-range                                  0.1
index-fullkeycard-less-than-any-key-card                 0.1
index-fullkeycard-less-than-firstkeycard                 0
maximum-frequency-less-than-reciprocal-of-colgroup-card 0.1
number-of-frequency-records-greater-than-colgroup-card  0.1
product-of-colcard-less-than-colgroup-card               0
quantile-card-greater-than-colcard                       0.1
quantile-card-greater-than-colgroup-card                 0.1
quantile-frequency-out-of-range                          0
single-col-index-fullkeycard-not-equal-firstkeycard      0.1
sum-of-frequency-greater-than-one                        0.1
sum-of-histogram-frequency-greater-than-one              0
sum-of-histogram-greater-than-colcard                    0.1
sum-of-histogram-greater-than-colgroup-card              0.1
tabcard-less-than-colcard                                0.1
tabcard-less-than-colgroup-card                          0.1
tabcard-less-than-index-keycard                          0.1
tabcard-not-equal-unique-index-fullkeycard               0.1

```

Figure 337. Update Inconsistency Threshold panel

2. Verify or change the statistics thresholds. If the field is left blank, the threshold is not used. For information about the fields, press PF1 for help.
3. When you have completed the required fields, press PF3 (END). The Update Stats Monitor Profile panel is displayed.

## Displaying a list of table spaces to be monitored

You can use the **Test Restrict Tablespace** field to generate a list of table spaces that meet the WHERE clause that you entered in the **Restrict Tablespace** field.

### Procedure

1. From the Update Stats Monitor Profile panel, enter Y in the **Test Restrict Tablespace** field and press Enter. If the WHERE clause you entered on the Update Stats Monitor Profile panel is not valid, a message panel explaining the error is displayed. If the WHERE clause is valid, the Tablespace Stats Display panel is displayed, as shown in the following figure:

```

AUTOTOOL V4R2 ----- Tablespace Stats Display ----- 2014/10/17 10:37:45
Option ==> Scroll ==> CSR

Where DBNAME LIKE 'DLCDB%' AND INSTANCE = 1 > DB2 Subsystem: SS1A
Row 1 of 29 +>
-----
Name DBName Partition Instance DBid PSid Extents
ARCHIV11 DLCDB2 00000 00001 01988 00124 00001
ARCHIV11 DLCDB 00000 00001 00267 00124 00001
DLCPL11 DLCDB 00000 00001 00267 00088 00009
DLCPL11 DLCDB2 00000 00001 01988 00088 00001
DLCUTS11 DLCDB2 00000 00001 01988 00101 00001
DLCUTS11 DLCDB 00000 00001 00267 00101 00001
DRCOPY11 DLCDB 00000 00001 00267 00119 00001
DRCOPY11 DLCDB2 00000 00001 01988 00119 00001
ETRIGS31 DLCDB2 00000 00001 01988 00074 00001
ETRIGS31 DLCDB 00000 00001 00267 00074 00001
EXCPTN11 DLCDB 00000 00001 00267 00029 00001
EXCPTN11 DLCDB2 00000 00001 01988 00029 00001
JOBS11 DLCDB2 00000 00001 01988 00017 00001
JOBS11 DLCDB 00000 00001 00267 00017 00013
OBJECT13 DLCDB2 00000 00001 01988 00007 00001
OBJECT13 DLCDB 00000 00001 00267 00007 00005
OBJEXT31 DLCDB 00000 00001 00267 00012 00001
OBJEXT31 DLCDB2 00000 00001 01988 00012 00001
PAGELOG3 DLCDB 00000 00001 00267 00109 00002
PAGELOG3 DLCDB2 00000 00001 01988 00109 00001
PROFIL11 DLCDB 00000 00001 00267 00002 00003
PROFIL11 DLCDB2 00000 00001 01988 00002 00001

```

Figure 338. Tablespace Stats Display panel

2. This panel lists the table spaces that meet the WHERE clause listed in the top of the panel. Review the list of objects. If you want to modify the list of table spaces, you can edit the **Where** field at the top of the panel and press Enter. The columns listed for each table space are directly from the SYSIBM.SYSTABLESPACESTATS catalog table. Refer to the DB2 for z/OS documentation for a description of these fields.
3. When you have finished editing or reviewing the list, press PF3 (END). The Update Stats Monitor Profile panel is displayed.

## Running a statistics monitor profile

When a statistics monitor profile is run, DB2 Automation Tool calls the ADMIN\_UTL\_MONITOR stored procedure using the parameters and criteria specified in the profile.

### About this task

There are two ways to run a statistics monitor profile:

- On demand (immediately)
- Schedule the run via the DB2 administrative task scheduler

### Procedure

- To run the statistics monitor profile immediately, enter X in the line command area next to the profile and press Enter. The Executing Statistics Monitor window displays while the profile is running. When the profile finishes running, the results are displayed in a panel, and the information is stored in the DB2 catalog table SYSIBM.SYSAUTORUNS\_HIST. The following figure shows the

## Autonomic Execution Output panel:

```

AUTOTOOL V4R2 ----- Autonomic Execution Output ----- 2014/08/18 12:09:12
Option ==> Scroll ==> CSR
Row 13 of 238 -+
-----
Stored Procedure Output

2014-08-18 12:07:57.563784> Executing SYSPROC.ADMIN_UTL_MONITOR
2014-08-18 12:07:57.563795> with options: RESTRICT-TS="DBNAME LIKE 'DLCDB%' AND
    INSTANCE = 1",STAND-ALONE=NO,STATISTICS-SCOPE=PROF
    ILE-CONSISTENCY,SAMPLING-THRESHOLD=500000,NUM-CHANG
    ES=0,NUM-MASS-DELETES=0,PCT-CHANGES=20,COLGROUP-CAR
    D-GREATER-THAN-SUPERSET-COLGROUP-CARD=0.1,DIFFERENT
    -COLGROUP-CARD-FROM-COLDIST-AND-INDEX=0.1,DIFFERENT
    -COLGROUP-CARD-FROM-INDEXES=0.1,DIFFERENT-SINGLE-CO
    L-COLGROUP-CARD-FROM-COLDIST-AND-INDEX=0.1,DIFFEREN
    T-SINGLE-COL-COLGROUP-CARD-FROM-INDEXES=0.1,DRF-GRE
    ATER-THAN-TABCARD=0.1,DRF-LESS-THAN-NPAGES=0.1,FREQ
    UENCY-OUT-OF-RANGE=0.1,INDEX-FULLKEYCARD-LESS-THAN-
    ANY-KEY-CARD=0.1,INDEX-FULLKEYCARD-LESS-THAN-FIRSTK
    EYCARD=0,MAXIMUM-FREQUENCY-LESS-THAN-RECIPROCAL-OF-
    COLGROUP-CARD=0.1,NUMBER-OF-FREQUENCY-RECORDS-GREAT
    ER-THAN-COLGROUP-CARD=0.1,PRODUCT-OF-COLCARD-LESS-T
    HAN-COLGROUP-CARD=0,QUANTILE-CARD-GREATER-THAN-COLC
    ARD=0.1,QUANTILE-CARD-GREATER-THAN-COLGROUP-CARD=0.
    1,QUANTILE-FREQUENCY-OUT-OF-RANGE=0,SINGLE-COL-INDE
    X-FULLKEYCARD-NOT-EQUAL-FIRSTKEYCARD=0.1,SUM-OF-FRE
    QUENCY-GREATER-THAN-ONE=0.1,SUM-OF-HISTOGRAM-FREQUE
    NCY-GREATER-THAN-ONE=0,SUM-OF-HISTOGRAM-GREATER-THA
    N-COLCARD=0.1,SUM-OF-HISTOGRAM-GREATER-THAN-COLGROU
    P-CARD=0.1,TABCARD-LESS-THAN-COLCARD=0.1,TABCARD-LE
  
```

Figure 339. Autonomic Execution Output panel

- To schedule the execution via DB2 Automation Tool's interface to the DB2 administrative task scheduler, enter S in the line command area next to the statistics monitor profile and press Enter. The Schedule DB2 Admin Task panel is displayed, as shown in the following figure:

```

AUTOTOOL V4R2 ----- Schedule DB2 Admin Task ----- 2014/08/18 12:17:51
Option ==> Scroll ==> CSR

Task Name . . . . DB2 AUTOMATION TOOL STATMONITOR: TEST MONITOR >
Task Description >

Begin Timestamp . . &CURRENT (DB2 Timestamp)
End Timestamp . . . &CURRENT + 5 MINUTES (DB2 Timestamp)
Max Invocations . . 1 (Integer, Blank)
SSID . . . . . SS1A (Blank for any datasharing member)

Invocation Options:
Interval (minutes) (Integer, Blank)
-Or-
Trigger:
Task Name . . . >
Cond . . . . . (GT,GE,EQ,LT,LE,NE)
Code . . . . . (Integer, Blank)
-Or-
Point in Time . . >
  
```

Figure 340. Schedule DB2 Admin Task panel

Complete the fields as required. For information about the fields, press PF1 for help.

When you are finished, press Enter, then PF3. A message displays that confirms that the task has been scheduled.

### What to do next

- You can view a statistics monitor profile's execution history by using the H line command on the Statistics Monitor Profiles panel.
- You can also view scheduled executions of a statistics monitor profile using option 12 from the DB2 Automation Tool Main Menu.

---

## Managing maintenance windows for autonomic statistics

Use this option to define and manage maintenance windows in which RUNSTATS utilities can be run to update object statistics.

### About this task

This function is used to view and update the SYSAUTOTIMEWINDOWS DB2 catalog table, which defines when the RUNSTATS stored procedure can be run.

### Procedure

1. From the Autonomic Console panel, enter 2 in the **Option** field and press Enter.
2. On the Autonomic Maintenance Window panel, enter S in the **Source** field and press Enter.
3. If prompted, enter \* in the Window Like field.
4. To create a new maintenance window, enter T in the line command area and press Enter. The Create Maintenance Window panel is displayed. as shown in the following figure:

Create Maintenance Window

SSID . . . . .	SS01	(Blank for any datasharing member)
Max Tasks . . . . .	1	(Integer, Blank)
Month or Week . . .	M (M - Month, W - Week)	
Month. . . . .	(1-12, blank)	
Day . . . . .	(1-31, blank)	
Time From . . . . .	00:00:00 (HH:MM:SS)	
Time To . . . . .	00:00:00 (HH:MM:SS)	

*Figure 341. Create Maintenance Window window*

5. Complete the fields as required. For information about the fields, press PF1 for help.
6. When you have entered the required fields, press Enter, then PF3 to create the maintenance window. The maintenance window appears as a row on the Autonomic Maintenance Window panel. You might need to scroll down to see the row that was added.

### What to do next

Once you have created a maintenance window, you can:

- Update it using the U line command.
- Create a new window using the T command.

- Copy an existing maintenance window and edit it to create a new maintenance window; use the R (repeat) line command
- Schedule RUNSTATS to run in the selected maintenance window; use the S line command.

## Scheduling RUNSTATS via the DB2 administrative task scheduler

You can schedule a RUNSTATS task from the Autonomic Maintenance Window panel. The DB2 administrative task scheduler schedules the ADMIN\_UTL\_EXECUTE stored procedure to run RUNSTATS against any object that has an alert in the SYSAUTOALERTS table.

Enter S in the **Cmd** field next to an autonomic statistics maintenance window on the Autonomic Maintenance Window panel. The Schedule DB2 Admin Task panel is displayed, as shown in the following figure:

```

AUTOTOOL V4R2  ----- Schedule DB2 Admin Task ----- 2014/08/18 23:31:05
Option  ==>                               Scroll ==> CSR
                                           DB2 Subsystem: SS01

Task Name . . . . RUNSTATS WINDOW ID:282                >
Task Description . . . . .                            >

Begin Timestamp . . 2014-08-23-00.00.00.000000 (DB2 Timestamp)
End Timestamp . . . . . (DB2 Timestamp)
Max Invocations . . 1 (Integer, Blank)
SSID . . . . . SS1A (Blank for any datasharing member)
Stand Alone . . . . Y (Yes/No)

Invocation Options:
Interval (minutes) . . . . . (Integer, Blank)
-Or-
Trigger:
Task Name . . . . . >
Cond . . . . . (GT,GE,EQ,LT,LE,NE)
Code . . . . . (Integer, Blank)
-Or-
Point in Time . . . . . >

```

Figure 342. Schedule DB2 Admin Task panel

Complete the fields as required. For information about the fields, press PF1 for help.

When you are finished, press Enter, then PF3. The Autonomic Maintenance Window panel is displayed.

## Viewing execution history of autonomic statistics procedures

DB2 Automation Tool provides an interface to view a history of DB2 autonomic statistics procedures that have been run. This function allows you see the results from the autonomic statistics procedure execution and a list of related alerts.

### Procedure

1. On the DB2 Automation Tool main menu, enter 13 in the **Option** field and press Enter.
2. On the Autonomic Console, enter 3 in the **Option** field and press Enter.

3. On the Autonomic Execution History panel, enter Y in the **Show AutoStats Monitor** field or the **Show Autostats Execute** field, or both, and press Enter. The Autonomic Execution History panel is refreshed with a list of autonomic statistics procedures that were run, listed in the PROC\_NAME column as follows:
  - SYSPROC.ADMIN\_UTL\_MONITOR: The ADMIN\_UTL\_MONITOR stored procedure, which detects objects with out-of-date statistics and notes the actions to be taken.
  - SYSPROC.ADMIN\_UTL\_EXECUTE: The ADMIN\_UTL\_EXECUTE stored procedure, which resolves the out-of-date statistics by running RUNSTATS during a maintenance window.

## Viewing output of autonomic statistics procedures

You can view the error messages and output from an autonomic statistics procedure run by using the O line command.

### Procedure

On the Autonomic Execution History panel, enter O in the line command area. The Autonomic Execution Output panel is displayed, as shown in the following figure:

```

AUTOTOOL V4R2  ----- Autonomic Execution Output -----  2014/08/19  10:10:13
Option  ===>                                     Scroll ===> CSR
                                                Row 1 of 29          +
-----
                        Error Messages
-----
DSNA649I
DSNX7EXE RUNSTATS ALERTS COULD NOT BE RESOLVED BY PROCEDURE. REASON 1

                        Stored Procedure Output
-----
2014-08-19 09:52:33.019090> Executing SYSPROC.ADMIN_UTL_EXECUTE
2014-08-19 09:52:33.019109> with options: STAND-ALONE=YES
2014-08-19 09:52:33.019121> stored procedure begins at 2014-08-19 09:52:33.0191
13
2014-08-19 09:52:33.024085> running in DB2 subsystem SS1A
2014-08-19 09:52:33.024096> ----->>Used parameters<<-----
-----
2014-08-19 09:52:33.024109> STAND-ALONE=YES
2014-08-19 09:52:33.035048> ----->>Step 1: detect new alerts<
<-----
2014-08-19 09:52:33.215914> 1 new alerts with action RUNSTATS detected
2014-08-19 09:52:33.216027> ----->>Step 2: get maintenance wi
ndows<<-----
2014-08-19 09:52:33.216674> DSNA649I  DSNX7EXE RUNSTATS ALERTS COULD NOT BE RES
OLVED BY PROCEDURE. REASON 1
2014-08-19 09:52:33.217024> ----->>Execution summary<<-----
-----
2014-08-19 09:52:33.217037> RUNSTATS alerts solved: 0
2014-08-19 09:52:33.217046> RUNSTATS duplicated alerts completed: 0

```

Figure 343. Autonomic Execution Output panel

This output report panel contains the following two sections:

#### Error Messages

Indicates the start of the error messages. If the return code was zero, there are no error messages and 'No Error Messages' is displayed.

#### Stored Procedure Output

Indicates the start of the output from the execution of the stored procedure.

For additional information about the error messages output from the stored procedures, refer to the autonomic procedures documentation for your version of DB2.

## What to do next

Press PF3 to return to the previous panel.

## Viewing alerts from autonomic statistics procedures

You can view the alerts that triggered an autonomic procedure execution by using the A line command.

### Procedure

On the Autonomic Execution History panel, enter A in the line command area. The Autonomic Actions panel is displayed, as shown in the following figure:

```

AUTOTOOL V4R2  ----- Autonomic Actions ----- 2017/09/15 12:39:37
Option ==>                                     Scroll ==> CSR
-----
Commands: REFRESH - Refresh action status.
Line Commands: D - Delete Action  G - Group  O - Output  P - options
                S - Symptoms  T - change action Type
-----
Profile      :                               DB2 Subsystem: SS01
Creator      :
Description:                               Row 1 of 2      >
-----
      Target      Target      Target      Active/
Cmd Qualifier    Object      Part  Action  Status  Passive
NMHAQA23         CMP00102    ALL  RUNSTATS COMPLETED ACTIVE
NMHAQA23         TSQA2301    ALL  RUNSTATS COMPLETED ACTIVE
***** Bottom of Data *****

```

Figure 344. Autonomic Actions panel

For information about the fields, press PF1 for help.

## What to do next

Press PF3 to return to the previous panel.

## Viewing autonomic statistics alerts

This option allows you to view a list of autonomic statistics alerts. An alert is a recommendation from autonomic procedures that RUNSTATS needs to be run.

### About this task

These alerts are contained in the SYSIBM.SYSAUTOALERTS catalog table.

### Procedure

1. From the Autonomic Console panel, enter 4 in the **Option** field and press Enter.
2. On the Autonomic Actions panel, enter S in the **Source** field and press Enter.
3. Verify or change the selection criteria in the **Target Qualifier** and **Target Object** fields. You can limit the alerts to be listed on the panel by changing the values in these fields. Wildcarding can be used for the **Target Qualifier** and **Target Object** fields. When finished, press Enter. The Autonomic Actions panel is

displayed again, as shown in the following figure:

```

AUTOTOOL V4R2 ----- Autonomic Actions ----- 2017/09/15 12:31:41
Option ==> Scroll ==> CSR
-----
Commands: REFRESH - Refresh action status.
Line Commands: D - Delete Action G - Group O - Output P - oPtions
                S - Symptoms T - change action Type
-----
Target Qualifier *
Target Object *
Source S (S - AutoStats, T - Automation Tool)
Status * (C - Completed, E - Error, I - Inprogress, O - Open, * - All)
DB2 Subsystem: SS1A Row 1 of 9 +>
-----

```

Cmd	Target Qualifier	Target Object	Target Part	Action	Status	Active/Passive
	NMHAQA23	TSQA2301	ALL	RUNSTATS	COMPLETED	ACTIVE
	NMHAQA23	CMP00102	ALL	RUNSTATS	COMPLETED	ACTIVE
	NMHAQA23	TSQA2301	ALL	RUNSTATS	COMPLETED	ACTIVE
	NMHAQA23	TSQA2301	ALL	RUNSTATS	COMPLETED	ACTIVE
	NMHAQA23	CMP00102	ALL	RUNSTATS	COMPLETED	ACTIVE
	NMHAQA23	TSQA2301	ALL	RUNSTATS	COMPLETED	ACTIVE
	NMHAQA23	CMP00102	ALL	RUNSTATS	COMPLETED	ACTIVE

Figure 345. Autonomic Actions panel

This panel lists the alerts that meet your selection criteria.

4. Press PF3 to return to the Autonomic Console.

## Viewing output from alerts

You can view the output from an alert execution by using the O line command.

### Procedure

On the Autonomic Actions panel, enter O in the line command area. The Autonomic Execution Output panel is displayed, as shown in the following figure:

```

HAA$ALRO V4R2 ----- Autonomic Execution Output ----- 2017/09/20 21:18:59
Option ==> Scroll ==> CSR
DB2 Subsystem: SS01 Row 1 of 66 +
-----
Error Messages

ABPU5003I 194 08:47:15.51 DB2 Utilities Enhancement Tool intercept completed.

Stored Procedure Output

2017-07-13 08:47:16.265948> ABPU5001I 194 08:47:15.05 IBM DB2 Utilities Enhanc
ement Tool Version 0220, FMID=H2AM220, COMP_ID=5655
-T58
2017-07-13 08:47:16.265958> ABPU5012I 194 08:47:15.05 Connected to started tas
k ABPID=SS01

2017-07-13 08:47:16.265967> ABPG8008I 194 08:47:15.07 System=RS22 ,Job=SS01
TCB1,Job Id=S0852449,Step=SS01TCB1,Program=DSNX9WLM
,User=DB2USER
2017-07-13 08:47:16.265975> ABPU5002I 194 08:47:15.08 Initialization is comple
te.

```

Figure 346. Autonomic Execution Output panel

This output report panel contains the following two sections:



### Error Messages

Indicates the start of the error messages. If the return code was zero, there are no error messages and 'No Error Messages' is displayed.

### Stored Procedure Output

Indicates the start of the output from the execution of the stored procedure.

For additional information about the error messages and output from the stored procedure, refer to the autonomic procedures documentation for your version of DB2.

### What to do next

Press PF3 to return to the previous panel.

## Viewing alert options

You can view the options used for RUNSTATS syntax when an alert was run by using the P line command.

### Procedure

On the Autonomic Actions panel, enter P in the line command area and press Enter. The Autonomic Action Options panel is displayed, as shown in the following figure:

```
AUTOTOOL V4R2 ----- Autonomic Action Options ----- 2017/09/20 21:24:49
Option ==> Scroll ==> CSR
DB2 Subsystem: SS01 Row 1 of 3
-----
Options
TABLE("MYQA1"."TB230101") USE PROFILE
***** Bottom of Data *****
```

Figure 347. Autonomic Action Options panel

This output report panel contains the RUNSTATS syntax that was used to resolve the alert. This information is retrieved from the OPTIONS column of the SYSAUTOALERTS table associated with the selected row of the Autonomic Actions panel. For additional information about the error messages and output from the stored procedure, refer to the autonomic procedures documentation for your version of DB2.

### What to do next

Press PF3 to return to the previous panel.



---

## Chapter 23. Troubleshooting

Use these topics to diagnose and correct problems that you experience with DB2 Automation Tool.

---

### Messages

Use the information in these messages to help you diagnose and solve DB2 Automation Tool problems.

#### Message format

DB2 Automation Tool messages adhere to the following format:

*ABCnnnx*

Where:

- ABC** Indicates that the message was issued by DB2 Automation Tool
- nnn** Indicates the message identification number
- x** Indicates the severity of the message:
  - E** Indicates that an error occurred, which might or might not require operator intervention.
  - I** Indicates that the message is informational only.
  - W** Indicates that the message is a warning to alert you to a possible error condition.

Each message also includes the following information:

#### Explanation:

The Explanation section explains what the message text means, why it occurred, and what its variables represent.

#### User response:

The User response section describes whether a response is necessary, what the appropriate response is, and how the response will affect the system or program.

### Tools Customizer messages

Use the information in these messages to help you diagnose and solve Tools Customizer problems.

---

**CCQB000I** The product parameter data was saved in the data store.

**Explanation:** Changes that were made to the product parameters were saved in the data store.

**System action:** None.

**User response:** No action is required.

---

**CCQB001I** The DB2 parameter data was saved in the data store.

**Explanation:** Changes that were made to the DB2 parameters were saved in the data store.

**System action:** None.

**User response:** No action is required.

---

**CCQB002I** The LPAR parameter data was saved in the data store.

**Explanation:** Changes that were made to the LPAR parameters were saved in the data store.

**System action:** None.

**User response:** No action is required.

---

**CCQB003E** At least one step must be selected in a selected task. The selected task is *task\_description*.

**Explanation:** When a task is selected, at least one step must be selected. A selected step is missing from the specified task.

**System action:** Processing stops.

**User response:** Select a step in the specified task or deselect the task.

---

**CCQB004I** The required information to run the Discover EXEC was saved in the data store.

**Explanation:** The data store contains all the information that is required to run the Discover EXEC.

**System action:** None.

**User response:** No action is required.

---

**CCQB005E** The conflicting values for the *parameter\_name* parameter must be resolved before the information can be saved.

**Explanation:** Two values for one parameter conflict with each other, and they must be resolved to save the information.

**System action:** Processing stops.

**User response:** Resolve the conflicting values for the parameter.

---

**CCQB006E** One row must be selected.

**Explanation:** One row in the table must be selected.

**System action:** Processing stops.

**User response:** Select one row.

---

**CCQB007E** Only one row can be selected.

**Explanation:** Multiple rows in the table are selected, but only one row is allowed to be selected.

**System action:** Processing stops.

**User response:** Select only one row.

---



---

**CCQC000I** The jobs have been customized on the selected DB2 entries.

**Explanation:** The jobs were customized on the DB2 entries that were selected.

**System action:** None.

**User response:** Press Enter to clear the message.

---

**CCQC001W** The jobs were not generated on one or more of the selected DB2 entries. Press PF3 to check the DB2 entries that were not customized.

**Explanation:** The product was not customized on one or more of the DB2 entries that were selected.

**System action:** None.

**User response:** Press PF3 to see the DB2 entries on which the product was not customized. The status of these DB2 entries is Errors in Customization.

---

**CCQC002I** The edit session was started automatically because values for required parameters are missing or must be verified.

**Explanation:** If product, LPAR parameters, or DB2 parameters are not defined or if parameter definitions must be verified, an editing session for the undefined or unverified parameters starts automatically.

**System action:** None.

**User response:** Define values for all required product, LPAR parameters, or DB2 parameters.

---

**CCQC003W** The *template\_name* template in the *library\_name* metadata library does not contain any parameters.

**Explanation:** The specified template does not have parameters.

**System action:** None.

**User response:** No action is required.

---

**CCQC004S** The value of the "type" attribute for the *template\_name* template in the *library\_name* metadata library does not match the value that was previously specified. The value is *value\_name*, and the previously specified value is *value\_name*.

**Explanation:** The value of the "type" attribute must match the value that was previously specified.

**System action:** Processing stops.

**User response:** See "Gathering diagnostic

information” on page 760. Contact IBM Software Support.

---

**CCQC005S** The *template\_name* template exceeds the number of allowed templates for a customization sequence. The template is in the *library\_name* metadata library.

**Explanation:** The customization sequence can process only *number* templates. The specified template cannot be processed because the customization sequence already contains the maximum number of templates.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQC006E** The jobs could not be generated for the *group\_attach\_name* DB2 group attach name.

**Explanation:** The customization jobs could not be generated for the specified DB2 group attach name.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQC007E** The jobs could not be generated for the *subsystem\_ID* DB2 subsystem.

**Explanation:** The customization jobs could not be generated for the specified DB2 subsystem.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQC008E** The jobs could not be generated for the *member\_name* DB2 member.

**Explanation:** The customization jobs could not be generated for the specified DB2 member.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQC009S** The jobs were not generated for the DB2 entries.

**Explanation:** One or more errors occurred while customization jobs were being generated for the selected DB2 entries.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQC010S** The *template\_name* template could not be accessed in the *library\_name* metadata library.

**Explanation:** The specified template could not be accessed because the user does not have RACF access to the data set, the data set has incorrect data characteristics, or the data set is not cataloged.

**System action:** Processing stops.

**User response:** Ensure that you have RACF access to the data set, that the characteristics are correct according to the specifications of the product that you are customizing, and that the data set is cataloged. If the problem persists, contact IBM Software Support.

---

**CCQC011S** The *template\_name* template could not be written to the *library\_name* customization library.

**Explanation:** The specified template could not be accessed because the user does not have RACF access to the data set, the data set has incorrect data characteristics, or the data set is not cataloged.

**System action:** Processing stops.

**User response:** Ensure that you have RACF access to the data set, that the characteristics are correct according to the specifications of the product that you are customizing, and that the data set is cataloged. If the problem persists, contact IBM Software Support.

---

**CCQC012W** The job card was generated with default values because the JOB keyword was missing.

**Explanation:** Default values were used to generate the job card because the JOB keyword was not specified in the first line of the job card.

**System action:** The job card was generated with default values.

**User response:** No action is required. To generate the job card with your own values, add the JOB keyword in the first line of the job card.

---

**CCQC013W** The job card was generated with the default value for the programmer name because the specified programmer name exceeded 20 characters.

**Explanation:** Default values were used to generate the job card because the specified programmer name contained too many characters.

**System action:** The job card was generated with default values.

**User response:** No action is required. To generate the job card with your own values, add a valid programmer name in the job card. A valid programmer name is 1 - 20 characters.

---

**CCQC014W** The job card was generated with default values because the JOB keyword was not followed by a space.

**Explanation:** Default values were used to generate the job card because a space did not follow the JOB keyword.

**System action:** The job card was generated with default values.

**User response:** No action is required. To generate the job card with your own values, add a space after the JOB keyword in the job card.

---

**CCQC015S** The *template\_name* template in the *library\_name* metadata library contains the following file-tailoring control statement: *statement\_name*. This control statement is not valid in a *template\_type* template.

**Explanation:** The *template\_type* template cannot contain the specified type of file-tailoring control statement.

**System action:** Processing stops.

**User response:** See "Gathering diagnostic information" on page 760. Contact IBM Software Support.

---

**CCQC016S** The )DOT file-tailoring control statement exceeded the number of allowed occurrences for the *template\_name* template in the *library\_name* metadata library.

**Explanation:** The )DOT file-tailoring control statement can occur only a limited number of times in the specified template.

**System action:** Processing stops.

**User response:** See "Gathering diagnostic information" on page 760. Contact IBM Software Support.

---

**CCQC017S** The nested )DOT file-tailoring control statements exceeded the number of allowed occurrences in the *template\_name* template in the *library\_name* metadata library.

**Explanation:** Nested )DOT file-tailoring control statements can occur only *number* times.

**System action:** Processing stops.

**User response:** See "Gathering diagnostic information" on page 760. Contact IBM Software Support.

---

**CCQC018S** The *template\_name* template in the *library\_name* metadata library is not valid because it does not contain any data.

**Explanation:** The specified template is missing required data.

**System action:** Processing stops.

**User response:** See "Gathering diagnostic information" on page 760. Contact IBM Software Support.

---

**CCQC019S** The *template\_name* template in the *library\_name* metadata library is not valid because an )ENDDOT file-tailoring control statement is missing.

**Explanation:** A )ENDDOT file-tailoring control statement is required in the specified template.

**System action:** Processing stops.

**User response:** See "Gathering diagnostic information" on page 760. Contact IBM Software Support.

---

**CCQC021S** The *template\_name* template in the *library\_name* metadata library is not valid because the template must start with the *parameter\_name* job card parameter.

**Explanation:** The specified template must start with the specified job card parameter.

**System action:** Processing stops.

**User response:** See "Gathering diagnostic information" on page 760. Contact IBM Software Support.

---

**CCQC022S** The parameters used in a )DOT file-tailoring control statement exceeded the number of allowed parameters in the *template\_name* template. The template is in the *library\_name* metadata library. The error occurs in )DOT section *section\_number*.

**Explanation:** A )DOT file-tailoring control statement can contain only a limited number of parameters.

**System action:** Processing stops.

**User response:** See "Gathering diagnostic information" on page 760. Contact IBM Software Support.

---

**CCQC023S** The )DOT file-tailoring control statement must include the *table-name* table name in the *template\_name* template. The template is in the *library\_name* metadata library. The error occurs in )DOT section *section\_number*.

**Explanation:** The )DOT file-tailoring control statement is missing a required table name.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQC024S** ISPF file tailoring failed for the *template\_name* template in the *library\_name* metadata library.

**Explanation:** An error occurred during ISPF file tailoring for the specified template.

**System action:** Processing stops.

**User response:** Review the Tools Customizer-generated trace data set and the ISPF file tailoring trace data set. To create an ISPF file tailoring trace data set, complete the following steps:

1. Run Tools Customizer until the error is about to occur.
2. Specify the ISPFITRC command, and press Enter.
3. Issue the Tools Customizer command that issues the error.
4. Specify the ISPFITRC command, and press Enter. The ISPF file tailoring trace data set is created. It adheres the following naming convention: *TSO\_ID*.ISPFITRC, where *TSO\_ID* is the TSO user ID that is being used.

If the problem persists, gather the following information and contact IBM Software Support.

- A screen capture of the Tools Customizer error. Ensure that the complete error message is displayed by pressing PF1.
- The Tools Customizer trace data set. It adheres to the following naming convention: *TSO\_ID*.CCQ.TRACE, where *TSO\_ID* is the TSO user ID that is running Tools Customizer.
- The ISPF file tailoring trace data set.

---

**CCQC025I** Customized jobs do not exist because they have not been generated.

**Explanation:** The list of customized jobs cannot be displayed because the product has not been customized for any DB2 entries.

**System action:** None.

**User response:** Complete the steps to customize a product. Customized jobs are generated when all

required product, LPAR parameters, and DB2 parameters are defined and at least one DB2 entry on which to customize the product has been selected.

---

**CCQC026S** The value of the "customized" attribute for the *parameter\_name* parameter in the *library\_name* metadata library template does not match the value that was previously specified. The value is *value\_name*, and the previously specified value is *value\_name*.

**Explanation:** The value for the "customized" attribute for a parameter must match the value that was previously specified.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQC027S** The *job\_name* customization job was not found in the *library\_name* customization library.

**Explanation:** The selected customization job does not exist in the customization library.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQC028S** The *library\_name* customization library was not found.

**Explanation:** The customization library does not exist.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQC029I** The customization jobs were generated for *Product\_name*.

**Explanation:** The customization jobs were generated for the specific product.

**System action:** None.

**User response:** No action is required.

---

**CCQC030S** The customization jobs cannot be generated because at least one DB2 entry must be associated with this product.

**Explanation:** The product that you are customizing requires at least one DB2 entry to be associated with it before customization jobs can be generated.

**System action:** None.

**User response:** Associate a DB2 entry with the product that you are customizing, and regenerate the jobs.

---

**CCQC031I The jobs were generated for the associated DB2 entries.**

**Explanation:** The customization jobs were generated for the DB2 entries that are associated with the product.

**System action:** None.

**User response:** No action is required.

---

**CCQC032S The customization jobs were not generated for *Product\_name*.**

**Explanation:** A severe error occurred while the jobs were being generated for the specified product.

**System action:** None.

**User response:** See "Gathering diagnostic information" on page 760. Contact IBM Software Support.

---

**CCQC033S The *customization\_library\_name* has no customized jobs.**

**Explanation:** The specified customization library cannot be browsed or edited because it is empty.

**System action:** None.

**User response:** Generate customization jobs for the specified library, and browse or edit the library again.

---

**CCQC034S The specified operation is not allowed.**

**Explanation:** Issuing commands against customization jobs from the customization library from an ISPF browse or edit session that was started on the Finish Product Customization panel is restricted.

**System action:** None.

**User response:** To make changes to customization jobs, follow the steps for recustomization.

---

**CCQC035E Before you generate customization jobs, edit the product parameters to select one or more tasks or steps, and then issue the G line command or the GENERATEALL command again.**

**Explanation:** One or more tasks or steps must be selected before customization jobs can be generated.

**System action:** None.

**User response:** Edit the product parameters to select one or more tasks or steps. Then, issue the G line command or the GENERATEALL command again.

---

**CCQC036E Before you exit the Product Parameters panel, you must select one or more tasks or steps to generate customization jobs or issue the CANCEL command.**

**Explanation:** One or more tasks or steps must be selected to generate customization jobs or the CANCEL command must be issued before you can exit the Product Parameters panel.

**System action:** None.

**User response:** Select one or more tasks or steps, or issue the CANCEL command.

---

**CCQC037W The customization information was not found.**

**Explanation:** To use the JOBLIST command, the customization jobs must be regenerated by using the GENERATEALL command or the G line command.

**System action:** None.

**User response:** Issue the GENERATEALL command or the G line command to generate the customization jobs.

---

**CCQC038W The customization information cannot be accessed because the *customization\_member* customization member is being used.**

**Explanation:** The customization member that was specified on NNN is currently being used.

**System action:** None.

**User response:** Determine why the customization member is in use, release it, and redo the work.

---

**CCQC039I The VERIFY/VERIFYOFF command is not active in Generate mode.**

**Explanation:** The VERIFY/VERIFYOFF command is not active in Generate mode because all values saved in Generate mode must already have been verified.

**System action:** None.

**User response:** No action is required.

---

**CCQD000W The *member\_name* environment index member is not valid. The PL/I XML parser issued the following exception warning code: *code\_number*.**

**Explanation:** While determining if the specified environment index member is valid, the PL/I XML parser issued an exception warning code.

**System action:** Processing continues.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the warning.



---

**CCQD001S** The *member\_name* environment index member is not valid. The PL/I XML parser issued the following exception error code: *code\_number*.

**Explanation:** While determining if the specified environment index member is valid, the PL/I XML parser issued an exception error code.

**System action:** Processing continues.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the error.

---

**CCQD002S** The XML structure of the *member\_name* environment index member is not valid. The *element\_name* element is unknown.

**Explanation:** The specified environment index member contains an unknown element.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD003S** The XML structure of the *member\_name* environment index member is not valid. Content is not allowed for the *element\_name* element, but content was found.

**Explanation:** Content was found in an element that cannot contain content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD004S** The XML structure of the *member\_name* environment index member is not valid. Content is required for the *element\_name* element, but content was not found.

**Explanation:** The specified element does not contain required content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD005S** The XML structure of the *member\_name* environment index member is not valid. The content length for the *element\_name* element exceeds *maximum\_number* characters.

**Explanation:** The specified element contains too many characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD006S** The XML structure of the *member\_name* environment index member is not valid. The *element\_name* element cannot occur more than *maximum\_number* times.

**Explanation:** The specified element occurs too many times in the environment index member.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD007S** The XML structure of the *member\_name* environment index member is not valid. The *element\_name* element must occur at least *minimum\_number* times.

**Explanation:** The specified element does not occur enough times in the environment index member.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD008S** The XML structure of the *member\_name* environment index member is not valid. The *attribute\_name* attribute in the *element\_name* element cannot occur more than *maximum\_number* times.

**Explanation:** The specified attribute occurs too many times in the environment index member.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD009S** The XML structure of the *member\_name* environment index member is not valid. The *attribute\_name* attribute in the *element\_name* element must occur at least *minimum\_number* times.

**Explanation:** The specified attribute does not occur enough times in the environment index member.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic

information” on page 760. Contact IBM Software Support.

---

**CCQD010S** The XML structure of the *member\_name* environment index member is not valid. Content is not allowed for the *attribute\_name* attribute in the *element\_name* element, but content was found.

**Explanation:** Content was found in an attribute that cannot contain content. The name of the attribute and the name of the element that contains it are indicated in the message text.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD011S** The XML structure of the *member\_name* environment index member is not valid. Content is required for the *attribute\_name* attribute in the *element\_name* element, but content was not found.

**Explanation:** An attribute does not contain required content. The name of the attribute and the name of the element that contains it are indicated in the message text.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD012S** The XML structure of the *member\_name* environment index member is not valid. The content length for the *element\_name* element exceeds *maximum\_number* characters.

**Explanation:** An element contains too many characters. The name of the element and the maximum number of allowed characters are indicated in the message text.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD013S** The XML structure of the *member\_name* environment index member is not valid. The *attribute\_name* attribute in the *element\_name* element is unknown.

**Explanation:** The environment index member contains an unknown attribute. The name of the unknown

attribute and the name of the element that contains it are indicated in the message text.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD050S** The following LPAR serial number is duplicated in the environment index member: *serial\_number*.

**Explanation:** The environment index member contains duplicate LPAR serial numbers. The duplicate serial number is indicated in the message text.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD051S** The following DB2 serial number is duplicated in the environment index member: *serial\_number*.

**Explanation:** The environment index member contains duplicate DB2 serial numbers. The duplicate serial number is indicated in the message text.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD052S** The following DB2 group attach name is duplicated in the environment index member: *group\_attach\_name*.

**Explanation:** The environment index member contains duplicate group attach names.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD053S** The reference to the following DB2 subsystem for a DB2 group attach name is duplicated in the environment index member: *subsystem\_ID*.

**Explanation:** The environment index member contains duplicate references to a DB2 subsystem for a DB2 group attach name.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD054S** The reference to the following DB2 subsystem for the *LPAR\_name* LPAR is duplicated in the environment index member: *subsystem\_ID*.

**Explanation:** The environment index member contains duplicate references to a DB2 subsystem for an LPAR. The duplicate subsystem ID is indicated in the message text.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD055S** The following DB2 group attach name was not found in the environment index member: *group\_attach\_name*.

**Explanation:** A group attach name that is referenced by a DB2 member does not exist in the environment index member.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD056S** The following LPAR was not found in the environment index member: *LPAR\_name*.

**Explanation:** The LPAR does not exist in the environment index member.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD057S** The following LPAR is duplicated in the environment index member: *LPAR\_name*.

**Explanation:** The environment index member contains duplicate LPARs. The name of the duplicate LPAR name is indicated in the message text.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD100W** The *member\_name* product index member is not valid. The PL/I XML parser issued the following exception warning code: *code\_number*.

**Explanation:** While determining if the product index member is valid, the PL/I XML parser issued the specified exception warning code.

**System action:** Processing continues.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the specified exception warning code.

---

**CCQD101S** The *member\_name* product index member is not valid. The PL/I XML parser issued the following exception error code: *code\_number*.

**Explanation:** While determining if the product index member is valid, the PL/I XML parser issued the specified exception error code.

**System action:** Processing stops.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the specified exception error code. Ensure that the Tools Customizer data store data set DCB is the same as the sample SCCQSAMP(CCQCDATS) data set DCB.

---

**CCQD102S** The XML structure of the *member\_name* product index member is not valid. The *element\_name* element is unknown.

**Explanation:** The specified product index member contains an unknown element.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD103S** The XML structure of the *member\_name* product index member is not valid. Content is not allowed for the *element\_name* element, but content was found.

**Explanation:** Content was found for an element that cannot contain content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD104S** The XML structure of the *member\_name* product index member is not valid. Content is required for the *element\_name* element, but content was not found.

**Explanation:** The specified element does not contain required content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD105S** The XML structure of the *member\_name* product index member is not valid. The content length for the *element\_name* element exceeds *maximum\_number* characters.

**Explanation:** The specified element contains too many characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD106S** The XML structure of the *member\_name* product index member is not valid. The *element\_name* element cannot occur more than *maximum\_number* times.

**Explanation:** The specified element occurs too many times in the product index member.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD107S** The XML structure of the *member\_name* product index member is not valid. The *element\_name* element must occur at least *minimum\_number* times.

**Explanation:** The specified element does not occur enough times in the product index member.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD108S** The XML structure of the *member\_name* product index member is not valid. The *attribute\_name* attribute in the *element\_name* element cannot occur more than *maximum\_number* times.

**Explanation:** An attribute occurs too many times. The name of the attribute and the element that contains it are indicated in the message text.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD109S** The XML structure of the *member\_name* product index member is not valid. The *attribute\_name* attribute in the *element\_name* element must occur at least *minimum\_number* times.

**Explanation:** The specified attribute does not occur enough times in the product index member.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD110S** The XML structure of the *member\_name* product index member is not valid. Content is not allowed for the *attribute\_name* attribute in the *element\_name* element, but content was found.

**Explanation:** An attribute cannot contain content. The name of the attribute and the element that contains it are indicated in the message text.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD111S** The XML structure of the *member\_name* product index member is not valid. Content is required for the *attribute\_name* attribute in the *element\_name* element, but content was not found.

**Explanation:** An attribute requires content. The name of the attribute and the name of the element that contains it are indicated in the message text.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD112S** The XML structure of the *member\_name* product index member is not valid. The content length for the *element\_name* element exceeds *maximum\_number* characters.

**Explanation:** The specified element contains too many characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD113S** The XML structure of the *member\_name* product index member is not valid. The *attribute\_name* attribute in the *element\_name* element is unknown.

**Explanation:** The specified attribute in the product index member is unknown.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD118S** The content of the *member\_name* product index member is not valid. The *configuration\_ID* configuration ID for the *configuration-name* configuration name is not unique.

**Explanation:**

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD120S** The content of the *member\_name* product index member is not valid. The pack ID *pack\_ID* that is referenced by product prefix *product\_prefix* in the metadata library *library\_name* could not be found.

**Explanation:** The specified pack ID could not be found in the metadata library.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD121I** The specified pack contains the *component\_name*, which was previously specified as a stand-alone product.

**Explanation:** The specified component of the pack was previously specified as a stand-alone product.

**System action:** None.

**User response:** No action is required.

---

**CCQD122I** The specified component metadata library was previously specified as part of the *pack\_name*.

**Explanation:** The specified metadata library for the component was previously specified as part of a pack.

**System action:** None.

**User response:** No action is required.

---

**CCQD123E** The customization library name *library\_name* is being used by another product or component. Specify another customization library qualifier on the Tools Customizer Settings panel.

**Explanation:** A different product or component is using the specified customization library.

**System action:** None.

**User response:** Specify another customization library qualifier on the Tools Customizer Settings panel.

---

**CCQD124E** The customization library *library\_name* is in use by another metadata library.

**Explanation:** A different product or component is using the specified customization library. Specify another metadata library in the Workplace panel.

**System action:** None.

**User response:** Specify another customization library qualifier in the Tools Customizer Settings panel.

---

**CCQD300W** The *member\_name* product environment member is not valid. The PL/I XML parser issued the following exception warning code: *code\_number*.

**Explanation:** While determining if the product environment member is valid, the PL/I XML parser issued the specified exception warning code.

**System action:** Processing continues.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the specified exception warning code.

---

**CCQD301S** The *member\_name* product environment member is not valid. The PL/I XML parser issued the following exception error code: *code\_number*.

**Explanation:** While determining if the product environment member is valid, the PL/I XML parser issued the specified exception error code.

**System action:** Processing stops.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the specified exception error code.

---

**CCQD302S** The XML structure of the *member\_name* product environment member is not valid. The *element\_name* element is unknown.

**Explanation:** The specified product environment member contains an unknown element.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD303S** The XML structure of the *member\_name* product environment member is not valid. Content is not allowed for the *element\_name* element, but content was found.

**Explanation:** Content was found for an element that cannot contain content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD304S** The XML structure of the *member\_name* product environment member is not valid. Content is required for the *element\_name* element, but content was not found.

**Explanation:** The specified element does not contain required content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD305S** The XML structure of the *member\_name* product environment member is not valid. The content length for the *element\_name* element exceeds *maximum\_number* characters.

**Explanation:** The specified element contains too many characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD306S** The XML structure of the *member\_name* product environment member is not valid. The *element\_name* element cannot occur more than *maximum\_number* times.

**Explanation:** The specified element occurs too many times in the product environment member.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD307S** The XML structure of the *member\_name* product environment member is not valid. The *element\_name* element must occur at least *minimum\_number* times.

**Explanation:** The specified element does not occur enough times in the product environment member.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD308S** The XML structure of the *member\_name* product environment member is not valid. The *attribute\_name* attribute in the *element\_name* element cannot occur more than *maximum\_number* times.

**Explanation:** The specified attribute occurs too many times. The name of the attribute and the element that contains it are indicated in the message text.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD309S** The XML structure of the *member\_name* product environment member is not valid. The *attribute\_name* attribute in the *element\_name* element must occur at least *minimum\_number* times.

**Explanation:** The specified attribute does not occur enough times in the product environment member.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD310S** The XML structure of the *member\_name* product environment member is not valid. Content is not allowed for the *attribute\_name* attribute in the *element\_name* element, but content was found.

**Explanation:** The specified attribute cannot contain content. The name of the attribute and the element that contains it are indicated in the message text.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD311S** The XML structure of the *member\_name* product environment member is not valid. Content is required for the *attribute\_name* attribute in the *element\_name* element, but content was not found.

**Explanation:** The specified attribute requires content. The name of the attribute and the name of the element that contains it are indicated in the message text.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD312S** The XML structure of the *member\_name* product environment member is not valid. The content length for the *element\_name* element exceeds *maximum\_number* characters.

**Explanation:** The specified element contains too many characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD313S** The XML structure of the *member\_name* product environment member is not valid. The *attribute\_name* attribute in the *element\_name* element is unknown.

**Explanation:** The specified attribute in the product environment member is unknown.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD350I** The *subsystem\_ID* DB2 subsystem is associated with this product.

**Explanation:** The specified DB2 subsystem was added and saved in the Tools Customizer data store for the product to be customized.

**System action:** Processing continues.

**User response:** No action is required.

---

**CCQD351I** The *member\_name* DB2 member for the *group\_attach\_name* DB2 group attach name is associated with this product.

**Explanation:** The specified DB2 member for the group attach name was added and saved in the Tools Customizer data store for the product to be customized.

**System action:** Processing continues.

**User response:** No action is required.

---

**CCQD352I** The *group\_attach\_name* DB2 group attach name is associated with this product.

**Explanation:** The specified DB2 group attach name was added and saved in the Tools Customizer data store for the product to be customized.

**System action:** Processing continues.

**User response:** No action is required.

---

**CCQD353E** The *subsystem\_ID* DB2 subsystem is already associated with this product.

**Explanation:** The specified DB2 subsystem cannot be added for the product to be customized because it already exists in the product environment in the data store.

**System action:** None.

**User response:** Ensure that the DB2 subsystem is specified correctly. If the problem persists, contact IBM Software Support.

---

**CCQD354E** The *member\_name* DB2 member for the *group\_attach\_name* DB2 group attach name is already associated with this product.

**Explanation:** The specified DB2 member for the group attach name cannot be added for the product to be customized because it already exists in the product environment in the data store.

**System action:** None.

**User response:** Ensure that the DB2 group attach name is specified correctly. If the problem persists, contact IBM Software Support.

---

**CCQD355E** The *group\_attach\_name* DB2 group attach name is already associated with this product.

**Explanation:** The specified DB2 group attach name cannot be added for the product to be customized because it already exists in the product environment in the data store.

**System action:** Processing stops.

**User response:** Ensure that the DB2 group attach name is specified correctly. If the problem persists, contact IBM Software Support.

---

**CCQD356S** The *library\_name* metadata library is already associated with the maximum number of allowed DB2 entries for this product.

**Explanation:** The specified metadata library cannot be associated with more DB2 entries because it is already associated with the number of DB2 entries that are allowed.

**System action:** Processing stops.

**User response:** Delete an associated DB2 entry, and associate the specified library with another DB2 entry again.

---

**CCQD357I** The *subsystem\_ID* DB2 subsystem is unassociated with this product.

**Explanation:** The specified DB2 SSID was unassociated with the product that you are customizing.

**System action:** Processing continues.

**User response:** No action is required.

---

**CCQD358I** The *member\_name* DB2 member for the *group\_attach\_name* DB2 group attach name is unassociated with this product.

**Explanation:** The specified DB2 member for the DB2 group attach name was unassociated with the product that you are customizing.

**System action:** Processing continues.

**User response:** No action is required.

---

**CCQD359I** The *group\_attach\_name* DB2 group attach name is unassociated with this product.

**Explanation:** The specified DB2 group attach name was unassociated with the product that you are customizing.

**System action:** Processing continues.

**User response:** No action is required.

---

**CCQD360S** The *library\_name* metadata library is not associated with the specified DB2 subsystem *subsystem\_ID*.

**Explanation:** The specified DB2 subsystem and metadata library are not associated with each other.

**System action:** None.

**User response:** Ensure that the DB2 subsystem and the metadata library are associated. If the problem persists, contact IBM Software Support.

---

**CCQD361S** The *library\_name* metadata library is not associated with the specified DB2 data sharing group member *member\_name* for the *group\_attach\_name* DB2 group attach name.

**Explanation:** The specified DB2 data sharing group member for the group attach name and metadata library are not associated with each other.

**System action:** None.

**User response:** Ensure that the DB2 data sharing group member for the group attach name and the metadata library are associated. If the problem persists, contact IBM Software Support.

---

**CCQD362S** The *library\_name* metadata library is not associated with the specified *group\_attach\_name* DB2 group attach name.

**Explanation:** The specified DB2 group attach name and metadata library are not associated with each other.

**System action:** None.

**User response:** Ensure that the DB2 group attach name and the metadata library are associated. If the problem persists, contact IBM Software Support.

---

**CCQD400W** The customization parser issued the *code\_number* warning code while it parsed the product customization member *member\_name*. See the PL/I programming guide for more information about this XML parser continuable exception code.

**Explanation:** While determining if the specified member is valid, the PL/I XML parser issued an exception warning code.

**System action:** Processing stops.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the warning.

---

**CCQD401S** The customization parser issued the *code\_number* error code while it parsed the product customization member *member\_name*. See the PL/I programming guide for more information about this XML parser terminating exception code.

**Explanation:** While determining if the specified member is valid, the PL/I XML parser issued an exception error code.

**System action:** Processing stops.

**User response:** See the *Enterprise PL/I for z/OS*



*Programming Guide* for more information about the error.

---

**CCQD500W** The *data\_set\_name* data store data set was not found.

**Explanation:** Tools Customizer could not find the specified data store data set.

**System action:** None.

**User response:** No action is required.

---

**CCQD501W** The *data\_set\_name* data store data set was not found, so it was created.

**Explanation:** Tools Customizer created the specified data set because it could not be found.

**System action:** None.

**User response:** No action is required.

---

**CCQD502E** The *data\_set\_name* data store data set is not writable.

**Explanation:** Tools Customizer cannot write to the specified data set.

**System action:** None.

**User response:** Ensure that the data set is writable.

---

**CCQD503E** The *data\_set\_name* data store data set could not be opened with the *disposition\_type* disposition.

**Explanation:** Tools Customizer could not open the data set with the specified disposition.

**System action:** Processing stops.

**User response:** Ensure that you have WRITE authority access to this data set.

---

**CCQD504E** The *data\_set\_name* data store data set could not be opened with the *option\_name* option.

**Explanation:** Tools Customizer could not open the data set with the specified option.

**System action:** Processing stops.

**User response:** Ensure that you have WRITE authority access to this data set.

---

**CCQD505E** The data store data set *data\_set\_name* already exists in a different volume.

**Explanation:** Tools Customizer could not create the specified data set because the specified data set already exists in a different volume. Data store data set names must be unique.

**System action:** Processing stops.

---

**User response:** Specify a different data store data set name.

---

**CCQD510I** The DB2 SSID and DB2 group attach name were created.

**Explanation:** The DB2 SSID and DB2 group attach name were created and saved in the data store.

**System action:** None.

**User response:** No action is required.

---

**CCQD511E** The DB2 entry already exists in the list of DB2 entries to be associated.

**Explanation:** The DB2 entry cannot be added because it already exists in the list of DB2 entries to be associated.

**System action:** None.

**User response:** Specify a different DB2 entry.

---

**CCQD512S** An error occurred while a DB2 entry was being created.

**Explanation:** A severe error occurred while a DB2 entry was being created.

**System action:** Processing stops.

**User response:** See "Gathering diagnostic information" on page 760. Contact IBM Software Support.

---

**CCQD513E** The specified DB2 entry already exists and is associated with the current product on the Customizer Workplace panel.

**Explanation:** The DB2 entry cannot be added because it already exists, and it is already associated with the product to be customized.

**System action:** None.

**User response:** Press F3 to go to the Customizer Workplace panel to see the DB2 entry, or specify a different DB2 entry.

---

**CCQD514E** A value is required for a DB2 subsystem, a DB2 group attach name, or both before they can be created.

**Explanation:** Required information is missing. A DB2 subsystem, a DB2 group attach name, or both must be specified.

**System action:** None.

**User response:** Specify a DB2 subsystem, a DB2 group attach name, or both.

---

---

**CCQD515E** The specified DB2 entry already exists in the list of DB2 entries and is already associated with the current product.

**Explanation:** The DB2 entry has already been created and associated with the product that you want to customize.

**System action:** None.

**User response:** Specify a different DB2 entry.

---

**CCQD516E** The specified DB2 entry already exists in the list of DB2 entries on the Associate DB2 Entry with Product panel but is not associated with the current product.

**Explanation:** The DB2 entry exists, but it must be associated with the product to be customized.

**System action:** None.

**User response:** On the Customizer Workplace panel, issue the ASSOCIATE command to associate the DB2 entry with the product.

---

**CCQD517S** An error occurred while a DB2 entry was being copied.

**Explanation:** A severe error occurred while a DB2 entry was being copied

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD518E** A value is required for a DB2 subsystem, a DB2 group attach name, or both before they can be copied.

**Explanation:** Required information is missing. A DB2 subsystem, a DB2 group attach name, or both must be specified.

**System action:** None.

**User response:** Specify a DB2 subsystem, a DB2 group attach name, or both.

---

**CCQD519I** The DB2 entry was copied.

**Explanation:** The DB2 entry was copied and saved in the Tools Customizer data store.

**System action:** None.

**User response:** No action is required.

---



---

**CCQD520S** The DB2 entry was copied to the list of DB2 entries but was not associated because the product is already associated with the allowed number of DB2 entries.

**Explanation:** The DB2 entry was not completely copied because a product can be associated with only 1200 DB2 entries.

**System action:** Processing stops.

**User response:** Remove a DB2 entry from the list, and copy the specified DB2 entry again.

---

**CCQD521E** *Line\_command* is not a valid line command.

**Explanation:** The specified line command is not valid. Valid line commands are on the panel.

**System action:** Processing stops.

**User response:** Specify a valid line command.

---

**CCQD522E** The *subsystem\_ID* DB2 subsystem ID occurs more than once in the list. Each row must be unique.

**Explanation:** The specified DB2 subsystem ID can be used only once.

**System action:** Processing stops.

**User response:** Specify a different DB2 subsystem ID.

---

**CCQD523E** The *group\_attach\_name* DB2 group attach name occurs more than once in the list. Each row must be unique.

**Explanation:** The specified DB2 group attach name can be used only once.

**System action:** Processing stops.

**User response:** Specify a different DB2 group attach name.

---

**CCQD524E** The *member\_name* DB2 member for the DB2 group attach name occurs more than once in the list. Each row must be unique.

**Explanation:** The specified DB2 member for the DB2 group attach name can be used only once.

**System action:** Processing stops.

**User response:** Specify a different DB2 member for the DB2 group attach name.

---

---

| **CCQD525I** The DB2 entries were created.

| **User response:** No action is required.

---

| **CCQD526E** The *subsystem\_ID* DB2 subsystem ID occurs more than once in the list. Each DB2 subsystem ID must be unique.

| **Explanation:** The specified DB2 subsystem ID can be used only once.

| **System action:** Processing stops.

| **User response:** Specify a different DB2 subsystem ID.

---

| **CCQD527I** DB2 group attach names cannot be created during the copy process.

| **Explanation:** The ability to create DB2 group attach names is not available during the copy process.

| **System action:** None.

| **User response:** Create DB2 group attach names by issuing the CREATE command on the Customizer Workplace panel.

---

| **CCQD528E** The *metadata\_library* metadata library is already associated with *number* DB2 entries. The maximum number of associated DB2 entries for this metadata library is 256.

| **Explanation:** A metadata library can be associated with a maximum of 256 DB2 entries. The specified metadata library is already associated with 256.

| **System action:** Processing stops.

| **User response:** Remove an existing association between the specified metadata library and a DB2 entry, and associate the specified the metadata library with another entry.

---

| **CCQD529I** At least one row is required.

---

**CCQD560E** The *subsystem\_ID* DB2 subsystem already exists and is associated with the current product on the Customizer Workplace panel.

**Explanation:** The specified DB2 subsystem exists and is associated with the product that you are customizing.

**System action:** None.

**User response:** Specify another DB2 subsystem.

---

**CCQD561E** The *member\_name* DB2 member for the *group\_attach\_name* DB2 group attach name already exists and is associated with the current product on the Customizer Workplace panel.

---

**Explanation:** The specified DB2 data sharing group for the DB2 group attach namer exists and is associated with the product that you are customizing.

**System action:** None.

**User response:** Specify another DB2 subsystem.

---

**CCQD562E** The *group\_attach\_name* DB2 group attach name already exists and is associated with the current product on the Customizer Workplace panel.

**Explanation:** The specified DB2 group attach name exists and is associated with the product that you are customizing. The subsystem is in the table on the Customizer Workplace panel.

**System action:** None.

**User response:** Specify another DB2 group attach name.

---

**CCQD563E** A value is required for a DB2 subsystem, a DB2 group attach name, or both before they can be created.

**Explanation:** A DB2 subsystem, a DB2 group attach name, or both are not specified so one or both of them cannot be created.

**System action:** None.

**User response:** Specify a value for the DB2 subsystem, the DB2 group attach name, or both.

---

**CCQD565E** The *subsystem\_ID* DB2 subsystem already exists in the list of DB2 entries and is already associated with the current product.

**Explanation:** The specified subsystem is already associated.

**System action:** None.

**User response:** Specify a different DB2 subsystem.

---

**CCQD566E** The *member\_name* DB2 member for the *group\_attach\_name* DB2 group attach name already exists in the list of DB2 entries and is already associated with the current product.

**Explanation:** The specified DB2 member is already associated.

**System action:** None.

**User response:** Specify a different DB2 member.

---

---

**CCQD567E** The *group\_attach\_name* DB2 group attach name already exists in the list of DB2 entries and is already associated with the current product.

**Explanation:** The specified DB2 group attach name is already associated.

**System action:** None.

**User response:** Specify another DB2 group attach name.

---

**CCQD568I** *product\_name* is not associated with a DB2 entry.

**Explanation:** The product that you are trying to customize is not associated with a DB2 entry. Before a product can be customized, it must be associated with at least one DB2 entry.

**System action:** None.

**User response:** Associate one or more DB2 entries with the product.

---

**CCQD569I** The *product\_name* product configuration is not associated with a DB2 entry.

**Explanation:** The configuration for the specified product is not associated with a DB2 entry.

**System action:** None.

**User response:** Associate one or more DB2 entries with the configuration.

---

**CCQD577W** The *mode\_name* DB2 mode of the *subsystem\_ID* DB2 subsystem is not supported by the product.

**Explanation:** The product does not support the specified DB2 mode.

**System action:** None.

**User response:** Specify a supported DB2 mode.

---

**CCQD578W** The *mode\_name* DB2 mode of the *member\_name* DB2 member for the DB2 group is not supported by the product.

**Explanation:** The product does not support the specified DB2 mode.

**System action:** None.

**User response:** Specify a supported DB2 mode.

---

**CCQD579W** The *mode\_name* DB2 mode of the *group\_name* DB2 group attach name is not supported by the product.

**Explanation:** The product does not support the specified DB2 mode.

**System action:** None.

**User response:** Specify a supported DB2 mode.

---

**CCQD580S** The *subsystem\_ID* DB2 subsystem was copied to the list of DB2 entries but was not associated because the product is already associated with the allowed number of DB2 entries.

**Explanation:** The copied DB2 subsystem was not associated with the product because the product is associated with the maximum number of DB2 entries.

**System action:** None.

**User response:** Remove an associated DB2 entry and associate the product with the copied DB2 subsystem.

---

**CCQD581S** The *member\_name* DB2 member for the *group\_attach\_name* DB2 group attach name was copied to the list of DB2 entries but was not associated because the product is already associated with the allowed number of DB2 entries.

**Explanation:** The copied DB2 member for the DB2 group attach name was not associated with the product because the product is associated with the maximum number of DB2 entries.

**System action:** None.

**User response:** Remove an associated DB2 entry and associate the product with the copied DB2 member.

---

**CCQD582S** The *group\_attach\_name* DB2 group attach name was copied to the list of DB2 entries but was not associated because the product is already associated with the allowed number of DB2 entries.

**Explanation:** The copied DB2 group attach name was not associated with the product because the product is associated with the maximum number of DB2 entries.

**System action:** None.

**User response:** Remove an associated DB2 entry and associate the product with the copied DB2 group attach name.

---

**CCQD583I** The *from\_DB2* DB2 subsystem was copied to the *to\_DB2* subsystem.

**System action:** None.

**User response:** No action is required.

---

---

**CCQD584I** The *member\_name* DB2 member for the *group\_attach\_name* DB2 group attach name is copied to the *subsystem\_ID* DB2 subsystem.

**Explanation:** The specified DB2 member was copied.

**System action:** None.

**User response:** No action is required.

---

**CCQD585I** The *group\_attach\_name* DB2 group attach name cannot be copied because a DB2 member is required.

**Explanation:** The specified DB2 group attach name was not copied because a DB2 member was missing.

**System action:** None.

**User response:** No action is required.

---

**CCQD586S** The current LPAR is *LPAR\_name*, but the data store contains information about the *LPAR\_name* LPAR. You must use the *LPAR\_name* LPAR to customize the product.

**Explanation:** The LPAR that is stored in the data store data set must be used to customize the product.

**System action:** Processing stops.

**User response:** Use the LPAR that is stored in the data store data set.

---

**CCQD587W** The *level\_number* DB2 level of the *subsystem\_name* DB2 subsystem is not supported by the product.

**Explanation:** The product does not support the specified DB2 level.

**System action:** Processing continues.

**User response:** Specify a supported level of DB2.

---

**CCQD588W** The *level\_number* DB2 level of the *member\_name* DB2 member of the *group\_name* DB2 group is not supported by the product.

**Explanation:** The product does not support the specified DB2 level.

**System action:** Processing continues.

**User response:** Specify a supported level of DB2.

---

**CCQD589W** The *level\_number* DB2 level of the *group\_name* DB2 group attach name is not supported by the product.

**Explanation:** The product does not support the specified DB2 level.

**System action:** Processing continues.

**User response:** Specify a supported level of DB2.

---

**CCQD593I** The *subsystem\_ID* DB2 subsystem was deleted.

**User response:** No action is required.

---

**CCQD594I** The *member\_name* DB2 for the *group\_attach\_name* DB2 group attach name was deleted.

**User response:** No action is required.

---

**CCQD595I** The *group\_attach\_name* DB2 group attach name was deleted.

**User response:** No action is required.

---

**CCQD596E** The *subsystem\_ID* DB2 subsystem was not deleted.

**Explanation:** An internal error occurred while the specified DB2 subsystem was being deleted.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD597E** The *member\_name* DB2 member for the *group\_attach\_name* DB2 group attach name was not deleted.

**Explanation:** An internal error occurred while the specified DB2 member was being deleted.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD598E** The *group\_attach\_name* DB2 group attach name was not deleted.

**Explanation:** An internal error occurred while the specified DB2 group attach name was being deleted.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD600W** The *member\_name* product customization member is not valid. The PL/I XML parser issued the following exception warning code: *code\_number*.

**Explanation:** While determining if the XML structure of the product customization member is valid, the PL/I

XML parser issued an exception warning code.

**System action:** Processing continues.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the exception warning code.

---

**CCQD601S** The *member\_name* product customization member is not valid. The PL/I XML parser issued the following exception error code: *code\_number*.

**Explanation:** While determining if the XML structure of the product customization member is valid, the PL/I XML parser issued an exception error code.

**System action:** Processing stops.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the exception error code.

---

**CCQD602S** The XML structure of the *member\_name* product customization member is not valid. The *element\_name* element is unknown.

**Explanation:** The data store member contains an unknown element.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD603S** The XML structure of the *member\_name* product customization member is not valid. Content is not allowed for the *element\_name* element, but content was found.

**Explanation:** The specified element cannot contain content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD604S** The XML structure of the *member\_name* product customization member is not valid. Content is required for the *element\_name* element, but content was not found.

**Explanation:** The specified element is missing required content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic

information” on page 760. Contact IBM Software Support.

---

**CCQD605S** The XML structure of the *member\_name* product customization member is not valid. The content length for the *element\_name* element exceeds *maximum\_number* characters.

**Explanation:** The specified element contains too many characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD606S** The XML structure of the *member\_name* product customization member is not valid. The *element\_name* element cannot occur more than *maximum\_number* times.

**Explanation:** The specified element occurs too many times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD607S** The XML structure of the *member\_name* product customization member is not valid. The *element\_name* element must occur at least *minimum\_number* times.

**Explanation:** The specified element does not occur enough times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD608S** The XML structure of the *member\_name* product customization member is not valid. The *attribute\_name* attribute in the *element\_name* element cannot occur more than *maximum\_number* times.

**Explanation:** The specified attribute occurs too many times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD609S** The XML structure of the *member\_name* product customization member is not valid. The *attribute\_name* attribute in the *element\_name* element must occur at least *minimum\_number* times.

**Explanation:** The specified attribute does not occur enough times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD610S** The XML structure of the *member\_name* product customization member is not valid. Content is not allowed for the *attribute\_name* attribute in the *element\_name* element, but content was found.

**Explanation:** The specified attribute cannot contain content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD611S** The XML structure of the *member\_name* product customization member is not valid. Content is required for the *attribute\_name* attribute in the *element\_name* element, but content was not found.

**Explanation:** The specified attribute does not contain required content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD612S** The XML structure of the *member\_name* product customization member is not valid. The content length for the *element\_name* element exceeds *maximum\_number* characters.

**Explanation:** The specified element contains too many characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD613S** The XML structure of the *member\_name* product customization member is not valid. The *attribute\_name* attribute in the *element\_name* element is unknown.

**Explanation:** The specified attribute in the data store member is unknown.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD614S** The content of the *member\_name* product customization member is not valid. The value of the *element\_name* element is not valid. The value is *value\_name*.

**Explanation:** The specified value is not valid.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQD700W** The *member\_name* DB2 data member is not valid. The PL/I XML parser issued the following exception warning code: *code\_number*.

**Explanation:** While determining if the XML structure of the DB2 data member is valid, the PL/I XML parser issued an exception warning code.

**System action:** Processing continues.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the exception warning code.

---

**CCQD701S** The *member\_name* DB2 data member is not valid. The PL/I XML parser issued the following exception error code: *code\_number*.

**Explanation:** While determining if the XML structure of the DB2 data member is valid, the PL/I XML parser issued an exception error code.

**System action:** Processing continues.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the exception error code.

---

**CCQD750W** The *value\_number* value in the DB2 parameter *parameter\_name* was skipped because only *maximum\_number* values are allowed.

**Explanation:** The specified value was skipped because

it exceeds the number of allowed values in the DB2 parameter.

**System action:** Processing continues.

**User response:** No action is required. To stop this message from being issued, remove the extra values from the DB2 parameter.

---

**CCQD800W** The *member\_name* LPAR data member is not valid. The PL/I XML parser issued the following exception warning code: *code\_number*.

**Explanation:** While determining if the XML structure of the LPAR data member is valid, the PL/I XML parser issued an exception warning code.

**System action:** Processing continues.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the exception warning code.

---

**CCQD801S** The *member\_name* LPAR data member is not valid. The PL/I XML parser issued the following exception error code: *code\_number*.

**Explanation:** While determining if the XML structure of the LPAR data member is valid, the PL/I XML parser issued an exception error code.

**System action:** Processing continues.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the exception error code.

---

**CCQD850W** The *value\_number* value in the LPAR parameter *parameter\_name* was skipped because only *maximum\_number* values are allowed.

**Explanation:** The specified value was skipped because it exceeds the number of allowed values in the LPAR parameter.

**System action:** Processing continues.

**User response:** No action is required. To stop this message from being issued, remove the extra values from the LPAR parameter.

---

**CCQD851I** The *subsystem\_ID* DB2 subsystem is copied to the *member\_name* DB2 member for the *group\_attach\_name* DB2 group attach name.

**User response:** No action is required.

---

**CCQD852I** The *member\_name* DB2 member for the *group\_attach\_name* DB2 group attach name is copied to the *member\_name* DB2 member for the *group\_attach\_name* DB2 group attach name.

**User response:** No action is required.

---

**CCQD854I** The *member\_name* DB2 member for the *group\_attach\_name* DB2 group 'attach name is copied to multiple DB2 entries.

**User response:** No action is required.

---

**CCQD900W** The *member\_name* product data member is not valid. The PL/I XML parser issued the following exception warning code: *code\_number*.

**Explanation:** While determining if the XML structure of the product data member is valid, the PL/I XML parser issued an exception warning code.

**System action:** Processing continues.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the exception warning code.

---

**CCQD901S** The *member\_name* product data member is not valid. The PL/I XML parser issued the following exception error code: *code\_number*.

**Explanation:** While determining if the XML structure of the product data member is valid, the PL/I XML parser issued an exception error code.

**System action:** Processing continues.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the exception warning code.

---

**CCQD950W** The *value\_number* value in the product parameter *parameter\_name* was skipped because only *maximum\_number* values are allowed.

**Explanation:** The specified value was skipped because it exceeds the number of allowed values in the product parameter.

**System action:** Processing continues.

**User response:** No action is required. To stop this message from being issued, remove the extra values from the product parameter.



---

**CCQD960I** The *subsystem\_ID* DB2 subsystem was changed to the *member\_name* DB2 member for the *group\_attach\_name* DB2 group attach name.

**User response:** No action is required.

---

**CCQD961I** The *member\_name* DB2 member for the *group\_attach\_name* DB2 group attach name was changed to the *subsystem\_ID* DB2 subsystem.

**User response:** No action is required.

---

**CCQD962I** The *member\_name* DB2 member for the *group\_attach\_name* DB2 group attach name was changed to the *member\_name* DB2 member for the *group\_attach\_name* DB2 group attach name.

**User response:** No action is required.

---

**CCQD963E** The DB2 group attach name cannot be blank when the DB2 subsystem ID is blank.

**Explanation:** A DB2 group attach name, DB2 subsystem ID, or both must be specified.

**System action:** Processing stops.

**User response:** Specify a DB2 group attach name, DB2 subsystem ID, or both.

---

**CCQE000S** The specified message field name or message *message\_ID* was not found.

**Explanation:** An error occurred while displaying a message field name or the specified message.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQE001E** An incorrect trace level was specified. Valid trace levels are 0 - 4.

**Explanation:** A wrong trace level was specified. Valid trace levels are 0 - 4.

**System action:** Processing stops.

**User response:** Specify a valid trace level 0 - 4.

---

**CCQF028E** An asterisk was improperly specified in a filter argument.

**Explanation:** An asterisk, which is treated as data, is embedded in the filter arguments. A generic filter argument is specified by placing the asterisk in the last nonblank position of the argument. No rows match the

filter arguments, so all rows will be shown.

**System action:** Processing stops.

**User response:** Specify a valid filter argument.

---

**CCQF029I** More DB2 entries are associated with the specified product. All DB2 entries are listed.

**System action:** None.

**User response:** No action is required.

---

**CCQF080I** The customized jobs for the product that you are customizing are stored in this data set.

**System action:** None.

**User response:** No action is required.

---

**CCQF081I** The JCL must be browsed or edited.

**Explanation:** You can either browse or edit the JCL.

**System action:** None.

**User response:** No action is required.

---

**CCQF082E** The *sort-command* command has an invalid sort field or order. The valid fields are *list-of-column-names*. The valid sort orders are A (for ascending) or D (for descending).

**Explanation:** An invalid sort field or order was specified.

**System action:** Processing stops.

**User response:** Specify a valid sort field or order.

---

**CCQF083E** The *sort-command* command is missing a sort field.

**Explanation:** A sort field must be specified.

**System action:** Processing stops.

**User response:** Specify a valid sort field.

---

**CCQF084E** The *sort-command* command has more than two sort fields specified.

**Explanation:** The specified sort command included more than two sort fields. The sort command can have up to two fields specified.

**System action:** Processing stops.

**User response:** Specify only one or two sort fields.

---

---

**CCQF085E** A sort order was specified incorrectly in the *sort-command* command. A sort order can be specified only after a field name.

**Explanation:** Valid orders are A (for ascending) or D (for descending).

**System action:** Processing stops.

**User response:** Specify a valid sort order after a field name.

---

**CCQF086E** The *sort-command* command has an invalid sort field. The valid fields are *list-of-the-table-column-names*.

**Explanation:** An invalid sort field was specified.

**System action:** Processing stops.

**User response:** Specify a valid sort field.

---

**CCQF087E** The *sort-command* command has an invalid sort order. The valid orders are A (for ascending) or D (for descending).

**Explanation:** An invalid sort order was specified.

**System action:** Processing stops.

**User response:** Specify a valid sort order.

---

**CCQF088E** No row match the specified filter argument. All rows are shown.

**Explanation:** No rows match the selected values.

**System action:** Processing stops.

**User response:** Specify a matched value for filtering.

---

**CCQF089I** Type the search arguments to filter objects. A generic filter argument is a search argument of the form AA\*.

**Explanation:** In a generic filter argument, only the characters up to the asterisk (\*) are compared. The \* must be placed in the last nonblank position of the argument. Asterisks embedded in the argument are treated as data.

**System action:** None.

**User response:** No action is required.

---

**CCQF110I** To show the panel instructions section, specify a slash (/). To hide the panel instructions section, remove the slash.

**System action:** None.

**User response:** No is action required.

---

**CCQF111I** To show the Products to Customize section, specify a slash (/). To hide the Products to Customize section, remove the slash. The Product to Customize section can be shown or hidden only on the Customizer Workplace panel.

**System action:** None.

**User response:** No is action required.

---

**CCQF112I** To show the Usage Notes section, specify a slash (/). To hide the Usage Notes section, remove the slash. The Usage Notes section can be shown only on the Product Parameters, LPAR Parameters, and DB2 Parameters panels.

**System action:** None.

**User response:** No action is required.

---

**CCQF113I** The specified values have been saved.

**System action:** None.

**User response:** No action is required.

---

**CCQF114I** Displays the Panel Display Options panel. Use this panel to select which information to display on panels .

**System action:** None.

**User response:** No action is required.

---

**CCQF116I** The fully qualified name of the data set into which you want to copy the current user profile. If the data set name exceeds 42 characters, enclose the name in quotation marks. ALTER or UPDATE authorization to this data set is required.

**System action:** None.

**User response:** No action is required.

---

**CCQF117I** The volume name in which the data set will reside. If left blank, the volume name will be decided by the system.

**System action:** None.

**User response:** No action is required.

---

**CCQF110I** To show the panel instructions section, specify a slash (/). To hide the panel instructions section, remove the slash.

**System action:** None.

**User response:** No is action required.

---

**CCQH001W** The specified option *option\_name* is not valid.

**Explanation:** The option that was specified is not a valid option on the panel.

**System action:** Tools Customizer stops.

**User response:** Specify a valid option on the panel.

---

**CCQH006W** Before you customize a product, verify your user settings.

**Explanation:** The user settings must be verified before a product can be customized.

**System action:** Tools Customizer stops.

**User response:** Verify the user settings.

---

**CCQH007E** Check the user settings. One or more current values are not valid.

**Explanation:** One or more of the values in the user settings is not valid.

**System action:** Tools Customizer stops.

**User response:** Ensure that the specified values for the user settings are valid.

---

**CCQH008W** Before you use Tools Customizer, you must select option 0 to verify your user settings.

**Explanation:** The user settings must be changed before a product can be customized.

**System action:** Tools Customizer stops.

**User response:** Change the user settings.

---

**CCQH009E** You must select option 0 to change your user settings.

**Explanation:** User settings must be changed before a product can be customized.

**System action:** Tools Customizer stops.

**User response:** Change the user settings.

---

**CCQI000W** The XML structure of the *member\_name* DB2 parameter metadata member is not valid. The PL/I XML parser issued the following exception warning code: *code\_number*.

**Explanation:** While determining if the DB2 parameter metadata member is valid, the PL/I XML parser issued an exception warning code.

**System action:** Processing continues.

**User response:** See the *Enterprise PL/I for z/OS*

---

*Programming Guide* for more information about the exception warning code.

---

**CCQI001S** The XML structure of the *member\_name* DB2 parameter metadata member is not valid. The PL/I XML parser issued the following exception error code: *code\_number*.

**Explanation:** While determining if the DB2 parameter metadata member is valid, the PL/I XML parser issued an exception error code.

**System action:** Processing stops.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the exception warning code.

---

**CCQI002S** The XML structure of the *member\_name* DB2 parameter metadata member is not valid. The *element\_name* element is unknown.

**Explanation:** The specified element in the DB2 parameter metadata member is unknown.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI003S** The XML structure of the *member\_name* DB2 parameter metadata member is not valid. Content is not allowed for the *element\_name* element, but content was found.

**Explanation:** The specified element cannot contain content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI004S** The XML structure of the *member\_name* DB2 parameter metadata member is not valid. Content is required for the *element\_name* element, but content was not found.

**Explanation:** The specified element requires content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

---

**CCQI005S** The XML structure of the *member\_name* DB2 parameter metadata member is not valid. The content length for the *element\_name* element cannot exceed *maximum\_number* characters.

**Explanation:** The specified element contains too many characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI006S** The XML structure of the *member\_name* DB2 parameter metadata member is not valid. The content length for the *element\_name* element must be at least *minimum\_number* characters.

**Explanation:** The specified element does not contain enough characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI007S** The XML structure of the *member\_name* DB2 parameter metadata member is not valid. The *element\_name* element must occur at least *minimum\_number* times.

**Explanation:** The specified element does not occur enough times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI008S** The XML structure of the *member\_name* DB2 parameter metadata member is not valid. The *attribute\_name* attribute in the *element\_name* element cannot occur more than *maximum\_number* times.

**Explanation:** The specified attribute occurs too many times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI009S** The XML structure of the *member\_name* DB2 parameter metadata member is not valid. The *attribute\_name* attribute in the *element\_name* element must occur at least *minimum\_number* times.

**Explanation:** The specified attribute did not occur enough times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI010S** The XML structure of the *member\_name* DB2 parameter metadata member is not valid. Content is not allowed for the *attribute\_name* attribute in the *element\_name* element, but content was found.

**Explanation:** The specified attribute cannot have content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI011S** The XML structure of the *member\_name* DB2 parameter metadata member is not valid. Content is required for the *attribute\_name* attribute in the *element\_name* element, but content was not found.

**Explanation:** The specified attribute is missing required content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI012S** The XML structure of the *member\_name* DB2 parameter metadata member is not valid. The content length for the *element\_name* element cannot exceed *maximum\_number* characters.

**Explanation:** The specified element contains too many characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

---

**CCQI013S** The XML structure of the *member\_name* DB2 parameter metadata member is not valid. The *attribute\_name* attribute in the *element\_name* element is unknown.

**Explanation:** The specified attribute in the DB2 parameter metadata member is unknown.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI014S** The content of the *member\_name* DB2 parameter metadata member is not valid because the value of the *element\_name* element is incorrect. The value is *value\_name*.

**Explanation:** The specified value of the element is not a valid value.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI015S** The content of the DB2 parameter metadata member is not valid because the value of the *attribute\_name* attribute in the *element\_name* element is incorrect. The value of the attribute is *value\_name*.

**Explanation:** The specified value of the attribute is not a valid value.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI016S** The content of the DB2 parameter metadata member is not valid because the data type of the *element\_name* element is incorrect. The value is *value\_name*.

**Explanation:** The specified data type is not a valid data type.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI017S** The content of the DB2 parameter metadata member is not valid because the data type of the *attribute\_name* attribute in the *element\_name* element is incorrect. The value of the attribute is *value\_name*.

**Explanation:** The specified data type is not a valid data type.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI050S** The *member\_name* DB2 parameter metadata member was not found in the *data\_set\_name* data set.

**Explanation:** Tools Customizer could not find the specified DB2 parameter metadata member.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI051S** The *parameter\_name* LPAR parameter in the *template\_name* template does not have associated metadata in the *member\_name* LPAR parameter metadata member.

**Explanation:** The specified template does not contain metadata for an LPAR parameter. The name of the LPAR parameter metadata member, the name of the LPAR parameter, and the name of the template are indicated in the message text.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI052S** The *parameter\_name* product parameter in the *template\_name* template does not have associated metadata in the *member\_name* product parameter metadata member.

**Explanation:** The specified template does not contain metadata for a product parameter. The name of the product parameter metadata member, the name of the product parameter, and the name of the template are indicated in the message text.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI053E** The following metadata data set was not found: *data\_set\_name*.

**Explanation:** Tools Customizer could not find the specified metadata data set.

**System action:** Processing stops.

**User response:** Ensure that the metadata data set is specified correctly. If the problem persists, contact IBM Software Support.

---

**CCQI054E** The following metadata data set could not be opened: *data\_set\_name*.

**Explanation:** Tools Customizer could not open the specified LPAR metadata data set.

**System action:** Processing stops.

**User response:** Ensure the metadata data set was specified correctly.

---

**CCQI055S** The CCQ\$\$DB2 DB2 parameter metadata member was not found in the *data\_set\_name* Tools Customizer metadata data set.

**Explanation:** Tools Customizer could not find the DB2 parameter metadata member in the specified Tools Customizer metadata data set.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI056S** The CCQ\$\$LPR LPAR parameter metadata member was not found in the *data\_set\_name* data set.

**Explanation:** Tools Customizer could not find the specified LPAR parameter metadata member.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI057S** The *member\_name* product parameter metadata member was not found in the *data\_set\_name* data set.

**Explanation:** The product parameter metadata member was not found in the specified data set.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI058I** *Product\_name* does not have any DB2 parameters.

**Explanation:** DB2 parameters are not required to customize the specified product.

**System action:** Processing continues.

**User response:** No action is required.

---

**CCQI059I** *Product\_name* does not have any LPAR parameters.

**Explanation:** LPAR parameters are not required to customize the specified product.

**System action:** Processing continues.

**User response:** No action is required.

---

**CCQI060S** The *parameter\_name* DB2 parameter in the *task\_description* task condition does not have associated metadata in the *member\_name* DB2 parameter metadata member.

**Explanation:** Associated metadata is missing for the specified DB2 parameter in a task.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI061S** The *parameter\_name* LPAR parameter in the *task\_description* task condition does not have associated metadata in the *member\_name* LPAR parameter metadata member.

**Explanation:** Associated metadata is missing for the specified LPAR parameter in a task.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI062S** The *parameter\_name* product parameter in the *task\_description* task condition does not have associated metadata in the *member\_name* product parameter metadata member.

**Explanation:** Associated metadata is missing for the specified product parameter in a task.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI063S**    **The *parameter\_name* DB2 parameter in the *task\_description* task and the *step\_description* step does not have associated metadata in the *member\_name* DB2 parameter metadata member.**

**Explanation:** Associated metadata is missing for the specified DB2 parameter in a task and step.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI064S**    **The *parameter\_name* LPAR parameter in the *task\_description* task and the *step\_description* step does not have associated metadata in the *member\_name* LPAR parameter metadata member.**

**Explanation:** Associated metadata is missing for the specified LPAR parameter in a task and step.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI065S**    **The *parameter\_name* product parameter in the *task\_description* task and the *step\_description* step does not have associated metadata in the *member\_name* parameter metadata member.**

**Explanation:** Associated metadata is missing for the specified parameter in a task and step.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI066S**    **The *parameter\_name* DB2 parameter in the *task\_description* task, *step\_description* step, and *template\_name* template condition does not have associated metadata in the *member\_name* DB2 parameter metadata member.**

**Explanation:** Associated metadata is missing for the specified DB2 parameter in a task, step, and template.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI067S**    **The *parameter\_name* LPAR parameter in the *task\_description* task, *step\_description* step, and *template\_name* template condition does not have associated metadata in the *member\_name* LPAR parameter metadata member.**

**Explanation:** Associated metadata is missing for the specified LPAR parameter in a task, step, and template.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI068S**    **The *parameter\_name* product parameter in the *task\_description* task, *step\_description* step, and *template\_name* template condition does not have associated metadata in the *member\_name* product parameter metadata member.**

**Explanation:** Associated metadata is missing for the specified product parameter in a task, step, and template.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI069S**    **Product metadata does not support multiple configurations, but the *template\_name* product template contains the *parameter\_name* parameter. Enable multiple configurations support for this product, and try again.**

**Explanation:** The specified template contains a parameter for multiple configurations, but the product is not enabled to support multiple configurations.

**System action:** Processing stops.

**User response:** Enable multiple configurations support, and try again.

---

**CCQI070E**    **The *parameter\_name* DB2 parameter metadata member is not valid. The default length for the *parameter-element\_name* parameter element exceeds the length of the parameter. The default length is *default\_length*, and the specified length is *specified\_length*. The default length will be truncated accordingly.**

**Explanation:** The specified length cannot be shorter than the default length.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI071E** The *parameter\_name* LPAR parameter metadata member is not valid. The default length for the *parameter-element\_name* parameter element exceeds the length of the parameter. The default length is *default\_length*, and the specified length is *specified\_length*. The default length will be truncated accordingly.

**Explanation:** The specified length cannot be shorter than the default length.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI072E** The *parameter\_name* product parameter metadata member is not valid. The default length for the *parameter-element\_name* parameter element exceeds the length of the parameter. The default length is *default\_length*, and the specified length is *specified\_length*. The default length will be truncated accordingly.

**Explanation:** The specified length cannot be shorter than the default length.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI073S** The XML structure of the *member\_name* DB2 parameter metadata member is not valid. The following value of the *attribute\_name* attribute in the *element\_name* element already exists: *value\_name*.

**Explanation:** The specified value already exists for an attribute.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI074S** The XML structure of the *member\_name* LPAR parameter metadata member is not valid. The following value of the *attribute\_name* attribute in the *element\_name* element already exists: *value\_name*.

**Explanation:** The specified value already exists for an attribute.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI075S** The XML structure of the *member\_name* product parameter metadata member is not valid. The following value of the *attribute\_name* attribute in the *element\_name* element already exists: *value\_name*.

**Explanation:** The specified value already exists for an attribute.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI076S** The XML structure of the *member\_name* DB2 parameter metadata member is not valid. The *parameter\_name* parameter refers to the *section-name* section. This section was not found in the DB2 parameter metadata member.

**Explanation:** The specified value already exists for an attribute.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI077S** The XML structure of the *member\_name* LPAR parameter metadata member is not valid. The *parameter\_name* parameter refers to the *section-name* section. This section was not found in the LPAR parameter metadata member.

**Explanation:** The specified parameter refers to a section that is not in the LPAR parameter metadata member.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.



---

**CCQI078S** The XML structure of the *member\_name* product parameter metadata member is not valid. The *parameter\_name* parameter refers to the *section-name* section. This section was not found in the product parameter metadata member.

**Explanation:** The specified parameter refers to a section that is not in the product parameter metadata member.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI080S** The content of the *member\_name* DB2 parameter metadata member is not valid because the value of the *attribute\_name* attribute in the *element\_name* element is incorrect. The value of the attribute is *value\_name*.

**Explanation:** The specified value for an attribute in the DB2 parameter metadata member is not valid.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI081S** The content of the *member\_name* LPAR parameter metadata member is not valid because the value of the *attribute\_name* attribute in the *element\_name* element is incorrect. The value of the attribute is *value\_name*.

**Explanation:** The specified value for an attribute in the LPAR parameter metadata member is not valid.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI082S** The content of the *member\_name* product parameter metadata member is not valid because the value of the *attribute\_name* attribute in the *element\_name* element is incorrect. The value of the attribute is *value\_name*.

**Explanation:** The specified value for an attribute in the product parameter metadata member is not valid.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI088I** The *command* command is not active in BROWSE mode.

**Explanation:** The specified command can be entered only in Edit mode.

**System action:** Processing continues.

**User response:** Put the panel in Edit mode and reissue the command.

---

**CCQI089I** The *command* command is already active.

**System action:** Processing continues.

**User response:** No action required.

---

**CCQI090S** The product-defined DB2 parameter *parameter\_name* in the *member\_name* parameter metadata member references the *section\_ID* section ID, but this ID does not exist in either the parameter metadata member or the DB2 parameter metadata member.

**Explanation:** A section that does not exist in the parameter metadata member or the DB2 parameter metadata member is referenced by the specified DB2 parameter.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI091S** The product-defined LPAR parameter in the *member\_name* parameter metadata member references the *section\_ID* section ID, but this ID does not exist in either the parameter metadata member or the LPAR parameter metadata member.

**Explanation:** A section that does not exist in the parameter metadata member or the LPAR parameter metadata member is being referenced by the specified LPAR parameter.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI092S** The overridden DB2 parameter *parameter\_name* in the *member\_name* parameter metadata member does not exist in the DB2 parameter metadata member.

**Explanation:** The specified parameter does not exist.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic

information” on page 760. Contact IBM Software Support.

---

**CCQI093S** The overridden LPAR parameter *parameter\_name* in the *member\_name* parameter metadata member does not exist in the LPAR parameter metadata member.

**Explanation:** The specified parameter does not exist.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI094S** The CCQ\$\$PRD product customization parameter metadata member was not found in the *data\_set\_name* data set.

**Explanation:** The specified data set must contain the CCQ\$\$PRD product customization parameter metadata member

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI100W** The XML structure of the *member\_name* LPAR parameter metadata member is not valid. The PL/I XML parser issued the following exception warning code: *code\_number*.

**Explanation:** While determining if the LPAR parameter metadata member is valid, the PL/I XML parser issued an exception warning code.

**System action:** Processing continues.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the exception warning code.

---

**CCQI101S** The XML structure of the *member\_name* LPAR parameter metadata member is not valid. The PL/I XML parser issued the following exception error code: *code\_number*.

**Explanation:** While determining if the LPAR parameter metadata member is valid, the PL/I XML parser issued an exception error code.

**System action:** Processing stops.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the exception warning code.

---

**CCQI102S** The XML structure of the *member\_name* LPAR parameter metadata member is not valid. The *element\_name* element is unknown.

**Explanation:** The specified element in the LPAR parameter metadata member is unknown.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI103S** The XML structure of the *member\_name* LPAR parameter metadata member is not valid. Content is not allowed for the *element\_name* element, but content was found.

**Explanation:** The specified element cannot contain content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI104S** The XML structure of the *member\_name* LPAR parameter metadata member is not valid. Content is required for the *element\_name* element, but content was not found.

**Explanation:** The specified element requires content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI105S** The XML structure of the *member\_name* LPAR parameter metadata member is not valid. The content length for the *element\_name* element cannot exceed *maximum\_number* characters.

**Explanation:** The specified element contains too many characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI106S** The XML structure of the *member\_name* LPAR parameter metadata member is not valid. The content length for the *element\_name* element must be at least *minimum\_number* characters.

**Explanation:** The specified element does not contain enough characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

**CCQI107S** The XML structure of the *member\_name* LPAR parameter metadata member is not valid. The *element\_name* element must occur at least *minimum\_number* times.

**Explanation:** The specified element does not occur enough times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

**CCQI108S** The XML structure of the *member\_name* LPAR parameter metadata member is not valid. The *attribute\_name* attribute in the *element\_name* element cannot occur more than *maximum\_number* times.

**Explanation:** The specified attribute occurs too many times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

**CCQI109S** The XML structure of the *member\_name* LPAR parameter metadata member is not valid. The *attribute\_name* attribute in the *element\_name* element must occur at least *minimum\_number* times.

**Explanation:** The specified attribute did not occur enough times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

**CCQI110S** The XML structure of the *member\_name* LPAR parameter metadata member is not valid. Content is not allowed for the *attribute\_name* attribute in the *element\_name* element, but content was found.

**Explanation:** The specified attribute cannot have content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

**CCQI111S** The XML structure of the *member\_name* LPAR parameter metadata member is not valid. Content is required for the *attribute\_name* attribute in the *element\_name* element, but content was not found.

**Explanation:** The specified attribute is missing required content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

**CCQI112S** The XML structure of the *member\_name* LPAR parameter metadata member is not valid. The content length for the *element\_name* element cannot exceed *maximum\_number* characters.

**Explanation:** The specified element contains too many characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

**CCQI113S** The XML structure of the *member\_name* LPAR parameter metadata member is not valid. The *attribute\_name* attribute in the *element\_name* element is unknown.

**Explanation:** The specified attribute in the LPAR parameter metadata member is unknown.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

**CCQI114S** The content of the *member\_name* LPAR parameter metadata member is not valid because the value of the *element\_name* element is incorrect. The value is *value\_name*.

**Explanation:** The specified value for an element in the LPAR parameter metadata member is not valid.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI115S**    **The content of the *member\_name* LPAR parameter metadata member is not valid because the value of the *attribute\_name* attribute in the *element\_name* element is incorrect. The value of the attribute is *value\_name*.**

**Explanation:** The specified value for an attribute in the LPAR parameter metadata member is not valid.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI116S**    **The content of the *member\_name* LPAR parameter metadata member is not valid because the data type of the *element\_name* element is incorrect. The value is *value\_name*.**

**Explanation:** The specified data type value for an element in the LPAR parameter metadata member is not valid.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI117S**    **The content of the *member\_name* LPAR parameter metadata member is not valid because the data type of the *attribute\_name* attribute in the *element\_name* element is incorrect. The value is *value\_name*.**

**Explanation:** The specified data type value for an attribute in the LPAR parameter metadata member is not valid.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI120S**    **The XML structure of the *member\_name* DB2 parameter metadata member is not valid. The *element\_name* element in the *parameter\_name* parameter contains duplicate values for the *element\_name* element. The duplicate value is *value\_name*.**

**Explanation:** An element contains the specified duplicate value.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic

information” on page 760. Contact IBM Software Support.

---

**CCQI121S**    **The XML structure of the *member\_name* LPAR parameter metadata member is not valid. The *element\_name* element in the *parameter\_name* parameter contains duplicate values for the *element\_name* element. The duplicate value is *value\_name*.**

**Explanation:** An element contains the specified duplicate value.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI122S**    **The XML structure of the *member\_name* parameter metadata member is not valid. The *element\_name* element in the *parameter\_name* parameter contains duplicate values for the *element\_name* element. The duplicate value is *value\_name*.**

**Explanation:** An element contains the specified duplicate value.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI123S**    **The XML structure of the *member\_name* discover metadata member is not valid. The *element\_name* element in the *parameter\_name* parameter contains duplicate values for the *element\_name* element. The duplicate value is *value\_name*.**

**Explanation:** An element contains the specified duplicate value.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI124S**    **The XML structure of the *member\_name* product customization parameter metadata member is not valid. The *element\_name* element in the *parameter\_name* parameter contains duplicate values for the *element\_name* element. The duplicate value is *value\_name*.**

**Explanation:** An element contains the specified duplicate value.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

**CCQI200W** The XML structure of the *member\_name* information metadata member is not valid. The PL/I XML parser issued the following exception warning code: *code\_number*.

**Explanation:** While determining if the information metadata member is valid, the PL/I XML parser issued an exception warning code.

**System action:** Processing continues.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the exception warning code.

**CCQI201S** The XML structure of the *member\_name* information metadata member is not valid. The PL/I XML parser issued the following exception error code: *code\_number*.

**Explanation:** While determining if the information metadata member is valid, the PL/I XML parser issued an exception error code.

**System action:** Processing stops.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the exception warning code.

**CCQI202S** The XML structure of the *member\_name* information metadata member is not valid. The *element\_name* element is unknown.

**Explanation:** The specified element in the information metadata member is unknown.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

**CCQI203S** The XML structure of the *member\_name* information metadata member is not valid. Content is not allowed for the *element\_name* element, but content was found.

**Explanation:** The specified element cannot contain content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

**CCQI204S** The XML structure of the *member\_name* information metadata member is not valid. Content is required for the *element\_name* element, but content was not found.

**Explanation:** The specified element requires content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

**CCQI205S** The XML structure of the *member\_name* information metadata member is not valid. The content length for the *element\_name* element cannot exceed *maximum\_number* characters.

**Explanation:** The specified element contains too many characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

**CCQI206S** The XML structure of the *member\_name* information metadata member is not valid. The content length for the *element\_name* element must be at least *minimum\_number* characters.

**Explanation:** The specified element does not contain enough characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

**CCQI207S** The XML structure of the *member\_name* information metadata member is not valid. The *element\_name* element must occur at least *minimum\_number* times.

**Explanation:** The specified element does not occur enough times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI208S** The XML structure of the *member\_name* information metadata member is not valid. The *attribute\_name* attribute in the *element\_name* element cannot occur more than *maximum\_number* times.

**Explanation:** The specified attribute occurs too many times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI209S** The XML structure of the *member\_name* information metadata member is not valid. The *attribute\_name* attribute in the *element\_name* element must occur at least *minimum\_number* times.

**Explanation:** The specified attribute did not occur enough times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI210S** The XML structure of the *member\_name* information metadata member is not valid. Content is not allowed for the *attribute\_name* attribute in the *element\_name* element, but content was found.

**Explanation:** The specified attribute cannot have content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI211S** The XML structure of the *member\_name* information metadata member is not valid. Content is required for the *attribute\_name* attribute in the *element\_name* element, but content was not found.

**Explanation:** The specified attribute is missing required content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI212S** The XML structure of the *member\_name* information metadata member is not valid. The content length for the *element\_name* element cannot exceed *maximum\_number* characters.

**Explanation:** The specified element contains too many characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI213S** The XML structure of the *member\_name* information metadata member is not valid. The *attribute\_name* attribute in the *element\_name* element is unknown.

**Explanation:** The specified attribute in the information metadata member is unknown.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI214S** The content of the *member\_name* information metadata member is not valid because the value of the *element\_name* element is incorrect. The value is *value\_name*.

**Explanation:** The specified value for an element in the information metadata member is not valid.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI215S** The content of the *member\_name* information metadata member is not valid because the value of the *attribute\_name* attribute in the *element\_name* element is incorrect. The value is *value\_name*.

**Explanation:** The specified value for an attribute in the information metadata member is not valid.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

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**CCQI216S** The content of the *member\_name* information metadata member is not valid because the data type of the *element\_name* element is incorrect. The value is *value\_name*.

**Explanation:** The specified data type value for an element in the information metadata member is not valid.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI217S** The content of the *member\_name* information metadata member is not valid because the data type of the *attribute\_name* attribute in the *element\_name* element is incorrect. The value is *value\_name*.

**Explanation:** The specified data type value for an attribute in the information metadata member is not valid.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI218S** The content of the *member\_name* information metadata member is not valid. The length of the *value\_name* value that of the *attribute\_name* attribute is longer than the *value\_name* value of the *attribute\_name* attribute.

**Explanation:** The first specified value cannot be longer than the second specified value.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI219S** The content of the *member\_name* information metadata member is not valid. The *value\_name* value of the *attribute\_name* attribute contains the *value\_name* value.

**Explanation:** The first specified value cannot be longer than the second specified value.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI220S** The XML structure of the *member\_name* information metadata member is not valid. Content for the *attribute\_name* attribute in the *element\_name* element exceed *maximum\_number* characters.

**Explanation:** The specified attribute contains too many characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI223S** The XML structure of the *member\_name* information metadata member is not valid. The value that is specified for the DB2 Level already exists. The value is *value\_name*.

**Explanation:** The specified value already exists.

**System action:** Processing stops.

**User response:** Specify a different DB2 level. If the problem persists, contact IBM Software Support.

---

**CCQI224S** The XML structure of the *member\_name* information metadata member is not valid. The value that is specified for the DB2 Mode already exists. The value is *value\_name*.

**Explanation:** The specified value already exists.

**System action:** Processing stops.

**User response:** Specify a different DB2 mode. If the problem persists, contact IBM Software Support.

---

**CCQI250S** The information metadata member was not found in the *data\_set\_name* data set.

**Explanation:** Tools Customizer could not find the information metadata member in the specified data set.

**System action:** Processing stops.

**User response:** If this message was issued on the Specify the Metadata Library (CCQPHLQ) panel, specify the product metadata library. The name of this library is *hlq.SHAADENU*.

Do not specify the Tools Customizer metadata library, which is *hlq.SCCQDENU*.

If the problem persists, identify the name of the Tools Customizer trace data set and contact IBM Software Support.

---

---

**CCQI251E** The *member\_name* member was not accessible in the *data\_set\_name* data set.

**Explanation:** The specified member could not be accessed in the data set.

**System action:** Processing stops.

**User response:** Specify the correct metadata library.

---

**CCQI252S** The information metadata member was not found in the *library\_name* component metadata library that is part of the *library\_name* pack metadata library. The name of the pack is *pack\_name*.

**Explanation:** The specified component metadata library does not contain the information metadata member.

**System action:** Processing stops.

**User response:** Specify the correct metadata library.

---

| **CCQI253E** The *library\_name* Tools Customizer  
| metadata library is not current. Update  
| the metadata library on the Tools  
| Customizer Settings panel.

| **Explanation:** The specified metadata library is not  
| current.

| **System action:** Processing stops.

| **User response:** Specify a current metadata library on  
| the Tools Customizer Settings panel.

---

**CCQI300W** The XML structure of the *member\_name* sequence metadata member is not valid. The PL/I XML parser issued the following exception warning code: *code\_number*.

**Explanation:** While determining if the sequence metadata member is valid, the PL/I XML parser issued an exception warning code.

**System action:** Processing continues.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the exception warning code.

---

**CCQI301S** The XML structure of the *member\_name* sequence metadata member is not valid. The PL/I XML parser issued the following exception error code: *code\_number*.

**Explanation:** While determining if the sequence metadata member is valid, the PL/I XML parser issued an exception error code.

**System action:** Processing stops.

---

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the exception error code, and contact IBM Software Support.

---

**CCQI302S** The XML structure of the *member\_name* sequence metadata member is not valid. The *element\_name* element is unknown.

**Explanation:** The specified element in the sequence metadata member is unknown.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI303S** The XML structure of the *member\_name* sequence metadata member is not valid. Content is not allowed for the *element\_name* element, but content was found.

**Explanation:** The specified element cannot contain content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI304S** The XML structure of the *member\_name* sequence metadata member is not valid. Content is required for the *element\_name* element, but content was not found.

**Explanation:** The specified element is missing required content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI305S** The XML structure of the *member\_name* sequence metadata member is not valid. Content length for the *element\_name* element cannot exceed *maximum\_number* characters.

**Explanation:** The specified element contains too many characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

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**CCQI306S** The XML structure of the *member\_name* sequence metadata member is not valid. The *element\_name* element cannot occur more than *maximum\_number* times.

**Explanation:** The specified element occurs too many times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI307S** The XML structure of the *member\_name* sequence metadata member is not valid. The *element\_name* element must occur at least *minimum\_number* times.

**Explanation:** The specified element does not occur enough times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI308S** The XML structure of the *member\_name* sequence metadata member is not valid. The *attribute\_name* attribute in the *element\_name* element cannot occur more than *maximum\_number* times.

**Explanation:** The specified attribute occurs too many times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI309S** The XML structure of the *member\_name* sequence metadata member is not valid. The *attribute\_name* attribute in the *element\_name* element must occur at least *minimum\_number* times.

**Explanation:** The specified attribute does not occur enough times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI310S** The XML structure of the *member\_name* sequence metadata member is not valid. Content is not allowed for the *attribute\_name* attribute in the *element\_name* element, but content was found.

**Explanation:** The specified attribute cannot contain content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI311S** The XML structure of the *member\_name* sequence metadata member is not valid. Content is required for the *attribute\_name* attribute in the *element\_name* element, but content was not found.

**Explanation:** The specified attribute is missing required content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI312S** The XML structure of the *member\_name* sequence metadata member is not valid. The content length for the *element\_name* element cannot exceed *maximum\_number* characters.

**Explanation:** The specified element contains too many characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI313S** The XML structure of the *member\_name* sequence metadata member is not valid. The *attribute\_name* attribute in the *element\_name* element is unknown.

**Explanation:** The specified attribute in the sequence metadata member is unknown.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI314S** The content of the *member\_name* sequence metadata member is not valid because the value of the *element\_name* element is incorrect. The value is *value\_name*.

**Explanation:** The specified value for an element in the sequence metadata member is not valid.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI315S**    **The content of the *member\_name* sequence metadata member is not valid because the value of the *attribute\_name* attribute in the *element\_name* element is incorrect. The value is *value\_name*.**

**Explanation:** The specified value for an attribute in the sequence metadata member is not valid.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI316S**    **The content of the *member\_name* sequence metadata member is not valid because the data type of the *element\_name* element is incorrect. The value is *value\_name*.**

**Explanation:** The specified data type value for an element in the sequence metadata member is not valid.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI317S**    **The content of the *member\_name* sequence metadata member is not valid because the data type of the *attribute\_name* attribute in the *element\_name* element is incorrect. The value is *value\_name*.**

**Explanation:** The specified data type value for an attribute in the sequence metadata member is not valid.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI350S**    **The XML structure of the *member\_name* sequence metadata member is not valid because the value of the *attribute\_name* attribute in the *element\_name* element is incorrect. The value is *value\_name*.**

**Explanation:** A specified value for an attribute in the sequence metadata member is not valid.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI351S**    **The *member\_name* sequence metadata member was not found in the *data\_set\_name* metadata data set.**

**Explanation:** Tools Customizer could not find the specified sequence metadata member in the metadata data set.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI352S**    **The *template\_name* product template was not found in the *data\_set\_name* metadata data set.**

**Explanation:** Tools Customizer could not find the specified product template in the data set.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI353S**    **The sequence metadata member was not found in the *data\_set\_name* component data set that is part of the *data\_set\_name* pack.**

**Explanation:** Tools Customizer could not find the sequence metadata member.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI360S**    **The XML structure of the *member\_name* sequence metadata member is not valid. The value of the *attribute\_name* attribute in the *element\_name* element already exists.**

**Explanation:** The specified attribute contains a value that already exists.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI361S**    **The XML structure of the *member\_name* sequence metadata member is not valid. The condition element on the *level\_type* level already contains a relational operator.**

**Explanation:** A relational operator already exists for the condition element on the specified level.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI362S** The XML structure of the *member\_name* sequence metadata member is not valid. The condition element on the *level\_type* level must contain only one content string or content number element.

**Explanation:** Only one content string element or content number element can be contained in the condition element on the specified level.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI363S** The XML structure of the *member\_name* sequence metadata member is not valid. The condition element in the *element\_name* element with the *attribute\_name* attribute must contain either the content string element or the content number element.

**Explanation:** Either the content string element or the content number element must be in the condition element.

**System action:** Processing stops.

**User response:** Contact IBM Software Support.

---

**CCQI400W** The XML structure of the *member\_name* parameter metadata member is not valid. The PL/I XML parser issued the following exception warning code: *code\_number*.

**Explanation:** While determining the parameter metadata member is valid, the PL/I XML parser issued an exception warning code.

**System action:** Processing continues.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the exception warning code.

---

**CCQI401S** The XML structure of the *member\_name* parameter metadata member is not valid. The PL/I XML parser issued the following exception error code: *code\_number*.

**Explanation:** While determining if the parameter metadata member is valid, the PL/I XML parser issued an exception error code.

**System action:** Processing stops.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the exception warning code.

---

**CCQI402S** The XML structure of the *member\_name* parameter metadata member is not valid. The *element\_name* element is unknown.

**Explanation:** The specified element in the parameter metadata member is unknown.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI403S** The XML structure of the *member\_name* parameter metadata member is not valid. Content is not allowed for the *element\_name* element, but content was found.

**Explanation:** The specified element cannot contain content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI404S** The XML structure of the *member\_name* parameter metadata member is not valid. Content is required for the *element\_name* element, but content was not found.

**Explanation:** The specified element requires content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI405S** The XML structure of the *member\_name* parameter metadata member is not valid. The content length for the *element\_name* element cannot exceed *maximum\_number* characters.

**Explanation:** The specified element contains too many characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI406S** The XML structure of the *member\_name* parameter metadata member is not valid. The content length for the *element\_name* element must be at least *minimum\_number* characters.

**Explanation:** The specified element does not contain enough characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI407S** The XML structure of the *member\_name* parameter metadata member is not valid. The *element\_name* element must occur at least *minimum\_number* times.

**Explanation:** The specified element does not occur enough times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI408S** The XML structure of the *member\_name* parameter metadata member is not valid. The *attribute\_name* attribute in the *element\_name* element cannot occur more than *maximum\_number* times.

**Explanation:** The specified attribute occurs too many times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI409S** The XML structure of the *member\_name* parameter metadata member is not valid. The *attribute\_name* attribute in the *element\_name* element must occur at least *minimum\_number* times.

**Explanation:** The specified attribute does not occur enough times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI410S** The XML structure of the *member\_name* parameter metadata member is not valid. Content is not allowed for the *attribute\_name* attribute in the *element\_name* element, but content was found.

**Explanation:** The specified attribute cannot have content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI411S** The XML structure of the *member\_name* parameter metadata member is not valid. Content is required for the *attribute\_name* attribute in the *element\_name* element, but content was not found.

**Explanation:** The specified attribute is missing required content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI412S** The XML structure of the *member\_name* parameter metadata member is not valid. The content length for the *element\_name* element cannot exceed *maximum\_number* characters.

**Explanation:** The specified element contains too many characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI413S** The XML structure of the *member\_name* parameter metadata member is not valid. The *attribute\_name* attribute in the *element\_name* element is unknown.

**Explanation:** The specified attribute in the parameter metadata member is unknown.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

---

**CCQI414S** The content of the *member\_name* parameter metadata member is not valid because the value of the *element\_name* element is incorrect. The value is *value\_name*.

**Explanation:** The specified value for an element in the parameter metadata member is not valid.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI415S** The content of the *member\_name* parameter metadata member is not valid because the value of the *attribute\_name* attribute in the *element\_name* element is incorrect. The value is *value\_name*.

**Explanation:** The specified value for an attribute in the parameter metadata member is not valid.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI416S** The content of the *member\_name* parameter metadata member is not valid because the data type of the *element\_name* element is incorrect. The value is *value\_name*.

**Explanation:** The specified data type value for an element in the parameter metadata member is not valid.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI417S** The content of the *member\_name* parameter metadata member is not valid because the data type of the *attribute\_name* attribute in the *element\_name* element is incorrect. The value is *value\_name*.

**Explanation:** The specified data type value for an attribute in the parameter metadata member is not valid.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI420S** The XML structure of the *member\_name* parameter metadata member is not valid. The *element\_name* element is unknown for the overridden DB2 parameter.

**Explanation:**

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI421S** The XML structure of the *member\_name* parameter metadata member is not valid. The *element\_name* element is unknown for the overridden LPAR parameter.

**Explanation:**

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI422S** The XML structure of the *member\_name* parameter metadata member is not valid. The *attribute\_name* attribute in the *element\_name* element is unknown for the overridden DB2 parameter.

**Explanation:**

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI423S** The XML structure of the *member\_name* parameter metadata member is not valid. The *attribute\_name* attribute in the *element\_name* element is unknown for the overridden LPAR parameter.

**Explanation:**

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI450S** The *member\_name* product parameter metadata member was not found in the *data\_set\_name* data set.

**Explanation:** Tools Customizer could not find the specified product parameter metadata member.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI510W** The *data\_set\_name* data store data set does not exist.

**Explanation:** The specified data store data set does not exist.

**System action:** Processing continues.

**User response:** Ensure that the data store data set exists.

---

**CCQI511S** The *data\_set\_name* data store data set cannot be opened by using the *disposition\_type* disposition.

**Explanation:** The specified data store data set could not be opened with the specified disposition.

**System action:** Processing continues.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI512S** The *data\_set\_name* data store data set cannot be opened by using the *option-type* option.

**Explanation:** The specified data store data set was unable to be opened with the specified option.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI600W** The XML structure of the *member\_name* product customization parameter metadata member is not valid. The PL/I XML parser issued the following exception warning code: *code\_number*.

**Explanation:** While determining if the product customization parameter metadata member is valid, the PL/I XML parser issued an exception warning code.

**System action:** Processing continues.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the warning.

---

**CCQI601S** The XML structure of the *member\_name* product customization parameter metadata member is not valid. The PL/I XML parser issued the following exception error code: *code\_number*.

**Explanation:** While determining if the product

customization parameter metadata member is valid, the PL/I XML parser issued an exception error code.

**System action:** Processing continues.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the warning.

---

**CCQI602S** The XML structure of the *member\_name* product customization parameter metadata member is not valid. The *element\_name* element is unknown.

**Explanation:** The specified product customization parameter metadata member contains an unknown element.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI603S** The XML structure of the *member\_name* product customization parameter metadata member is not valid. Content is not allowed for the *element\_name* element, but content was found.

**Explanation:** Content was found in an element that cannot contain content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI604S** The XML structure of the *member\_name* product customization parameter metadata member is not valid. Content is required for the *element\_name* element, but content was not found.

**Explanation:** The specified element does not contain required content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI605S** The XML structure of the *member\_name* product customization parameter metadata member is not valid. The content length for the *element\_name* element cannot exceed *maximum\_number* characters.

**Explanation:** The specified element contains too many characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI606S** The XML structure of the *member\_name* product customization parameter metadata member is not valid. The *element\_name* element cannot occur more than *maximum\_number* times.

**Explanation:** The specified element occurs too many times in the product customization parameter metadata member.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI607S** The XML structure of the *member\_name* product customization parameter metadata member is not valid. The *element\_name* element must occur at least *minimum\_number* times.

**Explanation:** The specified element does not occur enough times in the product customization parameter metadata member.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI608S** The XML structure of the *member\_name* product customization parameter metadata member is not valid. The *attribute\_name* attribute in the *element\_name* element cannot occur more than *maximum\_number* times.

**Explanation:** The specified attribute occurs too many times in the product customization parameter metadata member.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI609S** The XML structure of the *member\_name* product customization parameter metadata member is not valid. The *attribute\_name* attribute in the *element\_name* element must occur at least *minimum\_number* times.

**Explanation:** The specified attribute does not occur enough times in the product customization parameter metadata member.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI610S** The XML structure of the *member\_name* product customization parameter metadata member is not valid. Content is not allowed for the *attribute\_name* attribute in the *element\_name* element, but content was found.

**Explanation:** Content was found in an element that cannot contain content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI611S** The XML structure of the *member\_name* product customization parameter metadata member is not valid. Content is required for the *attribute\_name* attribute in the *element\_name* element, but content was not found.

**Explanation:** The specified attribute does not contain required content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI612S** The XML structure of the *member\_name* product customization parameter metadata member is not valid. The content length for the *attribute\_name* attribute in the *element\_name* element cannot exceed *maximum\_number* characters.

**Explanation:** The specified attribute contains too many characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI613S** The XML structure of the *member\_name* product customization parameter metadata member is not valid. The *attribute\_name* attribute in the *element\_name* element is unknown.

**Explanation:** The specified product customization parameter metadata member contains an unknown attribute.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI614S** The XML structure of the *member\_name* product customization parameter metadata member is not valid. The value of the *element\_name* element is not valid. The value *value\_name*.

**Explanation:** The specified value of the element is not a valid value.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI615S** The XML structure of the *member\_name* product customization parameter metadata member is not valid. The value of the *attribute\_name* attribute for the *element\_name* element is not valid. The value is *value\_name*.

**Explanation:** The specified value of the attribute is not a valid value.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI616S** The XML structure of the *member\_name* product customization parameter metadata member is not valid. The data type of the *element\_name* element is 'not valid. The value of the element is *value\_name*.

**Explanation:** The specified data type is not a valid data type.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI617S** The XML structure of the *member\_name* product customization parameter metadata member is not valid. The data type of the *attribute\_name* attribute for the *element\_name* element is not valid. The value of the attribute is *value\_name*.

**Explanation:** The specified data type is not a valid data type.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI650S** The XML structure of the *member\_name* product customization parameter metadata member is not valid. The following value of the *attribute\_name* attribute in the *element\_name* element already exists: *value\_name*.

**Explanation:** The specified value for an attribute already exists.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI651S** The XML structure of the *member\_name* product customization parameter metadata member is not valid. The *parameter\_name* parameter refers to the following section, which was not found in the *member\_name* product customization parameter metadata member: *section-name*.

**Explanation:** The specified section is not in the product customization parameter metadata member.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI652S** The *member\_name* product customization metadata member not valid. The default length for the *element\_name* parameter element exceeds the length of the parameter. The default length is *default\_length*, and the specified length is *specified\_length*. The default length will be truncated accordingly.

**Explanation:** The specified length cannot be shorter than the default length.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI653S** The content of the *member\_name* product customization parameter metadata member is not valid. The value of the *attribute\_name* attribute in the *element\_name* element is not valid. The value of the attribute is *value\_name*.



**Explanation:** The specified value of the attribute is not a valid value.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

**CCQI700W** The XML structure of the *member\_name* solution pack metadata member is not valid. The PL/I XML parser issued the following exception warning code: *code\_number*.

**Explanation:** While determining if the specified solution pack metadata member is valid, the PL/I XML parser issued an exception warning code.

**System action:** Processing continues.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the warning.

**CCQI701S** The XML structure of the *member\_name* solution pack metadata member is not valid. The PL/I XML parser issued the following exception error code: *code\_number*.

**Explanation:** While determining if the specified solution pack metadata member is valid, the PL/I XML parser issued an exception error code.

**System action:** Processing stops.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the error.

**CCQI702S** The XML structure of the *member\_name* solution pack metadata member is not valid. The *element\_name* element is unknown.

**Explanation:** The specified solution pack metadata member contains an unknown element.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

**CCQI703S** The XML structure of the *member\_name* solution pack metadata member is not valid. Content is not allowed for the *element\_name* element, but content was found

**Explanation:** Content was found in an element that cannot contain content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

**CCQI704S** The XML structure of the *member\_name* solution pack metadata member is not valid. Content is required for the *element\_name* element, but content was not found.

**Explanation:** The specified element does not contain required content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

**CCQI705S** The XML structure of the *member\_name* solution pack metadata member is not valid. The content length for the *element\_name* element cannot exceed *maximum\_number* characters.

**Explanation:** The specified element contains too many characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

**CCQI706S** The XML structure of the *member\_name* solution pack metadata member is not valid. The *element\_name* element cannot occur more than *maximum\_number* times.

**Explanation:** The specified element occurs too many times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

**CCQI707S** The XML structure of the *member\_name* solution pack metadata member is not valid. The *element\_name* element must occur at least *minimum\_number* times.

**Explanation:** The specified element does not occur enough times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI708S** The XML structure of the *member\_name* solution pack metadata member is not valid. The *attribute\_name* attribute in the *element\_name* element cannot occur more than *maximum\_number* times.

**Explanation:** The specified attribute occurs too many times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI709S** The XML structure of the *member\_name* solution pack metadata member is not valid. The *attribute\_name* attribute in the *element\_name* element must occur at least *minimum\_number* times.

**Explanation:** The specified attribute does not occur enough times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI710S** The XML structure of the *member\_name* solution pack metadata member is not valid. Content is not allowed for the *attribute\_name* attribute in the *element\_name* element, but content was found.

**Explanation:** The specified attribute cannot have content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI711S** The XML structure of the *member\_name* solution pack metadata member is not valid. Content is required for the *attribute\_name* attribute in the *element\_name* element, but content was not found.

**Explanation:** The specified attribute is missing content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI712S** The XML structure of the *member\_name* solution pack metadata member is not valid. The content length for the *attribute\_name* attribute in the *element\_name* element cannot exceed *maximum\_number* characters.

**Explanation:** The specified attribute contains too many characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI713S** The XML structure of the *member\_name* solution pack metadata member is not valid. The *attribute\_name* attribute in the *element\_name* element is unknown.

**Explanation:** The specified attribute in the solution pack metadata member is unknown.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI714S** The XML structure of the *member\_name* solution pack metadata member is not valid because the value of the *element\_name* element is incorrect. The value is *value\_name*.

**Explanation:** The specified value of the element is not a valid value.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI715S** The XML structure of the *member\_name* solution pack metadata member is not valid because the value of the *attribute\_name* attribute in the *element\_name* element is incorrect. The value of the attribute is *value\_name*.

**Explanation:** The specified value of the attribute is not a valid value.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

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**CCQI716S** The XML structure of the *member\_name* solution pack metadata member is not valid because the data type of the *element\_name* element is incorrect. The value is *value\_name*.

**Explanation:** The specified data type is not a valid data type.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI717S** The XML structure of the *member\_name* solution pack metadata member is not valid because the data type of the *attribute\_name* attribute in the *element\_name* element is incorrect. The value of the attribute is *value\_name*.

**Explanation:** The specified data type is not a valid data type.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI720S** The XML structure of the *member\_name* solution pack metadata member is not valid. The msg element is required for the *component\_name* component that is not customizable.

**Explanation:** The msg element is required for the specified component, which cannot be customized by using Tools Customizer.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI750S** The solution pack metadata member was not found in the *library\_name* metadata library.

**Explanation:** Tools Customizer could not find the solution pack metadata member in the specified library.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI751S** The version in the *library\_name* solution pack metadata library is different than the version in the *library\_name* component metadata library. The name of the pack is *pack\_name*, and the name of the component is *component\_name*.

**Explanation:** The version in the solution pack metadata library does not match the version in the component metadata library.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI752S** The release in the *library\_name* solution pack metadata library is different than the release in the *library\_name* component metadata library. The name of the pack is *pack\_name*, and the name of the component is *component\_name*.

**Explanation:** The release in the solution pack metadata library does not match the release in the component metadata library.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI753S** The modification level in the *library\_name* solution pack metadata library is different than the modification level in the *library\_name* component metadata library. The name of the pack is *pack\_name*, and the name of the component is *component\_name*.

**Explanation:** The modification level in the solution pack metadata library does not match the modification level in the component metadata library.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQI755S** The XML structure of the *member\_name* parameter metadata member is not valid. When a default value is not specified in the metadata member, the “required” attribute with a value of “true” cannot be specified.

**System action:** Processing stops.

**User response:** Contact IBM Software Support.

---

**CCQM002E** The *command\_name* line command is not valid: .

**Explanation:** The specified line command is not valid.

**System action:** Processing continues.

**User response:** Specify a valid line command on the panel.

---

**CCQO000W** The XML structure of the *member\_name* discover parameter metadata member is not valid. The PL/I XML parser issued the following exception warning code: *code\_number*.

**Explanation:** While determining if the discover parameter metadata member is valid, the PL/I XML parser issued an exception warning code.

**System action:** Processing continues.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the exception warning code.

---

**CCQO001S** The XML structure of the *member\_name* discover parameter metadata member is not valid. The PL/I XML parser issued the following exception error code: *code\_number*.

**Explanation:** While determining if the Discover metadata member is valid, the PL/I XML parser issued an exception error code.

**System action:** Processing stops.

**User response:** See the *Enterprise PL/I for z/OS Programming Guide* for more information about the exception warning code. Contact IBM Software Support.

---

**CCQO002S** The XML structure of the *member\_name* discover parameter metadata member is not valid. The *element\_name* element is unknown.

**Explanation:** The specified element in the discover parameter metadata member is unknown.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQO003S** The XML structure of the *member\_name* discover parameter metadata member is not valid. Content is not allowed for the *element\_name* element, but content was found.

**Explanation:** The specified element cannot contain content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQO004S** The XML structure of the *member\_name* discover parameter metadata member is not valid. Content is required for the *element\_name* element, but content was not found.

**Explanation:** The specified element is missing required content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQO005S** The XML structure of the *member\_name* discover parameter metadata member is not valid. The content length for the *element\_name* element cannot exceed *maximum\_number* characters.

**Explanation:** The specified element contains too many characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQO006S** The XML structure of the *member\_name* discover parameter metadata member is not valid. The *element\_name* element cannot occur more than *maximum\_number* times.

**Explanation:** The specified element occurs too many times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQO007S** The XML structure of the *member\_name* discover parameter metadata member is not valid. The *element\_name* element must occur at least *minimum\_number* times.

**Explanation:** The specified element does not occur enough times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQO008S** The XML structure of the *member\_name* discover parameter metadata member is not valid. The *attribute\_name* attribute in the *element\_name* element cannot occur more than *maximum\_number* times.

**Explanation:** The specified attribute occurs too many times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQO009S** The XML structure of the *member\_name* discover parameter metadata member is not valid. The *attribute\_name* attribute in the *element\_name* element must occur at least *minimum\_number* times.

**Explanation:** The specified attribute does not occur enough times.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQO010S** The XML structure of the *member\_name* discover parameter metadata member is not valid. Content is not allowed for the *attribute\_name* attribute in the *element\_name* element, but content was found.

**Explanation:** The specified attribute cannot contain content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQO011S** The XML structure of the *member\_name* discover parameter metadata member is not valid. Content is required for the *attribute\_name* attribute in the *element\_name* element, but content was not found.

**Explanation:** The specified attribute requires content.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQO012S** The XML structure of the *member\_name* discover parameter metadata member is not valid. The content length for the *attribute\_name* attribute in the *element\_name* element in the cannot exceed *maximum\_number* characters.

**Explanation:** The specified attribute contains too many characters.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQO013S** The XML structure of the *member\_name* discover parameter metadata member is not valid. The *attribute\_name* attribute in the *element\_name* element is unknown.

**Explanation:** The specified attribute is unknown.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQO014S** The content of the *member\_name* discover parameter metadata member is not valid because the value of the *element\_name* element is incorrect. The value is *value\_name*.

**Explanation:** A The specified value for an element in the discover parameter metadata member is not valid.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQO015S** The content of the *member\_name* discover parameter metadata member is not valid because the value of the *attribute\_name* attribute in the *element\_name* element is incorrect. The value is *value\_name*.

**Explanation:** The specified value for an attribute in the discover parameter metadata member is not valid.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQO016S** The content of the *member\_name* discover parameter metadata member is not valid because the data type of the *element\_name* element is incorrect. The value is *value\_name*.

**Explanation:** The specified data type value for an element in the discover parameter metadata member is not valid.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQO017S** The content of the *member\_name* product parameter metadata member is not valid because the data type of the *attribute\_name* attribute in the *element\_name* element is incorrect. The value is *value\_name*.

**Explanation:** The specified data type value for an attribute in the product parameter metadata member is not valid.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQO050S** The *data\_set\_name* Discover REXX EXEC data set could not be initialized or was not found.

**Explanation:** Tools Customizer could not find or could not initialize the specified Discover REXX EXEC data set.

**System action:** Processing stops.

**User response:** Ensure that the Discover REXX EXEC is specified correctly.

---

**CCQO051W** The *data\_sharing\_group\_ID* data sharing group ID cannot contain more than four characters.

**Explanation:** The specified data sharing group ID contains too many characters.

**System action:** Processing continues.

**User response:** Ensure that the specified data sharing group ID does not exceed four characters.

---

**CCQO052S** The *REXX\_EXEC\_name* Discover REXX EXEC was not found in the *data\_set\_name* Discover data set.

**Explanation:** Tools Customizer could not find the Discover REXX EXEC in the specified data set.

**System action:** Processing stops.

**User response:** Ensure that the Discover data set was specified correctly.

---

**CCQO053W** The *LPAR\_name* LPAR name cannot contain more than eight characters.

**Explanation:** The specified LPAR name contains too many characters.

**System action:** Processing continues.

**User response:** Ensure that the specified LPAR name does not exceed eight characters.

---

**CCQO054W** The *subsystem\_ID* DB2 SSID cannot contain more than four characters. The record was not processed.

**Explanation:** The specified DB2 SSID contains too many characters.

**System action:** Processing continues.

**User response:** Ensure that the specified DB2 SSID does not exceed four characters.

---

**CCQO055W** The *parameter\_name* DB2 group attach name parameter is in the *record\_name* Discover record, but a DB2 group attach name was not specified. The record was not processed.

**Explanation:** The Discover record contains a data sharing group parameter, but a DB2 group attach name was not specified.

**System action:** Processing continues.

**User response:** Ensure that information is specified correctly on the Discover Customized Product Information panel.

---

**CCQO056W** The *parameter\_name* DB2 parameter in the *record\_name* Discover record did not have a DB2 group attach name or a DB2 SSID. The record was not processed.

**Explanation:** The Discover record did not have a DB2 group attach name or a DB2 subsystem ID in the DB2 parameter.

**System action:** Processing continues.

**User response:** Ensure that information is specified correctly on the Discover Customized Product Information panel.

---

**CCQO057W** The Discover EXEC could not find the *parameter\_name* parameter in the metadata for the product to be customized. The record was not processed.

**Explanation:** The specified parameter could not be found in the metadata for the product to be customized.

**System action:** Processing continues.

**User response:** Ensure that information is specified correctly on the Discover Customized Product Information panel.

**CCQO058W** The *parameter\_name* product parameter name in the *record\_type* Discover record does not start with CCQ\_LPR\_, CCQ\_DB2\_, or CCQ\_PRD\_. The record was not processed.

**Explanation:** The parameter in the record does not start with CCQ\_DB2\_, CCQ\_LPAR\_, or CCQ\_PRD\_.

**System action:** Processing continues.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

**CCQO059W** The *parameter\_name* product parameter cannot contain more than 72 characters. The record was not processed.

**Explanation:** The specified product parameter contains too many characters.

**System action:** Processing continues.

**User response:** Ensure that the specified product parameter does not exceed 72 characters.

**CCQO060W** The *record\_name* Discover record from the REXX EXEC output must start with the following record type: *record\_type*. The record was not processed.

**Explanation:** A Discover record from the REXX EXEC output must start with the specified DB2 record type.

**System action:** Processing continues.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

**CCQO061I** If you do not have a previously customized version of the product, do not run the Discover EXEC. Press END to go to the Customizer Workplace panel.

**Explanation:** This message is issued when you customize a product for a the first time. It prompts you to use the Discover EXEC to discover data from a previous customization of the specified product.

**System action:** Processing continues.

**User response:**

**Tip:** Using the Discover EXEC saves time and reduces errors that can error when parameters are specified manually. If you want to use the Discover EXEC, specify the required information on the Discover Customized Product Information panel. Otherwise, press End to continue without discovering data from a previous customization of the product.

**CCQO062W** The Discover EXEC could not find the following *parameter\_name* parameter in the DB2 metadata. The record was not processed.

**Explanation:** The specified parameter is missing in the DB2 metadata.

**System action:** Processing continues.

**User response:** If this parameter is required, contact IBM Software Support.

**CCQO064W** The *Discover-record* Discover record did not have a parameter name. The record was not processed.

**Explanation:** A parameter name was missing in the Discover record.

**System action:** Processing continues.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

**CCQO065W** The value for the *parameter\_name* parameter is ignored because it has more than *maximum\_number* characters, which is the maximum length that is defined in the metadata. The value is *parameter\_value*.

**Explanation:** The specified value exceeded the maximum allowed length, which was defined in the metadata. Tools Customizer truncated the extra characters.

**System action:** Processing continues.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

**CCQO066W** The *record\_name* Discover record from the Discover REXX EXEC output does not have a parameter value. The record was not processed.

**Explanation:** The Discover record was missing a parameter value from the Discover EXEC output.

**System action:** Processing continues.

**User response:** Ensure that information was specified

correctly on the Discover Customized Product Information panel.

---

**CCQO067W** The *parameter\_name* parameter is defined in the metadata to support one value, but more than one value was found. The last value was used.

**Explanation:** The definition of the parameter in the metadata supports one value, but more than one value was specified. Only the last value was used.

**System action:** Processing continues.

**User response:** Ensure that information was specified correctly on the Discover Customized Product Information panel.

---

**CCQO068W** The value of the *parameter\_name* parameter is ignored because the parameter is defined as *internal=true*. The value is *value\_name*.

**Explanation:** The specified value of the parameter is ignored because it is defined as *internal=true*.

**System action:** Processing continues.

**User response:** Ensure that information was specified correctly on the Discover Customized Product Information panel.

---

**CCQO069W** The Discover EXEC did not find the *parameter\_name* parameter in the LPAR metadata. The record was not processed.

**Explanation:** The specified parameter is missing from the LPAR metadata.

**System action:** Processing continues.

**User response:** Ensure that information was specified correctly on the Discover Customized Product Information panel.

---

**CCQO070W** The *record\_type* Discover record contains an incorrect delimiter between the Environment section and the Data section. The record was not processed.

**Explanation:** Tools Customizer found an incorrect delimiter between the Environment section and the Data section.

**System action:** None.

**User response:** No action is required.

---

**CCQO071W** The *member\_name* member could not be found in the *data\_set\_name* Discover data set.

**Explanation:** Tools Customizer could not find the specified Discover data set.

**System action:** None.

**User response:** No action is required.

---

**CCQO072S** The *member\_name* discover metadata member was not found in the *data\_set\_name* metadata data set.

**Explanation:** Tools Customizer could not find the specified metadata member in the data set.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQO073E** The *member\_name* discover metadata member is not valid because the default length for the *element\_name* parameter element exceeds the length of the parameter. The default length is *default\_length*, and the specified length is *specified\_length*. The default length will be truncated accordingly.

**Explanation:** The default length for the specified parameter element is longer than the parameter.

**System action:** Processing continues.

**User response:** No action is required.

---

**CCQO074S** The content of the *member\_name* discover metadata member is not valid. The value of the *attribute\_name* attribute in the *element\_name* element is not valid. The value of the attribute is *value\_name*.

**Explanation:** The specified value is not valid.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQO075W** The *configuration\_ID* configuration ID in the *record\_name* Discover record is incorrect. The record was not processed.

**Explanation:** The specified configuration ID is not correct.

**System action:** Processing continues.

**User response:** No action is required.

---

**CCQO076W** The *configuration\_ID* configuration ID cannot contain more than *maximum\_number* characters. The record was not processed.

**Explanation:** The specified configuration ID contains too many characters.



**System action:** Processing continues.

**User response:** No action is required.

---

**CCQO077S** The discover metadata member was not found in the *data\_set\_name* component data set that is part of the *data\_set\_name* pack.

**Explanation:** The discover metadata member was not found in the specified component data set.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQO078I** Additional configurations were discovered and saved in the data store. All DB2 entries associated with this configuration are listed.

**System action:** None.

**User response:** No action is required.

---

**CCQO080I** *Product\_name* does not support the Discover process.

**Explanation:** The specified product does not support the Discover process.

**System action:** None.

**User response:** No action is required.

---

**CCQP000E** The value of the *mode\_name* DB2 mode is not valid for the *level\_name* DB2 level.

**Explanation:** The specified DB2 mode is not valid for the DB2 level.

**System action:** Processing stops.

**User response:** Specify a valid DB2 mode for the DB2 level.

---

**CCQP001E** The value of the *mode\_name* DB2 mode is missing.

**Explanation:** The specified DB2 mode is not defined.

**System action:** Processing stops.

**User response:** Specify a value for the DB2 mode.

---

**CCQP002E** The value of the *mode\_name* DB2 level is missing.

**Explanation:** The specified DB2 level is not defined.

**System action:** Processing stops.

**User response:** Specify a value for the DB2 level.

---

**CCQP003E** The value of the *level\_name* DB2 level is not valid.

**Explanation:** The specified DB2 level does not have a valid name.

**System action:** Processing stops.

**User response:** Specify a valid value for the DB2 level.

---

**CCQP004S** The *parameter\_name* parameter does not exist in the CCQ\$DB2 DB2 parameter metadata member.

**Explanation:** The CCQ\$DB2 DB2 parameter metadata member does not contain the specified parameter.

**System action:** Processing stops.

**User response:** See “Gathering diagnostic information” on page 760. Contact IBM Software Support.

---

**CCQP005E** The value of the *subsystem\_ID* DB2 SSID is missing.

**Explanation:** The specified DB2 SSID is not defined.

**System action:** Processing stops.

**User response:** Specify a valid value for the DB2 SSID.

---

**CCQP006E** The value of the *group\_attach\_name* DB2 group attach name is missing.

**Explanation:** The specified DB2 group attach name is not defined.

**System action:** Processing stops.

**User response:** Specify a valid DB2 group attach name.

---

**CCQQ000E** Specify a valid metadata library. Each qualifier of the library must start with an alphabetic character and must be 1-8 alphanumeric characters. The library name must be 1-44 characters.

**Explanation:** The metadata library was not specified in the correct format. The high-level qualifier must contain alphanumeric characters, and the first character cannot be numeric. The name cannot contain wildcard characters, such as asterisks (\*) and percent signs (%).

**System action:** Tools Customizer prompts for the correct library name.

**User response:** Specify a library in the correct format. If the message was issued on the Specify the Metadata Library (CCQPHLQ) panel, specify the product metadata library. The name of this library is *hlq.SHAADENU*.

Do not specify the Tools Customizer metadata library, which is *hlq.SCCQDENU*.

---

**CCQQ001E** The *data\_set\_name* data set name that was specified for the metadata library was not found.

**Explanation:** The data set does not exist, or the data set name was written in the incorrect format. The high-level qualifier must contain alphanumeric characters, and the first character cannot be numeric. The name cannot contain wildcard characters, such as asterisks (\*) and percent signs (%).

**System action:** Tools Customizer prompts for the correct data set name.

**User response:** Specify a data set name in the correct format.

---

**CCQQ002E** The data set name that was specified for the *library\_name* metadata library cannot be opened.

**Explanation:** Tools Customizer could not open the data set.

**System action:** Tools Customizer prompts for an available data set.

**User response:** Ensure that the specified data set is available for Tools Customizer to open it.

---

**CCQQ003E** The *data\_set\_name* data set name that was specified for the metadata sample library is not valid. The data set must be in the following format:  
**HLQ.SxxxSAMP.**

**Explanation:** The specified data set name was not specified in the correct format.

**System action:** None.

**User response:** Specify the data set name in the following format: HLQ.SxxxSAMP, where xxx is the three-character prefix for the product.

---

**CCQQ004E** The *data\_set\_name* data set is being used by another user. Try again when the data set is not being used.

**Explanation:** Another user is using the specified data set.

**System action:** None.

**User response:** Ensure that the specified data set is not being used.

---

**CCQQ009E** The *data\_set\_name* data set name that was specified for the metadata library is not valid because the data set is empty.

**Explanation:** The specified data set is empty.

**System action:** Tools Customizer prompts for an available data set.

**User response:** Ensure that the specified data set is available for Tools Customizer to open it.

---

**CCQQ011E** The *library\_name* metadata library for the component that is part of the *library\_name* pack was not found in the catalog. The name of the pack is *pack\_name*, and the name of the component is *component\_name*.

**Explanation:** The specified metadata library is not in the catalog.

**System action:** None.

**User response:** Specify another metadata library.

---

**CCQQ012E** The *library\_name* metadata library for the component that is part of the *library\_name* pack cannot be opened.

**Explanation:** The specified metadata library cannot be opened.

**System action:** None.

**User response:** Ensure that the name of the library is specified correctly.

---

**CCQS000I** Tools Customizer is being invoked for the first time or the previous ISPF session ended before Tools Customizer was exited. In both cases, the fields on this panel are populated with default values. Review these default values or specify new values to be used to customize products or packs.

**Explanation:** When you customize a stand-alone product or a solution pack for the first time, or when an ISPF session unexpectedly ends before the ISPF profile is saved, you must specify or review your Tools Customizer user settings.

**System action:** Processing stops.

**User response:** Review and accept the default settings, or specify new settings.

---

**CCQS001E** The following command is not valid:  
*command\_name*.

**Explanation:** The specified command is not a valid command on the panel.

**System action:** Processing stops.

**User response:** Specify a valid command.

---

---

**CCQS002W** The *data\_set\_name* Discover data set could not be found.

**Explanation:** Tools Customizer could not find the specified data set.

**System action:** The data set will be allocated, and processing continues.

**User response:** Ensure that the data set name is specified correctly because the data set will be allocated with this name after the values are saved.

---

**CCQS003W** The *data\_set\_name* Discover data set was not found so it was created.

**Explanation:** Tools Customizer could not find the specified data set.

**System action:** Processing continues.

**User response:** Ensure that the data set name is specified correctly.

---

**CCQS004I** The settings were saved.

**Explanation:** The settings that you changed were saved.

**System action:** Processing continues.

**User response:** No action is required.

---

**CCQS006W** The length of a qualifier for the *data\_set\_name* customization library data set exceeds 26 characters.

**Explanation:** The qualifier for the customization library data set is too long. The qualifier cannot exceed 26 characters.

**System action:** Processing continues.

**User response:** Specify a qualifier that is 26 characters or less.

---

**CCQS007E** The discover data set *data\_set\_name* could not be opened with the *option-type* option.

**Explanation:** The specified option could not open the Discover data set.

**System action:** None.

**User response:** Specify a data set to which you have WRITE access.

---

**CCQS008E** The Discover data set *data\_set\_name* exists on a different volume.

**Explanation:** The specified Discover data set must exist on the same volume as where it was created.

**System action:** Processing continues.

**User response:** Specify a different Discover data set name.

---

**CCQS010E** The customization library qualifier is not valid.

**Explanation:** The customization library qualifier that was specified is not valid.

**System action:** None.

**User response:** Specify a valid qualifier for the customization library.

---

**CCQS011E** The group attach option is not valid.

**Explanation:** The group attach option that was specified is not valid.

**System action:** None.

**User response:** Specify a valid option for the group attach option.

---

**CCQS012E** The Tools Customizer metadata library is not valid.

**Explanation:** The metadata library that was specified is not a valid data set.

**System action:** None.

**User response:** Specify a valid data set for the metadata library.

---

**CCQS013E** The Discover data set is not valid.

**Explanation:** The Discover data set that was specified is not a valid data set.

**System action:** None.

**User response:** Specify a valid Discover data set.

---

**CCQS014E** The data store data set is not valid.

**Explanation:** The data set that was specified is not a valid data set.

**System action:** None.

**User response:** Specify a valid data store data set.

---

**CCQS015E** Tools Customizer is already running.

**Explanation:** A session of Tools Customizer is already running in your environment. Only one Tools Customizer session is allowed.

**System action:** None.

**User response:** The trace data set is being used. Free the trace data set, and start Tools Customizer again.

---

**CCQS018E** Information on the first line of the job card exceeds 57 characters.

**Explanation:** The first line of the job card can contain only 57 characters. This character limit includes a continuation character.

**System action:** Tools Customizer clears the first line of the job card.

**User response:** Specify information that does not exceed 57 characters on the first line of the job card.

---

**CCQS019E** The required trace data set, *data\_set\_name*, is currently not accessible.

**Explanation:** The trace data set must be accessible.

**System action:** Processing stops.

**User response:** Ensure that the trace data set is accessible.

---

**CCQS020E** An error occurred while the customization library data set was being created. ALTER authority on the high-level qualifier for the customization library data set is required.

**Explanation:** To create the customization library data set, ALTER authority on the specified high-level qualifier must be granted.

**System action:** None.

**User response:** Ensure that ALTER authority for the specified customization library data set is granted.

---

**CCQS021E** The value *value\_name* in the field that contains the cursor position is not valid.

**Explanation:** The specified value is not valid.

**System action:** None.

**User response:** Specify a valid value.

---

**CCQS022E** An error occurred while the customization library data set was being opened. UPDATE authority on the high-level qualifier for the customization library data set is required.

**Explanation:** To open the customization library data set, UPDATE authority on the specified high-level qualifier must be granted.

**System action:** None.

**User response:** Ensure that UPDATE authority for the specified customization library data set is granted.

---

**CCQS023E** An error occurred while the customization library data set was being opened. UPDATE authority on the high-level qualifier for the customization library data set is required.

**Explanation:** To open the customization library data set, UPDATE authority on the specified high-level qualifier must be granted.

**System action:** None.

**User response:** Ensure that UPDATE authority for the specified customization library data set is granted, or specify a different high-level qualifier for the customization library data set on the Tools Customizer Settings panel.

---

**CCQS024E** An error occurred while the customization library data set was being created. ALTER authority on the high-level qualifier for the customization library data set is required.

**Explanation:** To create the customization library data set, ALTER authority on the specified high-level qualifier must be granted.

**System action:** None.

**User response:** Ensure that ALTER authority for the specified customization library data set is granted, or specify a different high-level qualifier for the customization library data set on the Tools Customizer Settings panel.

---

**CCQS025I** The display options were saved.

**System action:** None.

**User response:** No action is required.

---

**CCQS026E** The customization library data set *data\_set\_name* could not be opened because the requester does not have UPDATE authority on this data set.

**Explanation:** Users must have UPDATE authority to open the customization library data set. Users must have UPDATE authority to open the customization library data set.

**System action:** None.

**User response:** Ensure that UPDATE authority for the specified customization library data set is granted or specify a different high-level qualifier for the customization library data set on the Tools Customizer Settings panel.

---

---

**CCQS027E** The customization library data set *data\_set\_name* could not be created because the requester does not have ALTER authority on this data set.

**Explanation:** To create the customization library data set, ALTER authority on the data set must be granted.

**System action:** Processing stops.

**User response:** Ensure that ALTER authority for the specific customization library data set is granted, or specify a different high-level qualifier for the customization library data set on the Tools Customizer Settings panel.

---

**CCQS029E** The customization library data set is not valid. Enter a valid data set name or use the Tools Customizer default: *data\_set\_name*.

**Explanation:** The specified data set is invalid.

**System action:** Processing stops.

**User response:** Specify a valid data set name.

---

**CCQS030E** The following command is not a valid CREATE statement: *command\_statement*.

**Explanation:** The specified CREATE command statement is invalid because it contains blanks or alphabetic characters.

**System action:** Processing stops.

**User response:** Specify a valid CREATE command statement. The correct syntax is CREATE *nn*, where *nn* is 1 - 99.

---

**CCQS031E** The following command is not a valid CREATE statement: *command\_statement*. The number that can be specified with the CREATE command is 1 - 99.

**Explanation:** The specified CREATE command statement is invalid because it contains either 0 or a number greater than 99.

**System action:** Processing stops.

**User response:** Specify a valid CREATE command statement. The correct syntax is CREATE *nn*, where *nn* is 1 - 99.

---

**CCQS033E** A user profile cannot be copied into the same user profile

**Explanation:** The specified data set cannot be copied into user's own user profile.

**System action:** Processing stops.

**User response:** Enter a different data set name.

---

**CCQS034E** The shared user profile data set *data\_set\_name* could not be created because the requester does not have UPDATE authority on this data set or because the data set already exists in another volume serial.

**Explanation:** To create a shared user profile data set, the requester must have update authority on the data set, and the specified data set name must be unique.

**System action:** Processing stops.

**User response:** Ensure that the requester has UPDATE authority on the data set and ensure that the data set name is unique.

---

**CCQS035E** The specified data set already has a user profile. Specify a different data set, or press Enter again to replace the existing user profile.

**Explanation:** Pressing Enter overwrites the previous user profile for the specified data set with user's own user profile.

**System action:** Processing stops.

**User response:** Specify a different data set name.

---

**CCQS036E** The customization library *data\_set\_name* already exists in *volume* and cannot be created in a different volume. Enter a different customization library name.

**Explanation:** The same data set name cannot exist in a different volume.

**System action:** Processing stops.

**User response:** Specify a different data set name.

---

**CCQS037E** The data set name was either not specified or invalid.

**Explanation:** The data set name specified does not follow the IBM data set name convention.

**System action:** Processing stops.

**User response:** Specify a valid data set name.

---

**CCQS038E** The specified data set cannot be used.

**Explanation:** The specified data sets contain information that supports Tools Customizer, but this data set cannot be used.

**System action:** Processing stops.

**User response:** Specify a different data set.

---

---

**CCQS039E** The specified data set has an invalid record format.

**Explanation:** The specified data set should be saved as a different record format. For example, the record format should be FB (Formatted Block) but it is set to VB (Variable Block).

**System action:** Processing stops.

**User response:** Specify a valid record format.

---

**CCQT000I** The product configuration ID *copied\_configuration\_ID* was successfully copied from *configuration\_ID*.

**Explanation:** The specified configuration ID was copied.

**System action:** None.

**User response:** No action is required.

---

**CCQT001E** The *command\_name* line command was specified more than once, which is not allowed.

**Explanation:** The specified line command cannot be specified more than one time.

**System action:** Processing stops.

**User response:** Specify the line command only once.

---

**CCQT002E** The *configuration\_ID* configuration ID already exists. Specify a different configuration ID.

**Explanation:** The specified configuration ID exists.

**System action:** Processing stops.

**User response:** Ensure that the specified configuration ID is unique.

---

**CCQT003I** The product configuration ID *configuration\_ID* was created.

**Explanation:** The specified configuration ID was created.

**System action:** None.

**User response:** No action is required.

---

**CCQT004I** The product configuration ID *configuration\_ID* was removed.

**Explanation:** The specified configuration ID was removed.

**System action:** None.

**User response:** No action is required.

---



---

**CCQT005E** The product configuration ID *configuration\_ID* is not valid. The product configuration ID cannot contain a colon (:).

**Explanation:** The specified configuration ID contains a colon (:), but a colon is not valid.

**System action:** Processing stops.

**User response:** Specify a configuration ID that does not contain a colon.

---

**CCQT006E** The *configuration\_ID* configuration ID exists. Specify a different configuration ID.

**Explanation:** The specified configuration ID exists.

**System action:** Processing stops.

**User response:** Specify another configuration ID.

---

**CCQT007E** The *configuration\_ID* configuration ID exists but was removed from the list of configurations. To use this configuration ID, you must restore it.

**Explanation:** The specified configuration ID exists but was removed from the list of available configuration.

**System action:** Processing stops.

**User response:** Specify another configuration ID. To restore the specified configuration ID, issue the CREATE command, and specify the same configuration ID again.

---

**CCQT008E** The *configuration\_ID* configuration ID exceeds *maximum\_number* characters.

**Explanation:** The specified configuration ID contains too many characters.

**System action:** Processing stops.

**User response:** Specify another configuration ID that does not exceed the maximum number of characters that was set by DB2 Automation Tool.

---

**CCQT010I** Create request for *configuration\_ID* configuration was cancelled by user.

**Explanation:** The request to create the specified configuration was canceled.

**System action:** Processing stops.

**User response:** No action is required.

---

---

**CCQT011I**    **The *configuration\_ID* configuration was not copied.**

**Explanation:** The specified configuration was not copied.

**System action:** Processing stops.

**User response:** No action is required.

---

**CCQT012I**    **The *configuration\_ID* configuration was not removed.**

**Explanation:** The specified configuration was not removed.

**System action:** Processing stops.

**User response:** No action is required.

---

**CCQT013I**    **None of the configurations were copied or removed. All of the previously selected configurations are deselected.**

**Explanation:** The selected configurations were not copied or removed, and they are deselected.

**System action:** Processing stops.

**User response:** No action is required.

---

**CCQT014E**    **Specify Y or N and press Enter to continue, or press End to cancel.**

**Explanation:** A function requires input.

**System action:** Processing stops.

**User response:** To continue, specify Y or N and press Enter. Otherwise, press End to cancel.

---

**CCQT015E**    **The *command\_name* command is not allowed during the process of "Select" configuration line command.**

**Explanation:** The specified command is not allowed while the line command for selecting configurations is processing.

**System action:** Processing stops.

**User response:** Remove the specified line command.

---

**CCQT016I**    **The *configuration\_ID* configuration was not created**

**Explanation:** The specified configuration was not created.

**System action:** Processing stops.

**User response:** No action is required.

---



---

**CCQT017I**    **The *configuration\_ID* configuration was not copied.**

**Explanation:** The specified configuration was not copied.

**System action:** Processing stops.

**User response:** No action is required.

---

**CCQT018E**    **Specify Y or N, and press Enter.**

**Explanation:** A function requires input.

**System action:** Processing stops.

**User response:** To continue, specify Y or N, and press Enter.

---

**CCQT019I**    **The select *configuration\_ID* configuration process ended.**

**Explanation:** The select process for the specified configuration is finished.

**System action:** Processing stops.

**User response:** No action is required.

---

**CCQT020E**    **The *configuration\_ID* configuration was not created because the data store was not accessible.**

**Explanation:** The specified configuration was not created because the data store could not be accessed.

**System action:** Processing stops.

**User response:** Ensure that the data store is accessible and create the configuration again.

---

**CCQT021E**    **The *configuration\_ID* configuration was not copied because the data store was not accessible.**

**Explanation:** The specified configuration was not copied because the data store could not be accessed.

**System action:** Processing stops.

**User response:** Ensure that the data store is accessible and copy the configuration again.

---

**CCQT025I**    **The *configuration\_ID* configuration was not updated.**

**Explanation:** The specified configuration was not updated because the edit process was canceled.

**System action:** Processing stops.

**User response:** No action is required.

---

---

**CCQT027I** The product configuration ID has been updated from *edit\_from\_id* to *edit\_to\_id*.

**System action:** Processing continues.

**User response:** No action is required.

---

**CCQT028I** The product configuration ID has been updated from *edit\_from\_id* to *edit\_to\_id*, and the description has been updated from *edit\_from\_des* to *edit\_to\_des*.

**System action:** Processing continues.

**User response:** No action is required.

---

**CCQT029I** The product configuration description has been updated from *edit\_from\_des* to *edit\_to\_des*.

**System action:** Processing continues.

**User response:** No action is required.

---

**CCQX001S** *Product\_name* has already been customized by using values from *data\_set\_name* data store data set. Switch to the specified data store data set to continue customizing this product.

**Explanation:** The specified product was customized by using values from the specified data store data set.

**System action:** Processing stops.

**User response:** Use the specified data store data set to continue customizing the product.

---

**CCQX002S** *component\_name* has already been customized by using values from *data\_set\_name* data store data set. Switch to the specified data store data set to continue customizing this component.

**Explanation:** The specified component was customized by using values from the specified data store data set.

**System action:** Processing stops.

**User response:** Use the specified data store data set to continue customizing the component.

---

**CCQX011I** *Product\_name* was not found.

**Explanation:** The specified product was not found.

**System action:** Processing stops.

**User response:** Specify another product.

---

## ISPF interface messages

The following messages may appear when using the ISPF interface for DB2 Automation Tool.

---

**FECA900E** Invalid Column Function value. Valid values: 1, 2, 3, 4

**Explanation:** An invalid character was entered in the Column Function field.

**User response:** Specify a valid character (1, 2, 3, or 4).

---

**FECA901E** Invalid Permanent View value. Valid values: Y, N

**Explanation:** An invalid value was entered in the Permanent View field.

**User response:** Correct the value or cancel. Valid values are Y and N.

---

**FECA902E** Invalid Reset View value. Valid values are Y, N

**Explanation:** An invalid character was entered in the Reset View field. Valid characters are Y and N.

**User response:** Specify a valid value or cancel. Valid values are:

- Y - resets all customizations.
- N - customizations are not reset.

---

**FECA903E** Invalid Stop Sorting value. Valid values: Y, N

**Explanation:** The specified stop sorting value is not valid. Valid values are:

- Y - Indicates that sorting will be stopped.
- N - Indicates that sorting will continue.

**User response:** Specify a valid value or cancel.

---

**FECA904E** Invalid command in FORM display

**Explanation:** The command you issued when viewing the FORM display was not valid.

**User response:** Valid commands for FORM display include NROW and PROW.

---

**FECA905E** FORM command not supported from CSETUP function

**Explanation:** The FORM command was issued from a CSETUP function. FORM is not supported while in a CSETUP function (CSETUP functions include CFIX, CORDER, CSIZE and CS).

**User response:** No action is required.



---

**FECA906E Invalid parameter for NROW. Must be numeric.**

**Explanation:** The parameter you specified was not numeric and is therefore invalid.

**User response:** Specify a numeric value corresponding to the number of rows to advance. The default value for NROW is 1.

---

**FECA907E Invalid parameter for PROW. Must be numeric.**

**Explanation:** The parameter you specified was not numeric and is therefore invalid.

**User response:** Specify a numeric value corresponding to the number of rows to scroll back. The default value for PROW is 1.

---

**FECA908E Invalid parameter for NROW. Too many digits.**

**Explanation:** An invalid parameter for the NROW keyword was specified. More than eight digits were specified. Parsing stops at eight digits.

**User response:** A parameter of NROW must be between 1 and the number of rows in the current report display. If no parameter is specified, 1 is assumed.

---

**FECA909E Invalid parameter for PROW. Too many digits.**

**Explanation:** Invalid parameter to PROW specified. More than eight digits were specified. Parsing stops at eight digits.

**User response:** A parameter of PROW must be between 1 and the number of rows in the current report display. If no parameter is specified, 1 is assumed.

---

**FECA910E CSETUP command not supported from FORM function**

**Explanation:** CSETUP functions are not supported while in the FORM display. CSETUP functions include CFIX, CORDER, CSIZE, CSORT, and CSETUP (CSET).

**User response:** Exit the current FORM function before issuing a CSETUP function.

---

**FECA911E Invalid ICR command. Use RIGHT command.**

**Explanation:** ICR is only valid with columns that are not their maximum size. You can see the column's current and maximum sizes by issuing CSIZE.

**User response:** RIGHT and LEFT commands can be used to see all parts of this column.

---



---

**FECA912E Invalid ICL command. Use LEFT command.**

**Explanation:** ICL is only allowed with columns that are not their maximum size. You can see the column's current and maximum sizes by issuing CSIZE.

**User response:** RIGHT and LEFT commands can be used to see all parts of this column.

---

**FECA913E Format mix data element not updated.**

**Explanation:** Format MIX data cannot be updated when only part of the data is displayed.

**User response:** No action is required.

---

**FECA914E FORM command not supported from FORM function**

**Explanation:** FORM was issued from within a FORM display. This is not supported.

**User response:** No action is required.

---

**FECA915E FORM PF keys set; NROW = nrow  
PROW = prow**

**Explanation:** The NROW (next row) and PROW (previous row) commands are used to move the FORM display window to another row. The UP, DOWN, LEFT, and RIGHT commands move the FORM display window within the current row.

Row, as mentioned above, refers to the row from the original report display, not any reformatted FORM display row.

By default, NROW advances the FORM display to the next row. If NROW n is issued, the FORM display will advance n rows.

Similarly, PROW moves the FORM display window to the immediately prior row. PROW n moves the current FORM display window to the nth prior row.

**User response:** No action is required.

---

**FECA916E Invalid CNUM parm. Valid parms are ON, OFF, or blank.**

**Explanation:** CNUM was issued with an invalid parameter. Issuing CNUM with no parameter acts as an ON/OFF toggle. ON and OFF are the only parameters accepted. ON turns the CNUM display on. OFF turns the CNUM display off.

**User response:** Use a valid CNUM parameter (ON, OFF, or blank)

---

---

**FECA917E** Report width for print too large.

**Explanation:** The report width exceeds the maximum print width.

**User response:** The maximum report width that is currently supported is 32,760.

---

**FECA918E** *string* not found. Press PF5 to continue from top.

**Explanation:** The indicated character string was not found.

**User response:** To continue searching for the character string from the top of the dialog, press PF5.

---

**FECA920I** Chars *chars* found *n* times

**Explanation:** Indicates the number of times the specified character was found.

**User response:** No action is required.

---

**FECA921I** Chars *chars* not found on any lines

**Explanation:** Indicates that the specified characters were not found on any of the lines.

**User response:** No action is required.

---

**FECA922I** Search for CHARS *chars* was successful.

**Explanation:** Indicates the search for the indicated characters produced matches.

**User response:** No action is required.

---

**FECA923E** Check for misspelled keywords or embedded blanks in search string.

**Explanation:** Indicates there may be invalid keywords or blanks embedded within the search string.

**User response:** Verify and correct the search string to remove embedded blanks or to correct keywords.

---

**FECA924E** *string* and *string* cannot both be specified for FIND command.

**Explanation:** You specified two strings for the FIND command.

**User response:** You must specify one FIND string at a time.

---

**FECA925E** Put quotes (") around the string of characters to be displayed.

**Explanation:** The string of characters is not enclosed in quotes.

**User response:** Place the string of characters in side quotes.

---

**FECA926E** Maximum parameter length is 80

**Explanation:** The parameter you specified is too long.

**User response:** Specify a parameter that is 80 characters or less.

---

**FECA927E** Invalid COLS parm. Valid parms are ON, OFF, or blank

**Explanation:** COLS was issued with an invalid parameter. Issuing COLS with no parameters acts as an ON/OFF toggle. ON and OFF are the only parameters accepted.

**User response:** Enter COLS ON or COLS OFF. COLS ON turns the COLS display on; COLS OFF turns the COLS display off.

---

**FECA930I** No columns eligible for resizing.

**Explanation:** You cannot resize any columns.

**User response:** No action is required.

---

**FECA931I** No columns eligible for sorting

**Explanation:** You cannot sort any columns.

**User response:** No action is required.

---

**FECA932I** TBMOD failed. RC=*rc*

**Explanation:** An unexpected return code occurred during TBMOD.

**User response:** Suggested diagnostics:

- See z/OS ISPF Services Guide under TBMOD.
- Review ISPTLIB allocation.
- Review security-controlled access to ISPTLIB data sets.

---

**FECA933E** Invalid column name: missing quote

**Explanation:** SORT or CSORT was issued with a parameter that had an initial quotation character, but not a second closing quotation character.

**User response:** Either clear the command line and select the desired sort column(s) from the displayed selection list or correct the command on the command line.

---

**FECA934E** More than 9 columns specified

**Explanation:** SORT or CSORT was issued with too many columns specified as sort columns. A maximum of 9 sort columns can be specified.

**User response:** Either clear the command line and select the desired sort column(s) from the displayed selection list or correct the command on the command line.

---

**FECA935E Invalid column name**

**Explanation:** SORT or CSORT was issued with a column parameter that does not match any column name. A list of the correct column names is seen in the SORT selection panel.

**User response:** Either clear the command line and select the desired sort column(s) from the displayed selection list or correct the command on the command line.

---

**FECA936E Invalid row selection character**

**Explanation:** An invalid selection character was entered in the SSID selection list. The only valid selection character is S. Alternatively, place the cursor on the desired line and press ENTER (without a line selection character).

**User response:** Clear the invalid character.

---

**FECA937E Only one row selection allowed**

**Explanation:** More than one SSID was selected from the SSID selection list. A maximum of one SSID can be selected.

**User response:** Clear all, or all but one row selection character.

---

**FECA938E Invalid command**

**Explanation:** An invalid command was entered on the SSID selection list panel.

**User response:** Clear the command.

---

**FECA939E Read of control file failed**

**Explanation:** Reading the control data set failed.

**User response:** Check the product setup (accessed from the main menu) to view the control data set currently in use. Verify that the data set name is correct.

---

**FECA940E Invalid DB2 Control data set**

**Explanation:** Allocation of the control data set failed.

**User response:** Check the product setup (accessed from the main menu) to view the control data set currently in use. Verify that the data set name is correct.

---

**FECA942E IFCARC1=return code IFCARC2=reason code**

**Explanation:** The DB2 command issued failed. The return code and reason code received from DB2 are in the error message. If there is any command output, it is displayed.

**User response:** Check the Messages and Codes documentation for your version of DB2 for information on the return and reason codes. Examine the command for possible mistyping, invalid syntax, or other errors.

---

**FECA943E Invalid command**

**Explanation:** An invalid command was issued. It is not supported on the current panel.

**User response:** Check the command for typographical error. Clear or correct the command.

---

**FECA944I Empty History**

**Explanation:** This is an informational message. The history database is empty. If commands were previously entered, then either HCLEAR was issued or the size of the history database was set to 0. If ISPTABL and ISPTLIB are not allocated, history is not remembered across sessions, and each new session has an empty history database.

**User response:** No action is required. To verify allocation of ISPTLIB and ISPTABL, ISRDDN and ISPLIBD can be useful; refer to the ISPF manuals for information on ISRDDN and ISPLIBD.

---

**FECA945E Invalid history size limit**

**Explanation:** An invalid character was found in the History Size Limit field. Only numeric values from 0-999 are valid.

**User response:** Enter a valid value in the History Size Limit field.

---

**FECA946I No DB2 command history output library allocated**

**Explanation:** This is an informational message. ISPTABL is not allocated. The history database cannot be saved across sessions when ISPTABL is not allocated.

**User response:** No action is required. If saving history across sessions is desired, see product installation instructions for allocating ISPTABL (and ISPTLIB).

---

**FECA947I No DB2 command history input library allocated**

**Explanation:** This is an informational message. ISPTLIB is not allocated. If a history database is saved across sessions (using ISPTABL DD), the ISPTLIB DD is used to initialize a new DB2 Command Processor session. If ISPTLIB is not allocated, this cannot occur and the history starts out empty.

**User response:** No action is required. If saving history across sessions is desired, see product installation instructions for allocating ISPTLIB (and ISPTABL).

---

**FECA948E**    **TBOPEN failed. RC=return code**

**Explanation:** TBOPEN for the history table failed. *return code* is the return code from the TBOPEN service.

**User response:** Check ISPTLIB allocation. Verify the data sets in ISPTLIB. Verify it is a valid PDS. See ISPF manuals for ISPTLIB requirements.

---

**FECA949E**    **Invalid command**

**Explanation:** An invalid command was entered.

**User response:** Check for typographical error. Clear or correct the command. Issue **HELP** for the DB2 Command Processor tutorial to see what commands are valid.

**KEYS** might also be a useful command, since some PF keys are set to valid DB2 Command Processor commands.

---

**FECA950E**    **No SSIDs in control file**

**Explanation:** There are no valid SSIDs found in the DB2 control file specified.

**User response:** A control file with no SSIDs is not useful. It is probably not the control file desired. See product installation instructions for information about creating and building a control file.

---

**FECA951I**    **History cleared**

**Explanation:** History was cleared either by issuing the HCLEAR command or by setting the History Size Limit to 0.

**User response:** No action is required.

---

**FECA952E**    **Unable to list data sharing members.  
Display failed**

**Explanation:** Command failed attempting to get a list of data sharing members. The reason code and return code are listed in the message.

**User response:** Look up the reason code and return code in the DB2 Messages and Codes manual for your version of DB2.

---

**FECA953I**    **Zero data sharing members found**

**Explanation:** Zero data sharing members found. The current SSID is not a member of a data sharing group.

**User response:** The Datasharing Member field should be left blank.

---

**FECA954E**    **Invalid command**

**Explanation:** An invalid command was issued from the datasharing members list/selection panel.

**User response:** Clear the command.

---

**FECA955I**    **No member selected**

**Explanation:** You exited the datasharing member selection panel without selecting a datasharing member.

**User response:** No action is required.

---

**FECA956E**    **Invalid row selection character**

**Explanation:** An invalid selection character was entered in the History output display. A command listed in the History display can be selected for execution either by selecting it with an "S" selection character, or by placing the cursor anywhere on a line within the command and pressing Enter.

When selecting by cursor placement, the cursor can be on the line selection input line, which also has a command number, or on a line with some command text.

**User response:** Clear the invalid character.

---

**FECA957E**    **Only one row selection allowed**

**Explanation:** More than one command was selected from the History display. Only one History command can be selected.

**User response:** Clear all, or all but one row selection character.

---

**FECA958E**    **Invalid row selection character**

**Explanation:** An invalid selection character was entered in the displayed list of datasharing members. A datasharing member in this display can be selected by selecting it with an S selection character, or by placing the cursor anywhere on the desired row and pressing Enter.

**User response:** Clear the invalid character.

---

**FECA959E**    **Only one row selection allowed**

**Explanation:** More than one datasharing member was selected from the list of displayed datasharing members.

**User response:** Clear all, or all but one row selection character.

---

**FECA960E**    **Cannot list commands without SSID**

**Explanation:** A command was issued to select a command syntax diagram, but no SSID has been selected. Syntax diagrams cannot be displayed until an SSID has been selected.

**User response:** Select an SSID. You can generate a list of SSIDs by clearing the SSID field, or entering a ? (question mark).

---

**FECA961E Invalid row selection character**

**Explanation:** An invalid selection character was entered in the displayed list of DB2 commands. A DB2 command in this display can be selected by selecting it with an S selection character, or by placing the cursor anywhere on the desired row and pressing Enter.

**User response:** Clear the invalid character.

---

**FECA962E Only one row selection allowed**

**Explanation:** More than one DB2 command was selected from the list of displayed DB2 commands.

**User response:** Clear all, or all but one row selection character.

---

**FECA963E Invalid command**

**Explanation:** An invalid command was issued from the DB2 command list/selection panel.

**User response:** Clear the command.

---



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**FEC801E Pgm: program name Stmt: statement Type: type**

**Explanation:** This message is used to convert SQL return code information into a text message. The data from the SQLCA is called using DSNTIAR and formatted into this message.

**User response:** Refer to *DB2 UDB for z/OS: SQL Reference* (SC18-7426-03) to resolve.

---



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**FEC802E An invalid return code of code was encountered on function function. The error message text follows: text**

**Explanation:** An invalid return code was encountered for the specified function. The supporting diagnostic data are returned in the error message.

**User response:** Refer to the DB2 Messages and Codes documentation for your version of DB2 to resolve.

---



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**FEC803E The first character of the command is not a dash. Correct the syntax of the DB2 command and resubmit.**

**Explanation:** The first character of the command is not a dash. Correct syntax for a DB2 command dictates that the command be preceded by a dash.

**User response:** Precede the command with a dash ('-') and reenter.

---



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**FEC804E message\_text**

**Explanation:** An error occurred during call attach initialization.

**User response:** Refer to the message text for details. If a reason code accompanies the message, use the reason code to help you determine the appropriate corrective action. If you need assistance, contact IBM Software Support.

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**FEC901E The default load library could not be located.**

**Explanation:** The data set name entered for DB2 Tools Load Library was not found.

**User response:** Enter a valid loadlib data set name and continue.

---



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**FEC902E A DB2 subsystem ID has to be entered for processing.**

**Explanation:** There was no valid value entered for DB2 subsystem ID.

**User response:** Enter a valid DB2 subsystem name.

---



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**FEC903E The default GDG base data set name could not be located.**

**Explanation:** The data set name entered for GDG Base model was not found.

**User response:** Enter a valid model data set name and continue.

---



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**FEC904E The specified data set could not be opened for I/O.**

**Explanation:** A VSAM open error occurred while attempting to open the data set specified for the DB2 Control File.

**User response:** Verify that the VSAM data set is accessible.

---



---

**FEC905E An unexpected return code from VSAM was encountered while doing a read of the control file. RC1=rc RC2=rc**

**Explanation:** A VSAM READ error occurred while attempting to access the data set specified for the DB2 Control File. The VSAM return code is provided for diagnostic purposes.

**User response:** Refer to *DB2 UDB for z/OS Messages* (GC18-9602) and *DB2 UDB for z/OS Codes* (GC18-9603) to resolve and then continue.

---

---

**FEC906I**      **The control file record for DB2 subsystem *ssid* has been successfully updated.**

**Explanation:** The DB2 Control File record has been successfully updated based on the definitions for the specified DB2 subsystem.

**User response:** No action is required.

---

**FEC907E**      **An unexpected return code from VSAM was encountered while doing an update operation of the control file. RC1=*rc* RC2=*rc***

**Explanation:** A VSAM update error occurred while attempting to update the data set specified for the DB2 Control File. The RC1 and RC2 (VSAM return cards) are provided for diagnostic purposes.

**User response:** Refer to *DB2 UDB for z/OS Messages* (GC18-9602) and *DB2 UDB for z/OS Codes* (GC18-9603) to resolve and then continue.

---

**FEC908I**      **The control file record for DB2 subsystem *sys* has been successfully added.**

**Explanation:** The DB2 Control File record has been successfully updated based on the definitions for the specified DB2 subsystem.

**User response:** No action is required.

---

**FEC909E**      **Invalid value. Valid options are 1 and 2.**

**Explanation:** The value you specified is not valid. valid values are 1 and 2.

**User response:** Enter a valid value.

---

**FEC910E**      **An unexpected return code from VSAM was encountered while doing an add operation to the control file. RC1=*rc* RC2=*rc***

**Explanation:** A VSAM error occurred while attempting to perform an add operation to the specified DB2 Control File. The RC1 and RC2 (VSAM return codes) are provided for diagnostic purposes.

**User response:** Refer to *DB2 UDB for z/OS Messages* (GC18-9602) and *DB2 UDB for z/OS Codes* (GC18-9603) to resolve and then continue.

---

**FEC911E**      **The (F)IND command was entered but no parameters were specified.**

**Explanation:** No parameters were specified with the (F)IND command. No match can be made unless you specify a string to find.

**User response:** Enter a FIND parameter.

---



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**FEC912I**      **The requested find string was not found.**

**Explanation:** No matches were found for the string you specified with the FIND command.

**User response:** No action is required.

---

**FEC913I**      **The control file record has been successfully updated.**

**Explanation:** The control file was updated successfully.

**User response:** No action is required.

---

**FEC914E**      **An unknown column was specified using the SORT command.**

**Explanation:** The column you specified with the SORT command is not known.

**User response:** Verify that you correctly typed the name of the column or select another column.

---

**FEC915E**      **SORT is not supported for the specified column.**

**Explanation:** The column you attempted to SORT is not supported as a column on which to sort.

**User response:** Refer to the sort columns listed on the Define Sort Columns panel for a list of valid columns on which the sort can be based and redefine the sort.

---

**FEC916E**      **Sort column not entered. Column name or number must be specified.**

**Explanation:** A column was not specified with the SORT. A column name or number must be specified for the SORT command.

**User response:** Ensure that if the column name is used, that all spaces in the name are replaced with an underscore.

---

**FEC917E**      **Put an ending quote at the end of the string.**

**Explanation:** You must place a quote at the end of the string.

**User response:** Place a quote at the end of the string.

---

**FEC918**      **CHARS *string* not found. Press PF5 to continue from top.**

**Explanation:** The indicated character string was not found.

**User response:** To continue searching for the character string from the top of the dialog, press PF5.

---

---

**FEC919**      *chars foundstr not found. Press PF5 to continue from bottom.*

**Explanation:** The indicated character string was not found.

**User response:** To continue searching for the character string from the bottom of the dialog, press PF5.

---

**FEC920E**      **File tailoring open returned a file tailoring already in progress condition**

**Explanation:** An attempt to perform file tailoring for utility customization failed. There was a file tailoring session already in progress. File tailoring sessions cannot be performed concurrently.

**User response:** No action is required.

---

**FEC921E**      **File tailoring open returned the output file already in use condition -- ENQ failed**

**Explanation:** An attempt to open the DB2 Control File failed with an ENQ error. The data set is already open for output.

**User response:** Verify that you are the only user attempting to access this file.

---

**FEC922E**      **File tailoring open returned the skeletal file or output file not allocated condition**

**Explanation:** An attempt to perform file tailoring failed because either the tailoring skeleton file or output file is not allocated.

**User response:** Verify that all required files are allocated prior to performing file tailoring.

---

**FEC923E**      **File tailoring open returned a severe error condition**

**Explanation:** An attempt to perform file tailoring failed because a severe error condition was encountered on open.

**User response:** Verify that all required files are allocated and accessible prior to performing file tailoring.

---

**FEC924E**      **File tailoring open returned an unknown code -- severe error**

**Explanation:** An attempt to perform file tailoring failed because a severe error condition was encountered on open.

**User response:** Verify that all required files are allocated and accessible prior to performing file tailoring.

---



---

**FEC925E**      **File tailoring close returned a file not open condition -- severe error**

**Explanation:** An attempt to perform file tailoring failed because a File-Not-Open condition was encountered on close.

**User response:** Verify that all required files are allocated and accessible and that there are no other tailoring sessions running concurrently with your session.

---

**FEC926E**      **File tailoring close returned an output file in use condition**

**Explanation:** An attempt to perform file tailoring failed because an Output-File-In-Use condition was encountered on close.

**User response:** Verify that all required files are allocated and accessible and that there are no other tailoring sessions running concurrently with your session.

---

**FEC927E**      **File tailoring close returned a skeletal file or output file not allocated condition**

**Explanation:** An attempt to close file tailoring failed because either a tailoring skeleton file or output file was not allocated.

**User response:** Verify that all required files are allocated and accessible and that there are no other tailoring sessions running concurrently with your session.

---

**FEC928E**      **File tailoring close returned a severe error**

**Explanation:** An attempt to perform file tailoring failed because a severe error condition was encountered on close.

**User response:** Verify that all required files are allocated and accessible prior to performing file tailoring.

---

**FEC929E**      **File tailoring close returned an unknown code -- severe error**

**Explanation:** An attempt to perform file tailoring failed because a severe error condition was encountered on close.

**User response:** Verify that all required files are allocated and accessible prior to performing file tailoring.

---

---

**FEC930E      File tailoring close returned an output member exists in the output library and NOREPL was specified**

**Explanation:** An attempt to perform file tailoring failed because the close process could not replace the pre-existing tailored member in the output file.

**User response:** Change the output member name to a new name or ensure that the output library allows for member replacement.

---

**FEC931E      File tailoring include returned a skeleton does not exist condition**

**Explanation:** An attempt to perform file tailoring failed because the tailoring process could not locate a required tailoring skeleton.

**User response:** Assure that all required files are allocated to perform file tailoring.

---

**FEC932E      File tailoring include returned a skeleton in use -- ENQ failed condition**

**Explanation:** An attempt to access a tailoring skeleton failed with an ENQ error (member-in-use).

**User response:** Verify that all required tailoring files are allocated and that there are no other tailoring sessions running concurrently.

---

**FEC933E      File tailoring include returned a data truncation or skeleton library or output file not allocated condition**

**Explanation:** An attempt to perform file tailoring failed because either the tailoring skeleton file or output file is not allocated.

**User response:** Verify that all required files are allocated prior to performing file tailoring.

---

**FEC934E      File tailoring include returned a severe error condition**

**Explanation:** An attempt to perform file tailoring failed because a severe error condition was encountered on an include operation.

**User response:** Verify that all required files are allocated and accessible prior to performing file tailoring.

---

**FEC935E      File tailoring include returned an unknown condition -- severe error**

**Explanation:** An attempt to perform file tailoring failed because a severe error condition was encountered on an include operation.

**User response:** Verify that all required files are

allocated and accessible prior to performing file tailoring.

---

**FEC936E      Allocation error - The ISPFDD is already allocated and cannot be deallocated - Process not completed**

**Explanation:** The ISPFDD allocation failed. The DD is already allocated and cannot be deallocated for this TSO session. The process did not complete successfully.

**User response:** No action is required.

---

**FEC937E      Allocation Error - An error was encountered allocating the ISPWRK1 or ISPWRK2 DD - Process not completed**

**Explanation:** The ISPWRK1 or ISPWRK2 DD allocation failed.

**User response:** Verify TSO session parameters are set correctly for your site prior to allocation of these DD statements. The process did not complete successfully.

---

**FEC938E      Field Required - The data set entered is a partitioned data set and the member name is required**

**Explanation:** A required field was not specified. The data set entered is a PDS (partitioned data set) and a member in this PDS must be referenced.

**User response:** Enter a valid member name for PDS access.

---

**FEC939E      The only valid values are "T" for tracks and "C" for cylinders**

**Explanation:** You specified an invalid value. The only valid values are "T" for tracks and "C" for cylinders

**User response:** Specify a valid value.

---

**FEC940E      The specified data set could not be found in the MVS catalog.**

**Explanation:** The specified data set could not be found in the MVS catalog.

**User response:** Ensure that the data set name is correct.

---

**FEC941E      The RFINDD key works only after a FIND character string is entered.**

**Explanation:** A repeat FIND (RFINDD) was issued before a FIND command was issued. You must issue FIND before RFINDD will work.

**User response:** Issue FIND prior to attempting to issue RFINDD.



---

**FEC942E Invalid Sort number. Enter a valid digit.**

**Explanation:** An invalid character was entered in the Srt column. Valid characters are the digits 1, 2, 3,... up to 9, or the number of sortable columns, whichever is less.

**User response:** Specify a valid sort number.

---

**FEC943E Same Sort number entered twice**

**Explanation:** The same sort number was entered for more than one column. The screen is positioned to the second instance. Sort sequence numbers must be unique.

**User response:** Specify a valid sort number.

---

**FEC944E Sort sequence skips a number.**

**Explanation:** The selected sorting sequence skips a number. This is not allowed. The screen is positioned to a selection whose number is lacking an immediate predecessor. The sort sequence is completely rebuilt from the Cmd (and Dir) information. Any previously existing sort sequence is entirely replaced. It is not added to or extended by the new entries.

**User response:** Please specify a valid sort sequence that does not skip a number.

---

**FEC945E Invalid Dir entered. Must be A or D (ascending/descending).**

**Explanation:** The selected sorting direction is invalid. Only A (ascending) or D (descending) can be specified. A blank indicates ascending (default).

**User response:** Specify a valid sorting direction.

---

**FEC946E Dir not valid without Ord.**

**Explanation:** A sorting direction was selected for a column that was not selected to be sorted. Sorting direction is only a valid choice for selected columns.

**User response:** Select a sorting direction and order.

---

**FEC947E Max Sort Columns exceeded. Sorting first 10 columns.**

**Explanation:** More columns were selected for sorting than are supported. Nine columns can be selected. Under certain circumstances the limit is less than nine, due to internal constraints. For example, sorting a date field can be implemented by three sorts of partial column fields. In that case, the column would count as three toward the maximum of nine, not one.

**User response:** Specify the appropriate allowable maximum number of sort columns.

---

---

**FEC948E Fix Columns cannot exceed screen size.**

**Explanation:** More columns were selected to be fixed than will fit on the screen.

**User response:** Remove the (F) selection character from one or more columns.

---

**FEC950E Invalid selection character. "F" and "U" are valid.**

**Explanation:** An invalid Cmd character was entered. Valid characters are F (fix) and U (unfix). Fix causes the column to move to the fixed area on the left side of the screen. Fixed columns do not scroll horizontally when LEFT or RIGHT scrolling commands are issued. Unfix moves the column out of the fixed area, and allows it to scroll horizontally when LEFT and RIGHT scroll commands are issued.

**User response:** Either remove the invalid character or enter a valid one.

---

**FEC951E Invalid entry. Must be numeric.**

**Explanation:** An invalid Cmd value was entered. Cmd values must be numeric. If the column is fixed, the number must be in the fixed range. If the column is not fixed, the number must be in the unfixed range.

**User response:** Either remove the invalid number or enter a valid one.

---

**FEC952E Invalid entry for fixed column.**

**Explanation:** An invalid Cmd value was entered for a fixed column. Valid selections for fixed column are up to the number of fixed columns.

**User response:** Either remove the invalid number or enter a valid one.

---

**FEC953E Invalid entry for unfixed column.**

**Explanation:** An invalid Cmd value was entered for an unfixed column. The number must be less than the number of columns, and greater than the number of fixed columns.

**User response:** Either remove the invalid number or enter a valid one.

---

**FEC954E Invalid value entered for column size: non-numeric data.**

**Explanation:** An invalid Cmd value was entered. This must be a number between the values in the MIN and MAX fields.

**User response:** Either remove the invalid number or enter a valid one.

---

---

**FEC955E Invalid value entered for column size: out of range.**

**Explanation:** An invalid Cmd value was entered. This must be a number between the values in the MIN and MAX fields. MIN is the smallest acceptable value. MAX is the largest acceptable value.

**User response:** Either remove the invalid number or enter a valid one.

---

**FEC956E Total fixed column sizes cannot exceed screen size.**

**Explanation:** The Cmd values entered would result in the sum of the fixed column sizes to exceed the screen size. This is not allowed. The fixed columns are those with an or in the Fix column. Fixed columns are always displayed, and so must fit on the screen.

**User response:** Either change the fixed column sizes so that the total is less than the screen size or cancel to return to the previous panel.

---

**FEC957E New configuration makes this column size invalid.**

**Explanation:** The requested column sizes make at least one unfixed column unable to be displayed. The cursor is positioned on the value where the problem was detected. The unfixed area on the screen would be too small to show the column where the cursor is placed.

**User response:** Do one of the following:

- Make the column where the cursor is smaller so that it can fit in the available unfixed area.
- Set it to its maximum size (width).
- Make the fixed area smaller.
- Cancel to return to the previous panel.

---

**FEC958E Column does not fit in unfixed area in new configuration.**

**Explanation:** The requested column sizes would make the unfixed column where the cursor is positioned undisplayable. The unfixed area on the screen would be too small to show this column.

**User response:** Shrink the fixed area by either unfixing columns or making fixed columns smaller. The column where the cursor is cannot be partially displayed (min-max) so its size cannot be changed.

---

**FEC959E New configuration makes this column size invalid.**

**Explanation:** Fixing the requested columns would shrink the available area for unfixed columns unacceptably. One or more unfixed columns would not fit in the remaining unfixed area of the screen. The cursor is placed on a row that represents one such

column. Therefore, the requested configuration is not allowed.

**User response:** To change column sizes, cancel out of the CFIX function and invoke the CSIZE function. Either cancel to exit CFIX with no change or blank out one or more FIX selections until an allowable fixed size is reached.

---

**FEC960E Invalid fixed selections. Would not leave enough space for this column.**

**Explanation:** Fixing the columns requested would make at least one unfixed column undisplayable. The cursor is positioned on the row that represents one such unfixed column, whose minimum displayable size would not fit in the available screen area.

**User response:** Shrink the requested fixed area by either:

- Requesting fewer fixed columns.
- Unfixing one or more fixed columns.
- Cancel out of CFIX and invoke CSIZE in order to shrink one or more fixed columns enough so that all unfixed columns have the space they require.

---

**FEC962E Duplicate Cmd values entered.**

**Explanation:** Duplicate Cmd numbers were entered. The cursor points to the second instance of a Cmd value.

**User response:** Either change this value, clear it, or exit the CORDER function.

---

**FEC963E Cursor not on data element.**

**Explanation:** CEXPAND was issued and the cursor was not located on a valid (expandable) area. CEXPAND requires the cursor to be positioned on a data element (non-heading area) in the dynamic area of the display. Or CEXPAND can be issued specifying the row and column of the data element to expand.

**User response:** Ensure the cursor is located on a valid (expandable) area prior to issuing the CEXPAND command.

---

**FEC964E Invalid scroll amount for CRIGHT. Must be numeric.**

**Explanation:** Invalid (non-numeric) parameter to CRIGHT specified. CRIGHT accepts one numeric parameter: the number of columns to scroll right. If no parameter is entered a value of 1 is assumed.

**User response:** Specify a numeric parameter to the CRIGHT command.

---

**FEC965E Invalid scroll amount for CLEFT. Must be numeric.**

**Explanation:** Invalid (non-numeric) parameter to CLEFT specified. CLEFT accepts one numeric parameter: the number of columns to scroll left. If no parameter is entered, a value of 1 is assumed.

**User response:** Specify a numeric parameter to the CLEFT command.

---

**FEC966E Invalid parameter to ICRIGHT; must be numeric.**

**Explanation:** A parameter to ICRIGHT is not numeric. ICRIGHT (inner column scroll right) accepts either zero, one, or two numeric parameters. ICRIGHT can be abbreviated as ICR.

**User response:** Specify a valid, numeric parameter for ICRIGHT.

---

**FEC967E Parameter to ICRIGHT too long. Invalid.**

**Explanation:** A parameter to ICRIGHT is too long. ICRIGHT does not process more than eight digits in a parameter, which is more than double any reasonable value.

**User response:** Specify a valid parameter for ICRIGHT.

---

**FEC968E Parameter to ICRIGHT is zero. Invalid.**

**Explanation:** A parameter to ICRIGHT has the value zero. This is not supported.

**User response:** Specify non-zero parameters to ICRIGHT.

---

**FEC969E ICRIGHT: unspecified column.**

**Explanation:** ICRIGHT was invoked with no parameters and the cursor is not positioned in the dynamic panel area.

**User response:** Either put the cursor in the column that should be scrolled or specify the column by number. Column numbers can refer to visible columns (in the current display window) only. Number starts at 1, on the left side.

---

**FEC971E ICRIGHT: Column number specified is too big.**

**Explanation:** A column number parameter to ICRIGHT must be between 1 and the number of columns currently on the display screen.

**User response:** To refer to a column by number you must first position the display window so that the desired column is visible.

---



---

**FEC972E Invalid parameter to ICLEFT; must be numeric.**

**Explanation:** A parameter to ICLEFT is not numeric. ICLEFT (inner column scroll left) accepts either zero, one, or two numeric parameters. ICLEFT can be abbreviated as ICL.

**User response:** Specify a valid parameter for ICLEFT.

---

**FEC973E Parameter to ICLEFT too long. Invalid.**

**Explanation:** A parameter to ICLEFT is too long. ICLEFT does not process more than eight digits in a parameter which is more than double reasonable value.

**User response:** Specify a parameter less than or equal to eight digits for ICLEFT.

---

**FEC974E Parameter to ICLEFT is zero. Invalid.**

**Explanation:** A parameter to ICLEFT has the value zero. This is not supported.

**User response:** Specify a non-zero number for ICLEFT.

---

**FEC975E ICLEFT: unspecified column.**

**Explanation:** ICLEFT was invoked with no parameters and the cursor is not positioned in the dynamic panel area.

**User response:** Either put the cursor in the column that should be scrolled or specify the column by number. Column numbers can refer to visible columns (in the current display window) only. Numbering starts at 1 on the left side.

---

**FEC976E Column selected not sortable. Sort selection list presented.**

**Explanation:** You cannot perform a SORT on the column you selected. Valid sort columns are displayed in the sort selection list.

**User response:** Sort on one of the valid columns displayed in the selection list.

---

**FEC977E ICLEFT: Column number specified is too big.**

**Explanation:** A column number parameter to ICLEFT must be between 1 and the number of columns currently on the display screen.

**User response:** To refer to a column by number, you must first position the display window so that the desired column is visible.

---

---

**FEC978E Invalid column number specified for SORT (not numeric).**

**Explanation:** Invalid column number parameter to CSORT specified (non-numeric).

**User response:** Specify a column number parameter to CSORT that is between 1 and the number of columns currently on the display screen. This can be followed by a direction value A or D (ascending/descending).

---

**FEC979E Invalid column number specified. Too many digits.**

**Explanation:** Invalid parameter to CSORT specified. More than eight digits were specified. Parsing stops at eight digits.

**User response:** Specify a column number parameter between 1 and the number of columns currently on the display screen. This can be followed by a direction value A or D (ascending/descending).

---

**FEC980E Invalid column number specified: zero.**

**Explanation:** Invalid parameter to CSORT was specified (zero).

**User response:** Specify a column number parameter to CSORT that is between 1 and the number of columns currently on the display screen. This can be followed by a direction value A or D (ascending/descending).

---

**FEC981E Invalid column number specified: out of range.**

**Explanation:** Invalid parameter to CSORT was specified (zero).

**User response:** Specify a column number parameter to CSORT that is between 1 and the number of columns currently on the display screen. This can be followed by a direction value A or D (ascending/descending)

---

**FEC982E Invalid view. View adjusted.**

**Explanation:** The current view was adjusted but not deleted. The saved view did not match the report requirements. This could be caused by the report changing or the view file getting corrupted.

**User response:** The adjusted view will be used. You can issue CSET to modify the view.

---

**FEC983E Invalid view. View deleted.**

**Explanation:** Invalid data was found in a view for this report. The view was deleted and contents ignored. This could be caused by the report changing or the view file getting corrupted.

**User response:** You can issue CSET to create a view that will match current report.

---

**FEC984E Unexpected return code from TBSTATS: rc**

**Explanation:** An unexpected failure issuing TBSTATS was received.

**User response:** Refer to *ISPF Services Guide* (SC34-4819-03) for (hex) return code descriptions. Also, review the ISPTLIB and ISPTABL allocations. For information about ISPTLIB and ISPBABL see ISPF manuals.

---

**FEC985E View Library not allocated.**

**Explanation:** A view input library has not been allocated. In order for a user to save and use report customizations that are created via the CSET command, ISPTABL and ISPTLIB must be allocated.

**User response:** Refer to *ISPF Services Guide* (SC34-4819-03) for information on ISPTLIB and ISPTABL.

---

**FEC986E TBCREATE failed. RC=rc**

**Explanation:** TBCREATE was issued to create a view. It failed with a (hex) return code as indicated in the message.

**User response:** Review ISPTLIB allocation and data set characteristics. Review security controlled access to ISPTLIB data sets. For information about return codes, refer to *ISPF Services Guide* (SC34-4819-03).

---

**FEC987E TBOPEN failed. RC=rc**

**Explanation:** TBOPEN was issued to open a view. It failed with a (hex) return code as indicated in the message.

**User response:** Review ISPTLIB allocation and data set characteristics. Review security controlled access to ISPTLIB data sets. For information about return codes, refer to *ISPF Services Guide* (SC34-4819-03).

---

**FEC988E TBGET failed. RC=rc**

**Explanation:** A TBGET produced a return code (as indicated in the message).

**User response:** Review ISPTLIB allocation and data set characteristics. Review security controlled access to ISPTLIB data sets. For information about return codes, refer to *ISPF Services Guide* (SC34-4819-03).

---

**FEC989E TBMOD failed. RC=rc**

**Explanation:** A TBMOD produced an error and return code (as indicated in the message).

**User response:** Review ISPTLIB allocation and data set characteristics. Review security controlled access to ISPTLIB data sets. For information about return codes,

refer to *ISPF Services Guide* (SC34-4819-03).

---

**FEC990E      TBCLOSE failed. RC=rc**

**Explanation:** TBCLOSE failed with a (hex) return code as indicated in the message.

**User response:** Review ISPTLIB allocation and data set characteristics. Review security controlled access to ISPTLIB data sets. For information about return codes, refer to *ISPF Services Guide* (SC34-4819-03).

---

**FEC991E      TBDELETE failed. RC=rc**

**Explanation:** TBDELETE failed with a (hex) return code as indicated in the message.

**User response:** Review ISPTLIB allocation and data set characteristics. Review security controlled access to ISPTLIB data sets. For information about return codes, refer to *ISPF Services Guide* (SC34-4819-03).

---

**FEC992E      Invalid selection.**

**Explanation:** A command that is not supported on this panel was selected.

**User response:** Issue a valid command for the panel.

---

**FEC993I      Permanent view not supported.**

**Explanation:** DB2 Automation Tool detected something that prevents views from being saved. The permanent view flag cannot be set to Y. The most likely cause of this is that either ISPTLIB or ISPTABL (or both) have not been properly allocated.

**User response:** Review ISPTLIB allocation and data set characteristics. Review security controlled access to ISPTLIB data sets. For information about return codes, refer to *ISPF Services Guide* (SC34-4819-03).

---

**FEC994E      Invalid row number.**

**Explanation:** CEXPAND was issued with an invalid parameter of zero. CEXPAND can be issued with no parameters and the cursor on a data field, or with two parameters. The two parameters are the row number, followed by the column number of the data element to be expanded. The row number is counted down from the top, starting with the first scrollable row (heading not counted) The column number is counted from left to right, starting with the left column in the current display window.

**User response:** Specify a valid parameter count for use with CEXPAND.

---

**FEC995E      Invalid column number.**

**Explanation:** CEXPAND was issued with an invalid parameter of zero. CEXPAND can be issued with no parameters and the cursor on a data field, or with two parameters. The two parameters are the row number, followed by the column number of the data element to be expanded. The row number is counted down from the top, starting with the first scrollable row (heading not counted) The column number is counted from left to right, starting with the left column in the current display window.

**User response:** Specify a valid parameter count for use with CEXPAND.

---

**FEC996E      Invalid digits.**

**Explanation:** CEXPAND was issued with an invalid parameter of zero. CEXPAND can be issued with no parameters and the cursor on a data field, or with two parameters. The two parameters are the row number, followed by the column number of the data element to be expanded. The row number is counted down from the top, starting with the first scrollable row (heading not counted) The column number is counted from left to right, starting with the left column in the current display window.

**User response:** Specify a valid parameter count for use with CEXPAND.

---

**FEC997E      Too many digits.**

**Explanation:** CEXPAND was issued with an invalid parameter of zero. CEXPAND can be issued with no parameters and the cursor on a data field, or with two parameters. The two parameters are the row number, followed by the column number of the data element to be expanded. The row number is counted down from the top, starting with the first scrollable row (heading not counted) The column number is counted from left to right, starting with the left column in the current display window.

**User response:** Specify a valid parameter count for use with CEXPAND.

---

**FEC998E      Zero parameter invalid.**

**Explanation:** CEXPAND was issued with an invalid parameter of zero. CEXPAND can be issued with no parameters and the cursor on a data field, or with two parameters. The two parameters are the row number, followed by the column number of the data element to be expanded. The row number is counted down from the top, starting with the first scrollable row (heading not counted) The column number is counted from left to right, starting with the left column in the current display window.

**User response:** Specify a non-zero parameter.

---

**FEC999E Invalid parameter count: must be either two or zero parms.**

**Explanation:** CEXPAND was issued with an invalid number of parameters. CEXPAND can be issued with no parameters and the cursor on a data field, or with two parameters. The two parameters are the row number, followed by the column number of the data element to be expanded. The row number is counted down from the top, starting with the first scrollable row (heading not counted) The column number is counted from left to right, starting with the left column in the current display window.

**User response:** Specify a valid parameter count for use with CEXPAND.

---

**HAAP001E Invalid record type found**

**Explanation:** An invalid record type was encountered during a profile load.

**User response:** Contact IBM Customer Support.

---

**HAA001E Invalid value entered - Please enter a valid value from the list displayed**

**Explanation:** You have entered an invalid selection in the Option line.

**User response:** Enter a valid value.

---

**HAA002E A valid DB2 subsystem ID is a required field. Please enter a valid subsystem ID**

**Explanation:** You have entered an invalid DB2 subsystem ID.

**User response:** Enter a valid DB2 subsystem ID.

---

**HAA004E Invalid subsystem ID entered**

**Explanation:** An undefined subsystem ID has been encountered.

**User response:** Correct the DB2 Subsystem ID field.

---

**HAA006E Invalid line command entered**

**Explanation:** A invalid line command has been entered.

**User response:** Enter a valid line command.

---

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---

**Explanation:** This message appears upon starting the DB2 Automation Tool ISPF screens.

**User response:** None required.

---

**HAA023E Subsystem unavailable**

**Explanation:** DB2 Automation Tool cannot connect to the specified subsystem. The call attach facility has failed.

**User response:** Confirm that the DB2 subsystem is active. Contact your systems administrator.

---

**HAA035I Single quotes will be changed to double quotes for Header Constant**

**Explanation:** Single quotes in the Header Constant field will cause errors at job run time. Single quotes will be replaced by double quotes.

**User response:** None required.

---

**HAA036E The range of a datatype of INTEGER is -2147483648 thru 2147483647**

**Explanation:** An integer value was entered that is outside the specified valid range.

**User response:** Enter a valid integer value.

---

**HAA037E The range of a datatype of SMALLINT is -32768 thru 32767**

**Explanation:** A small integer value was entered that is outside the specified valid range.

**User response:** Enter a valid small integer value.

---

**HAA044W No profiles were found that match your selection criteria. Press enter to create a new profile or change the selection criteria**

**Explanation:** No profiles match your selection criteria.

**User response:** Press Enter to create a new profile, or change your selection criteria to get a different list.

---

**HAA045E Command is not supported on this screen. Please enter a valid command or clear the primary command line**

**Explanation:** An invalid command was entered in the Option line.

**User response:** Correct the command or clear the Option line.

---

---

**HAA046E**    You are not authorized to update or delete this profile. Enter a "V" if you would like to view this profile

**Explanation:** A profile was selected for update or deletion that was created with the View only option.

**User response:** Type V next to the profile to view the profile contents.

---

**HAA047E**    The Profile Creator is a required field. Please enter a valid creator

**Explanation:** When creating a new profile, the Profile Creator field was left blank.

**User response:** Enter a profile creator in the Profile Creator field.

---

**HAA048E**    The Profile Name is a required field. Please enter a unique name

**Explanation:** When creating a new profile, the Profile Name field was left blank.

**User response:** Enter a unique profile name in the Profile Name field.

---

**HAA049E**    Invalid Value - Enter a "U" to allow other users to Update your profile, a "V" to allow other users to just View your profile or "N" to disallow other users from viewing or updating your profile

**Explanation:** When creating a new profile, an invalid value was entered the Update Option field.

**User response:** Correct the value as described in the message text.

---

**HAA050E**    Profile "*profile\_creator.profile\_name*" already exists in DB2 SSID *subsystem\_ID*. Please enter a unique profile name and press Enter

**Explanation:** When creating a new profile, a profile name was used that duplicates another profile name created by the same user ID.

**User response:** Enter a unique profile name and press Enter.

---

**HAA051E**    Invalid Value - Please enter a "Y" if you would like to delete profile "*profile\_creator.profile\_name*" or an "N" if you do not want to delete it

**Explanation:** An invalid value was entered in the Delete field.

**User response:** Enter a valid value as described in the message text.

---



---

**HAA060E**    Invalid line command entered

**Explanation:** An invalid value was entered in the line command area.

**User response:** Enter one of the valid line commands listed at the bottom of the screen.

---

**HAA062E**    The online options can only be modified when the "Online Reorg" setting is set to "Y"

**Explanation:** The online REORG options were selected to be updated, but the online REORG has not been specified for inclusion in the utility profile.

**User response:** Type Y in the Include field next to the online REORG option, then type Y in the Update field for online REORG to update the options.

---

**HAA063E**    The valid values are "C"hange, "R"eference, and "N"one

**Explanation:** An invalid value was entered in the Sharelevel field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA064E**    The options can not be altered if they are not first selected

**Explanation:** You specified to update utility options, but the utility has not yet been selected for inclusion in the profile.

**User response:** Type Y in the Include field next to the utility, then type Y in the Update field for the utility to update the options.

---

**HAA065E**    This field cannot be left blank

**Explanation:** A field has been left blank that must be completed.

**User response:** The cursor is positioned at the field that must be completed. Fill in the field and press Enter.

---

**HAA066E**    The valid values for MaxRO are "DEFER" or a number

**Explanation:** An invalid value was entered for the Maxro field.

**User response:** Enter a valid value as specified in the message text.

---

---

**HAA067E**    The valid values for Drain are "W"riters, "A"ll, or "N"o

**Explanation:** An invalid value was entered for the Drain field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA068E**    The valid values for Long Log are "C"ontinue, "T"erm, and "D"rain

**Explanation:** An invalid value was entered for the Longlog field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA069E**    This field must contain a number

**Explanation:** A non-numeric value was entered in a field that requires a number.

**User response:** Enter a valid numeric value.

---

**HAA070E**    The only valid values for Timeout are "A", "T", or "N"

**Explanation:** An invalid value was entered for the Timeout field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA071E**    Unknown command

**Explanation:** An invalid command was entered in the Option line.

**User response:** Correct the command or clear the Option line.

---

**HAA072E**    Invalid value - Please enter an "S" to select a column, a "D" to deselect and delete exception data, an "R" to repeat an exception condition, an "A" to select a column as an "A"nd condition, or an "O" to select a column as an "O"r condition

**Explanation:** An invalid line command was entered on the Update Exceptions Profile Display.

**User response:** Enter a valid value as specified in the message text.

---

**HAA073E**    Invalid Condition - Valid values are "<" "LT" "<=" "LE" "=" "EQ" ">" "GT" ">=" "GE" ">=" "NE" "<>"

**Explanation:** An invalid condition was entered for a column on the Update Exceptions Profile Display.

**User response:** Enter a valid value as specified in the message text.

---

**HAA074E**    Invalid Value - Please enter an "O" to generate the job online via your ISPF session or "B" to build the job in Batch

**Explanation:** An invalid value was entered in the Build Online or Batch field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA075E**    Invalid Value - Please enter a "Y" if you would like to edit the generated JCL after the job has been built

**Explanation:** An invalid value was entered in the Edit Generated Job field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA076E**    Enter Required Field - A fully qualified dataset name is required to save the generated JCL

**Explanation:** The data set name is missing from the Build Job in Dataset field.

**User response:** Enter a fully qualified data set name in the Build Job in Dataset field to hold the generated JCL.

---

**HAA077E**    Dataset not found - Dataset *dataset name* was not found in the MVS catalog. Please enter a valid dataset that is cataloged

**Explanation:** The data set name entered in the Build Job in Dataset field does not exist.

**User response:** Enter an existing cataloged data set name in the Build Job in Dataset field.

---

**HAA079W**    Please enter a condition and an exception value. To deselect an item, enter a "D" in the "S" field.

**Explanation:** A table was selected on the Update Exceptions Profile Display, but you must also enter conditions and exceptions for the table.

**User response:** Enter a condition and exception value for the selected table. Consult the bottom of the screen for valid condition values. Scroll right to see information about exception values.

---



---

**HAA080E**    A condition or exception value was specified without the other. Both a condition and an exception value must be specified.

**Explanation:** You specified either a condition without an exception value, or an exception value without a corresponding condition.

**User response:** Enter both a condition and an exception value for the selected column. Consult the bottom of the screen for valid condition values. Scroll right to see information about exception values.

---

**HAA081E**    A floating point number in the form of "3.17E+05" or "317000" must be entered. The syntax of a floating point number is [+|-][n][.][n][E+|-n]

**Explanation:** The exception value was entered incorrectly.

**User response:** Enter the exception value as a floating point decimal as described in the message text.

---

**HAA082E**    The only valid values for the Deadline parameter are "N"one, "T"imestamp, and "L"abeled duration expression

**Explanation:** An invalid value was entered for the Deadline parameter.

**User response:** Enter a valid value as specified in the message text.

---

**HAA083E**    If the deadline value is "None," the timestamp and labeled duration fields must be blank

**Explanation:** The Deadline field contains N for None. Timestamp and Labeled Duration Expression fields are invalid if no deadline is specified.

**User response:** Remove the values from the specified fields.

---

**HAA084E**    The valid values for the Unload field are "C"ontinue, "P"ause, "O"nly, and "E"xternal

**Explanation:** An invalid value was entered in the Unload field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA085I**    Option is currently unavailable

**Explanation:** The selected DB2 Automation Tool option is currently not available.

**User response:** None required.

---



---

**HAA086E**    The specified qualifier code is not a supported value

**Explanation:** An invalid qualifier code was entered for the image copy data set name.

**User response:** Change the qualifier code to one of the available codes listed on the screen.

---

**HAA087E**    Invalid hexadecimal value. Valid values are 0123456789ABCDEF

**Explanation:** An invalid hexadecimal value was entered for the exception value.

**User response:** Enter a valid hexadecimal value using the hex characters listed in the message.

---

**HAA088W**    Truncation has occurred in building the data set qualifier

**Explanation:** The data set name for the image copy is too long as constructed.

**User response:** Shorten the data set name by using less or shorter qualifiers.

---

**HAA089W**    The symbolic data set name generation field is full

**Explanation:** The symbolic input area is out of space. The maximum number of characters allowed is 159.

**User response:** Reduce the number or type of symbolics in the generated data set name.

---

**HAA090I**    Profile "*profile\_creator.profile\_name*" saved

**Explanation:** The profile named in the message was successfully saved.

**User response:** None required.

---

**HAA091E**    Invalid Value - Please enter an "A" to AND conditions or an "O" to OR conditions together when doing exception processing

**Explanation:** An invalid value was entered in the Conditions To Be field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA092E**    Invalid Value - Please enter an "R" to use statistics from the Automation Tool "R"epository, a "C" to use statistics from the DB2 "C"atalog, or an "S" to use statistics from a DB2 "S"hadow Catalog

**Explanation:** An invalid value was entered in the Use Stats From field.

---

## HAA094E • HAA106E

**User response:** Enter a valid value as specified in the message text.

---

**HAA094E**    **The valid values for Update are "A"ll, "C"esspath, "S"pace, and "N"one**

**Explanation:** An invalid value was entered in the Update Catalog Tables or Update History Tables field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA095I**    **DEBUG command processed**

**Explanation:** This message appears after issuing a DEBUG ON|OFF command. Some screens allow this command, but the DEBUG mode should only be used under the direction of IBM Customer Support.

**User response:** None required.

---

**HAA096E**    **Cannot repeat this column**

**Explanation:** An R (repeat) line command was entered next to a column that cannot appear in the exception profile more than once.

**User response:** Use an S to select multiple columns for this table.

---

**HAA098E**    **The entered device type is not recognized by z/OS as a valid device type**

**Explanation:** An invalid device type was entered in the Unit Type field.

**User response:** Enter a valid device type or CART for tape devices.

---

**HAA099E**    **When using disk type devices, expiration date and retention period are not valid**

**Explanation:** A value was entered in the Expiration date or Retention period fields, when a disk type device was specified for the image copy. These fields are mutually exclusive.

**User response:** Clear the Expiration date and Retention period fields, or change the Unit Type field to CART.

---

**HAA100W**    **If a Tape device is selected, either retention period or expiration date must be specified**

**Explanation:** A tape device was specified but no value was entered for the tape expiration date or retention period.

**User response:** Enter a valid value in the Expiration

date or Retention period fields, or change the Unit Type field to a disk type device.

---

**HAA101E**    **The year in the expiration date must be in a range of 1999 and higher**

**Explanation:** The date entered for the tape expiration date is incorrect.

**User response:** Enter a valid future date in the Expiration date field.

---

**HAA102E**    **The day in the expiration date must be in the range of 1 to 366**

**Explanation:** The day entered for the tape expiration date is incorrect.

**User response:** Enter a valid value as specified in the message text.

---

**HAA103E**    **The only valid values are "+" for a positive offset, and "-" for a negative offset**

**Explanation:** An invalid value was entered in the +/- field for the labeled duration expression.

**User response:** Enter a valid value as specified in the message text.

---

**HAA104E**    **Both components of an LDE modifier are required**

**Explanation:** You must specify both the value and a value modifier (+ or -) for the labeled duration expression.

**User response:** Enter the missing value or value modifier.

---

**HAA105E**    **The only valid values are Current "D"ate, and Current "T"imestamp**

**Explanation:** An invalid value was entered in the Base on Current Date/Timestamp field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA106E**    **If the value of the deadline is "Timestamp," the labeled duration fields must be blank**

**Explanation:** A timestamp deadline was specified, values appear in the Labeled Duration Expression fields.

**User response:** Clear the Labeled Duration Expression fields, or change the deadline type.

---

**HAA107E** If the value of the deadline is "Timestamp," the Timestamp value must be entered

**Explanation:** A timestamp deadline was specified, but a timestamp value has not been entered.

**User response:** Enter a valid timestamp in the Timestamp value field.

---

**HAA108E** The entered timestamp has invalid syntax or an invalid value

**Explanation:** An invalid value for the Timestamp value field was entered.

**User response:** Enter a valid timestamp in the Timestamp value field. The format is YYYY-MM-DD-HH.MM.SS.ssssss.

---

**HAA109E** If the deadline value is "Labeled Duration Expression", the timestamp value is not allowed

**Explanation:** A labeled duration expression deadline was specified, but a timestamp value appears in the Timestamp value field.

**User response:** Clear the Timestamp value field, or change the deadline type.

---

**HAA110E** The only valid values are "A"ll, a"C"cesspath, "S"pace, or "N"one

**Explanation:** An invalid value was entered for the Update or History fields.

**User response:** Enter a valid value as specified in the message text.

---

**HAA112E** The Change Limit fields cannot be included when taking a full image copy

**Explanation:** A value was specified in the Change Limit: First Percent Value or Change Limit: Second Percent Value fields, but these values are not valid when a full image copy is to be taken.

**User response:** Clear the Change Limit fields, or change the Full Image Copy field to N.

---

**HAA113E** Using Report Only requires that at least one Change Limit field be entered

**Explanation:** A report only was specified for the image copy, but no value was entered for one or both of the Change Limit fields.

**User response:** Enter a valid percentage in the Change Limit fields, or change the Report Only field to N.

---



---

**HAA114E** The second Change Limit field can be entered only if the first Change Limit field is entered

**Explanation:** A value was specified for the Change Limit: Second Percent Value, but no value was entered for the Change Limit:First Percent Value field.

**User response:** Enter a valid percentage in the Change Limit:First Percent Value field.

---

**HAA115E** The specified table does not exist in the DB2 catalog

**Explanation:** A mapping table creator and name were specified on the Change options screen, but the specified table does not exist.

**User response:** Either create the mapping table outside of DB2 Automation Tool, or leave the Mapping Table Creator and Mapping Table Name fields blank to allow DB2 Automation Tool to dynamically create a mapping table. The table will be dropped upon successful completion of the REORG.

---

**HAA116E** Log Yes is not valid when Sharelevel is set to Change

**Explanation:** Log Y was specified on the Reorg Utility profile options screen, but a REORG with SHRLEVEL CHANGE has been specified. This combination is not allowed.

**User response:** Either change the Log field to N, or change the sharelevel type for the REORG.

---

**HAA117E** This profile's Tablespace Reorg options have the Sharelevel set to "sharelevel". When this is the case, at least one image copy must be selected in the Tablespace Reorg options as well

**Explanation:** When either REORG SHRLEVEL CHANGE or REFERENCE have been specified, you must select an image copy type in the Tablespace REORG options as well.

**User response:** Select the Copy options fields on the Reorg Utility profile options screen and select an image copy type.

---

**HAA118W** The mapping table information will only be recognized with Sharelevel set to Change

**Explanation:** When SHRLEVEL REFERENCE or NONE have been specified, the mapping table name and creator fields are invalid.

**User response:** Clear the Mapping Table Creator and Mapping Table Name fields, or change the REORG sharelevel type.

---

---

**HAA119E**    If specifying a value for either MAPPING TABLE CREATOR or MAPPING TABLE NAME, a value must be specified for both

**Explanation:** A mapping table is required when specifying REORG with SHRLEVEL CHANGE. One of the field values that identifies the mapping table is missing.

**User response:** To supply your own mapping table, specify both the table creator and name in the appropriate fields. To allow DB2 Automation Tool to dynamically generate a mapping table, leave both the Mapping Table Creator and Mapping Table Name fields blank.

---

**HAA120E**    When Parallel is set to Yes, the Number Of Objects field must be specified

**Explanation:** Parallel processing for the image copy was specified, but the number of objects to process in parallel has not been specified.

**User response:** Enter a value of 0 to 99 for the number of objects to process in parallel. If you enter 0, COPY will determine the optimal number of objects.

---

**HAA121E**    When Parallel is set to No, the Number Of Objects field must be blank

**Explanation:** Parallel processing for the image copy was not specified, but the number of objects to process in parallel contains a value.

**User response:** Set the Parallel field to Y, or clear the value in the Number of objects field.

---

**HAA122E**    When Nosysrec is set to Yes, Sort Data must also be set to Yes

**Explanation:** You set the Nosysrec field to Y without setting the Sortdata field to Y. The Nosysrec option is only valid with the Sortdata option.

**User response:** Set the Sortdata field to Y or set the Nosysrec field to N.

---

**HAA123E**    The Concurrent and Full parameters cannot be set to Yes at the same time

**Explanation:** On the Image Copy options screen, a full DB2 image copy was specified along with a DB2 COPY with the CONCURRENT option using DFSMS. These options are mutually exclusive.

**User response:** Set either the Full Image Copy or the Concurrent field to Y, and set the other field to N.

---

**HAA124E**    When the Filter DD option is used, Concurrent must be Yes

**Explanation:** On the Image Copy options screen, a DD name was specified in the Filter DDname field, but the concurrent copy option was not specified.

**User response:** Set the Concurrent field to Y or clear the Filter DDname field.

---

**HAA125E**    More than 1 decimal point was found in the percent value

**Explanation:** Too many decimal points were entered in a percentage field.

**User response:** Remove the extraneous decimal point(s).

---

**HAA126E**    No more than 1 digit after the decimal point is allowed

**Explanation:** Two or more integers were entered after a decimal point in a percentage field.

**User response:** Correct the value to one decimal place.

---

**HAA127E**    The value of a percentage field cannot exceed 100

**Explanation:** An invalid percentage value was entered.

**User response:** Correct the percentage value to 100 or less.

---

**HAA128E**    A decimal point was entered, but no digits followed

**Explanation:** An invalid percentage value was entered.

**User response:** Correct the percentage value to add an integer after the decimal or remove the decimal.

---

**HAA130E**    The only valid values are "C"ontinue, "P"ause, and "O"nly

**Explanation:** An invalid value was entered in the Unload field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA131E**    When this type of processing is selected on this utility profile, required fields on subsequent panels must also be entered. Enter a "Y" and press Enter to proceed

**Explanation:** You selected a utility that requires some option settings.

**User response:** Type Y in the Update Utility options field and press Enter to complete the options.

---

---

**HAA132E**     **Cannot ignore dependency check unless checking LOB dependencies**

**Explanation:** A Y was entered in the Ignore dependency check for DEFINE NO objects field, but the Perform LOB Dependency checks field was set to N. The Ignore selection is only available when the dependency check option is selected.

**User response:** Set the Ignore dependency check for DEFINE NO field to N, or set the Perform LOB Dependency checks field to Y.

---

**HAA134E**     **The member name is not allowed on a non-partitioned data set**

**Explanation:** A member name was included for the specified data set, but the data set is sequential, not a PDS.

**User response:** Remove the member name or use a PDS.

---

**HAA135E**     **The member name selected for the generated job cannot be the same as the member name used for the generation job (which was specified in the dataset shown at the text at the beginning of this window)**

**Explanation:** The same member name was specified for the batch job to generate the JCL as for the generated JCL. These two members cannot be the same.

**User response:** Change one of the member names.

---

**HAA136E**     **Invalid date. Enter a valid date in the form of MM/DD/YYYY. Valid ranges are 01/01/1901 to 12/31/2041**

**Explanation:** An invalid date was entered.

**User response:** Enter a valid date as specified in the message text.

---

**HAA137E**     **Invalid Time. Enter a valid time in the form of HH:MM:SS. Valid delimiters are ":" and ".". Valid Ranges are 00:00:00 to 23:59:59**

**Explanation:** An invalid time was entered.

**User response:** Enter a valid time as described in the message text.

---

**HAA139E**     **Either the date or age field must be specified**

**Explanation:** You must specify either the Date or Age fields for the modify utility.

**User response:** Specify a value in one of the fields.

---



---

**HAA140E**     **The date and age fields cannot be specified together**

**Explanation:** The Date and Age fields cannot both be specified.

**User response:** Specify a value in either the Date or Age fields.

---

**HAA141E**     **Invalid Date. Enter a valid date in the form of YYYYMMDD**

**Explanation:** An invalid date was entered.

**User response:** Enter a valid date as specified in the message text.

---

**HAA142E**     **The age field has a valid range of 1-32767**

**Explanation:** An invalid value was entered in the Age field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA144E**     **This field can be blank or a number in the range of 0 to 100**

**Explanation:** An invalid value was entered in the field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA145I**     **Since the copy options was set to "Y" and none of the copies are selected, this screen is being displayed**

**Explanation:** This message appears when an image copy is specified for a REORG and image copy options have not been set. The Image Copy Options screen appears so you can set the options.

**User response:** Set the image copy type and other options required for the image copy.

---

**HAA146E**     **When Sharelevel Change is specified, the options for Sharelevel Change need to be included**

**Explanation:** Image copy with SHRLEVEL CHANGE was selected. This copy type requires some additional option settings.

**User response:** To set the required options, type Y in the Shrlevel Change Options Include and Update fields and press Enter.

---

---

**HAA147E** This percentage field has a valid range of 1 to 100

**Explanation:** An invalid value was entered in a percentage field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA149E** The valid range of the number of extents field is from 1 to 255

**Explanation:** An invalid value was entered in the Extents in space greater than field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA150E** Invalid Combination - You have asked for a reallocation of primary space with Allocated Space plus *percentage* percent and reallocate by Used plus *percentage* percent. Only one of these fields can be entered

**Explanation:** Only one of the fields can be specified.

**User response:** Use either the primary allocated amount or the primary used amount of space.

---

**HAA151E** When Update is set to "N"one, the Report option must be set to a "Y"es

**Explanation:** This message appears when editing the RUNSTATS utility options panel. If the catalog or history tables will not be updated when RUNSTATS is run, the Report field must be set to Yes.

**User response:** Type Y in the Report field to specify REPORT YES.

---

**HAA154I** HAA Runstat Statistics maintenance is complete. *number* rows deleted

**Explanation:** The statistics maintenance function has successfully completed. Rows older than the specified number of days have been deleted.

**User response:** None required.

---

**HAA161E** This profile's data has been corrupted in the HAA tables. It must be re-created

**Explanation:** The profile you selected has been damaged and is not usable.

**User response:** Recreate the profile.

---



---

**HAA162E** Valid ICTYPE values are "A" ALTER (V6+), "B" REBUILD INDEX (V6+), "D" CHECK DATA LOG(NO) (V6+), "F" COPY FULL YES, "I" COPY FULL NO (Incremental IC), "Q" QUIESCE, "P" Partial RECOVERY, "R" LOAD REPLACE LOG(YES), "S" LOAD REPLACE LOG(NO), "W" REORG LOG(NO), "X" REORG LOG(YES), "Y" LOAD LOG(NO), "Z" LOAD LOG(YES)

**Explanation:** An invalid image copy type was entered.

**User response:** Enter a valid value as specified in the message text.

---

**HAA163E** This column must have a positive value

**Explanation:** A negative value was entered for an exception value for a statistic that does not allow negative values.

**User response:** Enter a valid positive value.

---

**HAA164E** ICTYPE conditions must all be EQ|= when repeated lines are present

**Explanation:** When specifying repeated conditions with the ICTYPE column, the comparator must be EQ or =.

**User response:** Correct the comparator value.

---

**HAA166E** Conditions for this column type must be either EQ|= or NE|!=|<>

**Explanation:** An invalid value was entered for the comparator.

**User response:** Correct the comparator.

---

**HAA167E** ICTYPE must be selected when DAYS is selected

**Explanation:** When specifying the number of days in which an image copy has been run as an exception, you must also specify an image copy type in the ICTYPE field.

**User response:** Enter a valid comparator and value for the ICTYPE field.

---

**HAA168E** Cannot have a NE|!=|<> condition when repeated lines are present

**Explanation:** When specifying repeated conditions, the comparator cannot be NE or != or <>.

**User response:** Enter a valid comparator.

---

---

**HAA170E**    **Invalid Date. Enter a valid date in the form of YYYY/MM/DD. Valid delimiters are "/", "-", or ".". Valid Range is 2000/01/01 to 2100/12/31**

**Explanation:** An invalid date was entered.

**User response:** Enter a valid date as described in the message text.

---

**HAA171E**    **If the Save Stats in DAT Repository is equal to a "Y", then the Report option must also be a "Y"**

**Explanation:** If you want to update the DB2 Automation Tool repository with statistics, the report option must be selected.

**User response:** Type Y in the Report field.

---

**HAA172E**    **The import file does not contain an object profile**

**Explanation:** The source data set you are importing from does not contain an object profile.

**User response:** Check the data set name from which you are importing. Check the contents of the data set. Before importing, re-export the desired object profile if necessary

---

**HAA174E**    **The import file does not contain a utility profile**

**Explanation:** The source data set you are importing from does not contain a utility profile.

**User response:** Check the data set name from which you are importing. Check the contents of the data set. Before importing, re-export the desired utility profile if necessary.

---

**HAA175E**    **The import file does not contain an exception profile**

**Explanation:** The source data set you are importing from does not contain an exception profile.

**User response:** Check the data set name from which you are importing. Check the contents of the data set. Before importing, re-export the desired exception profile if necessary.

---

**HAA176E**    **Invalid GDG limit parameter - Valid values are 0 - 999. Please enter a zero if you do not want to automatically define a GDG base or a valid value from 1 to 999 of the nbr of generations you would like to keep**

**Explanation:** An invalid value was entered in the Automatically Gen GDG base field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA177E**    **Invalid Nbr of Jobs parameter - Please enter a valid nbr between 1 and 999 of the nbr of jobs you would like Automation Tool to generate for this profile**

**Explanation:** An invalid value was entered in the Maximum nbr of jobs field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA179E**    **Invalid Load Balance Jobs parameter. Please enter a "T" if you would like to balance multiple jobs by previous run times, a "D" if you would like to balance by DASD tracks or "N" for No Load Balancing necessary**

**Explanation:** An invalid value was entered in the Load Balance by jobs field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA187E**    **You are not authorized to enter any line commands for this profile. The creator of the profile is restricting all activity**

**Explanation:** The creator of the selected profile specified that no other user is to view, update, or export the selected profile.

**User response:** Choose a different profile to work with.

---

**HAA188E**    **Invalid value - Please enter an "R" to use statistics from the Automation Tool "R"epository, a "C" to use statistics from the DB2 "C"atalog, an "S" to use statistics from a DB2 "S"hadow Catalog, a "U" to execute Runstats to collect current statistics, or an "H" to use statistics from the DB2 "H"istory tables**

**Explanation:** An invalid value was entered in the Use Stats From field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA189E**    **There was an error allocating the DB2 Parns control file *control\_file*. DB2 Automation Tool cannot run without allocating a valid control file. Please verify that the control file in your execution CLIST is correct**

**Explanation:** An error occurred when allocating the DB2PARMS control file.

**User response:** Refer to Chapter 3, "Customizing DB2 Automation Tool," on page 61 for information about the control file.

---

**HAA192E     The volume count field can be blank or in the range of 1 - 255**

**Explanation:** An invalid value was entered for the maximum number of tape volumes.

**User response:** Enter a valid value as specified in the message text.

---

**HAA202W     All of the image copy options (for the LP, LB, RP, and RB image copies) have been set to "N". Because of this, the Copy Options field on the Reorg options screen has been set to a "N"**

**Explanation:** An image copy was specified to be included in the REORG, but the image copy type has not been selected.

**User response:** If you want to include an image copy, select one or more image copy types and set their associated options on the Image Copy Options screen.

---

**HAA203W     All of the Image copy options (for the LP, LB, RP, and RB image copies) have been set to "N". Because of this, the Image Copy field on the main utility screen has been set to a "N"**

**Explanation:** An image copy was specified to be included in the profile, but the image copy type has not been selected. The Image Copy option Include field was set to N.

**User response:** If you want to include an image copy in the profile, select one or more image copy types and set their associated options on the Image Copy Options screen.

---

**HAA204W     All of the Image copy options (for the LP, LB, RP, and RB image copies) have been set to "N". Because of this, the Copy to Copy field on the main utility screen has been set to a "N"**

**Explanation:** The image copy type has not been selected for the COPYTOCOPY. The Copy to Copy Include field was set to N.

**User response:** You must select one or more image copy types and set their associated options using the Copy to Copy options screens.

---

**HAA205E     A Recovery Site Primary image copy cannot be selected unless the Local site primary is selected also**

**Explanation:** You cannot specify a Recovery Site Primary image copy without specifying a Local Site Primary copy as well.

**User response:** Type Y in the Local Primary - Take Image Copy field to select the local primary backup.

---

**HAA206W     All of the Recovery Expert Image Copy Options (for the LP, LB, RP, and RB image copies) have been set to "N" and the Recovery Expert Image Copy field on the main utility screen has been set to a "N"**

**Explanation:** A Recovery Expert image copy was specified to be included in the profile, but the Recovery Expert image copy type has not been selected. The Recovery Expert Image Copy option Include field was set to No.

**User response:** If you want to include a Recovery Expert image copy, select one or more Recovery Expert image copy types and set their associated options on the Recovery Expert Image Copy Options screen.

---

**HAA207E     Invalid Value - A valid range for Day is from 1 to 7**

**Explanation:** If the field Month or Week was defined as W to indicate the time window is available on a weekly basis, the field Day must be 1 through 7 to indicate the day of the week. To indicate you want to execute the profile on a Sunday, Day would be set to 1.

**User response:** Enter a valid Day from 1 to 7.

---

**HAA208I     Specify selection criteria and press <Enter>**

**Explanation:** To display a list of alerts from the SYSIBM.SYSAUTOALERTS table, enter criteria in the Target Qualifier and Target Object fields and press Enter.

**User response:** None required.

---

**HAA209E     Invalid Value - Days entered for a non-leap year cannot exceed 28**

**Explanation:** The year for the specified Month-Day is not a leap year, so the day must not exceed 28 for the month of February.

**User response:** Correct the Day value to be 28 or less.



---

**HAA210I    The move data set queue is currently empty**

**Explanation:** There are no data sets in the move queue.

**User response:** To add data sets, type Q next to the database, space, or data set you want to move and press Enter. You may then enter the QEDIT command to view the list of selected data sets.

---

**HAA211I    The move data set queue has been cleared**

**Explanation:** All data sets have been cleared from the move queue.

**User response:** None required.

---

**HAA212I    Entry added to move queue, type QEDIT on option line to process**

**Explanation:** All data sets for the selected item(s) were successfully added to the data set move queue. Any data sets that already existed within the move queue are retained and are not duplicated during the add request.

**User response:** None required.

---

**HAA213E    Update COLUMN name is invalid**

**Explanation:** The column name entered in the Update Column field is invalid.

**User response:** Enter one of the following valid column names: Vcat, Stogroup, Pqty\_KB, Sqty\_KB.

---

**HAA214E    Update FROM value is invalid**

**Explanation:** The value entered in the Update From field is invalid.

**User response:** Enter the existing value of the column in this field.

---

**HAA215E    Update TO value is invalid**

**Explanation:** The value entered in the Update To field is invalid.

**User response:** Enter a valid value for the specified column in this field.

---

**HAA216E    Update WHERE SP= requires DB= to be specified**

**Explanation:** A space name was entered in the Where SP= field, but no database name was specified.

**User response:** Enter the associated database in the DB= field.

---

---

**HAA217E    Update WHERE SP= requires DB= to be specified**

**Explanation:** A DSN was entered in the Where DSN= field, but no database and space name have been entered.

**User response:** Enter the associated database and space name in the corresponding Where DB= and SP= fields.

---

**HAA218E    Change PQTY/SQTY value is invalid**

**Explanation:** The change quantity value is invalid.

**User response:** Supply a valid numeric quantity value or a change quantity by % value. The minimum value is 12 and maximum value is 67108864 if a non-percentage value is supplied.

Valid change quantity by % values are:

- n%-nnnn% -- Change primary or secondary quantity to n% of current primary or secondary quantity allocation values
- n%-nnnn%A-- Change primary or secondary quantity to n% of current data set allocated size value.
- n%-nnnn%U -- Change primary or secondary quantity to n% of current data set used size value.

The change percentage value (n-nnnn) must be between 1 and 9999.

If a change % value results in a computed quantity less than 12 or greater than 67108864, it is ignored.

---

**HAA219I    Target data set allocation type set to USER defined**

**Explanation:** You specified a target VCAT for an originally DB2-managed data set. The data set will be reallocated as user-managed.

**User response:** None required.

---

**HAA220I    Target data set allocation type set to STOGROUP defined**

**Explanation:** You specified a target stogroup for an originally user-managed data set. The data set will be reallocated as DB2-managed using the specified stogroup.

**User response:** None required.

---

**HAA221E    SMS Class names invalid for STOGROUP defined Target DSN**

**Explanation:** You entered an SMS storage, management, or data class for a DB2-managed target data set. These fields are invalid when specified for DB2-managed data sets.

---

**User response:** Clear the invalid field.

---

**HAA222E SMS Class names and Volume are mutually exclusive**

**Explanation:** Both a volume ID in the First Volume field and an SMS class were entered in one of the SMS class fields. These fields are mutually exclusive.

**User response:** Select the appropriate field to allocate the data set.

---

**HAA223E Volume update not allowed, press PF1 for additional information**

**Explanation:** You specified to update the volume name for a target data set that will be DB2 managed.

**User response:** This ability is available and is controlled by the Allow STG Vols to be specified option on the DSM Move Dataset Queue display.

Providing volume name(s) is not required when the target data set is stogroup defined. If you want to explicitly specify the target data set stogroup volumes to be used when the data set is moved, the preceding option must be set to Y.

---

**HAA226E The Maximum Number of Concurrent Index Builds parameter must not be blank and must be in the range of 0-99**

**Explanation:** An invalid value was specified in the Max Concurrent Index Builds field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA227E Either the "Primary Allocated plus x percent" or the "Primary Used plus x percent" fields must be specified**

**Explanation:** When reallocating space, you must specify the amount of space to be allocated, either as a percentage of the primary allocated space or the primary used space.

**User response:** Enter a valid value as specified in the message text.

---

**HAA228E Both the "Primary Allocated plus x percent" and the "Primary Used plus x percent" fields have been specified. Only one can be specified in the profile**

**Explanation:** When reallocating space, you must specify the amount of space to be allocated, either as a percentage of the primary allocated space or the primary used space. Both cannot be specified.

**User response:** Remove the value from one of the fields.

---

**HAA229E One of the two "Reallocate When" parameters must be specified**

**Explanation:** When reallocating space, you must specify when space is to be reallocated: when extents are greater than a specified number, or when the percentage of space used is greater than the specified percentage. If you specify both, space will be reallocated if either condition is met.

**User response:** Enter values in one or both of the Reallocate When fields.

---

**HAA239E No data sets in queue have been modified for move, request ignored**

**Explanation:** You have requested to execute a move request for all data sets within the move queue. The request was ignored because none of the data sets in the move queue have been modified with new data set attributes to be used when the data sets are moved.

**User response:** If you want to move a data set, change its attributes in the move queue.

---

**HAA244E Quantity Percent value invalid**

**Explanation:** The change quantity contained a invalid change by % value.

**User response:** Valid change quantity by % values allowed are:

- n%-nnnn% -- Change primary or secondary quantity to n% of current primary or secondary quantity allocation values.
- n%-nnnn%A -- Change primary or secondary quantity to n% of current data set allocated size value.
- n%-nnnn%U -- Change primary or secondary quantity to n% of current data set used size value.

The change percentage value (n-nnnn) must be between 1 and 9999. If a change % request results in a computed quantity less than 12 or greater than 4194304, it is ignored.

---

**HAA245E A valid hour must be entered. Two numeric digits must be specified and they must be less than or equal to 12**

**Explanation:** An invalid value was entered for an exception value that uses the time of day.

**User response:** Enter a valid value as specified in the message text.

---

**HAA246E A valid minute must be entered. Two numeric digits must be specified and they must be less than or equal to 59**

**Explanation:** An invalid value was entered for an exception value that uses the time of day.

**User response:** Enter a valid value as specified in the message text.

---

**HAA247E    You must enter either an "A" for AM or a "P" for PM**

**Explanation:** An invalid value was entered for an exception value that uses the time of day.

**User response:** Enter a valid value as specified in the message text.

---

**HAA248E    TIME\_TO must be selected if TIME\_FROM is selected**

**Explanation:** A time was entered in the TIME\_FROM field but the TIME\_TO field was not completed.

**User response:** Enter a valid time in the TIME\_TO field.

---

**HAA249E    TIME\_FROM must be selected if TIME\_TO is selected**

**Explanation:** A time was entered in the TIME\_TO field, but the TIME\_FROM field was not completed.

**User response:** Enter a valid time in the TIME\_FROM field.

---

**HAA258E    Invalid member name; only A-Z, 0-9, @, #, and \$ are valid; first character must be A-Z, @, #, or \$**

**Explanation:** An invalid value was entered for the User\_Exit Load\_Module or CLIST\_REXX\_EXEC exception types.

**User response:** Enter a valid value as specified in the message text.

---

**HAA263E    Invalid starting position entered. Enter a numeric value for the starting position in the symbolic to substring**

**Explanation:** An invalid value was entered in the Enter Starting Position field.

**User response:** Enter a valid numeric as specified in the message text.

---

**HAA264E    Invalid substring length entered. Enter a numeric value greater than 1 to substring the symbolic**

**Explanation:** An invalid value was entered in the Enter Substring Length field.

**User response:** Enter a valid numeric as specified in the message text.

---

**HAA270I    Ability to specify STOGROUP target volumes ENABLED**

**Explanation:** The ability to provide specific volumes for stogroup defined target data sets is enabled. This option controls whether you can specify specific stogroup volumes when using the Move Data Set Queue and subordinate displays.

When enabled, you are allowed to set specific stogroup volumes to be used. When disabled, setting stogroup volumes is not allowed.

You are not required to provide specific volumes when moving a data set that is stogroup defined. Dataset Manager move processing will move the data set to an available volume within the stogroup. This option is provided for instances where you want to control which volumes are used.

**User response:** None required.

---

**HAA271I    Ability to specify STOGROUP target volumes DISABLED**

**Explanation:** The ability to provide specific volumes for stogroup defined target data sets has been disabled. This option controls whether you can specify specific stogroup volumes when using the Move Dataset Queue and subordinate displays.

When enabled, you are allowed to set specific stogroup volumes to be used. When disabled, setting stogroup volumes is not allowed.

You are not required to provide specific volumes when moving a data set that is stogroup defined. Dataset Manager move processing will move the data set to an available volume within the stogroup. This option is provided for instances where you want to control which volumes are used.

**User response:** None required.

---

**HAA272E    Target STOGROUP specified does not exist on DB2 SSID=*ssid***

**Explanation:** The target data set stogroup name provided is not a valid stogroup name. The stogroup name does not exist in DB2 subsystem *ssid*.

**User response:** Enter a valid stogroup name and press Enter to continue.

---

**HAA273E    Target FIRST VOLUME name is invalid, volume does not exist**

**Explanation:** The target data set First Volume name provided is invalid. The volume name does not exist on this host system.

**User response:** Supply a valid volume name and press Enter to continue.

---

**HAA274E Duplicate volume located**

**Explanation:** A duplicate volume name was located within the volume list. The cursor is located on the duplicate volume name.

**User response:** To remove the duplicate volume, set the volume name to blanks or nulls and press Enter.

---

**HAA275E Volume name is invalid, volume does not exist**

**Explanation:** The target data set volume name provided is invalid. The volume name does not exist on this host system.

**User response:** Supply a valid volume name and press Enter to continue.

---

**HAA276E Target Vcat name is invalid, Vcat name does not exist**

**Explanation:** The target data set Vcat name provided is not a valid Vcat name. The Vcat name does not exist on this host system.

**User response:** Supply a valid Vcat name and press Enter to continue.

---

**HAA278I Volume update(s) bypassed for SMS managed stogroup(s)**

**Explanation:** While processing the UPDATE FIRST VOLUME request, some stogroup defined target data sets were located with target stogroups that are SMS managed.

Specifying volume information is not allowed for stogroup defined data sets when the stogroup is SMS managed.

First volume update processing was bypassed for all applicable data sets.

**User response:** None required.

---

**HAA279E Volume update not allowed for SMS managed stogroup**

**Explanation:** You have attempted to update the first volume or the volume list for a target data set that is stogroup defined.

The target stogroup assigned to the target data set is SMS managed.

The ability to specify stogroup volumes is NOT ALLOWED if the target stogroup is SMS managed.

**User response:** None required.

---

**HAA280I Delete from move queue complete, press PF4 to view the move queue**

**Explanation:** All data sets for the selected item(s) were successfully deleted from the data set move queue.

**User response:** Press PF4 to view the move queue.

---

**HAA281I No matching data sets exist in move queue, delete req ignored**

**Explanation:** No data sets exist in the move queue for the items selected. The delete request was ignored.

**User response:** None required.

---

**HAA282I Stogroup is not currently in use**

**Explanation:** No pagesets are currently assigned to the stogroup name selected. The View Stogroup Database request can only be requested for stogroups which have one or more database pagesets using the stogroup.

**User response:** None required.

---

**HAA283I Data sets deleted from move queue**

**Explanation:** The requested data sets were deleted from the move queue.

**User response:** None required.

---

**HAA284I FIRST entry being viewed**

**Explanation:** The NEXT, PREV, or FIRST command has positioned the display on the first display entry.

**User response:** None required.

---

**HAA285I LAST entry being viewed**

**Explanation:** The NEXT, PREV, or LAST command has positioned the display on the last display entry.

**User response:** None required.

---

**HAA286I Single entry exists, request ignored**

**Explanation:** The PREV, NEXT, FIRST, or LAST command was invalid. There is only a single entry for the entity being viewed.

**User response:** None required.

---

**HAA287I Indexspace \*or\* Indexname can be specified**

**Explanation:** You are not allowed to specify both index space name and index name.

**User response:** Remove the value from one of the fields.

---

---

**HAA288E** When the Update Catalog option is set to ACCESSPATH, the Update History option must be ACCESSPATH or NONE

**Explanation:** The Update History setting is dependent on the Update Catalog setting. An invalid value was entered in the Update History field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA289E** When the Update Catalog option is set to SPACE, the Update History option must be SPACE or NONE

**Explanation:** The Update History setting is dependent on the Update Catalog setting. An invalid value was entered in the Update History field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA290E** When the Update Catalog option is set to NONE, the Update History option must be NONE

**Explanation:** The Update History setting is dependent on the Update Catalog setting. An invalid value was entered in the Update History field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA291E** The only valid values are "S" for the Set command, "D" for the DBD command, and "L" for the LevelID command

**Explanation:** An invalid value was entered in the Process field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA292E** The only valid values are "N" for no DBD control statement extra options, "D" for the Drop control card, "T" for the Test control card, "I" for the Diagnose control card, and "R" for the Rebuild control card

**Explanation:** An invalid value was entered in the DB2 Process Option field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA293E** If the DBD option is selected, the DBD sub-option selection can not be set to "N"o

**Explanation:** You selected the DBD option for repair (D in the Process field), but an N still appears in the DBD Process Option field.

**User response:** Specify one of the DBD Process Options of Drop, Test, Diagnose, or Rebuild.

---

**HAA294E** If the process mode is not DBD, the DBD sub-option field must be set to "N"o

**Explanation:** A value other than N in the DBD Process Option field is only valid if you specify the DBD process for repair (D in the Process field).

**User response:** Change the value in the DBD Process Option field to N, or change the Process field to D.

---

**HAA295E** If the process mode is not DBD, the output DDNAME for the DBD processing mode cannot be specified

**Explanation:** You entered a DD name in the Output DDname field for the DBD options, but DBD processing has not been specified.

**User response:** Clear the Output DDName field, or change the Process field to D to select DBD processing.

---

**HAA296E** "Work File Unit Device" must be specified on the Option 3 Setup panel for this DB2 subsystem. Enter an "S" in the Option field of this panel, then "3" in the Command field of the following panel. Specify the appropriate value

**Explanation:** The work file device type must be set in the product setup screen.

**User response:** Follow the instructions in the message text.

---

**HAA297E** Invalid recovery point. Specify "C" for current, "F" for the last full image copy, "I" for the last incremental image copy, "L" for the last image copy (full or incremental), "S" for a specified end point, "Q" for the last quiesce point, or "T" for using TOCOPY

**Explanation:** An invalid value was specified in the Recover To field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA298E** To use the specified "Use Stats From" value, *package\_set* PackageList must be specified on the Option 3 Setup panel for this DB2 subsystem. To access the Setup panel, enter an "S" in the Option field of the Main Menu, then "3" in the Command field of the following panel. Specify the appropriate value

**Explanation:** You selected a Use Stats From setting

that requires a corresponding package list name be entered in the product setup screen.

**User response:** Follow the instructions in the message text to set the appropriate package list name.

---

**HAA299E**    **If Tologpoint processing is specified, a corresponding log point must also be specified**

**Explanation:** Recovery to a log point was selected, but the log point to recover to has not been specified.

**User response:** Enter the six-byte hexadecimal RBA or LRSN as the point to which to recover.

---

**HAA300E**    **When a processing type other than to a specified point is selected, the Tologpoint field must be blank**

**Explanation:** A recovery point other than Tologpoint was selected, but a value was entered in the Specified point field. This combination is not allowed.

**User response:** Remove the value from the Specified point field.

---

**HAA301E**    **Specify "L" for local site processing, or "R" for recovery site processing**

**Explanation:** An invalid value was entered in the Site field.

**User response:** Enter a valid value as described in the message text.

---

**HAA302E**    **If recover Tocopy processing is selected, at least the Tocopy data set name must be specified**

**Explanation:** Recovery to a particular image copy was selected, but the image copy data set name to recover to has not been specified.

**User response:** Provide the image copy data set name in the TOCOPY Dataset Name field.

---

**HAA303E**    **If a processing mode other than Tocopy is specified, the Tocopy information fields must be blank**

**Explanation:** A recovery point other than to a particular image copy was selected, and there are values in the TOCOPY Dataset Name, TOCOPY VOLUME, and/or TOCOPY TOSEQNO fields.

**User response:** Remove the values from all the TOCOPY fields.

---

**HAA304E**    **If a "To Sequence Number" is specified, the "To Volume Serial" must also be specified**

**Explanation:** A value was specified for the file sequence number, but the volume serial has not been provided.

**User response:** Specify the volser in the TOCOPY TOVOLUME field.

---

**HAA306E**    **If standard DB2 utility processing is selected, the EMC hardware specific options can not be viewed or altered**

**Explanation:** A Y was entered in the Alter EMC Symm/IBM ESS Optns options field.

**User response:** Select the ESS or Symmetrix Image Copy Utility mode, or remove the Y from the Alter EMC Symm/IBM ESS Optns options field.

---

**HAA307E**    **The only valid values are "D" for snap data set processing, "V" for snap volume processing, "B" for BCV split processing**

**Explanation:** An invalid value was entered in the EMC Processing mode field.

**User response:** Enter a valid value as described in the message text.

---

**HAA308E**    **If the EMC mode is "V"olume, the data set mode fields may not be entered**

**Explanation:** The EMC Processing Mode was set to V for volume, and one or more of the data set option fields is filled in. This combination is not allowed.

**User response:** Remove the value from the data set option fields.

---

**HAA310E**    **Invalid Value - The value must be numeric and be >= 1 and <= 5**

**Explanation:** An invalid value was entered for an exception value.

**User response:** Correct the exception value as listed in the message text.

---

**HAA311E**    **Invalid Day of the Month - The value must be numeric and be >= 1 and <= 31**

**Explanation:** An invalid value was entered for a Day of the Month exception value.

**User response:** Enter a valid value as described in the message text.

---

**HAA312E Invalid Month - The value must be numeric and be >= 1 and <= 12**

**Explanation:** An invalid value was entered for a month value.

**User response:** Enter a valid value as described in the message text.

---

**HAA313E The DB2 Free Pages field has a valid range of 0 to 255**

**Explanation:** An invalid value was entered for the DB2 Free Pages.

**User response:** Enter a valid value as described in the message text.

---

**HAA314E Invalid Condition/Nth xxxDay of the Month combination The Nth Day value must be >= 2 with a LT Condition and be <= 4 with a GT Condition**

**Explanation:** An invalid exception value was specified for the Day of Month exception condition. The comparators and values entered are incompatible.

**User response:** Enter a valid value as described in the message text.

---

**HAA315E Cannot use the "O"r line command on this Column. Use the "A" or "S" command. Press Help for more information**

**Explanation:** And/Or line commands cannot be used to change the condition type of the day/time exceptions.

**User response:** Press PF1 for a detailed explanation of how the day/time conditions are evaluated.

---

**HAA316E Cannot use the "O"r line command on this column. When an "S" line command is used, an "O" is substituted for the "S". Use the "A" command. Press Help for more information**

**Explanation:** You attempted to change the SYSCOPY DAYS exception condition to be ANDed with the SYSCOPY image copy type field. This combination is not allowed.

**User response:** Press PF1 for a detailed explanation of how the SYSCOPY conditions are evaluated.

---

**HAA317E At least one repair type function must be selected when repair is used**

**Explanation:** If the Process field is set to S, one of the repair functions must be selected. This option resets the pending statuses of the objects.

**User response:** Select one of the repair functions (No Copy Pending, No Recover Pending, No Check Pending, No Auxiliary Warning, No Auxiliary Check Pending, or No Rebuild Pending).

---

**HAA318E Cannot use the "A"nd line command on a Repeated line. When an "S" line command is used, the "Conditions To Be" field value is substituted for the "S." Press Help for more information**

**Explanation:** You cannot use an AND condition for a repeated line.

**User response:** Press PF1 for a detailed explanation of how the repeated conditions are evaluated.

---

**HAA319E When the DB2\_DISPLAY\_STATUS.TRIGGER\_IF\_1\_MATCH Exception is selected and multiple DB2 DISPLAY exceptions are Selected, they must all be Selected as "A"nd Conditions. Press Help for more information**

**Explanation:** You must use an AND condition for a repeated line.

**User response:** Press PF1 for a detailed explanation of how DB2\_DISPLAY\_STATUS conditions are evaluated.

---

**HAA320E This percentage field has a valid range of 0 to 99**

**Explanation:** You entered a DB2 percent free per page greater than 99. This value is not allowed.

**User response:** Enter a valid value as specified in the message text.

---

**HAA321W Because an invalid combination of options existed in the Reallocate Options screen, the Reallocate option has been set to "N"o**

**Explanation:** The reallocate utility option has been deselected.

**User response:** None required.

---

**HAA322E The only valid values for the Source fields are "C" for the last image copy (Full or Incremental), "F" for the last Full image copy, and "I" for the last Incremental image copy**

**Explanation:** An invalid value was entered for the Copy to Copy source field.

**User response:** Enter a valid value as described in the message text.

---

---

**HAA323W** Because an invalid combination of options existed in the Repair Options screen, the Repair option has been set to "N"o

**Explanation:** The repair utility option has been deselected.

**User response:** None required.

---

**HAA324E** All 4 copy types can not be selected at the same time

**Explanation:** COPYTOCOPY can only make up to three copies at a time.

**User response:** Select up to three appropriate copy types.

---

**HAA325I** Option not allowed - This option is only valid with IBM Recovery Expert Tool installed

**Explanation:** In order to select EMC or ESS type copies, you must have a license for IBM DB2 Recovery Expert.

**User response:** None required.

---

**HAA326E** The buffer pool name entered is not recognized by DB2

**Explanation:** An invalid buffer pool was entered for the dynamic mapping table.

**User response:** Enter a valid buffer pool that DB2 Automation Tool can use when creating a dynamic mapping table.

---

**HAA327E** The statistics options can only be modified when the "Statistics Options" setting is set to "Y"

**Explanation:** You specified to update statistics options, but statistics options has not yet been selected for inclusion in the profile.

**User response:** Type Y in the Include field next to Statistics Options, then type Y in the Update field to update the options.

---

**HAA328E** The storage group name entered is not recognized by DB2

**Explanation:** An invalid storage group name was entered for the dynamic mapping table.

**User response:** Enter a valid storage group that DB2 Automation Tool can use when creating a dynamic mapping table.

---



---

**HAA329E** The maximum value for the OFFPOSLIMIT field is 65535

**Explanation:** An invalid value was entered in the Offposlimit field.

**User response:** Enter a valid value as listed in the message text.

---

**HAA330E** The maximum value for the INDREFLIMIT field is 65535

**Explanation:** An invalid value was entered in the Indreflimit field.

**User response:** Enter a valid value as listed in the message text.

---

**HAA331E** When the Sharelevel is set to Change or Reference, at least one image copy must be specified

**Explanation:** When specifying an online REORG, the SHRLEVEL was set to Change or Reference, but no image copy has been specified. DB2 requires an image copy to be taken when performing those methods of online REORG.

**User response:** The cursor is positioned in the Copy options field. Type Y in the Copy options field to specify an image copy. If image copy options have not yet been set in this profile, the Image Copy Options screen and related screens will appear after you specify online REORG options.

---

**HAA333E** The valid values for this field are "D" to use standard DB2 utility processing, "E" for EMC based fast copy, or "S" for Shark based fast copy

**Explanation:** An invalid value was entered in the Image Copy Utility mode field.

**User response:** Enter a valid value as listed in the message text.

---

**HAA334E** A Local site backup image copy can not be selected unless the Local site primary is selected also

**Explanation:** You cannot specify a local site backup image copy without specifying a local site primary copy as well.

**User response:** Type Y in the Local Primary - Take Image Copy field to select the local primary backup.

---

**HAA335E** A Recovery site backup image copy can not be selected unless the Recovery site primary is selected also

**Explanation:** You cannot specify a recovery site



backup image copy without specifying a recovery site primary copy as well.

**User response:** Type Y in the Recovery Site Primary - Take Image Copy field to select the recovery site backup.

---

**HAA337W** "Max Primary Space Allocation" must be specified on the Option 3 Setup panel for this DB2 Subsystem. Enter an "S" in the Option field of the Automation Tool Main Menu, then "3" in the Command field of the following panel. Specify the appropriate value. A default value of 999999 Tracks will be used for this session

**Explanation:** You must set the maximum primary space allocation allowed on the Setup screen.

**User response:** Access the Setup screens and enter the appropriate value as described in the message text.

---

**HAA338E** Invalid object value -Specify an "E" to exclude the objects or an "O" to process only these object types

**Explanation:** An invalid value was entered when specifying to include or exclude an object type in the exception profile.

**User response:** Enter a valid value as described in the message text.

---

**HAA339E** The only valid values are "W" for wait or "S" for stop

**Explanation:** An invalid value was entered in the Wait for volume avail or Stop field.

**User response:** Enter a valid value as listed in the message text.

---

**HAA340E** The only valid values are "C" for continue or "S" for stop

**Explanation:** An invalid value was entered in the Continue or Stop on Errors field.

**User response:** Enter a valid value as listed in the message text.

---

**HAA341E** The new VCAT name must be specified

**Explanation:** The New High Level VCAT is blank. This field is required.

**User response:** Enter a new high level qualifier to be assigned to the copied data sets in the New High Level VCAT field.

---

**HAA342E** When snap volume processing is specified, at least one volume destination field must be specified

**Explanation:** You specified Snap Volume, but did not list any destination volumes in the Volume List field.

**User response:** Enter a volume or volumes in the Volume list fields.

---

**HAA343E** The volume serial number does not exist or the volume serial pattern does not match any existing volume serial

**Explanation:** An invalid value was entered in one of the Volume list fields.

**User response:** Enter a valid existing volume serial name or pattern.

---

**HAA344E** The valid range of parallel subtasks is from 1 to 99

**Explanation:** An invalid value was entered in the Number of Parallel Subtasks field.

**User response:** Enter a valid value as listed in the message text.

---

**HAA345E** The only valid values are "D" for data set and "V" for volume level

**Explanation:** An invalid value was entered in the Backup Spaces at This Level field.

**User response:** Enter a valid value as listed in the message text.

---

**HAA346E** The only valid values are "D" for DFSMSDSS processing, or "F" for FDR processing

**Explanation:** An invalid value was entered in the Volume Backup Vendor field.

**User response:** Enter a valid value as listed in the message text.

---

**HAA347E** The maximum value for the drain wait is 1800 seconds

**Explanation:** An invalid value was entered in the Drain Wait field.

**User response:** Enter a valid value that is less than or equal to the maximum of 1800 seconds.

---

**HAA348E** The maximum value for the number of retries is 255

**Explanation:** An invalid value was entered in the Retry field.

**User response:** Enter a valid value that is less than or

equal to the maximum of 255.

---

**HAA349E**    **The valid range for this field is between 1-1800 seconds**

**Explanation:** An invalid value was entered in the Retry Delay field.

**User response:** Enter a valid value that is the range of 1 to 1800 seconds.

---

**HAA350E**    **When snap data set is selected, the user catalog data set name can not be specified**

**Explanation:** A user catalog volume serial was entered, but the EMC processing mode was not snap data set. This is not allowed.

**User response:** Change the processing mode to snap data set, or clear the User Catalog Volume Serial field.

---

**HAA351E**    **The user catalog data set name must be specified when the user catalog volume serial is specified**

**Explanation:** A user catalog name was entered, but the EMC processing mode was not snap data set. This is not allowed.

**User response:** Change the processing mode to snap data set, or clear the User Catalog field.

---

**HAA352E**    **The only valid values are "A" for All, "C" for Accesspath, and "S" for Space**

**Explanation:** An invalid value was entered in the Delete field.

**User response:** Enter a valid value as listed in the message text.

---

**HAA353E**    **If the ESS mode is "V"olume, the data set mode fields may not be entered**

**Explanation:** The ESS backup method selected was volume, but a value was entered in one or more of the Flash Dataset Options fields. This is not allowed.

**User response:** Clear the Flash Dataset Options fields.

---

**HAA354E**    **When parallel is set to no, the number of tape units field must be blank**

**Explanation:** Parallel processing was not specified (N was entered in the Parallel field), but a number was entered in the Number of tape units field. This is not allowed.

**User response:** Clear the Number of tape units field or specify Y in the Parallel field.

---

**HAA355E**    **The only valid values are "D" for flash data set processing, and "V" for flash volume processing**

**Explanation:** An invalid value was entered in the ESS Backup Method field.

**User response:** Enter a valid value as listed in the message text.

---

**HAA357E**    **When flash volume processing is specified, at least one volume destination field must be specified**

**Explanation:** Flash volume processing was specified (V was entered in the ESS Backup Method field), but volumes were not specified in the Volume list fields.

**User response:** Enter a volume or volumes in the Volume list field.

---

**HAA360E**    **One or more of the load libraries allocated for Automation Tool is not APF authorized. APF authorization is required for all load libs allocated in the Automation Tool startup CLIST**

**Explanation:** The DB2 Automation Tool or FEC load library is not APF authorized. APF authorization for these load libraries is required.

**User response:** APF authorize the load libraries. Refer to "APF authorizing load libraries" on page 20 for more information. If additional assistance is needed, contact IBM Customer Support.

---

**HAA361E**    **DB2 Subsystem *subsystem\_ID* could not be found on this MVS operating system**

**Explanation:** The DB2 subsystem ID entered on the DB2 Automation Tool Main Menu has not been defined to MVS.

**User response:** Enter a valid subsystem ID, or consult your DB2 administrator.

---

**HAA362E**    **A critical error has occurred attempting to resolve the subsystem RC=*return\_code***

**Explanation:** A critical error was encountered trying to access a DB2 subsystem. This message is most often the result of improperly setting up or configuring DB2 Automation Tool and its common components. Either the libraries were not APF authorized correctly or the authorization not enacted via an IPL.

**User response:** Ensure that you have completed all product customization steps. If you still receive this message, consider an IPL of the system, or note the return code and contact IBM Customer Support.

---

**HAA363E** DB2 subsystem *subsystem\_ID* is currently not active. Starting DB2 is required to continue

**Explanation:** The DB2 subsystem entered exists, but is inactive.

**User response:** Start the DB2 subsystem.

---

**HAA364E** Invalid data set name. This field, if entered, must conform to MVS naming rules

**Explanation:** An invalid data set name was entered in the DSN field. This data set is used to hold the copies of the records discarded from the REORG.

**User response:** Rename the data set name using proper data set naming conventions.

---

**HAA365E** If entering Threshold values, both the Threshold Quantity and the Threshold Quantity Type fields must be entered

**Explanation:** In the Use Threshold Unit if allocated space exceeds x Meg/Gig/Trk/Cyl field, only one of the two required fields was entered. If you want to use a threshold, you must enter both the quantity and its unit.

**User response:** Enter the missing value.

---

**HAA366E** The valid values for Threshold Quantity Type are "M" for megabytes, "G" for Gigabytes, "C" for cylinders, and "T" for tracks

**Explanation:** An invalid value was entered in the Use Threshold Unit if allocated space exceeds x Meg/Gig/Trk/Cyl field.

**User response:** Enter a valid value as described in the message text.

---

**HAA367E** The only valid values to the Exception Rule are "A"cepted, "R"ejected, and "B"oth

**Explanation:** An invalid value was entered in the Exception Rule field. This field determines when the utility is run on the objects accepted or rejected as a result of exception processing.

**User response:** Type A in this field to run the utility on objects accepted (included) as a result of exception processing. Type R to run the utility on objects that are rejected (excluded) as a result of exception processing. Type B to run this utility on all objects regardless of exception processing results.

---



---

**HAA368E** The GDG limit value must be either blank or a number in the range of 1-255

**Explanation:** An invalid value was entered in the GDG Limit field.

**User response:** Enter a numeric value between 1 and 255 as the GDG limit for this image copy type, or leave this field blank. If this field is left blank, the GDG limit set in the job profile (on the Generation Options screen) applies.

---

**HAA369E** If using the non-threshold data set name is desired, the data set information on the threshold screen must remain blank

**Explanation:** A data set name qualifier string was entered for the image copy threshold data set, but the Use Standard DSN in Threshold Proc field is set to Y. The two are mutually exclusive.

**User response:** Either clear the data set name qualifier string, or change the Use Standard DSN qualifier string field to N.

---

**HAA370I** There are additional options on the Image Copy Options screen. Press <PF8> to scroll down and view them

**Explanation:** This informational message appears upon accessing a scrollable screen as a reminder to scroll down to view all fields.

**User response:** Press PF8 to scroll down and view the rest of the fields. Press PF7 to scroll up.

---

**HAA371E** The threshold values cannot be entered if the profile is set to use a utility other than DB2 image copy

**Explanation:** You attempted to enter threshold values, but the image copy type selected for this profile is not a DB2 image copy type. Threshold values may only be specified for DB2 image copies.

**User response:** Clear the values from the threshold fields.

---

**HAA374E** The Sample parameter must be blank when not using Table All

**Explanation:** When specifying to collect statistics for all columns of all tables in a table space, you can specify a percentage of rows to sample using the Sample field. However, if not collecting stats for all columns of all tables, you cannot use sampling.

**User response:** Either change the Table All field to Y or remove the value from the Sample field.

---

---

**HAA375E** If the Index All parameter is specified, the Keycard parameter must be "N" and the Number of Columns and Count parameters must be blank

**Explanation:** When specifying to collect statistics for all columns of all indexes on a table space, you cannot specify Keycard = Y, or enter values in the Numcols field or Count field. These fields are invalid with RUNSTATS INDEX (ALL).

**User response:** Either change the Index All field to Y or change the invalid field values as listed in the message text.

---

**HAA376E** If Discard processing is selected, a Discard data set name must also be entered

**Explanation:** You entered Y in the Discard field to specify discard processing, but did not enter a discard data set name.

**User response:** Specify a discard data set in the DSN field.

---

**HAA377E** With Unload set to Pause | Only, the Nosysrec option cannot be specified.

**Explanation:** An invalid combination of parameters was entered. Nosysrec Y cannot be specified with Unload Pause or Unload Only.

**User response:** Change one or more of the parameters.

---

**HAA378E** The only valid values for Unload Data are "O"nly, "P"ause, "C"ontinue, and "E"xternal

**Explanation:** An invalid value was entered in the Unload Data field.

**User response:** Enter a valid value as listed in the message text.

---

**HAA380E** This field, if entered, can not have a value of zero

**Explanation:** If you specify a space allocation threshold, you must specify a quantity greater than 0.

**User response:** Enter a valid threshold quantity or remove the value from the field.

---

**HAA381E** The retention period and expiration date fields cannot be entered at the same time

**Explanation:** You entered a value in both the Expiration date and Retention period fields. This combination is not valid.

**User response:** Clear the value from either the

Expiration date or the Retention period field.

---

**HAA382E** The allocation multiplier for unloading compressed objects must be a number in the range of 1-99

**Explanation:** The allocation multiplier entered is incorrect.

**User response:** Enter a valid value as listed in the message text.

---

**HAA383W** The altered Threshold values entered here are reflected in the other image copy types

**Explanation:** Each image copy type does not have its own distinct threshold quantity and type. Therefore, when the value is changed on one image copy type screen, the same values will appear on the other screens.

**User response:** None required.

---

**HAA384E** Unload Data can not be set to External or Only when the Discard option is in use

**Explanation:** When the Discard data function is activated in the utility profile, the only valid values for the Unload Data parameter are "C"ontinue and "P"ause.

**User response:** Enter one of the valid values or set Discard to N.

---

**HAA415E** Invalid Value. Valid options are -1 or numeric value greater than 0 for DB2 V8 New Function Mode and later

**Explanation:** A zero or non-numeric value was entered in a field. -1 is valid for DB2 Version 8 New Function Mode.

**User response:** Enter a valid value as described in the message text.

---

**HAA418E** Invalid Condition - Please Enter "EQ" or "=" if you would Objects selected if they meet this Exception Condition or Enter "NE", "<>" or "<=" if you would like Objects selected if they do NOT meet this Exception Condition. Press Help for more information

**Explanation:** The condition type must be either EQUAL or NOTEQUAL. An EQUAL condition tells exception processing to select objects whose DB2 Display Status matches the selected status type. A NOTEQUAL condition tells exception processing to select objects whose DB2 Display Status is something other than the selected status type, i.e., whose status does NOT match the selected status type. For example,

if you want to select objects that are NOT in COPY PENDING status, enter NOTEQUAL for the CHECK\_PEND condition:

```
0 DB2 DISPLAY STATUS CHECK_PEND NE
```

**User response:** Enter a valid value as described in the message text.

---

**HAA419W Please enter a Condition. To Deselect an item, enter a "D" in the "S" field**

**Explanation:** A table was selected on the Update Exceptions Profile Display, but you must also enter conditions for the table.

**User response:** Enter a condition for the selected table. Consult the bottom of the screen for valid condition values. Scroll right to see information about the exception condition.

---

**HAA420E Updating of the Runstats options is allowed only when the "Use Stats From" value is set to rUnstats**

**Explanation:** You attempted to update RUNSTATS options by entering Y in the Update Runstats Options field. However, the value in the Use Stats From field is set to something other than U for RUNSTATs. This is not allowed.

**User response:** Change the Use Stats From field to U before typing Y in the Update Runstats Options field.

---

**HAA422E When one DB2 Display Status Exception is selected as a NOTEQUAL Condition, all DB2 Display Status Exceptions must be selected as AND Conditions. Press Help for more information**

**Explanation:** When one DB2 Display Status Exception is selected as a NOTEQUAL Condition, then all DB2 Display Status Exceptions must be selected as AND Conditions. Exception processing will trigger an object only when the DB2 Display Status of an object is something other than the selected statuses. For example, trigger an object if it is not in Check Pending, Copy Pending, or Stop status:

```
A DB2 DISPLAY STATUS CHECK_PEND NE
A DB2 DISPLAY STATUS COPY_PEND NE
A DB2 DISPLAY STATUS STOPPED NE
```

**User response:** Change the incorrect condition.

---

**HAA424E In order to enter a skeletal to be used in Pause processing, the Unload Data field must be set to "P"ause**

**Explanation:** A skeletal member name was entered in the Pause Skeletal field, but the Unload Data field is set to N.

**User response:** If you want to use a Pause Skeletal, you must set the Unload Data field to P(ause).

---

**HAA425E The Concurrent and Parallel parameters can not be set to Yes at the same time**

**Explanation:** A Y was entered in both the Parallel and Concurrent fields. The Parallel option is only allowed for non-concurrent image copies.

**User response:** Set one of the fields to N.

---

**HAA427E The Concurrent and Check Page parameters can not be set to Yes at the same time**

**Explanation:** A Y was entered in both the Check Page and Concurrent fields. The Check Page option is only allowed for non-concurrent image copies.

**User response:** Set one of the fields to N.

---

**HAA428E The Number Of Columns field must be greater than 0**

**Explanation:** You entered 0 in the Numcols field. The Numcols value, if specified, must be greater than 0.

**User response:** Either clear the Numcols field or set it to a value greater than 0.

---

**HAA429E The subsystem ID entered could not be verified against the Control File**

**Explanation:** DB2 Automation Tool is unable to verify that the selected DB2 subsystem is defined in the DB2PARMS VSAM control file. Your user ID must have sufficient RACF authority to read this data set.

**User response:** Verify that your user ID has read authority to the DB2 Automation Tool control file.

---

**HAA430E The GDG base for the entered discard data set does not exist**

**Explanation:** The discard data set name you entered is a GDG base, but the GDG base does not exist. The GDG base must already be defined.

**User response:** Create the GDG base before continuing.

---

**HAA431E The entered discard data set does not exist. Please ensure that it is defined with an LRECL and BLOCKSIZE consistent with the data being discarded**

**Explanation:** The discard data set name you entered does not exist. The discard data set must already be defined and must have the appropriate LRECL and block size for the records that you wish to discard.

**User response:** Enter an existing data set to continue.

---

**HAA432E**    **There are additional options on the Reorg Tablespace Options screen. Press <PF8> to scroll down and view them**

**Explanation:** This is a scrollable screen. Press PF8 or enter the DOWN command to view additional options.

**User response:** None required.

---

**HAA433E**    **Invalid DD name. If this field is specified, it must be a valid DD name**

**Explanation:** A valid DD name is 1-8 characters where the first character is A-Z, @, #, or \$. The remaining characters can be A-Z, 0-9, @, #, or \$.

**User response:** Correct the DD name.

---

**HAA434E**    **Invalid Value. Select F for Full Backup or D for data only**

**Explanation:** An invalid value was entered in the Backup System Full/Data Only field.

**User response:** Enter F to build JCL for a full system backup (data and logs). Enter D to build JCL for a data only system backup.

---

**HAA435E**    **Invalid Value. Select Y for Yes to select the log only option or N for No**

**Explanation:** An invalid value was entered in the Log Only field.

**User response:** Type N to build syntax to recover the DB2 subsystem volume data and apply log changes. Type Y to build syntax to apply log changes only; only use this option when the database volumes have already been restored outside of DB2.

---

**HAA437E**    **Invalid Entry - Only one recovery point can be selected from the list for the Restore System Utility. Please select only one line or select none and enter a recovery point RBA/LRSN**

**Explanation:** Multiple restore points were selected from the list. Only one restore point can be selected at a time.

**User response:** Choose one restore point or use the Recover RBA/LRSN field.

---

**HAA438E**    **Invalid Value - Select S to choose this option**

**Explanation:** An invalid value was entered in the Cmd field.

**User response:** Enter a valid value as listed in the message text.

---



---

**HAA440I**    **There were no Backup System history records found in any Boot Strap Datasets (if datasharing). System Restore utility is not allowed without running a Backup System utility prior.**

**Explanation:** The Restore System option was selected from the Standalone Utilities menu. However, no system backups have been made for the specified DB2 subsystem or data sharing group.

**User response:** None required.

---

**HAA441E**    **Invalid Entry - The Recover RBA/LRSN field is not a valid hexadecimal string. Please enter a valid RBA / LRSN to recover to.**

**Explanation:** An invalid RBA or LRSN was entered in the named field.

**User response:** Enter a valid value as listed in the message text.

---

**HAA442E**    **Invalid Entry - The Date entered is invalid**

**Explanation:** An invalid date was entered.

**User response:** Correct the invalid month, date or year.

---

**HAA442E**    **Invalid Entry - The Date entered is invalid**

**Explanation:** An invalid date was entered.

**User response:** Correct the invalid month, date or year.

---

**HAA443E**    **Invalid Entry - Enter Cancel or End to return to System Restore**

**Explanation:** A value was entered in the Option line. This is not allowed.

**User response:** Clear the Option line. Press PF3 (END) or enter the Cancel command to return to the Restore System utility screen.

---

**HAA444E**    **Invalid Entry - Enter a "Y" if you would like to enter a date/time and have it converted to an LRSN for you**

**Explanation:** An invalid value was entered in the View LRSN Utility field.

**User response:** Enter Y to use the timestamp to LRSN conversion utility. Enter N to enter an RBA/LRSN manually or to select a row from the list of available system backups.

---

---

**HAA445E**     **Invalid Value - Enter a "G" if the time you are entering is machine time (GMT) or enter an "L" if you are entering a Local Time**

**Explanation:** An invalid value was entered in the Timestamp is in GMT or Local Time field.

**User response:** Enter a valid value as listed in the message text.

---

**HAA446I**     **There are additional options on the Reorg Index Options screen. Press <PF8> to scroll down and view them**

**Explanation:** This informational message appears upon accessing a scrollable screen as a reminder to scroll down to view all fields.

**User response:** Press PF8 to scroll down and view the rest of the fields. Press PF7 to scroll up.

---

**HAA447E**     **Invalid Entry - Valid options are Y, N, or D**

**Explanation:** An invalid value was entered in the Dump field.

**User response:** Type Y to create a fast copy on disk, then dump it to tape. Type D to create a dump on tape of an existing fast copy. Type N to bypass dumps.

---

**HAA450E**     **This option is only valid when using a DB2 Version 9.1 or later DB2 subsystem**

**Explanation:** You set an option to a setting that requires DB2 Version 9.1 or later.

**User response:** Change the option setting to a blank for your version of DB2.

---

**HAA451E**     **The number of days field must be specified when RETAIN LAST (n) or RETAIN GDGLIMIT LAST (n) is selected**

**Explanation:** You specified to retain a specific number of recovery records with RETAIN LAST (n) or RETAIN GDGLIMIT LAST (n). However, the number of records is blank.

**User response:** Enter the number of records to be retained in SYSIBM.SYSCOPY.

---

**HAA452E**     **The number of days field has a valid range of 1-99999999**

**Explanation:** An invalid value was entered in a numeric field.

**User response:** Enter a valid numeric value.

---



---

**HAA453E**     **Force and Dumponly are mutually exclusive**

**Explanation:** You cannot specify both Force and Dumponly.

**User response:** Change the values and retry.

---

**HAA454E**     **Copy token is only valid with Dumponly**

**Explanation:** You entered a Copy token, but the Dumponly option was not set.

**User response:** Change the Dump field to D or remove the value from the Copy token field.

---

**HAA455E**     **Logonly and Fromdump are mutually exclusive**

**Explanation:** You specified a log only restore but also specified Y in the From Dump field. This combination is not valid.

**User response:** Change either the Log Only field or the From Dump field to N.

---

**HAA456E**     **Logonly and Tapeunits are mutually exclusive**

**Explanation:** You specified a log only restore but also specified Y in the Tape Units field. This combination is not valid.

**User response:** Change either the Log Only field or the Tape Units field to N.

---

**HAA457E**     **Dumpclass is only valid with Fromdump**

**Explanation:** You specified a Dump Class without specifying Y in the From Dump field. This combination is not valid.

**User response:** Change the From Dump field to Y, or remove the value from the Dump Class field.

---

**HAA458E**     **Valid options are Yes, No, 0-999**

**Explanation:** An invalid value was entered in the Tape Units field.

**User response:** Enter a valid value as listed in the message text.

---

| **HAA459E**     **When Shrlevel is set to Reference, the Unload Data field must be set to Continue.**

| **Explanation:** When a REORG with SHRLEVEL REFERENCE has been specified, the Unload Data field must be set to Continue.

| **User response:** Change the Unload Data field to  
| Continue.

---

#### **HAA460I    No indexspaces found**

**Explanation:** No indexspaces were found using the current selection criteria. Selection criteria is redisplayed.

**User response:** Either change the selection criteria or PRESS PF3 (END) to exit the selection input panel.

---

#### **HAA470I    SLB not selected. Prior value restored**

**Explanation:** An SLB was not selected as a source for the image copy. The Use System Level Backup field was reset to its prior value.

**User response:** None required.

---

#### **HAA471E    Invalid value. Valid values are S, R, or B**

**Explanation:** An invalid value was entered in the Use System Level Backup (SLB) field.

**User response:** Enter a valid value as described in the message text.

---

#### **HAA472E    Invalid value. Specify decimal number from 0-99**

**Explanation:** An invalid value was entered in the Number of Tasks field.

**User response:** Enter a valid value as described in the message text.

---

#### **HAA473I    No System Level Backups found**

**Explanation:** An attempt was made to select a specific SLB, but no system level backups were found.

**User response:** Ensure a system backup is available from DB2 Recovery Expert if you want to use this option.

---

#### **HAA474E    At least one work volume required**

**Explanation:** At least one work volume must be entered in the Work Volumes field.

**User response:** Correct the issue and retry.

---

#### **HAA475E    Volume not found**

**Explanation:** The work volume entered in the Work Volumes field was not found.

**User response:** Correct the issue and retry.

---

#### **HAA476E    Data set not found**

**Explanation:** The data set entered in the Control File field was not found.

**User response:** Ensure the data set entered is correct and the data set exists.

---

#### **HAA477E    At least one load library required**

**Explanation:** The load libraries for DB2 Recovery Expert were not entered. The load libraries for DB2 Recovery Expert must be supplied to use it with DB2 Automation Tool.

**User response:** Correct the problem and retry.

---

#### **HAA478E    The work volumes cannot be a mixture of SMS-managed and non-SMS-managed volumes**

**Explanation:** The supplied work volumes are a mixture of SMS and non-SMS managed storage groups. This combination is not allowed.

**User response:** Correct the problem and retry.

---

#### **HAA479E    If the work volume(s) are SMS-managed an SMS storage class must also be specified**

**Explanation:** The supplied work volumes are SMS-managed. You must supply an SMS storage class in the Work Storage Class field.

**User response:** Correct the problem and retry.

---

#### **HAA480E    A storage class must not be specified if the work volume(s) are not SMS-managed.**

**Explanation:** The supplied work volumes are not SMS-managed, but an SMS storage group was provided in the Work Storage Class field.

**User response:** Correct the problem and retry.

---

#### **HAA481E    A duplicate volume was entered.**

**Explanation:** A duplicate volume was entered in the Work Volumes field.

**User response:** Remove the duplicate volume and retry.

---

#### **HAA482E    Invalid value. Specify decimal number from 1-99**

**Explanation:** An invalid value was entered in the Number of Tasks field.

**User response:** Correct the problem and retry.



---

**HAA483E Invalid value. Specify decimal number from 1-256**

**Explanation:** An invalid value was entered in the Maximum Tapes field.

**User response:** Correct the problem and retry.

---

**HAA486E Sample and Table Sample are mutually exclusive**

**Explanation:** You may not specify both Sample and Table Sample.

**User response:** Please specify Sample or Table Sample, not both.

---

**HAA487E Repeatable is only valid when Table Sample is specified**

**Explanation:** Repeatable can only be specified if Table Sample is specified.

**User response:** Either specify a Table Sample value or remove the Repeatable value.

---

**HAA489E Inconsistency Thresholds may only be specified when Statistics Scope is Profile Consistency**

**Explanation:** A Y was specified in the Update Inconsistency Thresholds field, but the Statistics Scope field was set to Basic or Profile. Inconsistency thresholds can only be set when the Statistics Scope field is set to Profile Consistency.

**User response:** Either change the Statistics Scope field or change the Update Inconsistency field to N.

---

**HAA490E Statistics Scope must be B - Basic, P - Profile, or C - Profile Consistency**

**Explanation:** An invalid value was entered in the Statistics Scope field.

**User response:** Enter a valid value as described in the message text.

---

**HAA500E Invalid Entry - Valid options are A or P**

**Explanation:** An invalid value was entered in the Scope field.

**User response:** Enter A for Scope All or P for Scope Pending.

---

**HAA501E The only valid values are "N" for No, "L" for Last, "O" for IOglimit, "G" for Gdglimit, "T" for gdglimit lasT, or "M" for gdglimit logliMit**

**Explanation:** An invalid value was entered in the Retain field.

**User response:** Enter a valid value as listed in message text.

---

**HAA503E The number of days field must be specified when RETAIN LAST (n) or RETAIN GDGLIMIT LAST (n) is selected**

**Explanation:** You specified to retain a specific number of recovery records with RETAIN LAST (n) or RETAIN GDGLIMIT LAST (n). However, the number of records is blank.

**User response:** Enter the number of records to be retained in SYSIBM.SYSCOPY in the Number of Records field.

---

**HAA504E The number of days field has a valid range of 1-99999999**

**Explanation:** An invalid value was entered in a numeric field.

**User response:** Enter a valid numeric value as listed in the message text.

---

**HAA505E When either Histogram NUMCOLS or NUMQUANTILES is specified, then both values must be specified**

**Explanation:** You entered a value in only one of the Histogram fields. Both fields are required.

**User response:** Specify a value for both of the Histogram fields.

---

**HAA506E REBALANCE is not allowed with Sharelevel CHANGE**

**Explanation:** You can specify REBALANCE with SHRLEVEL REFERENCE or SHRLEVEL NONE. REBALANCE cannot be specified with SHRLEVEL CHANGE.

**User response:** Either change the SHRLEVEL or set the Rebalance field to N.

---

**HAA507E REBALANCE is not allowed with Scope Pending**

**Explanation:** You can specify REBALANCE with Scope All. REBALANCE cannot be specified with Scope Pending.

**User response:** Either change the Scope field to A(II), or set the Rebalance field to N.

---

**HAA508E Inline Copy is required with REBALANCE**

**Explanation:** When you specify REBALANCE, you must create an Inline Copy.

## HAA509E • HAA536E

**User response:** To specify an inline copy, type Y in the Include Copy options field. To set options for the inline copy, type Y in the Copy options Update field.

---

**HAA509E** FASTSWITCH is not valid when using a DB2 Version 9.1 or later DB2 subsystem

**Explanation:** You set an option to a setting that is not valid with DB2 Version 9.1 or later.

**User response:** Change the option to a valid setting for your version of DB2.

---

**HAA511W** An exception condition is specified for a column that is not included in the \_HIST tables

**Explanation:** You set an option to a setting that requires DB2 V8 or higher.

**User response:** The option will be set to an appropriate setting for your version of DB2.

---

**HAA516E** Invalid Value - The only valid values are "Y", "N", and "I"

**Explanation:** An invalid value was entered in field that only accepts Y, N, or I.

**User response:** Enter a valid value as described in the message text.

---

**HAA517E** A fraction is not allowed in the Exponent of a floating point number. The syntax of a floating point number is [+|-][n][.][n][E+|-n]

**Explanation:** The exception value was entered incorrectly.

**User response:** Enter the exception value as a floating point decimal as described in the message text.

---

**HAA518E** Invalid Condition/Nth Day of the Month combination - The Nth Day value must be >= 2 with a LT condition and be <= 30 with a GT condition

**Explanation:** An invalid combination was entered for the Nth\_DAY exception. Nth\_DAY greater than 31 is not a valid exception.

**User response:** Enter a valid value as described in the message text.

---

**HAA519E** The range of a BIGINT datatype is -9223372036854775808 to +9223372036854775807

**Explanation:** A BIGINT number was entered that is outside the specified range.

**User response:** Enter a valid BIGINT value.

---

**HAA520E** Invalid Group Partitions By value. Enter "J" to have partitioned objects grouped into the same Job, "S" to have partitioned objects grouped into the same Step, or "N" if grouping is not required

**Explanation:** The value you specified is not valid. Valid values are J (Job), S (Step), and N (None).

**User response:** Enter a valid value as described in the message text.

---

**HAA521E** This percentage field has a valid range of 0 to 100

**Explanation:** An invalid value was entered in the percentage field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA523E** The range of the integer value must be between 1 and 131,072 when the unit value is G

**Explanation:** A value was entered that is outside the specified range.

**User response:** Enter a valid value as specified in the message text.

---

**HAA530E** Invalid Combination - You have asked for a reallocation of Hash Space with HASHSPACE plus *percentage* percent and reallocate by DATASIZE plus *percentage* percent. Only one of these fields can be entered

**Explanation:** When reallocating hash space, you must specify the amount of space to be allocated, either as a percentage of the current HASHSPACE or the actual DATASIZE (used) space. Both cannot be specified.

**User response:** Remove the value from one of the fields.

---

**HAA531E** Either the "HASHSPACE plus x percent" or the "DATASIZE plus x percent" fields must be specified

**Explanation:** You must specify one of the hash space values.

**User response:** Enter either a HASHSPACE amount or a DATASIZE amount of space.

---

**HAA536E** Threshold unit type invalid without threshold value

**Explanation:** A threshold unit type was specified but without specifying a threshold value.

**User response:** Either clear the unit type or supply a threshold value.

---

**HAA538E Invalid Combination - You have asked to DROP Pending Changes. However, you have also specified to Use Dataset Manager. DB2 must be used to DROP Pending Changes. One of these fields must be set to No**

**Explanation:** The Use Dataset Manager to Reallocate field was set to Y and the DROP Pending Changes field was set to Y or O.

**User response:** DB2 must be used to drop pending changes. If you want to drop pending changes for your selected objects, you must set Use Dataset Manager to Reallocate to No. Otherwise, a warning message will be issued when you attempt to build the job.

---

**HAA541E Invalid Partition Number - The value must be numeric. Valid range is 0 through 4096**

**Explanation:** An invalid value was entered for the Partition exception value field.

**User response:** Enter a valid value as specified in the message text.

---

**HAA542E Invalid Process NPIs value - Enter Y to always collect statistics for non-partitioning indexes (NPIs); Enter N to not collect statistics for NPIs; Enter A to have exception processing determine whether or not to collect statistics for NPIs**

**Explanation:** An invalid value was entered in the Process NPIs field.

**User response:** Type A in this field if you want exception processing to determine whether or not to collect statistics for non-partitioning indexes (NPIs) based on the following criteria:

- Statistics will be collected when all partitions for an object are included in the objects profiles.
- Statistics will not be collected when only some of the partitions (a subset) are included in the object profiles, such as when there are missing parts for an object. This can occur when:
  - Objects are at the PART level and only a subset of all the partitions are selected in the objects profiles. For example: only parts 2, 5, and 9 are included in the objects profiles.
  - Individual partitions are specifically excluded by using the EXclude indicator in the objects profiles.

Type Y in this field if you want to collect statistics for NPIs regardless of the above criteria. Type N to not collect statistics for NPIs.

---

**HAA548E The range of a FLOAT datatype is -7.2E+75 to 7.2E+75.**

**Explanation:** A floating point number was entered that is outside the specified range.

**User response:** Enter a valid floating point value.

---

**HAA550E This option is only valid when using a version 10 or higher DB2 subsystem**

**Explanation:** An invalid value was entered. DB2 Version 10 or higher is required with the use of this keyword.

**User response:** Remove the value.

---

**HAA551E The AUX keyword is only valid with SHARELEVEL REFERENCE or CHANGE**

**Explanation:** AUX Y can only be specified if the Sharelevel field is R(eference) or C(hange).

**User response:** Either change the AUX value to N or change the Sharelevel field to R or C.

---

**HAA552I No Indexes available for this utility.**

**Explanation:** No indexes were found for this utility.

**User response:** None required.

---

**HAA553I No Tables available for this utility.**

**Explanation:** No tables were found for this utility.

**User response:** None required.

---

**HAA554E Frequency occurrence must be M, L, or B.**

**Explanation:** An invalid value was entered in the Freqval Occurrence field.

**User response:** Enter a valid value as described in the message text.

---

**HAA555E Numcols must be non-zero and not greater than number of index columns**

**Explanation:** The value entered in the Numcols field must non-zero and less than or equal to the number of columns in the index.

**User response:** Correct the invalid value.

---

**HAA556E C is the only command allowed on create line.**

**Explanation:** An invalid value was entered in the line command area. The only value allowed is C to create a statistic definition.

**User response:** Correct the invalid value.

---

**HAA557E** Histogram statistic definition already exists. Change definition.

**Explanation:** A histogram stats definition was already created for the entered number of columns.

**User response:** Change the number of columns, or enter the CANCEL command in the command line.

---

**HAA558E** Value must be numeric, 1 - 100.

**Explanation:** An invalid value was entered.

**User response:** Enter a numeric value between 1 and 100, inclusive.

---

**HAA559E** Freqval Numcol definition already exists. Change definition.

**Explanation:** A FREQVAL NUMCOL stats definition was already created for the entered number of columns.

**User response:** Change the number of columns, or enter the CANCEL command in the command line.

---

**HAA566E** Invalid value. Enter A for all, R for Readers or N for None

**Explanation:** An invalid value was entered in the Force field.

**User response:** Either a valid value as listed in the message text.

---

**HAA567E** The only valid values for Profile are Blank, U, I, D, P, S, and E

**Explanation:** An invalid value was entered in the Profile field.

**User response:** Enter a valid value as described in the message text.

---

**HAA568E** Sample cannot be specified with Delete, Set, or Update Profile

**Explanation:** The Profile field was set to D, P, or S and a value was specified in the Sample field. This combination is invalid.

**User response:** Change the Profile field or the Sample field value.

---

**HAA569E** Index All cannot be specified with USE, DELETE, or SET FROM EXISTING STATS profile options

**Explanation:** The Profile field was set to U, D, or E and Index All was set to Y. This combination is invalid.

**User response:** Change the Profile field or the Index All field value.

---

**HAA570W** All of the Image Copy Options (for the FlashCopy, LP, LB, RP, and RB image copies) have been set to "N". Because of this, the Copy Options field on the Reorg options screen has been set to a "N"

**Explanation:** An image copy was specified to be included in the REORG, but the image copy type has not been selected.

**User response:** If you want to include an image copy, select one or more image copy types and set their associated options on the Image Copy Options screen.

---

**HAA571W** All of the Image Copy Options (for the FlashCopy, LP, LB, RP, and RB image copies) have been set to "N". Because of this, the Image Copy field on the main utility screen has been set to a "N"

**Explanation:** An image copy was specified to be included in the profile, but the image copy type has not been selected. The Image Copy option Include field was set to No.

**User response:** If you want to include an image copy, select one or more image copy types and set their associated options on the Image Copy Options screen.

---

**HAA572E** At least one column must have a sequence number

**Explanation:** For a column group to be defined, at least one column must be selected with a sequence number.

**User response:** Enter a numeric value in the Seq column, or enter the CANCEL command to quit.

---

**HAA573E** At least one column must be selected

**Explanation:** For a column list, at least one column must be selected.

**User response:** Enter S next to column to select it, or enter the CANCEL command to quit.

---

**HAA574E** Freqval statistics are not allowed for LOB or XML objects

**Explanation:** The object selected was a LOB or XML space. Freqval statistics are not supported for LOB or XML objects.

**User response:** Set Define FREQVAL Statistics to N.

---

**HAA575E** Histogram statistics are not allowed prior to DB2 Version 9

**Explanation:** Runstats histogram statistics are not supported prior to DB2 V9.

**User response:** Set Define Histogram Statistics to N.

---

**HAA576E FlashCopy not available for non-DB2 Image Copy Utility Mode**

**Explanation:** The FlashCopy option is a DB2 mode option. It is only valid when Image Copy Utility Mode is set to D (DB2). Image Copy Utility Mode is set on the prior Image Copy Options panel.

**User response:** Change this option to N or issue the CANCEL command to eliminate this message.

---

**HAA577E Runstats Table Column Statistics are not allowed for indexes**

**Explanation:** Runstats Table Column statistics cannot be selected for indexes.

**User response:** Set Runstats Table Column Statistics to N.

---

**HAA584I Statistic Monitor profile has not been executed**

**Explanation:** The selected statistics monitor profile has not been run.

**User response:** Press Enter to continue.

---

**HAA586E Sortnpsi must be A - Auto, Y - Yes, N - No, or blank.**

**Explanation:** An invalid value was entered in the Sortnpsi field.

**User response:** Enter one of the following valid values:

- A (Auto): If sorting all keys of the non-partitioned secondary indexes improves the elapsed time and CPU performance, all keys are sorted.
- Y (Yes): If sorting all keys of the non-partitioned secondary indexes improves the elapsed time, all keys are sorted.
- N (No): Only keys of the non-partitioned secondary indexes that are in the scope of the REORG are sorted.
- blank: Use the subsystem parameter REORG\_PART\_SORT\_NPSI.

---

**HAA587E Invalid value - Value must be between 1 and 4096, or blank.**

**Explanation:** An invalid value was entered in the List Partitions field.

**User response:** Enter a value between 1 and 4096, or leave this field blank to generate all partitions in a single REORG.

---

**HAA589E Source must be S - autoStats or T - automation Tool**

**Explanation:** An invalid value was entered in the Source field.

**User response:** Enter S to view actions for autonomics statistics or enter T to view actions for DB2 Automation Tool.

---

**HAA590I No time windows were found. Press enter to create a time window**

**Explanation:** There are no time windows in which the statistics monitor profile may execute the RUNSTATS utility.

**User response:** Press Enter to define a maintenance window. After the window is defined, the statistics monitor profile will then be able to schedule a RUNSTATS utility to run within that maintenance window.

---

**HAA591E Invalid Value - Enter M for Month or W for Week**

**Explanation:** An invalid value was entered in the Month or Week field. This value determines how the value in the Day column is interpreted.

**User response:** Enter M for Month or W for Week.

---

**HAA592E Invalid Value - A valid range for Month is from 1 to 12**

**Explanation:** An invalid value was entered in the Month field.

**User response:** Enter a valid value. Valid values are from 1 through 12, where 1 corresponds to January and 12 corresponds to December.

---

**HAA593E Invalid Value - A valid range for Day is from 1 to 31**

**Explanation:** An invalid value was entered in the Day field.

**User response:** Enter a valid value. Valid values are from 1 through 31.

---

**HAA594E Invalid Value - If Month is *month* the day must be 1 to *day***

**Explanation:** The day listed in the Day field is not valid for the month listed in the Month field.

**User response:** Correct the day so that it is valid for the month listed in the message.

---

**HAA595E Invalid Value - If Month/Week field is Week this field must be blank**

**Explanation:** An invalid combination of fields was entered. If the Month/Week field is Week, this field must be blank.

**User response:** Clear the invalid value from the field.

---

**HAA596E Invalid Value - Enter Y to delete the SYSAUTOTIMEWINDOWS entry or N to cancel**

**Explanation:** An invalid value was entered in the Delete field.

**User response:** Enter a Y to delete this entry or N to cancel deletion.

---

**HAA597I The following entry has been successfully updated | deleted (Window ID window\_id)**

**Explanation:** The window ID listed in the message was successfully updated or deleted.

**User response:** None required.

---

**HAA598E Invalid combination. If Time type is blank, Time type2 must also be blank**

**Explanation:** If Time From or To is blank, no limitation on time exists so Time To or From must also be blank.

**User response:** Specify values in both Time fields or leave both fields blank.

---

**HAA600E Scope must be "P" - Pending , "X" - AUXOnly, "A" - All, "R" - RefOnly, or "S" - XMLSchemaOnly**

**Explanation:** An invalid value was entered in the Scope field.

**User response:** Enter a valid value as listed in the message text.

---

**HAA601E field\_name must be "I" - Invalidate, or "R" - Report**

**Explanation:** An invalid value was entered in a field that only accepts I for Invalidate or R for Report.

**User response:** Enter a valid value in the field as listed in the message text.

---

**HAA602E The values for AUXerror, LOBerror, and XMLerror must be the same**

**Explanation:** The values for the AUXerror, LOBerror, and XMLerror fields either must all be I for Invalidate or they must all be R for Report.

**User response:** Change the field values so they are all the same value.

---

**HAA603E SCOPE XMLSCHEMAONLY is only valid on DB2 V10 NFM and above**

**Explanation:** A SCOPE of XMLSCHEMAONLY is only valid for DB2 10 NFM and above.

**User response:** Enter a value other than XMLSCHEMAONLY.

---

**HAA604E Exception table creator and Exception table suffix cannot both be blank**

**Explanation:** To ensure a unique exception table name, you must specify exception table creator or exception table suffix or both.

**User response:** Specify an exception table creator or exception table suffix, or both.

---

**HAA605E Autonomic Console is only valid for DB2 Version 10 NFM and above**

**Explanation:** Autonomics Console is only valid for DB2 Version 10 NFM and later.

**User response:** Either clear the entry from the Option field, or enter a valid DB2 Version 10 NFM or later subsystem ID in the DB2 Subsystem ID field before entering the option to access the Autonomic Console.

---

**HAA611W RESET ACCESSPATH will reset the access path statistics for all tables in included table spaces and indexes. RESET ACCESSPATH cannot be executed on LOB table spaces. Further, no statistics collection is done.**

**Explanation:** This message is displayed when Y is entered in the Reset Accesspath field. This message is a warning that after execution of RESET ACCESSPATH, statistics cannot be rolled back to previous values. If there is no statistics history, there will be no record of the old statistics and no way to restore them, even if HISTORY ACCESSPATH is specified. RUNSTATS will not collect any statistics for objects when RESET ACCESSPATH is selected.

**User response:** No action is required.

---

**HAA612E HISTORY ACCESSPATH can only be Y when RESET ACCESSPATH is Y.**

**Explanation:** This message is displayed when N is entered in the Reset Accesspath field and Y is entered in the History Accesspath field. This combination is not allowed.

**User response:** Either change the Reset Accesspath field to Y, or change the History Accesspath field to N.

---

**HAA613E**    **Valid values for RBA/LRSN Conversion are blank, "B"asic, "E"xtended, and "N"o.**

**Explanation:** An invalid value was entered for the RBA/LRSN Conversion field.

**User response:** Enter one of the following valid values:

- Leave this field blank to use the UTILITY\_OBJECT\_CONVERSION ZPARM value.
- Enter B to convert objects in EXTENDED (10-byte format) to BASIC (6-byte) format.
- Enter E to convert objects in BASIC format to EXTENDED format.
- Enter N when no conversion is required.

---

**HAA614E**    **The valid values for Newmaxro are blank or a number.**

**Explanation:** An invalid value was entered in the Newmaxro field.

**User response:** Enter one of the following valid values:

- Leave this field blank to specify NEWMAXRO NONE at job build time.
- Type an integer to specify the maximum amount of time (in seconds) for the last log iteration after SWITCHTIME is met. If you specify an integer, you must also specify a Switchtime value.

---

**HAA615E**    **If the value for Newmaxro is specified, Switchtime must be Timestamp or Lde.**

**Explanation:** A valid value was entered in the Newmaxro field, but the Switchtime field is set to N or is blank. The Switchtime field must be set to Timestamp or LDE.

**User response:** In the Switchtime field, enter T for timestamp or L for labeled duration expression.

---

**HAA617E**    **View LRSN Utility not valid for non-data sharing.**

**Explanation:** A Y was entered in the View LRSN Utility field, but the subsystem selected on the DB2 Automation Tool Main Menu is not a member of a data sharing group. The View LRSN utility option is only valid for a data sharing group environment.

**User response:** Change the value in the View LRSN Utility field to N.

---

**HAA618E**    **VIEW must be "B" - Boolean logic or "S" - Selected exceptions**

**Explanation:** An invalid parameter was entered for the VIEW command.

**User response:** Enter a valid parameter as described in the message text.

---

**HAA620E**    **Sharelevel not set to Change.**

**Explanation:** Y was entered in the Update Shrlevel Change Options field, but the Sharelevel field is not set to Change.

**User response:** Either enter C in the Sharelevel field or change the Update Shrlevel Change Options field to N.

---

**HAA621E**    **Mapping Database only valid with Create Dynamic Mapping Table = I.**

**Explanation:** A mapping database was entered in the Mapping Database field. However, this field is only valid when the Create Dynamic Mapping Table field is set to I for Ignore.

**User response:** Either set Create Dynamic Mapping Table to I (Ignore), or clear the value from the Mapping Database field.

---

**HAA623E**    **Invalid database; DSNDB01, DSNDB06, and DSNDB07 not allowed.**

**Explanation:** A database name of DSNDB01, DSNDB06, or DSNDB07 was specified in the Mapping Database field. These databases cannot be specified for the mapping table.

**User response:** Either change the Mapping Database name to a different database, or clear the value from the field and allow DB2 to choose the database.

---

**HAA624E**    **Invalid database: Implicit database not allowed.**

**Explanation:** The database name specified in the Mapping Database field is an implicitly defined database. An implicitly defined database cannot be used for the mapping table.

**User response:** Either change the Mapping Database name to a different database, or clear the value from the field and allow DB2 to choose the database.

---

**HAA625E**    **Invalid database. Workfile or TEMP database not allowed.**

**Explanation:** The database name specified in the Mapping Database field is either a temporary or a work file database; these cannot be used for the mapping table.

**User response:** Either change the Mapping Database name to a different database, or clear the value from the field and allow DB2 to choose the database.

---

**HAA626E Database not found.**

**Explanation:** The database name specified in the Mapping Database field database name specified does not exist in this subsystem.

**User response:** Either change the Mapping Database name to a different database, or clear the value from the field and allow DB2 to choose the database.

---

**HAA628E Invalid value. Value must be between 0 and 32,767.**

**Explanation:** A value was specified for Parallel subtasks that is too large. The largest supported value is 32,767.

**User response:** Specify an integer between 0 and 32767.

---

**HAA631I No symptoms were found for this action**

**Explanation:** An exception profile was not included in the job profile. Therefore, no symptoms are associated with the autonomic build or Autonomics Director execution.

**User response:** No action is required.

---

	<b>HAA655E A Repeated exception condition cannot be Repeated more than once when one is an AND condition and one is an OR condition.</b>

	<b>Explanation:</b> An R (repeat) line command was entered on an exception condition that is already repeated where one exception is an "A"nd and one exception condition is an "O"r. To have more than one repeated condition, they all must be "A"nd conditions or "O"r conditions.

	<b>User response:</b> Either remove the R command, or change the condition type of all repeated lines to be the same, then re-issue the R line command.

---

	<b>HAA656E A Repeated exception condition cannot be Repeated more than once when one is an AND condition and one is an OR condition.</b>

	<b>Explanation:</b> An exception condition is repeated more than once. You attempted to change one or more, but not all, of the conditions from "A"nd to "O"r or "O"r to "A"nd. However, all of the conditions must be "A"nd conditions or "O"r conditions.

	<b>User response:</b> Either change the condition type of all repeated lines to be the same, or deselect all but one of the repeated lines.

---

**HAA700E *field\_name* Options can only be updated when the "Include" *field\_name* Options field is set to "Y".**

**Explanation:** A Y was entered in the Update field for the field that is listed in the message text, but the field's corresponding Include field contains N.

**User response:** Enter Y in the Include field for the field that is listed in the message text, then enter Y in the corresponding Update field.

---

**HAA702E Invalid Value - Select "Y", "N", "F", or blank.**

**Explanation:** An invalid value was entered in the DB2 field.

**User response:** Enter Y to allow DB2 to process SELECT statements that are not supported by DB2 HPU. Type N to reject SELECT statements that are not supported by DB2 HPU. Type F to force reading of the table using DB2 SQL access.

---

**HAA703E Invalid Value - Select "O", or blank.**

**Explanation:** An invalid value was entered in the NULL off field.

**User response:** Enter 0 for Off to bypass the NULL information, or leave the field blank.

---

**HAA704E Invalid Value - This field must remain blank if the "NULL Off" field is set to "O".**

**Explanation:** If O is specified in the NULL Off field, the **when NULL** and **when not NULL** fields must be left blank.

**User response:** Remove the values from these fields, or remove the value from the NULL Off field.

---

**HAA705E Invalid Value - Select "A", "B", or blank.**

**Explanation:** An invalid value was entered in the NULLPOS field.

**User response:** To specify the position of the NULL indicator, enter A for after, B for before, or leave this field blank.

---

**HAA706E Invalid Value - Select "+", "-", "P", or blank.**

**Explanation:** An invalid value was entered in the PIC sign field.

**User response:** Enter a plus sign (+), minus sign (-), or P in the PIC sign field, or leave the field blank.



---

**HAA707E Invalid Value - Select "L", "T", or blank.**

**Explanation:** An invalid value was entered in the **PIC position** field.

**User response:** Enter L to place the sign before the numeric value or T to place the sign after the numeric value, or leave the field blank.

---

**HAA708E Invalid Value - Select ",", ".", or blank.**

**Explanation:** An invalid value was entered in the **PIC decimal** field.

**User response:** Enter a comma (,) or a period (.) to include a decimal separator, or leave the field blank.

---

**HAA709E Invalid Value - Select "?" for a list of valid values.**

**Explanation:** An invalid value was entered. The cursor is positioned in the field that contains the invalid value.

**User response:** To display a list of valid values, enter ? in the field. Correct the value.

---

**HAA710E Invalid Value - Select "R", "M", or blank.**

**Explanation:** An invalid value was entered in the **LENGTH** field.

**User response:** Enter R for Real, M for Max, or leave the field blank.

---

**HAA711E Invalid hexadecimal value. Valid values are 0123456789ABCDEF.**

**Explanation:** An invalid value was entered in the **ORIGINOBID** field.

**User response:** Enter a valid hexadecimal value. Valid values are 0 through 9 and A, B, C, D, E, and F.

---

**HAA712E Invalid Value - Select "D", "L", or numeric value greater than zero.**

**Explanation:** An invalid value was entered in the **COPYDDN** field.

**User response:** Enter D for DDN; you must also provide data set and unit type information on the remainder of the panel. Enter L to use the most recent valid registered image copy. Enter an integer (n) to use the *n*th latest valid registered full image copy. Valid values are 1 - 999; 1 indicates the most recent valid registered full image copy). In the job syntax, the integer is preceded by a minus sign (-).

---

**HAA713E Invalid Value - Select "C", "I", or "N".**

**Explanation:** An invalid value was entered in the **IC** field.

**User response:** Enter I to include an inline image copy, N to indicate that the image copy is not inline, or C to check whether the image copy is inline.

---

**HAA714E Unload DSN Options must be included before generating HPU JCL.**

**Explanation:** Before you can build the DB2 HPU job, you must configure the UNLDDN DD data set specifications. The **UNLDDN Options** field **Include** and **Update** fields are set to Y.

**User response:** Press Enter to continue to the UNLDDN Options panel and configure the UNLDDN DD.

---

**HAA715E Only one table space can be selected. Choose one table space and resubmit.**

**Explanation:** You selected more than one table space on the HPU Tablespace Selection panel. One table space or multiple partitions of the same table space can be selected at a time processing.

**User response:** To continue, select a single table space or select partitions of the same table space.

---

**HAA716E Invalid value - COPYDDN is only valid when DB2 is set to "N".**

**Explanation:** An image copy cannot be used as the source for the unload job when the **DB2** field is set to Y for Yes or F for Force.

**User response:** Either remove the value in the **DB2** field, or set the **COPYDDN Options** field **Include** and **Update** fields to N.

---

**HAA717E ddname Options were selected but no DSN was included.**

**Explanation:** The *ddname* that is listed in the message text was selected for inclusion, but its data set name and other specifications are not defined.

**User response:** Specify Y in the *ddname* **Include** and **Update** fields and press Enter.

---

**HAA718E The field\_name field can be blank or in the range of 1 - 2147483647.**

**Explanation:** An invalid value was entered in the field that is listed in the message text.

**User response:** Enter an integer in the range of 1-2147483647.

---

**HAA719E**     **Duplicate DSN found. The *ddname\_1* DSN matches the *ddname\_2* DSN. Provide a unique DSN for each.**

**Explanation:** The *ddname\_1* data set name is identical to the *ddname\_2* data set name. The data set names must be unique to avoid errors at run time.

**User response:** Change one of the data set names to ensure that the data set names are unique.

---

**HAA720E**     **Invalid Value - Only one table can be selected at once.**

**Explanation:** More than one table was selected. You can select only one table at a time. After the required settings for a table are configured, such as column selection and output DD specifications, you can select another table for processing.

**User response:** Select a single table and press Enter.

---

**HAA721E**     **Invalid Value - Select "A", "C", or "O", or leave this field blank.**

**Explanation:** An invalid value was entered in the OUTEXIT exit name infield.

**User response:** Enter A for assembler, C for C language, O for Cobol2, or leave this field blank.

---

**HAA723E**     **Invalid Value - Select "A", "E", "S", "U", or leave this field blank.**

**Explanation:** An invalid value was entered in the Scheme field.

**User response:** To specify the format of the unloaded data, enter A for ASCII, E for EBCDIC, S for "as is", U for Unicode, or leave this field blank.

---

**HAA724E**     **Invalid Combination - Select a value for ORIGINOBID in either Hex or Decimal.**

**Explanation:** A value was entered in both of the ORIGINOBID hexadecimal and decimal value fields.

**User response:** Enter either a hexadecimal or decimal value in one of the ORIGINOBID fields.

---

**HAA725E**     **The Include field for Select Table and Columns field is set to "Y" but no table was selected.**

**Explanation:** The Select Table and Columns Include field is set to Y, but a table was not selected.

**User response:** Press Enter to select a table and columns to unload.

---



---

**HAA726E**     **Select Table and Columns can only be updated when the "Include" Select Table and Columns field is set to "Y".**

**Explanation:** A Y was entered in the Select Table and Columns Update field, but the Select Table and Columns Include field is set to N.

**User response:** Enter Y in the Select Table and Columns Include field and enter Y in the Select Table and Columns Update field.

---

**HAA727E**     **Invalid value - Enter a value for HPU Version from the list displayed.**

**Explanation:** Enter a valid value for your DB2 HPU version from the list displayed. DB2 Automation Tool currently supports DB2 HPU V4.2 and V4.3.

**User response:** Enter a valid version in the HPU Version field.

---

**HAA728W**     **The Include and Update fields have been set to "N" for the Select Table and Columns field because a table was not selected.**

**Explanation:** No table or column was selected by using the Select Table and Columns fields. The Select Table and Columns Include and Update fields were set to N.

**User response:** No action is required.

---

**HAA729E**     **OUTDDN DSN Options must be included before generating HPU JCL.**

**Explanation:** An OUTDDN DD data set name and specifications must be specified before you generate the JCL.

**User response:** Include a valid OUTDDN DD.

---

**HAA730E**     **Invalid Value - DSNTIAUL can be selected only when FORMAT is set to "T".**

**Explanation:** An invalid value was entered in the DSNTIAUL STRICT field. This option is only allowed when the FORMAT field is set to T for DSNTIAUL.

**User response:** Clear the value from the DSNTIAUL STRICT field or change the value in the FORMAT field.

---

**HAA731E**     **Invalid Value - Select "D", "T", "E", "U", "V", or "I".**

**Explanation:** An invalid value was entered in the FORMAT field.

**User response:** Enter D for Delimited, T for

---

DSNTIAUL, E for External, I for Internal, U for User, or V for Variable.

---

**HAA732E Invalid Value - Delimited values are only allowed when FORMAT is set to "D".**

**Explanation:** An invalid value was entered in the **DELIMITED SEP**, **DELIMITED DELIM**, or **NULL DELIM** fields. Delimited values can be included only when the **FORMAT** field is set to D for Delimited.

**User response:** Either clear the values from the **DELIMITED** field, or change the value in the **FORMAT** field.

---

**HAA733E Invalid Value - Variable value is only allowed when FORMAT is set to "V".**

**Explanation:** An invalid value was entered in the **Variable** field. This field can be populated only when the **FORMAT** field is set to V for Variable.

**User response:** Clear the **Variable** field or change the value in the **FORMAT** field.

---

**HAA734E Invalid Value - When FORMAT is set to "V", VARIABLE value must be included.**

**Explanation:** If the **FORMAT** field is set to V for Variable, a value must be entered in the **VARIABLE** field.

**User response:** In the **VARIABLE** field, enter E to specify that the characteristics and sequence of fields in the output data set corresponds to the characteristics and the sequence of fields in the **SELECT** statement. Enter A to specify that the variable columns are to be written using their actual length.

---

**HAA735E Invalid Value - Select blank, "E", or "A".**

**Explanation:** An invalid value was entered in the **VARIABLE** field.

**User response:** Enter E for End, A for all, or leave this field blank.

---

**HAA736E Invalid Value - Like Table | Creator can only be selected when FORMAT is set to "V" or "T".**

**Explanation:** The **Like Table** and **Like Creator** fields can be specified only when the **FORMAT** field is set to V for **VARIABLE** or T for **DSNTIAUL**.

**User response:** Remove the values from the **Like Table** and **Like Creator** fields.

---

**HAA737E Invalid Value - Both Like Table and Like Creator must be included.**

**Explanation:** Both the **Like Table** and the **Like Creator** fields must be specified.

**User response:** Specify values in both fields.

---

**HAA738E Invalid Value - Embedded blanks not allowed. Enter a valid Like Table | Like Creator name.**

**Explanation:** A blank was entered in either the **Like Table** or the **Like Creator** field. Embedded blanks are not allowed.

**User response:** Specify valid value in both fields.

---

**HAA740W Since a DSN was not included for ddname, the Include and Update fields have been set to "N" for ddname.**

**Explanation:** A valid data set name and other specifications are required for the DD name that is listed in the message. Because valid data set information was not included, the DD name **Include** and **Update** fields have been set to N.

**User response:** To configure the data set name and other specifications, enter Y in the **Include** and **Update** fields for the DD name.

---

**HAA741E Incomplete value - This field must contain 4 hexadecimal characters or remain blank.**

**Explanation:** An invalid value was entered in a field that requires a four hexadecimal characters.

**User response:** Enter four hexadecimal characters or leave this field blank.

---

**HAA742E Invalid value - If Scheme is set to "S" for Asis, this CCSID field must remain blank.**

**Explanation:** An invalid combination of values was entered in the **Scheme** and **CCSID** fields.

**User response:** Either clear the **CCSID** fields, or change the value of **Scheme** to include the **CCSID** fields.

---

**HAA743E Duplicate DSN found. The ddname\_1 DSN matches the ddname\_2 DSN for Select select\_statement. Provide a unique DSN for each.**

**Explanation:** Duplicate data set names were found. The *ddname\_1* DSN is identical to the *ddname\_2* DSN for the select statement that is listed in the message. These data set names must be unique.

## HAA744E • HAA810E

**User response:** Change either the *ddname\_1* or *ddname\_2* data set name to ensure that the data set names are unique.

---

**HAA744E** Both the OUTEXIT name and language must be specified.

**Explanation:** The OUTEXIT exit name field and the exit language must both be specified.

**User response:** Either specify a value in both fields, or leave both fields blank.

---

**HAA745W** Since a DSN was not included for OUTDDN, the *select\_statement* Select Statement has been set to "N".

**Explanation:** An OUTDDN DSN is required but was not specified. The SELECT statement that is listed in the message was set to "N".

**User response:** If you want to include the table in the unload job, enter the S command to select the table and specify an OUTDDN DSN.

---

**HAA746E** Invalid Value - Valid values are "S" for Select and "D" for Deselect.

**Explanation:** An invalid value was entered in the Select field.

**User response:** Enter a valid value as listed in the message text.

---

**HAA747E** Invalid Value - Valid values are "K" for Keepdictionary, "N" for Nokeepdictionary, or blank.

**Explanation:** An invalid value was entered in the Keepdictionary field.

**User response:** Enter a valid value as listed in the message text.

---

**HAA748E** Invalid Value - Enter a numeric value, SORTKEYS, or blank.

**Explanation:** An invalid value was entered in the Sortkeys field.

**User response:** Enter a valid value as listed in the message text.

---

**HAA749E** Invalid Value - Enter "E" for EBCDIC, "A" for ASCII, "U" for Unicode, or blank.

**Explanation:** An invalid value was entered in the Format field.

**User response:** Specify the format for the input data set. Enter E for EBCDIC, A for ASCII, U for Unicode, or leave the Format field blank.

---

**HAA805E** Template data sets are not available for non-DB2 image copy utility modes.

**Explanation:** Image copy utility modes E (ESS) and S (Symmetrix) do not support template data sets.

**User response:** To continue, remove the template data set.

---

**HAA806E** Single quote (apostrophe) not allowed for OPTIMIZATION\_HINT.

**Explanation:** A single quote was added to the OPTIMIZATION\_HINT field. This might cause errors at run time if the entire string is not encased in quotes.

**User response:** Remove the single quote from the OPTIMIZATION\_HINT string.

---

**HAA807E** Invalid Value - Value must be blank, numeric, or NUMRECS.

**Explanation:** An invalid value was entered in the Numrecs field.

**User response:** Enter a valid value as listed in the message text.

---

**HAA808E** Invalid Value - Value must be T for Total or D for Delta.

**Explanation:** An invalid value was entered in the PROCESS\_MSG\_FREQ type field.

**User response:** Enter a valid value as listed in the message text.

---

**HAA809W** This option is only available if the DB2 option on panel HAA\$HPUO is set to Force.

**Explanation:** If DB2 is not set to Force, this field will not be included in the generated JCL.

**User response:** If you want to include this option, set the DB2 field on the HPU Options panel to F(orce).

---

**HAA810E** Invalid value entered. Valid values are blank, N for none, E for enable, F for enable with fallback, L for eligible, or A for all.

**Explanation:** An invalid value was entered in the QUERY\_ACCELERATION field.

**User response:** Enter a valid value as listed in the message text.

---

HAA812I	Action type has been successfully changed to <i>action_type</i> .
<b>Explanation:</b>	The action type has been changed from its original type to the type that is listed in the message.
<b>User response:</b>	No response is required.

---

HAA813I	Action type change canceled.
<b>Explanation:</b>	The request to change the action type was canceled.
<b>User response:</b>	No response is required.

---

HAA814I	No <i>action_type</i> actions currently assigned to maintenance window.
<b>Explanation:</b>	You specified to view an action type for this maintenance window, but there are no actions of those type to display.
<b>User response:</b>	Enter the other type of action to display, or enter B to display both types of actions.

---

HAA815E	Type must be A - Active, P - Passive, or B - Both.
<b>Explanation:</b>	An invalid value was entered in the Type field.
<b>User response:</b>	Enter a valid value as described in the message text.

---

HAA817E	TableSample cannot be specified with Set Profile.
<b>Explanation:</b>	The Profile field was set to S and a value was specified in the TableSample field. This combination is invalid.
<b>User response:</b>	Change the Profile field or the TableSample field value.

---

HAA818E	Invalid value - EXPLAIN_TABLES_ROWS must be blank, "D" for Delete or "K" for Keep.
<b>Explanation:</b>	An invalid value was entered in the EXPLAIN_TABLE_ROWS field.
<b>User response:</b>	Enter a valid value as specified in the message text and resubmit.

---

HAA819E	Invalid value entered. Valid values are blank, or "O" for off.'
<b>Explanation:</b>	An invalid value was entered in the ZIIP field.
<b>User response:</b>	Enter a valid value as specified in the message text and resubmit.

---



---

**HAA917E** GDG base cannot be generated with dynamic variables. Remove the *variable\_name* variable to continue.

**Explanation:** Since the control cards for the GDG base are generated at build time, DB2 Automation Tool must know the fully qualified data set name. Dynamic variables are resolved at execution time; therefore, the following variables cannot be included in the data set name:

- 10. Time
- 11. Date
- 12. Year
- 13. Month
- 14. Day
- 15. Julian Day
- 16. Hours
- 17. Minutes
- 18. Seconds
- 19. Timestamp
- 20. Random Number

**User response:** Remove the invalid variable.

---

**HAA918E** Invalid value - Recluster Yes is only valid with Sortdata No.

**Explanation:** Y was entered in both the Sortdata and Recluster fields. This combination is not allowed.

**User response:** Change the value of either the Sortdata or the Recluster field.

---

**HAA919E** Invalid value - Recluster Yes is not valid with Shrlevel Change.

**Explanation:** The REORG is currently set to SHRLEVEL CHANGE, and Y was entered in the Recluster field. Recluster is not allowed with REORG SHRLEVEL CHANGE.

**User response:** Change the Recluster field to N, or change the REORG to SHRLEVEL REFERENCE or NONE.

---

**HAA941E** This option is not available at this time

**Explanation:** The selected option is not currently available.

**User response:** Select a different option.

---

**HAA942I** Debug Mode is now activated

**Explanation:** DEBUG mode is currently ON. To turn off DEBUG mode, type DEBUG in the option line of the DB2 Automation Tool main menu.

**User response:** None required.

**HAA943I     Debug Mode is now deactivated**

**Explanation:** DEBUG mode is currently OFF. To turn ON DEBUG mode, type DEBUG in the option line of the DB2 Automation Tool main menu.

**User response:** None required.

**HAA944I     XDC Mode is now activated**

**Explanation:** XDC mode is currently ON.

**User response:** None required.

**HAA945I     XDC Mode is now deactivated**

**Explanation:** XDC mode is currently OFF.

**User response:** None required.

**HAA947E     SORTDATA NO is invalid with SHARELEVEL CHANGE**

**Explanation:** The Sortdata field contains N and an online REORG with SHRLEVEL CHANGE was specified. This is not a valid option with SHRLEVEL CHANGE for DB2 V8 or above. SORTDATA NO is only valid when SHRLEVEL NONE or SHRLEVEL REFERENCE has been specified.

**User response:** Change the Sortdata field to Y if you want to use REORG with SHRLEVEL CHANGE.

**HAA948I     SHARELEVEL has been defaulted to CHANGE because ONLINE REORG was set to YES. Enter a Y for ONLINE REORG Options to change this value**

**Explanation:** When ONLINE REORG is set to Yes, SHRLEVEL will be given a default value of CHANGE. The only valid options are SHRLEVEL CHANGE or REFERENCE for ONLINE REORG.

**User response:** Enter a Y for ONLINE REORG Options to edit SHRLEVEL options.

**HAA949I     SHARELEVEL has been defaulted to NONE because ONLINE REORG was set to NO**

**Explanation:** When ONLINE REORG is set to no, SHARELEVEL is not valid. The Include SHARELEVEL option has been set to N.

**User response:** None required; enter a Y in the Include Online REORG field to edit SHARELEVEL options.

**HAA951E     Invalid Value - Please select a valid value from the list provided or press PF1 for more information**

**Explanation:** An invalid value was entered in one of the DISP options fields.

**User response:** Enter one of the following options for the DISP parameter:

- Status: M - Modify, N - New, O - Old, S - Share
- Normal Termination: C - Catalog, D - Delete, K - Keep, U - Uncatalog
- Abnormal Termination: C - Catalog, D - Delete, K - Keep, U - Uncatalog

**HAA952I     There are additional options on the Modify options screen. Press <PF8> to scroll down and view them**

**Explanation:** This is a scrollable screen.

**User response:** Press PF8 or enter the DOWN command to view additional options.

**HAA954E     Requested table not found**

**Explanation:** The combination of table name and table creator provided returned no results. The specified table does not exist.

**User response:** Either enter different criteria to receive more search results, create a new table under the name specified in the search or perform a wildcard search by entering an asterisk (\*) in both the Table creator and Table name fields to return more results.

**HAA955E     If Delimited is selected, a valid delimiter must be included. Please include a valid delimiter**

**Explanation:** If Delimited is included, a valid delimiter must be included.

**User response:** You can either enter a single character or a two-byte hexadecimal value.

**HAA956E     Sample value must not exceed 100. Please correct and resubmit**

**Explanation:** If included, Sample must contain a numeric value between 1 and 100.

**User response:** Clear the invalid value and enter a valid value between 1 and 100.

**HAA957E     Invalid Value - The only valid value for Strip is B for Both, L for Leading, N for No or T for Trailing**

**Explanation:** An invalid value was entered for the Strip field.

**User response:** Enter a valid value as described in the message text.

---

**HAA958E Invalid Value - The only valid value is I for Internal and E for External**

**Explanation:** An invalid value was entered for the Int,Ext field.

**User response:** Enter a valid value as described in the message text.

---

**HAA959E Invalid Value - The only valid value for And/Or is A for And or O for Or**

**Explanation:** An invalid value was entered for the And/Or field.

**User response:** Enter a valid value as described in the message text.

---

**HAA960E Invalid Value - The only valid value is S for Select**

**Explanation:** An invalid value was entered for the Select field.

**User response:** Enter a valid value as described in the message text.

---

**HAA961E Invalid Value - The only valid values for Header is C for CONST, N for None or O for OBID**

**Explanation:** An invalid value was entered for the Header field.

**User response:** Enter a valid value as described in the message text.

---

**HAA962E Invalid Value - The only valid values for FLOAT is I for IEEE or S for S390**

**Explanation:** An invalid value was entered for the Float field.

**User response:** Enter a valid value as described in the message text.

---

**HAA963E Invalid Value - The only valid value for CLONE is Y for Yes or N for No**

**Explanation:** An invalid value was entered for the Clone field.

**User response:** Enter a valid value as described in the message text.

---

**HAA964E Invalid Value - The only valid value for Skip Locked Data is Y for Yes or N for No**

**Explanation:** An invalid value was entered for the Skip Locked Data field.

**User response:** Enter a valid value as described in the message text.

---

**HAA965E Invalid Value - The only valid value for NOSUBS is Y for Yes or N for No**

**Explanation:** An invalid value was entered for the Nosubs field.

**User response:** Enter a valid value as described in the message text.

---

**HAA967E Invalid Value - The only valid value for NOPAD is Y for Yes or N for No**

**Explanation:** An invalid value was entered for the Nopad field.

**User response:** Enter a valid value as described in the message text.

---

**HAA967E Invalid Value - The only valid value for Encoding is A for ASCII, E for EBCDIC, No for No or U for Unicode**

**Explanation:** An invalid value was entered for the Encoding field.

**User response:** Enter a valid value as described in the message text.

---

**HAA968E Invalid Value - A valid CCSID must be entered**

**Explanation:** An invalid value was entered in the SBCS, MIXED, or DBCS CCSID fields.

**User response:** Enter a valid numeric CCSID value in the appropriate field.

---

**HAA969E Invalid Value - The only valid values for Dec Float Round Mode are C for Ceiling, D for Down, F for Floor, HD for Half Down, HE for Half Even, HU for Half Up, U for Up or N for None**

**Explanation:** An invalid value was entered in the Dec Float Round Mode field.

**User response:** Enter a valid value as described in the message text.

---

**HAA970E Invalid Value - The only valid values for this field is C for Shrlevel Change and Isolation CS, U for Shrlevel Change and Isolation UR or R for Shrlevel Reference**

**Explanation:** An invalid value was entered in the Shrlevel and Isolation field.

**User response:** Enter a valid value as described in the message text.

---

**HAA971E Skip Locked Data is only valid with Shrlevel Change and Isolation of CS**

**Explanation:** Skip Locked Data was set to Y, but is only allowed with Shrlevel Change and Isolation CS.

**User response:** Either set Skip Locked Data to N for No, or change your settings for Shrlevel and Isolation.

---

**HAA972E Invalid Value - The only valid values for Delimited are Y for Yes or N for No**

**Explanation:** An invalid value was entered for the Delimited field.

**User response:** Enter a valid value as described in the message text.

---

**HAA973E Invalid Value - The only valid values for Null is \*, Y for Yes or N for No**

**Explanation:** An invalid value was entered in the Null column.

**User response:** Enter Y for Yes, N for No and \* to not check for null column.

---

**HAA974E At least one column must be specified to Unload**

**Explanation:** At least one column must be selected in order to continue with the UNLOAD utility.

**User response:** Use the Select Order column to specify one or more columns to unload.

---

**HAA976E A constant must be included if Header is set to C for CONST**

**Explanation:** The Header field was set to C for constant, but no constant value was entered.

**User response:** Enter a constant value in the CONST field.

---

**HAA977E Strip Char must be specified when Strip L/T/B is specified**

**Explanation:** Strip Leading, Trailing or Both was specified without including Strip Char. If Strip Leading,

Trailing or Both is specified, Strip Char must be specified.

**User response:** Enter a strip character in the Strip Char field, or remove the value in the Strip L/T/B/N field.

---

**HAA980W A SYSREC DSN must be included to continue. Please update the SYSREC DSN options on this screen in order to continue**

**Explanation:** A valid SYSREC DSN must be included to continue with the UNLOAD process.

**User response:** Please complete all fields on this page and include a SYSREC DSN.

---

**HAA981E When using Disk type devices, expiration date and retention period are not valid**

**Explanation:** A value was entered in the Expiration date or Retention period fields, when a disk type device was specified for the Unload Utility. These fields are mutually exclusive.

**User response:** Clear the Expiration date and Retention period fields, or change the Unit Type field to CART.

---

**HAA982E Use Freeform Literal option was selected with no value entered for Free Form Literal**

**Explanation:** The Freeform Literal qualifier code was selected with no value entered for Freeform Literal.

**User response:** Please include a value for Freeform Literal or deselect the Freeform Literal qualifier code.

---

**HAA983E The GDG limit value must be either blank or a number in the range of 1-255**

**Explanation:** An invalid value was entered in the GDG limit field.

**User response:** Enter a numeric value between 1 and 255 as the GDG limit for this Discard DSN, or leave this field blank. If this field is left blank, the GDG limit set in the job profile (on the Generation Options screen) applies.

---

**HAA984E Update Syspunch cannot be selected if Include Syspunch is set to No**

**Explanation:** You specified to update Syspunch options, but the Syspunch has not yet been selected for inclusion.

**User response:** Type Y in the Include field for Syspunch, then type Y in the Update field for Syspunch to update the options.



---

**HAA985I** Since the Include Syspunch option was selected and none of the options have been updated, this screen is being displayed

**Explanation:** You specified to include Syspunch options, but Syspunch has not yet been updated for inclusion.

**User response:** This screen will allow you to update Syspunch options to be included for Unload.

---

**HAA986W** Since the Include Syspunch option was selected and none of the options have been updated, the Include Syspunch option has been set to No

**Explanation:** You specified to include Syspunch options, but the Syspunch has not been updated for inclusion.

**User response:** The Include Syspunch option has been set to No.

---

**HAA987E** Dec Float Round Mode is only valid when using a DB2 Version 9.1 or later DB2 subsystem

**Explanation:** You set an option to a setting that requires DB2 Version 9.1 or later.

**User response:** Set this option to No to continue for your version of DB2.

---

**HAA988E** Skip Locked Data is only valid when using a DB2 Version 9.1 or later DB2 subsystem

**Explanation:** You set an option to a setting that requires DB2 Version 9.1 or later.

**User response:** Set this option to No to continue for your version of DB2.

---

**HAA989E** Rebalance is only valid when using a version 9 or higher DB2 subsystem. It will be set to No

**Explanation:** You set an option to a setting that requires DB2 Version 9.1 or later.

**User response:** This option will be set to No for your version of DB2.

---

**HAA990E** The SYSREC DSN and SYSPUNCH DSN are identical. Please update either DSN to be unique

**Explanation:** The DSN specified for SYSREC and SYSPUNCH are identical.

**User response:** Change one of the DSNs to make it unique.

---



---

**HAA991I** All fields were saved to the current values

**Explanation:** All fields were defaulted to the current values displayed on the screen.

**User response:** None required.

---

**HAA992I** All fields were set to default values

**Explanation:** All fields were set back to default values. Any changes made were lost.

**User response:** None required.

---

**HAA993E** Invalid value. The Header Constant cannot contain quotes as this will cause errors during Job Run Time

**Explanation:** An invalid value was entered in the Header Constant Field.

**User response:** Enter a valid value that does not include quotes.

---

**HAA994E** Invalid value. The first character of the Header constant must contain a letter

**Explanation:** An invalid value was entered in the Header Constant Field. The first byte must contain a letter.

**User response:** Enter a valid value with a letter in the first byte.

---

**HAA995E** Invalid value. This field must contain either a single character delimiter or valid hexadecimal value

**Explanation:** An invalid value was entered in the Delimiter Field. The first byte must contain a single character delimiter. Otherwise a valid hexadecimal value must be entered.

**User response:** Enter a valid value as described in the message text.

---

**HAA996E** Invalid value. Days entered for a leap year cannot exceed 366

**Explanation:** An invalid value was entered in the Expiration Date Field. The year entered is a leap year and the day exceeds 366.

**User response:** Correct the date and resubmit.

---

**HAA997E** An invalid value was entered in the Expiration Date Field

**Explanation:** The year entered is not a leap year and the day exceeds 365.

**User response:** Correct the date and resubmit.

---

---

**HAA998E** Invalid value. The expiration date must be in the form of YYDDD or YYYYDDD. Please correct and resubmit

**Explanation:** An invalid value was entered in the Expiration Date Field.

**User response:** Enter a value in the format of YYDDD or YYYYDDD.

---

**HAAB001E** An error occurred connecting to DB2 SSID *ssid* in program RC = *rc*.

**Explanation:** The specified program could not connect to the DB2 subsystem. The return code from the Call Attach Facility is listed in the message. The message returned by the Call Attach Facility is listed in message HAAB005I.

**User response:** Review the HAAB005I message and the return code provided by the Call Attach Facility. Correct the problem and resubmit the job.

---

**HAAB002I** The program *program* returned with RC=*return\_code*.

**Explanation:** The program listed in the message returned the specified return code.

**User response:** No action is required.

---

**HAAB003E** The routine *routine* returned RC=*return\_code*.

**Explanation:** An error was detected during the build process by the listed routine. Additional messages provide details about the type of error.

**User response:** Review additional messages to determine the nature of the problem.

---

**HAAB004E** GETMAIN error; RC=*rc*

**Explanation:** A program encountered a GETMAIN error while executing.

**User response:** Increase the REGION size on the job card.

---

**HAAB005I** *message\_text*

**Explanation:** This message displays information related to processing. It may be used to provide information to supplement other messages.

**User response:** No action is required.

---

**HAAB006I** Routine: *routine\_name* additional\_text

**Explanation:** This message contains processing information about the routine in which an error occurred during the build process.

**User response:** No action is required.

---



---

**HAAB007I** *nnnnnn* objects were triggered by exception processing

**Explanation:** The number of objects listed in the message were triggered by exception processing.

**User response:** No action is required.

---

**HAAB008E** The job profile *profile\_creator.profile\_name* contains no profiles.

**Explanation:** The job profile that was built does not contain any profiles. At a minimum, a job profile must contain one object and one utility profile.

**User response:** Edit the job profile and add an object and a utility profile, and optionally an exception profile. Then rebuild the job profile.

---

**HAAB009E** There are no objects to process due to prior errors; build process terminated

**Explanation:** The job does not contain any objects because of errors identified in prior messages.

**User response:** Refer to the prior messages, correct the problem(s) and resubmit the job.

---

**HAAB010E** A file tailor include error occurred in program *program\_name*; return code =*return\_code*; member name=*member\_name*

**Explanation:** The build process attempted to include the indicated ISPSLIB member when generating JCL. However, ISPF returned the indicated return code. The member was most likely not found in the ISPSLIB libraries allocated to the job.

**User response:** Make sure the indicated member exists in the ISPSLIB libraries allocated to the job.

---

**HAAB011E** Invalid jobname *jobname*. Probable cause is invalid jobcard or jobcard template. Replaced by default jobname. | Invalid jobcard title. It should be prefixed with //. Force to prefixed with //

**Explanation:** An invalid job name or an invalid job card was specified. For an invalid job name, a default job name was provided. For an invalid job card, the job card was corrected to include the required // prefix.

**User response:** No action is required; the job name or job card was corrected and processing continues. To prevent this message in the future, either correct the invalid job name or job card on the Build Job for *jobname* window, or if the job name or job card was provided via data set, correct the invalid job name or job card in the job card member.

---

---

**HAAB011W** Unable to generate valid jobname;  
probable cause is no objects are selected

**Explanation:** There are no objects in the job. Either an object profile is included that contains no objects, or the objects that were included in the profile were also excluded.

**User response:** Ensure that at least one object is contained in the object profile.

---

**HAAB012I** Data set *data\_set\_name*; member name *member\_name*.

**Explanation:** This informational message is associated with another HAAB message. It provides a data set name and member name.

**User response:** No action is required.

---

**HAAB013E** ISPF Environment and Services are not available; ISPF is required to execute a CLIST/REXX EXEC

**Explanation:** The ISPF environment is not available to execute a CLIST/REXX EXEC user exit. This environment is required for further processing.

**User response:** Contact IBM Software Support for assistance.

---

**HAAB014I** Calling HAA\$EXUX to process exceptions user exits

**Explanation:** This informational message states that user exit is about to be processed.

**User response:** No action is required.

---

**HAAB016E** No RUNSTATS statistics were found for any objects.

**Explanation:** There were no RUNSTATS statistics in the DB2 catalog, DB2 shadow catalog, history tables, or DB2 Automation Tool repository (depending on the type of exception processing specified). Exception processing could not be performed.

**User response:** Run RUNSTATS to update the appropriate repository and resubmit the job.

---

**HAAB017E** *package\_list\_type* package name not set; use option 3 on the Setup panel to specify.

**Explanation:** Exception processing attempted to retrieve RUNSTATS statistics from the location specified in the Use Stats From field in the exception profile (refer to the description for message HAAB088I for additional details). However, the package list has not been defined on the corresponding PackageList field on the Setup panel.

---

**User response:** Access the Shared Profile Parameters panel via product Setup options and add the correct package list name for the type of statistics you want DB2 Automation Tool to use.

---

**HAAB018W** Multiple exception profiles found; the value for USE STATS FROM is taken from the first profile

**Explanation:** More than one exception profile was included in the job profile, and the exception profiles had different settings in the Use Stats from field.

**User response:** DB2 Shared Profile Support uses the statistics based on the Use Stats from field in the first exception profile processed. If this result is not what you expected, review and update your exception profiles.

---

**HAAB019W** CLUSTERRATIO|F exceptions are only applied to clustering indexes.

**Explanation:** An exception condition specified a CLUSTERRATIO or CLUSTERRATIOF column. Only clustering indexes have valid CLUSTERRATIO|F values. Therefore, the CLUSTERRATIO|F exception conditions are only applied to clustering indexes. Non-clustering indexes are skipped.

**User response:** No action is required. If you expected a clustering index to be included in this job, review your object profiles and other included exception profiles to determine why the clustering index was not included.

---

**HAAB020I** It is a new condition and was added to the exceptions list.

**Explanation:** Multiple exception profiles are included in the job profile, and the job generation option Evaluate Multiple Exception Profiles is set to All. An exception condition in a subsequent profile (displayed in message HAAB076I) was detected; the exception was added to the list of conditions in the prior profiles.

**User response:** No action is required.

---

**HAAB021W** It is a duplicate condition and was not added to the exceptions list.

**Explanation:** Multiple exception profiles are included in the job profile, and the job generation option Evaluate Multiple Exception Profiles is set to All. An exception condition in a subsequent profile (displayed in message HAAB076I) was detected and was the same condition specified in a prior profile. The condition was skipped.

**User response:** No action is required.

---

---

**HAAB022W** Object profile includes DB2 database *database*; object will not be processed.

**Explanation:** The object profile specified a temporary DB2 database or a DB2 directory. DB2 Automation Tool does not allow certain utilities to be executed on temporary or directory databases.

**User response:** Examine your object profile contents. Adjust the object profile or the utility profile as needed.

---

**HAAB023W** Saved exception condition for *statistics\_type.column* not found; the profile was most likely saved under a different version of DB2.

**Explanation:** An exception condition in an exception profile is not valid for the version of DB2 under which the job will be run. The profile may have been created under a version of DB2 in which the statistics type and column type are not valid.

**User response:** Ensure that the exception condition is valid for the DB2 version under which the job will be run. You can export the exception profile to the correct subsystem, then update the exception profile to ensure the contents are valid.

---

**HAAB024W** *space\_type creator|database space\_name partition\_number stepname* step will have a duplicate utility ID of another job

**Explanation:** In the job's generation options, multiple jobs were allowed but the utility ID was not specified to be prefixed with the job name. This combination may result in duplicate utility IDs being generated.

**User response:** Set the job generation options to allow only one job, or set the prefix for the utility ID to the job name.

---

**HAAB025I** Build JCL will be written to *dsn*

**Explanation:** You specified to build the job in batch. The output from the build JCL will be written to the data set specified in the message text.

**User response:** No action is required.

---

**HAAB026I** Build JCL member *member* successfully written

**Explanation:** You specified to build the job in batch. The output from the build job was written to the data set listed in the message text.

**User response:** No action is required.

---



---

**HAAB027I** Jobs generation options follow:

**Explanation:** This is the first in a series of messages that list the job generation options. This message is followed by a series of other messages that each describe an option setting.

**User response:** No action is required.

---

**HAAB028I** Maximum Number of Jobs...*n*

**Explanation:** This message is used with message HAAB027I and lists the maximum number of unique jobs that will be generated.

**User response:** No action is required.

---

**HAAB029I** Maximum Number of Objects per Job...*n*

**Explanation:** This message is used with message HAAB027I and lists the maximum number of objects that will be included per job.

**User response:** No action is required.

---

**HAAB030I** Automatically generate GDG Base...*n*

**Explanation:** This message is used with message HAAB027I and specifies whether a GDG will be automatically generated for image copy data sets if the base does not already exist. that will be generated. The GDG limit is listed in *num*; if the value is 0, GDG bases are not automatically created.

**User response:** No action is required.

---

**HAAB031I** Load Balance Jobs by...*time/DASD/none*

**Explanation:** This message is used with message HAAB027I and lists how copy and REORG jobs are load balanced.

**User response:** No action is required.

---

**HAAB032I** Capture Run Times for Load Balancing...*y|n*

**Explanation:** This message is used with message HAAB027I and indicates whether run times will be captured for load balancing.

**User response:** No action is required.

---

**HAAB033I** Process Spaces in Utility (UT) Mode...*y|n*

**Explanation:** This message is used with message HAAB027I and indicates if spaces will be started with utility-only access before running the utilities.

**User response:** No action is required.

---

---

**HAAB034I Prefix Utility ID with  
Jobname...*job | step | both | no***

**Explanation:** This message is used with message HAAB027I and indicates the prefix to be used with the utility ID.

**User response:** No action is required.

---

**HAAB035I Set JCL Member Name to Jobname...*y | n***

**Explanation:** This message is used with message HAAB027I and indicates if the JCL member generated will be the same as the job name in the job card.

**User response:** No action is required.

---

**HAAB036I Generate Job When Errors  
Encountered...*y | n | w***

**Explanation:** This message is used with message HAAB027I and shows how DB2 Shared Profile Support will proceed if errors are encountered during job build.

**User response:** No action is required.

---

**HAAB037I Utility Data Set High Level  
Qualifier...*hilevel***

**Explanation:** This message is used with message HAAB027I and lists the utility work data set high level qualifier.

**User response:** No action is required.

---

**HAAB039I Retrieve Jobcard and Comments from  
Data Set**

**Explanation:** This message is used with message HAAB027I and precedes HAAB040I. It appears if the job card and comments were retrieved from a data set.

**User response:** No action is required.

---

**HAAB040I Data set: *data\_set\_name***

**Explanation:** This message is used with message HAAB027I and follows HAAB039I. It lists the data set name that holds the job card and comments.

**User response:** No action is required.

---

**HAAB041I Member: *member\_name***

**Explanation:** This message is used with message HAAB027I and follows HAAB040I. It lists the member name that holds the job card and comments.

**User response:** No action is required.

---

**HAAB042I Jobname template  
"override\_byte\_characters"**

**Explanation:** This message is used with message HAAB027I and lists the job override byte characters, if specified.

**User response:** No action is required.

---

**HAAB043E File tailor *open | close* error in  
*program\_name*; RC=*return\_code***

**Explanation:** The build process attempted to open or close the indicated member when generating JCL. However, ISPF returned the indicated return code. The member was most likely either not found or the member was already opened (being used) by another job.

**User response:** Make sure the indicated member exists and that no other job has the member opened.

---

**HAAB044E An error was encountered attempting to  
execute HAA\$TSOC; RC=*return\_code***

**Explanation:** An attempt to execute an APF authorized program failed.

**User response:** Make sure the DB2 Shared Profile Support modules were correctly installed.

---

**HAAB045E Load library not APF authorized -APF  
authorization required**

**Explanation:** The target load library SHAALOAD was not APF authorized. APF authorization is required.

**User response:** Ensure the target load library SHAALOAD is APF authorized.

---

**HAAB046E Subsystem ID *ssid* could not be found in  
the operating system**

**Explanation:** The subsystem ID provided is either invalid or the subsystem has not been started since the last IPL.

**User response:** Use a valid subsystem ID or start the subsystem.

---

**HAAB047E A critical error has occurred attempting  
to resolve the subsystem; RC=*return\_code***

**Explanation:** Shared Profile Support was unable to access DB2 internal control blocks.

**User response:** Note the return code provided in the message and contact IBM Software Support for assistance.

---

---

**HAAB048I** DB2 subsystem ID: *ssid*; DB2 version:*version*; SQLID:*sqlid*; ZUSER:*userid*

**Explanation:** This informational message provides information about the DB2 subsystem, version, user ID, and SQLID.

**User response:** No action is required.

---

**HAAB049I** Using JOBS profile *profile\_creator.profile\_name* that includes...

**Explanation:** This message might include the following subheading:

Excp Rule

Order Accp Rjct Type Creator.Profile Name

The list of all the profiles in the jobs profile follows this message.

**User response:** No action is required.

---

**HAAB050I** *message\_text*

**Explanation:** This message is used with HAAB049I. This message formats the following text as a heading in the message output:

Excp Rule

Order Accp Rjct Type Creator.Profile Name

**User response:** No action is required.

---

**HAAB051E** *statistics\_column* exception not found; *statistics\_type* exceptions not applied

**Explanation:** An internal processing error occurred. A selected exception condition was not found in the list of exception conditions.

**User response:** Rerun the job with DEBUG\_MODE ON and save the job output. Contact IBM Software Support for assistance.

---

**HAAB052W** *index\_database\_name index\_name partition\_number* IXOWNER=*index\_owner*; associated TS object not found for triggered IX; IX triggers TS condition

**Explanation:** An exception condition for the specified index (such as CLUSTERRATIO) indicates that the associated table space is triggered. However, the associated table space is not included in any objects profile in the job.

**User response:** Examine the objects profile and the exceptions profile to determine the corrective action.

---



---

**HAAB053I** *Message\_text*

**Explanation:** This message is issued at the end of a build job. It indicates the status of the job build, and describes whether the JCL was built based on the settings in the Build Job on Errors or Warnings field.

**User response:** No action is required.

---

**HAAB054E** *profile\_type profile\_creator.profile\_name* cannot be found on DB2 subsystem *ssid*.

**Explanation:** The indicated profile could not be found on the specified DB2 subsystem during the build process. The profile may have been deleted from the DB2 subsystem.

**User response:** Examine your profile contents. Create or adjust the exception, job, object, or utility profile as needed.

---

**HAAB055E** Neither SQLID nor user is authorized to use *profile\_type* profile *profile\_creator.profile\_name*.

**Explanation:** The Update option for the indicated profile is either View or No and your user ID or SQLID does not match the creator ID of the profile. If the profile has an Update option of View or No, your user ID or the job's SQLID must match the Creator ID of the profile.

**User response:** Examine the profile in question. If you are not authorized to use the profile, select a different profile.

---

**HAAB056W** *space\_type creator | database space\_name partition\_number* - RUNSTATS statistics do not exist; default stat values will be used.

**Explanation:** No RUNSTATS statistics were found for the indicated object in the statistics repository in use as indicated by the Use Stats From field in the exception profile (see message HAAB088I).

**User response:** Run RUNSTATS and save the statistics in the appropriate repository. To run RUNSTATS, set the Use Stats from field in the exception profile.

---

**HAAB057E** SQL Error in *program\_name*: *SQL\_error\_message\_text*.

**Explanation:** The program listed in the error message encountered an SQL error. The SQL error message text is listed in the message.

**User response:** Ensure that a bind has been properly performed on the appropriate DB2 subsystem and that the bind job completed without errors. Resubmit the job when the error has been corrected.

---

---

**HAAB058E** NO exception conditions were found in the exception profiles; or RUNSTATS statistics are being retrieved from the history tables and ALL exception conditions are for columns not included in the history tables

**Explanation:** One of the following:

1. An exception profile is being used that has no exception conditions specified
2. The Use Stats From field indicates to use RUNSTATS statistics from the history tables, but all specified exception conditions are for non-history table columns. This occurs when you create an exception profile with a Use Stats From value of Repository, Catalog, or Runstats, specify exception conditions for statistic columns that are not part of the history tables but are part of the other repository table, and then change the Use Stats From value to History.

**User response:** Update the exception profile to:

1. Select and specify at least one exception condition; or
2. Change the Use Stats From value to Repository, Catalog, or Runstats, or select at least one exception condition for a history table statistic column.

---

**HAAB059E** No object profiles were found in the jobs profile or no objects were found in any included object profile

**Explanation:** An object profile is missing from the job profile, or the object profile in the job profile is empty. The build process cannot build a utility job without objects.

**User response:** Include an object profile in the jobs profile, or add objects to the empty object profile.

---

**HAAB060E** Only table space exceptions were specified but there are NO table space objects included in the object profiles

**Explanation:** The exception profile specified exception conditions that apply only to table spaces. However, no table spaces are included in the object profiles.

**User response:** Correct the object profile to include table spaces, or change the exceptions profile to specify conditions that do not apply to table spaces.

---

**HAAB061E** Only index exceptions were specified but there are NO index objects included in the object profiles

**Explanation:** The exception profile specified exception conditions that apply only to indexes. However, no indexes are included in the object profiles.

**User response:** Correct the object profile to include indexes, or change the exceptions profile to specify

conditions that do not apply to indexes.

---

**HAAB062W** Table space exceptions were specified but there are NO table space objects included in the object profiles

**Explanation:** The exception profile specified some exception conditions that apply only to table spaces. However, no table spaces are included in the object profiles.

**User response:** Correct the object profile to include table spaces, or change the exceptions profile to specify conditions that do not apply to table spaces.

---

**HAAB063W** Index exceptions were specified but there are NO index objects included in the object profiles

**Explanation:** The exception profile specified exception conditions that apply only to indexes. However, no indexes are included in the object profiles.

**User response:** Correct the object profile to include indexes, or change the exceptions profile to specify conditions that do not apply to indexes.

---

**HAAB064W** RUNSTATS was requested. However, no catalog table exceptions were specified. Therefore, RUNSTATS will NOT be run

**Explanation:** The exception profile indicated to run RUNSTATS. However, no exception conditions for DB2 catalog tables were selected. It is not necessary to run RUNSTATS in this instance since RUNSTATS statistics are not required to evaluate any of the specified exception conditions.

**User response:** Change the exception profile to select at least one catalog table exception condition.

---

**HAAB065E** *space\_type creator | database space\_name partition\_number DSN data\_set\_name truncated - too many symbolics*

**Explanation:** The symbolics used to generate the data set name caused the name to be greater than 44 characters. The maximum number of characters allowed for a data set is 44. The data set name for the indicated object was truncated to 44 characters.

**User response:** Reduce the number or type of symbolics in the generated data set name.

---

**HAAB066E** *space\_type creator | database space\_name partition\_number Invalid SYMBOLIC parameter parameter\_name found - skipped*

**Explanation:** An invalid symbolic parameter was detected while generating a data set name.

**User response:** Update the utility profile and specify

only valid symbolic parameters shown on the panel.

---

**HAAB067E** *space\_type creator | database space\_name partition\_number* **Index object IXOWNER=index\_owner IX=index\_name not found for triggered index**

**Explanation:** The indicated index was triggered by an exception condition. The associated table space was found and an attempt was made to find the index, but the index was not found in the list of objects. This is an internal processing error.

**User response:** Rerun the job with DEBUG\_MODE ON and save the job output. Contact IBM Software Support for assistance.

---

**HAAB068W** *TS database\_name\_pattern tablespace\_name\_pattern* **TS CREATOR=creator\_name - No table spaces found for this pattern.**

**Explanation:** A wild card pattern was specified on the Objects Profile Display. However, no objects were found for the specified wildcard pattern in the DB2 subsystem.

**User response:** Correct the wildcard in object profile.

---

**HAAB069W** *IX database\_name\_pattern index\_name\_pattern* **No indexes found for this pattern.**

**Explanation:** A wild card pattern was specified on the Objects Profile Display. However, no objects were found for the specified wildcard pattern in the DB2 subsystem.

**User response:** Correct the wildcard in object profile.

---

**HAAB070I** *space\_type creator | database space\_name partition\_number* **Duplicate object skipped**

**Explanation:** An object was included in the build more than once, probably because it was specified in two or more object profiles. The duplicate objects are skipped.

**User response:** No action is required.

---

**HAAB071I** *space\_type creator | database space\_name partition\_number* **Table space excluded because it was created with DEFINE NO and underlying file not yet created**

**Explanation:** An object was included in an object profile, but the underlying file has not yet been created.

**User response:** Either create the underlying file or remove the object from the object profile.

---

**HAAB072I** *space\_type database\_name tablespace\_name partition\_number utility\_name* **Run times do not exist for this table space**

**Explanation:** The job profile specified to capture run times for load balancing. This is the first time run times have been captured for this object. This message is strictly informational.

**User response:** No action is required.

---

**HAAB073E** *space\_type creator | database space\_name partition\_number* **Space no longer exists**

**Explanation:** The specified object has been deleted from the DB2 catalog. The object may have been deleted since the object profile was created.

**User response:** Recover the object or remove the object from the object profile.

---

**HAAB074E** *space\_type database\_name tablespace\_name partition* **Underlying VSAM file not found**

**Explanation:** An object was included in an object profile but the underlying file could not be found.

**User response:** Either create the underlying file or remove the object from the object profile.

---

**HAAB075I** *space\_type creator | database space\_name partition\_number* **Utility JCL has been created for this LOB table space**

**Explanation:** A LOB table space is part of the object profile. Utility JCL has been generated if applicable to the LOB table space.

**User response:** No action is required.

---

**HAAB076I** **Multiple exception condition detected for statistics\_type.column in profile profile\_creator.profile\_name**

**Explanation:** Evaluate Multiple Exception Profiles is set to All together and multiple exception profiles are included in the jobs profile. An exception condition in a subsequent profile was detected and is the same condition that was specified in a prior profile. The duplicate exception condition was skipped.

**User response:** No action is required.

---

**HAAB077I** *space\_type creator | database space\_name partition\_number* **Table space excluded because it is a TEMP or WORK database**

**Explanation:** The indicated temporary database was found in the job. JCL cannot be generated for temporary databases.



**User response:** Remove the temporary database from the object profile.

---

**HAAB078E** *space\_type creator | database space\_name partition\_number* **Image copy data set name generated for utility utility IC type copy\_type generated incorrectly. Data set has been truncated DSN=data\_set\_name NODE=nodemessage\_text**

**Explanation:** This message is issued when building an image copy data set name. One of the following messages may appear in the message text:

- Invalid Data Set Node Detected Length Greater than 8 Characters
- Invalid Data Set Node Detected - 2 Consecutive Periods
- Invalid Ending Period Detected
- Invalid Data Set Node Detected - First Character Not Alphabetic or National
- Invalid Characters Detected in Data Set Node
- Invalid Data Set Node Detected after a GDG

**User response:** Update the utility profile and make sure a valid data set name pattern is specified.

---

**HAAB079E** *Too many syscopy | DB2\_display exceptions were specified; reduce the number of exceptions to be less than or equal to number*

**Explanation:** An internal table overflowed.

**User response:** Reduce the number of SYSCOPY and DB2 display exceptions to be less than or equal to the value listed in the message.

---

**HAAB080E** *space\_type creator | database space\_name partition\_number* **Quiesce TABLESPACESET not supported on partitioned spaces with multiple job options turned on.**

**Explanation:** For partitioned spaces, a QUIESCE TABLESPACESET cannot be generated when a job profile specifies that more than one job is to be built (when a value greater than 1 was specified in the Maximum nbr of jobs field in the job profile).

**User response:** Either delete the QUIESCE TABLESPACESET from the job profile or update the job profile options so that the maximum number of jobs is 1.

---

**HAAB081I** *space\_type creator | database space\_name partition\_number* **Image copy bypassed on this index because the index was not created with the COPY YES option**

**Explanation:** The index listed in the message text

cannot be copied because it was created without the COPY YES keyword.

**User response:** No action is required.

---

**HAAB082E** *space\_type creator | database space\_name partition\_number* **GDG base not found for image copy data set data\_set\_name when generating DDs for utility utility IC type copy\_type; Automatically Gen GDG Base = 000**

**Explanation:** The image copy data set is specified to be a GDG. The GDG base does not exist, and the Automatically Gen GDG base field was set to 0 on the job options screen. Therefore, the GDG base cannot be created.

**User response:** If you want to use GDGs for the image copy data set, create the GDG base yourself, or set the Automatically Gen GDG base field to something other than 000.

---

**HAAB083I** *space\_type creator | database space\_name partition\_number* **GDG base not found for image copy data set data\_set\_name when generating DDs for utility utility IC type copy\_type; GDG base will be generated**

**Explanation:** The image copy data set is specified to be a GDG. The GDG base does not exist, and the Automatically Gen GDG base field was set to a valid limit on the job options screen. Shared Profile Support will create the GDG base with the specified limit.

**User response:** No action is required.

---

**HAAB084E** **CLUSTERED and/or CLUSTERRATIO | F is specified in an exceptions profile but there are NO table space objects in the object profiles**

**Explanation:** The listed exception conditions relate to indexes. If the condition is met, the associated table space is triggered. However, no table spaces are included in any of the object profiles in the job.

**User response:** Update the object profile to include table spaces or delete the CLUSTERED and CLUSTERRATIO | F exception from the exception profile.

---

**HAAB085W** *space\_type creator | database space\_name partition\_number* **Underlying file has been migrated; space quantities have been defaulted**

**Explanation:** The indicated object included in an object profile has been migrated from disk. The primary and secondary space quantities for the object have been defaulted to 500 tracks.

**User response:** Either remove the object from the object profile or recall the object back to disk.

---

**HAAB087W** Job *jobname* required *number* objects |  
Utilityname utility steps required *number*  
objects per step

**Explanation:** These messages indicate that the job breakdown process overrode user-specified values. The job name listed in the message required the listed number of objects, which overrode the number displayed in HAAB029I; or the utility listed in the message required the number of objects per step listed in the message, which overrode the number displayed in HAAB375I.

**User response:** No action is required.

---

**HAAB088I** RUNSTATS statistics are being retrieved  
from the *stats\_source*

**Explanation:** RUNSTATS statistics are being retrieved from the repository specified in the Use Stats From field in the first exception profile.

**User response:** No action is required.

---

**HAAB089I** Calling IBM RUNSTATS utility to  
collect current statistics for included  
objects; see SYSOUT file for additional  
RUNSTATS messages.

**Explanation:** RUNSTATS statistics were collected prior to exceptions processing. RUNSTATS parameters and messages are displayed in the SYSOUT.

**User response:** Review the SYSOUT file to determine if any errors need to be resolved.

---

**HAAB090E** RUNSTATS detected an unrecoverable  
error and terminated processing;  
RC=*return\_code*; see SYSOUT file for  
more details.

**Explanation:** RUNSTATS statistics were specified to be collected prior to exceptions processing. However, RUNSTATS ended with an error and provided the return code listed in the message.

**User response:** Review the SYSOUT file to determine the error. Correct the error and resubmit the job.

---

**HAAB091I** *space\_type creator | database space\_name*  
*partition\_number* Logging for REORG  
TABLESPACE utility has been set to  
LOG YES for this LOB table space

**Explanation:** The utility profile specifies a REORG TABLESPACE with LOG NO. For LOB table spaces, REORG LOG NO is not recommended, as this parameter will leave the LOB table space in COPY PENDING status. Shared Profile Support changed the

REORG to LOG YES for the LOB space.

**User response:** No action is required.

---

**HAAB092I** *space\_type creator | database space\_name*  
*partition\_number* Inline copy for REORG  
TABLESPACE utility has been turned  
off for this LOB table space

**Explanation:** The utility profile specifies a REORG TABLESPACE with an inline image copy. For LOB table spaces, an inline copy cannot be created during a REORG. Shared Profile Support removed the inline copy for the LOB space.

**User response:** No action is required.

---

**HAAB093E** Unexpected return code *return\_code* from  
CAF command processor; reason X  
*'reason\_code'*.

**Explanation:** The Call Attach Facility returned the indicated error while attempting to process a -DISPLAY command.

**User response:** To determine the cause of the problem, refer to the Call Attach Facility codes for your version of DB2 in the IBM Information Management Software for z/OS Solutions Information Center. Correct the problem and resubmit the job.

---

**HAAB094E** Unexpected error parsing CAF command  
processor output - Status not found

**Explanation:** The status of an object in the output from the -DISPLAY command could not be found.

**User response:** Rerun the job with DEBUG\_MODE ON and save the job output. Contact IBM Software Support for assistance.

---

**HAAB095I** *space\_type creator | database space\_name*  
*partition\_number* Online REORG  
TABLESPACE utility not supported on  
LOB table spaces; share level changed to  
NONE

**Explanation:** The utility profile specifies a REORG TABLESPACE with SHRLEVEL CHANGE or REFERENCE. For LOB table space REORGs, these parameters are not allowed. Shared Profile Support changed the REORG to SHRLEVEL NONE for the LOB space.

**User response:** No action is required.

---

**HAAB096I** *space\_type creator | database space\_name*  
*partition\_number* Inline statistics for  
REORG TABLESPACE utility has been  
turned off for this LOB table space

**Explanation:** The utility profile specifies a REORG TABLESPACE with STATISTICS option. For LOB table

space REORGs, inline statistics collection is not allowed. Shared Profile Support removed the STATISTICS keyword from the REORG for the LOB space.

**User response:** No action is required.

---

**HAAB097W** *space\_type creator | database space\_name partition\_number - REALTIME statistics row not found; object will not be processed*

**Explanation:** A real time exception condition was specified for the indicated object. However, a row in the real time statistic table could not be found. The real time exception condition will not be applied to the object.

**User response:** Ensure that real time statistics are being collected on the DB2 subsystem.

---

**HAAB098W** *space\_type creator | database space\_name partition\_number - REALTIME statistics row not found; object will not be processed*

**Explanation:** A real time exception condition was specified for the indicated object. However, a row in the real time statistic table could not be found. The real time exception condition will not be applied to the object.

**User response:** Ensure that real time statistics are being collected on the DB2 subsystem.

---

**HAAB099E** *User exit exit\_name not found*

**Explanation:** The indicated user exit could not be found in any of the libraries allocated to the job.

**User response:** Make sure a load module is in an ISPLLIB data set and a CLIST or a REXX EXEC is in a SYSPROC data set allocated to the job.

---

**HAAB100I** *Calling CLIST|REXX\_EXEC|load\_module user exit user\_exit\_name*

**Explanation:** The indicated user exit was specified in an exception profile. Exception processing displays this message just prior to calling the user exit for the first time.

**User response:** No action is required.

---

**HAAB101E** *CLIST/REXX EXEC specified; ISPF service routine routine returned an error; RC=return\_code*

**Explanation:** An attempt to initialize the ISPF environment to process user exits failed. Processing of user exits terminates. Processing of other exception conditions continue.

**User response:** Refer to the SYSTSPRT file, which describes the error condition, and take the appropriate corrective action.

---

**HAAB102E** *CLIST|REXX\_EXEC|load\_module user exit user\_exit error; descriptive\_text RC=return\_code*

**Explanation:** ISPF encountered an error attempting to execute the CLIST or REXX EXEC specified as a user exit. Processing of all user exits terminates. Processing of other exception conditions continues.

**User response:** Make sure that the CLIST or REXX EXEC is a member of the SYSPROC data set(s) allocated to the job.

---

**HAAB103E** *User exit abended with a SYSTEM|USER abend code of X'hexadecimal\_return\_code'; exception processing terminated*

**Explanation:** The user exit encountered an error in processing.

**User response:** Correct the user exit and resubmit.

---

**HAAB104I** *space\_type creator | database space\_name partition\_number Space excluded from reallocation, the newly calculated space is smaller than the allocation*

**Explanation:** The space calculations for an object slated for reallocation resulted in a space smaller than the current space allocation, and the utility profile setting Allow Reallocation to Decrease Size is set to No.

**User response:** If you want to allow a smaller allocation, alter the utility profile to set Allow Reallocation to Decrease Size to Yes.

---

**HAAB105W** *space\_type creator | database space\_name partition\_number Space excluded from reallocation, the space is not stogroup defined*

**Explanation:** The space listed in the message is VCAT defined. VCAT-defined spaces cannot be changed using DB2 ALTER.

**User response:** The space can be altered using Data Set Manager.

---

**HAAB106I** *Evaluate Multiple Exception Profiles...all\_together | one\_at\_a\_time*

**Explanation:** This message is used with message HAAB027I and shows how DB2 Shared Profile Support evaluates exception profiles when more than one is specified.

**User response:** No action is required.

---

**HAAB107W** Mutually exclusive conditions specified; objects were probably not triggered or triggered incorrectly

**Explanation:** A jobs profile contains more than one exception profile. A subsequent exception profile has an exception condition for a statistics column that contradicts the previous condition. For example, one exception condition specifies to check for a SYSCOPY.ICYTYPE = 'F' while a subsequent exception condition specifies to check for SYSCOPY.ICYTYPE NE 'F', or one exception condition specifies an OR condition while the other specified an AND condition.

**User response:** Examine your exception profiles and delete the exception condition that contradicts another exception condition in the job.

---

**HAAB108E** OPEN | CLOSE INPUT | OUTPUT error on file *ddname*; return code = *return\_code* X'hex\_return\_code'.

**Explanation:** An error occurred on the file indicated in the message.

**User response:** Make sure the file in error is included in the job. Review the related return codes, take the appropriate corrective action, and resubmit the job.

---

**HAAB109E** Both AGE and DATE are blank; one of these must specify a valid value

**Explanation:** A MODIFY utility was specified but DB2 Shared Profile Support cannot determine which records or rows to delete.

**User response:** You must specify either Date or Age on the Modify Utility options screen.

---

**HAAB110I** Cleanup repository delete timestamp used: *timestamp*

**Explanation:** This informational message lists the timestamp used to determine which rows in the repository to delete.

**User response:** No action is required.

---

**HAAB111I** Number of *table\_name* table rows deleted...*number*

**Explanation:** This informational message lists the number of rows in the specified table that were deleted.

**User response:** No action is required.

---

**HAAB112I** Recall Migrated Spaces...*y* | *n*

**Explanation:** This message is used with message HAAB027I and displays if migrated spaces are to be recalled during job build.

**User response:** No action is required.

---

**HAAB113I** Use DSNACCOR Exception Table...

**Explanation:** This message is used with message HAAB027I and lists whether the DSNACCOR exception table is to be used for exception processing.

**User response:** No action is required.

---

**HAAB114E** No parameter cards were found in input file *file\_name*; utility terminated

**Explanation:** No control cards were found in the input file. The utility cannot continue.

**User response:** Build the job again to generate the appropriate utility control cards.

---

**HAAB115E** Error loading *profile\_type* profile; not enough records found in input file

**Explanation:** This is issued by the UNLOAD/LOAD profile program. The input file was probably corrupted.

**User response:** Run the UNLOAD to recreate the file and re-run the LOAD using the new file.

---

**HAAB116E** Utilities Profile  
"profile\_creator.profile\_name"  
COPYTOCOPY Utility LP copy conflicts with prior image copy

**Explanation:** You have requested an LP type image copy, but the image copy to be used in the COPYTOCOPY utility is registered as an LP image copy. You cannot make the same type of copy using COPYTOCOPY.

**User response:** On the Copy to Copy Image Copy Options screen, specify N in the Local Primary - Take Image Copy field. Select another image copy type and resubmit the job.

---

**HAAB117E** Utilities Profile  
"profile\_creator.profile\_name"  
COPYTOCOPY Utility LB copy conflicts with prior image copy

**Explanation:** You have requested an LB type image copy, but the image copy to be used in the COPYTOCOPY utility is registered as an LB image copy. You cannot make the same type of copy using COPYTOCOPY.

**User response:** On the Copy to Copy Image Copy Options screen, specify N in the Local Backup - Take Image Copy field. Select another image copy type and resubmit the job.

---

**HAAB118E Utilities Profile**  
*"profile\_creator.profile\_name"*  
**COPYTOCOPY Utility RP copy conflicts with prior image copy**

**Explanation:** You have requested an RP type image copy, but the image copy to be used in the COPYTOCOPY utility is registered as an RP image copy. You cannot make the same type of copy using COPYTOCOPY.

**User response:** On the Copy to Copy Image Copy Options screen, specify N in the Recover Site Primary - Take Image Copy field. Select another image copy type and resubmit the job.

---

**HAAB119E Utilities Profile**  
*"profile\_creator.profile\_name"*  
**COPYTOCOPY Utility RB copy conflicts with prior image copy**

**Explanation:** You have requested an RB type image copy, but the image copy to be used in the COPYTOCOPY utility is registered as an RB image copy. You cannot make the same type of copy using COPYTOCOPY.

**User response:** On the Copy to Copy Image Copy Options screen, specify N in the Recover Site Backup - Take Image Copy field. Select another image copy type and resubmit the job.

---

**HAAB120E Utilities Profile** *profile\_creator.profile\_name*  
**Util Work high level in Jobs Options is required with REPAIR DBD**

**Explanation:** The utility profile specifies a REPAIR DBD option. This option requires a utility work data set high level qualifier to be set in the job options.

**User response:** Edit the job profile job generation options to include a utility work data set high level qualifier.

---

**HAAB121E** *space\_type creator | database space\_name partition\_number*  
**No image copy exists to support COPYTOCOPY utility**

**Explanation:** A utility profile specifies a COPYTOCOPY utility, but one or more objects in the object profile do not have a supporting image copy.

**User response:** The COPYTOCOPY utility requires an image copy. Change the utility profile settings or create image copies of the objects before submitting the job.

---

**HAAB122E** *space\_type creator | database space\_name partition\_number*  
**Last image copy backup backup\_type conflicts with COPYTOCOPY utility backup types**

**Explanation:** You specified to COPYTOCOPY using the most recent copy, but that copy is of a type that

conflicts with the image copy type selected on the Copy to Copy Image Copy Options screen.

**User response:** Select another image copy type and resubmit the job.

---

**HAAB123E** *space\_type creator | database space\_name partition\_number*  
**No recovery information was found in SYSCOPY for this space**

**Explanation:** No recovery information was found for the object listed in the message.

**User response:** The object cannot be recovered.

---

**HAAB124E** *space\_type creator | database space\_name partition\_number*  
**Recovery point could not be found for this space**

**Explanation:** A recovery utility profile was specified, but no recovery point can be found for the listed space.

**User response:** The object cannot be recovered.

---

**HAAB125E** *space\_type creator | database space\_name partition\_number*  
**An Alter has been done on this table space. Object Restore required for recovery**

**Explanation:** The listed object has been ALTERED since it was created.

**User response:** The index cannot be recovered unless your site has a license for DB2 Object Restore.

---

**HAAB126W** *space\_type creator | database space\_name partition\_number*  
**This index has been rebuilt, which prohibits recovery. Index will be rebuilt instead**

**Explanation:** The listed index has been rebuilt since it was created. The index cannot be recovered, but can and will be rebuilt.

**User response:** No action is required.

---

**HAAB127E** *space\_type creator | database space\_name partition\_number*  
**Space is not recoverable to desired point. A CHECK DATA with LOG NO prohibits recovery**

**Explanation:** This space cannot be recovered to the selected point in time because a CHECK DATA with LOG NO has been executed on the space.

**User response:** Select a recovery point in time before the CHECK DATA was executed.

---

**HAAB128W** *space\_type creator | database space\_name  
partition\_number* **Required full image  
copy image\_copy\_data\_set could not be  
found**

**Explanation:** A full image copy for the listed space could not be found, and cannot be used in the recovery.

**User response:** No action is required.

---

**HAAB129W** *space\_type creator | database space\_name  
partition\_number* **Incr Image copy  
image\_copy\_data\_set could not be found.  
Must log apply**

**Explanation:** An incremental image copy for the listed space could not be found, and cannot be used in the recovery. DB2 Shared Profile Support will use another valid copy and apply log changes to recover the object.

**User response:** No action is required.

---

**HAAB130W** *space\_type creator | database space\_name  
partition\_number* **Partial Recovery has  
been found. Recovery is still allowed**

**Explanation:** DB2 Shared Profile support detected a partial recovery of the listed object. However, it may be possible to still recover the object. If further processing detects that the object cannot be recovered, additional messages will be issued.

**User response:** No action is required.

---

**HAAB131E** *space\_type creator | database space\_name  
partition\_number* **Space is not recoverable  
to desired point. A LOAD REPLACE  
with LOG NO prohibits recovery**

**Explanation:** This space cannot be recovered to the selected point in time because a LOAD REPLACE with LOG NO has been executed on the space.

**User response:** Select a recovery point in time before the LOAD REPLACE was executed.

---

**HAAB132E** *space\_type creator | database space\_name  
partition\_number* **Space is not recoverable  
to desired point. A LOAD  
RESUME|REORG with LOG NO  
prohibits recovery**

**Explanation:** This space cannot be recovered to the selected point in time because a LOAD RESUME or REORG with LOG NO has been executed on the space.

**User response:** Select a recovery point in time before the LOAD RESUME or REORG was executed.

---



---

**HAAB133E** *space\_type creator | database space\_name  
partition\_number* **A valid starting point  
could not be found for the recover  
utility**

**Explanation:** The listed object cannot be recovered because events occurred that rendered recovery impossible, such as a REORG LOG NO without a successive image copy.

**User response:** The space is not recoverable.

---

**HAAB134I** *space\_type creator | database space\_name  
partition\_number* **Index excluded because  
it was created with DEFINE NO and  
underlying file not yet created**

**Explanation:** The listed index was excluded from recovery. When the index was created, DEFINE NO was used. However, the underlying VSAM file has not yet been created.

**User response:** No action is required.

---

**HAAB135I** *space\_type creator | database space\_name  
partition\_number* **Reorg Table Space  
option KEEPDICTIONARY has been  
turned off for non compressed space**

**Explanation:** The REORG utility profile specified KEEPDICTIONARY YES, but the listed space is not a compressed space. KEEPDICTIONARY will be suppressed for this space.

**User response:** No action is required.

---

**HAAB136E** **There was an error initializing the  
HAA#LRGN function; the  
SYSCOPY.CHGD\_SINCE\_LAST\_IC  
exceptions will NOT be processed;  
RC=return\_code**

**Explanation:** An exception profile contains the indicated statistics type. An error occurred during the initialization of the function. Processing of these exception conditions are skipped. Processing of other exception conditions continue.

**User response:** Rerun the job with DEBUG ON, save the job output, and contact IBM Software Support.

---

**HAAB137E** *space\_type creator | database space\_name  
partition\_number* **There was an error  
attempting to process a  
SYSCOPY.CHGD\_SINCE\_LAST\_IC  
exception condition**

**Explanation:** An exception profile contains the indicated statistics type. An error occurred while evaluating the exception condition. Processing of the current object is skipped. Processing of other objects continues.

**User response:** Rerun the job with DEBUG ON, save the job output, and contact IBM Software Support.

---

**HAAB138E** *space\_type creator | database space\_name partition\_number* **Object excluded. The data set data\_set\_name not found in SYSCOPY**

**Explanation:** You specified to recover to a particular copy (data set), but the data set is not found in SYSCOPY.

**User response:** The space is not recoverable to that copy. However, you might be able to recover the space using another recovery point.

---

**HAAB139W** *Profile profile\_creator.profile\_name* **re-startability has been disabled; JCL for this job will be saved to the SAME DSN/mb**

**Explanation:** The profile name listed in the message will not be able to be restarted because the JCL output for the current job profile is being written to the same data set and member name.

**User response:** No action is required.

---

**HAAB140I** *space\_type creator | database space\_name partition\_number* **Primary space necessary for allocation has been truncated to user specified quantity**

**Explanation:** The listed object's primary allocation was truncated due to the user-specified maximum primary space allocation limits. These limits are specified in the Shared Profile Support - Update Parameters for DB2 Subsystem screen. It is possible that adequate secondary space will be allocated for the object.

**User response:** No action is required.

---

**HAAB141W** *space\_type creator | database space\_name partition\_number* **Prime and Secd Space necessary for allocation have been truncated to user specified qty**

**Explanation:** The listed object's primary and secondary allocations were truncated due to the user-specified maximum space allocation limits.

**User response:** The job will probably fail due to lack of space. Re-evaluate your maximum space quantity allocations.

---

**HAAB142I** **DSNACCOR EXCEPT\_TBL not found; Utilities will not be excluded from generated JCL**

**Explanation:** You specified to use the DSNACCOR table for exception processing, but no exception data was found in the DSNACCOR table.

**User response:** To use the DSNACCOR EXCEPT\_TBL, ensure that the table exists and that it populated with exception data.

---

**HAAB143I** *TS | IX creator | database space\_name partition\_number utility\_type* **turned off because object was found in the DSNACC.EXCEPT\_TBL**

**Explanation:** This informational message lists the object that will be excluded by the listed utility because it was found in the DSNACCOR table.

**User response:** No action is required.

---

**HAAB144W** **Column exceptions were specified but there are NO table space or index objects included in the object profiles**

**Explanation:** The exception profile specified some column exception conditions. However, no table or index spaces are included in the object profiles. The objects may have been filtered by a previous exception.

**User response:** Ensure that the object profile will include objects for this exception. Check the exceptions profile to ensure conditions are properly set.

---

**HAAB145I** *IX creator index\_name partition\_number* **REORG turned off for this index since the table space is being REORGed**

**Explanation:** The table space associated with the listed index is being REORGed. When a table space is REORGed, its associated indexes are also REORGed. Therefore, the REORG utility that was specified for the index has been disabled to prevent a second REORG on the index.

**User response:** No action is required.

---

**HAAB146I** *IX creator index\_name partition\_number* **RUNSTATS turned off for this index since RUNSTATS is being performed on the table space**

**Explanation:** The RUNSTATS utility was already specified for the table space associated with the listed index. When RUNSTATS is run on a table space, RUNSTATS is also run on its associated indexes. Therefore, the RUNSTATS utility that was specified for the index has been disabled to prevent a second RUNSTATS on the index.

**User response:** No action is required.

---

**HAAB147W** *OBJS Profile profile\_creator.profile\_name:* **Volume processing at ALL level is not allowed with Symmetrix/ESS backups**

**Explanation:** The object profile contains objects selected by volume. When the volumes were selected,

processing at the “All” level was specified. However, when processing IBM ESS or Symmetrix copies, the objects must have been selected with processing at the “Part” level.

**User response:** Change the object profile to process the objects selected by volume to the “Part” level.

---

**HAAB148E** Not enough FlashCopy Target volumes are specified; The number of Source volumes (*num\_source*) exceeds the number of Target volumes (*num\_target*)

**Explanation:** There are more source volumes to be copied than there are target volumes specified. This is not allowed.

**User response:** Add or change the target volumes so there are at least as many target volumes as source volumes.

---

**HAAB149E** ANTRQST is not installed on this system; System Data Mover (SDM) functions are not available; FlashCopy canceled

**Explanation:** Utility JCL for image copies of objects on IBM ESS devices was to be generated. However, DB2 Automation Tool requires IBM ESS devices with Advanced Copy Services and the DFSSMS system data mover (SDM) API (macro ANTRQST) installed.

**User response:** The System Data Mover, level 5 or above, must be installed in order to use FlashCopy features.

---

**HAAB150E** FlashCopy is not available at this level of ANTRQST (*level*) running on this system; ANTRQST Level must be  $\geq$  *level*; FlashCopy canceled

**Explanation:** DB2 Automation Tool requires IBM ESS devices with Advanced Copy Services and the DFSSMS system data mover (SDM) API (macro ANTRQST) installed. However, the System Data Mover is not at the required level; it must be level 5 or above.

**User response:** Update your System Data Mover to the required level.

---

**HAAB151E** Unexpected return code from ANTRQST *level* | ESSRVCS request; Return code = *return\_code*; Reason code = *reason\_code*. See z/OS DFSMSdfp Advanced Services manual for a description of the Return Codes. ANTF0 *message\_number* For a Return Code of 7620. See z/OS MVS System Messages manual for a description of ANTF0nnn messages

**Explanation:** An error was encountered when building or processing the ESS image copy utility JCL.

**User response:** Refer to the message text for appropriate action.

---

**HAAB152E** FlashCopy Volume *volume* is not an ESS (Shark) device

**Explanation:** The specified volume is not an IBM ESS device.

**User response:** Enter a valid ESS volume on the IBM ESS Backup Options panel and resubmit.

---

**HAAB153E** FlashCopy Volume *volume* is in *status* status; It must be in SIMPLEX status to execute FlashCopy functions

**Explanation:** The ESS volume must be in SIMPLEX status to process the FlashCopy job. If the volume is in a state other than SIMPLEX, another FlashCopy job may be in progress.

**User response:** Wait until the current FlashCopy job is completed, or specify a different ESS volume.

---

**HAAB154I** Source FlashCopy volume *source\_volume* will be FlashCopied to target volume *target\_volume*

**Explanation:** This informational message lists the source volume to be flash copied and the target volume to which it will be copied.

**User response:** No action is required.

---

**HAAB155E** Unexpected Return Code (*return\_code*) attempting to establish communications with the Symmetrix; Copy functions canceled

**Explanation:** DB2 Shared Profile Support encountered an error communicating with the Symmetrix device. There may be a problem with the Symmetrix SCF started task.

**User response:** Check that the SCF started task is running. Consult your Symmetrix user guide for further assistance. Contact IBM Software Support if additional assistance is required.

---

**HAAB156E** Unexpected Return Code (*return\_code*) attempting to query the Symmetrix; Copy functions canceled

**Explanation:** DB2 Shared Profile Support encountered an error attempting to query the Symmetrix device. There may be a problem with the Symmetrix SCF started task.

**User response:** Check that the SCF started task is running. Consult your Symmetrix user guide for further assistance. Contact IBM Software Support if additional assistance is required.



---

**HAAB157E** Volume *volume* is not on an EMC Symmetrix device; Copy functions canceled

**Explanation:** The specified volume is not an EMC Symmetrix device.

**User response:** Enter a valid EMC device on the EMC Backup Options panel and resubmit.

---

**HAAB158E** EMCDASD scan failed with an RC = *return\_code* attempting to find the UCB for Symmetrix device *device\_address*; Copy functions canceled

**Explanation:** DB2 Shared Profile Support could not find the unit control block for the specified device.

**User response:** Note the return code and contact IBM Software Support.

---

**HAAB159E** UCBDASD scan failed with an RC = *return\_code* attempting to find the UCB for Symmetrix device *device\_address*; Copy functions canceled

**Explanation:** An error occurred when attempting to access the Symmetrix device. The UCB scan could not find the corresponding MVS device.

**User response:** Note the return code and contact IBM Software Support.

---

**HAAB160I** *space\_type creator | database space\_name partition\_number* Reorg Table Space utility does not support REUSE on LOB table spaces; Reuse has been turned off

**Explanation:** The REORG utility does not support the REUSE keyword on LOB table spaces. The job will be built without the REUSE keyword.

**User response:** No action is required.

---

**HAAB161I** *space\_type creator | database space\_name partition\_number* Reorg Table Space option NOSYSREC not allowed since no clustering index found for this space

**Explanation:** The listed object does not have a clustering index; therefore, the NOSYSREC keyword cannot be specified. NOSYSREC will not be included the REORG syntax.

**User response:** No action is required.

---

**HAAB162I** *space\_type creator | database space\_name partition\_number* REUSE parm in Reorg Tbsp/Index has been turned off because object was ALTERED

**Explanation:** The listed object has been ALTERed since creation. Therefore, the REUSE keyword cannot be

specified. REUSE will not be included the REORG syntax.

**User response:** No action is required.

---

**HAAB163E** The HAA database is not in a read/write status. Correct the invalid status and rerun

**Explanation:** The HAA database must be available in read/write status.

**User response:** Correct the invalid status and rerun the job.

---

**HAAB163I** *space\_type creator | database space\_name partition\_number* Table space is not in a read/write status. Correct the invalid status and rerun

**Explanation:** The table space listed in the message must be available in read/write status.

**User response:** Correct the invalid status and rerun the job.

---

**HAAB163E** Current user ID does not have sufficient authority to perform a DISPLAY DATABASE command

**Explanation:** The user ID under which the job is being generated does not have sufficient authority to perform the DISPLAY DATABASE command on the DB2 Automation Tool database. At a minimum, DISPLAYDB authorization is required in order to generate jobs.

**User response:** Grant the user ID DISPLAYDB authority on the DB2 Automation Tool database.

---

**HAAB164W** *space\_type creator | database space\_name partition\_number* The primary space quantity has been truncated due to the MAXPRIME rules set in reallocation

**Explanation:** The primary space allocation was truncated because the reallocation utility profile was configured to apply the maximum primary space allocation setting. The maximum primary allocation is specified in Setup on the Shared Profile Support setup parameters screen.

**User response:** No action is required.

---

**HAAB165W** *space\_type creator | database space\_name partition\_number* The primary space quantity has been truncated due to the PIECESIZE for this index

**Explanation:** The primary space allocation was truncated because the allocation quantity exceeded the PIECESIZE specified when the index was created.

**User response:** No action is required.

---

**HAAB166W** *space\_type creator | database space\_name  
partition\_number* **The secondary space  
quantity has been truncated due to the  
PIECESIZE for this index**

**Explanation:** The secondary space allocation was truncated because the allocation quantify exceeded the PIECESIZE specified when the index was created.

**User response:** No action is required.

---

| **HAAB167I** **REORG TS Turn off tape stacking was  
| selected with an image copy template on  
| a tape device. STACK has been set to  
| No.**

| **Explanation:** The Turn off Tape Stacking field was set  
| to Y in the utility profile, and an image copy utility  
| using templates is being generated for REORG  
| TABLESPACE. STACK YES will not be included in the  
| job; the default of STACK NO is assumed.

| **User response:** No action is required.

---

**HAAB168I** **Invalidatecache Yes is required for  
[RUNSTATS Update None Report No |  
Reset Accesspath] Invalidatecache has  
been set to Yes.**

**Explanation:** INVALIDATECACHE is required for RUNSTATS when both UPATE and REPORT are set to NO, or when RESET ACCESSPATH is specified.

**User response:** No action is required.  
INVALIDATECACHE is set to YES.

---

**HAAB169I** *space\_type creator | database space\_name  
partition\_number* **Reorg Table Space  
option SORTDATA is not supported on  
LOB table spaces; option removed**

**Explanation:** The REORG utility does not support the SORTDATA keyword for LOB table spaces. The job will be built without the SORTDATA keyword.

**User response:** No action is required.

---

**HAAB170I** *space\_type creator | database space\_name  
partition\_number* **Reorg Table Space  
option SORTKEYS is not supported on  
LOB table spaces; option removed**

**Explanation:** The REORG utility does not support the SORTKEYS keyword for LOB table spaces. The job will be built without the SORTKEYS keyword.

**User response:** No action is required.

---



---

**HAAB171I** *space\_type creator | database space\_name  
partition\_number* **Reorg Table Space  
option NOSYSREC is not supported on  
LOB table spaces; option removed**

**Explanation:** The REORG utility does not support the NOSYSREC keyword for LOB table spaces. The job will be built without the NOSYSREC keyword.

**User response:** No action is required.

---

**HAAB172I** *space\_type creator | database space\_name  
partition\_number* **Reorg Table Space  
option SORTDEVT is not supported on  
LOB table spaces; option removed**

**Explanation:** The REORG utility does not support the SORTDEVT keyword for LOB table spaces. The job will be built without the SORTDEVT keyword.

**User response:** No action is required.

---

**HAAB173I** *space\_type creator | database space\_name  
partition\_number* **Reorg Table Space not  
supported for this space**

**Explanation:** A REORG is not allowed on the listed space, most likely because the space is a system catalog space that does not allow REORGs (such as SYSUTILX). The object was skipped.

**User response:** No action is required.

---

**HAAB174I** *space\_type creator | database space\_name  
partition\_number* **Online Reorg Table  
Space Utility not supported on  
DSNDB01 spaces; Share level changed  
to NONE**

**Explanation:** An online REORG is not allowed on DSNDB01 spaces. The REORG syntax was built with SHRLEVEL NONE.

**User response:** No action is required.

---

**HAAB175I** *space\_type creator | database space\_name  
partition\_number* **Inline statistics for  
Reorg Table Space Utility has been  
turned off for this DSNDB01 space**

**Explanation:** Inline statistics is not allowed for DSNDB01.

**User response:** No action is required.

---

**HAAB176I** **Generate Templates.....y|n**

**Explanation:** This message is used with message HAAB027I and indicates whether TEMPLATE syntax is used when generating utilities.

**User response:** No action is required.

---

---

**HAAB177I   Generate Listdefs.....y|n**

**Explanation:** This message is used with message HAAB027I and indicates whether LISTDEF syntax is used when generating utilities.

**User response:** No action is required.

---

**HAAB178I   Preview Only.....y|n**

**Explanation:** This message is used with message HAAB027I and indicates whether the job will be generated in PREVIEW mode.

**User response:** No action is required.

---

**HAAB179I   Continue on Item Error.....y|n**

**Explanation:** This message is used with message HAAB027I and indicates whether processing will continue if an error message with return code 8 is received (not including ABENDS).

**User response:** No action is required.

---

**HAAB180I   Return code 0 on Warnings.....y|n**

**Explanation:** This message is used with message HAAB027I and indicates whether a return code of 0 is forced for jobs that end with return code 4.

**User response:** No action is required.

---

**HAAB181I   Override Work File Unit.....unit**

**Explanation:** This message is used with message HAAB027I and displays the Work File Unit setting on the Override Setup Options screen.

**User response:** No action is required.

---

**HAAB182I   Override Sort Work File Unit.....unit**

**Explanation:** This message is used with message HAAB027I and displays the Sort Work File Unit setting on the Override Setup Options screen.

**User response:** No action is required.

---

**HAAB183I   Override Job Track DB2 Subsystem.....ssid**

**Explanation:** This message is used with message HAAB027I and displays the Job Track DB2 SubSys setting on the Override Setup Options screen.

**User response:** No action is required.

---

---

**HAAB184I   Override Max Primary Space Allocation.....allocationunit**

**Explanation:** This message is used with message HAAB027I and displays the Max Prime Space Alloc setting on the Override Setup Options screen.

**User response:** No action is required.

---

**HAAB185I   Override Utility REGION Size.....amount M**

**Explanation:** This message is used with message HAAB027I and displays the Utility Region Size setting on the Override Setup Options screen.

**User response:** No action is required.

---

**HAAB186I   Override Parallel MVS Catalog LOCATEs..... number**

**Explanation:** This message is used with message HAAB027I and displays the Parallel MVS Cat LOCs setting on the Override Setup Options screen.

**User response:** No action is required.

---

**HAAB187I   Override Terminate Utility if ABEND.....y|n**

**Explanation:** This message is used with message HAAB027I and displays the Term Utility if Abend setting on the Override Setup Options screen.

**User response:** No action is required.

---

**HAAB188I   Override Generate STEPLIB DDs.....y|n**

**Explanation:** This message is used with message HAAB027I and displays the Generate STEPLIB DDs setting on the Override Setup Options screen.

**User response:** No action is required.

---

**HAAB189I   Override Generate Copy DSNs in GMT.....y|n**

**Explanation:** This message is used with message HAAB027I and displays the Gen Copy DSNs in GMT setting on the Override Setup Options screen.

**User response:** No action is required.

---

**HAAB190I   Override Primary Sort Work Space.....cylinders C**

**Explanation:** This message is used with message HAAB027I and displays the Prim SortWork Space setting on the Override Setup Options screen.

**User response:** No action is required.

---

---

**HAAB191I    Override Secondary Sort Work Space.....cylinders C**

**Explanation:** This message is used with message HAAB027I and displays the Prim SortWork Space setting on the Override Setup Options screen.

**User response:** No action is required.

---

**HAAB192I    Override Number of Sort Work DDs.....cylinders**

**Explanation:** This message is used with message HAAB027I and displays the Nbr of SortWork DDs setting on the Override Setup Options screen.

**User response:** No action is required.

---

**HAAB193I    Reorg Table Space with Unload Pause requires a Work DSN High level on Jobs Option Screen. All Data will be lost. HIGHLVL defaulted**

**Explanation:** You must specify a utility work data set high level qualifier to be used for REORG work data set DDs. If you specified to build the job regardless of errors or warnings, the high level qualifiers for those data sets will default to HIGHLVL.

**User response:** On the Generation Options screen for the job profile, specify a utility work data set high level qualifier and rebuild the job.

---

**HAAB194W    Maximum job steps exceeded. Job *jobname* has been split into *number\_of\_jobs* jobs**

**Explanation:** The job exceeds the maximum number of job steps allowed. The listed job name has been split into the specified number of jobs.

**User response:** No action is required.

---

**HAAB195W    The primary space quantity has been truncated due to the DSSIZE for this space**

**Explanation:** The primary space reallocation quantity exceeds the maximum DSSIZE (data set size) for this object type. The primary space quantity has been truncated.

**User response:** No action is required.

---

**HAAB196W    The secondary space quantity has been truncated due to the DSSIZE for this space**

**Explanation:** The secondary space reallocation quantity exceeds the maximum DSSIZE (data set size) for this object type. The secondary space quantity has been truncated.

**User response:** No action is required.

---

**HAAB197W    You have selected utility profiles with exception rules set for rejected, but no exception profiles exists**

**Explanation:** The utility profiles included in the job profile have the Exception Rule field set to Rejected. However, no exception profiles were included in the job profile. Objects cannot be considered rejected unless they have been excluded through exception processing.

**User response:** Change the Exception Rule field in the utility profile, or include appropriate exception profiles in the job profile.

---

**HAAB198E    *space\_type creator | database space\_name partition\_number* Index excluded due to exclusion of associated table space**

**Explanation:** Exception processing resulted in the exclusion of the table space listed in the message. Because in the object profile the table space has the Process Dependent Indexes field set to Y, the space's associated indexes will also be excluded.

**User response:** No action is required.

---

**HAAB199W    Util Profile *profile\_creator.profile\_name* has no utilities selected - profile ignored**

**Explanation:** The job profile contains a utility profile that has not specified any utilities (all utilities in the utility profile are set to 'N'). The utility profile is ignored. If the job was built in batch, a return code of 4 is produced.

**User response:** Update the utility profile to include the desired utility, or remove the utility profile from the job.

---

**HAAB200W    Optimization Hint | Query Acceleration will be ignored because DB2 Force was not selected.**

**Explanation:** The Optimization Hint or Query Acceleration options are only valid if DB2 is set to Force. The option will not be included in the generated JCL.

**User response:** If you want to include one of these options, set the Force option on the HPU Options panel to F(orced).

---

**HAAB201I    Recover Index has been disabled for this table space. Process Indexes was set to No**

**Explanation:** The listed index will not be recovered because the Process Indexes field was set to Y.

**User response:** No action is required.

---

**HAAB202I** *space\_type creator | database space\_name  
partition\_number* **Runstats UPDATE  
option has been changed to NONE for  
this LOB tablespace**

**Explanation:** The listed LOB was included in a LISTDEF; the RUNSTATS option must be set to NONE.

**User response:** No action is required.

---

**HAAB203I** **Rebind Dependent Plans / Packages ...**

**Explanation:** This message is used with message HAAB027I and displays the Rebind Dependent Plans/Packages setting on the Generation Options screen.

**User response:** No action is required.

---

**HAAB204I** *space\_type creator | database space\_name  
partition\_number* **Reorg Index not  
supported for this space**

**Explanation:** A REORG is not allowed on the listed index, most likely because it is an index for a system catalog space that does not allow a REORG INDEX. The object was skipped.

**User response:** No action is required.

---

**HAAB205I** *space\_type creator | database space\_name  
partition\_number* **Runstats not supported  
for this object**

**Explanation:** RUNSTATS cannot be executed on this object. The object will be skipped.

**User response:** No action is required.

---

**HAAB207W** *space\_type creator | database space\_name  
partition\_number* **Space with page size >  
4K excluded from concurrent image  
copy with SHARELEVEL CHANGE**

**Explanation:** Concurrent COPY with SHRLEVEL CHANGE is not valid for objects with a page size greater than 4 KB. These objects will be excluded from the generated JCL.

**User response:** No action is required.

---

**HAAB208E** **Image copy FILTERDDN option must  
be used with templates only**

**Explanation:** A filter DD name was specified in the COPY utility profile, but the job profile did not specify to use templates. It is required to set the Generate Templates option in Y in order to use the filter DD name.

**User response:** Update the job profile to set the Generate Templates job option to Y.

---



---

**HAAB210I** *space\_type creator | database space\_name  
partition\_number utility* **Utility has been  
turned off for this object**

**Explanation:** The utility listed in the message has been turned off for the object because the utility does not apply to this type of object.

**User response:** No action is required.

---

**HAAB211I** **All ACCEPTED/REJECTED Utilities  
have been turned off for this object**

**Explanation:** This message indicates that an object does not have any utilities to be run against it and therefore will not be included in the JCL. This condition might occur when an object is initially included but later is excluded.

**User response:** No action is required.

---

**HAAB213I** **Severity of HAAB524 message has been  
overridden to Info | Warning**

**Explanation:** The severity of the HAAB524E message was manually overridden to either an informational message or a warning message (as stated in the message text).

**User response:** No action is required.

---

**HAAB215W** **IDAA exceptions were specified but  
there were no IDAA appliances found  
on this SSID. IDAA exceptions are  
disabled.**

**Explanation:** IDAA exception conditions were selected. However, no IDAA accelerators were found attached to the DB2 subsystem. Therefore, the IDAA exception conditions were disabled.

**User response:** Remove the IDAA exception conditions from the exception profile.

---

**HAAB216W** **IDAA exceptions were specified but  
there were no IDAA-enabled tables  
found on this SSID. IDAA exceptions  
are disabled.**

**Explanation:** IDAA exception conditions were specified. However, no tables in any table spaces in the object profiles were found on any IDAA accelerators attached to the DB2 subsystem. Therefore, the IDAA exception conditions were disabled.

**User response:** Remove the IDAA exception conditions from the exception profile.

---

---

**HAAB217W** IDAA exceptions were specified but there are no IDAA utilities in this job group. IDAA exceptions are disabled.

**Explanation:** IDAA exception conditions were selected. However, no load accelerator tables utility was found in the current job group in the job profile. Therefore, the IDAA exception conditions were disabled for the current job group.

**User response:** Either remove the IDAA exception conditions from the exception profile or add a load accelerator tables utility to the job group.

---

**HAAB218W** IDAA table cannot be loaded because its status is not loaded or operational. Schema.table **current status is status.**

**Explanation:** The IDAA NOT\_OPERATIONAL exception condition was selected. The indicated table has an IDAA status that is listed in the message.

**User response:** Refer to the IDAA documentation for specifics about the status of an IDAA-enabled table.

---

**HAAB219I** An IDAA stored procedure returned the following informational | warning | error message and reason-code reason-code: message-text; message-description; action-text

**Explanation:** An IDAA stored procedure returned an SQLCODE = 466, indicating that a result set was returned. However, an informational, warning, or error message was also issued. Message-text and message-description indicate the situation that the stored procedure detected. Refer to the IDAA documentation for more information about the reason-code.

**User response:** Take the specified action as described in action-text to resolve the issue.

---

| **HAAB221I** Explode IXs with DEFINE NO  
| TSs.....YIN

| **Explanation:** The Setup or Job Override value being used for the current job profile is displayed.

| **User response:** No action is required.

---

| **HAAB222I** Altered Object Adjustment.....A | P

| **Explanation:** The Setup or Job Override value being used for the current job profile is displayed.

| **User response:** No action is required.

---

**HAAB225W** Refresh of the real time statistics failed. Processing continues. Rerun job with "DEBUG\_MODE ON" for diagnostic information.

**Explanation:** Externalization of the real-time statistics to the catalog tables failed due to unavailable resources.

**User response:** Rerun the job in DEBUG mode to view more detailed diagnostic information.

---

**HAAB300I** space\_type creator | database space\_name partition\_number **Logging for Reorg Tablespace Utility has been set to LOG NO for this LOB tablespace**

**Explanation:** LOG YES is not allowed for LOB table spaces when the REORG type is set to SHRLEVEL REFERENCE or SHRLEVEL CHANGE. The LOG keyword has been set to NO.

**User response:** No action is required.

---

**HAAB301W** space\_type creator | database space\_name partition\_number **Reorg SHARELEVEL(CHANGE) not supported on not logged spaces**

**Explanation:** The listed space was created with NOT LOGGED attribute. An online REORG cannot be performed on this space.

**User response:** No action is required.

---

**HAAB302W** space\_type creator | database space\_name partition\_number **Copy SHARELEVEL(CHANGE) not supported on not logged spaces**

**Explanation:** The listed space was created with the NOT LOGGED attribute. An online COPY cannot be performed on this space.

**User response:** No action is required.

---

**HAAB303W** space\_type creator | database space\_name partition\_number **Recover LOGONLY not supported on not logged spaces**

**Explanation:** The listed space was created with the NOT LOGGED attribute. A RECOVER LOGONLY cannot be performed on this space.

**User response:** No action is required.

---

**HAAB304W** space\_type creator | database space\_name partition\_number **Quiesce WRITE(NO) not supported on not logged spaces**

**Explanation:** The listed space was created with the NOT LOGGED attribute. An QUIESCE WRITE(NO) cannot be performed on this space.

**User response:** No action is required.

---

**HAAB305E** space\_type creator | database space\_name partition\_number **The state of the object at selected point in time was not logged**

**Explanation:** At the specified recovery point, the listed space contained the NOT LOGGED attribute. This

space cannot be recovered to a point in time without log records.

**User response:** Select a different recover point for the space.

---

**HAAB306I Not Logged objects may need to be recovered to establish a point of consistency**

**Explanation:** This informational message states that if there were any spaces with the NOT LOGGED attribute when the system backup was performed, these spaces will be in RECOVER PENDING after the system restore is completed.

**User response:** No action is required.

---

**HAAB307I The FASTSWITCH option is not supported on Online Reorg**

**Explanation:** The FASTSWITCH keyword is not valid with online REORG for DB2 Version 9.1 or later. This keyword will be ignored.

**User response:** No action is required.

---

**HAAB309I All associated Runstats statistics will be collected regardless of the specified exception conditions**

**Explanation:** In an exception profile, the Collect All Statistics field on the Runstats Options screen was set to Y. Therefore, RUNSTATS keywords will be generated to collect all associated statistics for an object, regardless of the exception conditions that are specified in the exception profiles. This allows the DB2 catalog and/or the DB2 Automation Tool repository to have current table space and index statistics for all objects in the job.

**User response:** No action is required.

---

**HAAB310W** *space\_type creator | database space\_name partition\_number* **Clone objects no longer exist**

**Explanation:** The object profile specified to process clone objects for the object listed in the message. However, a clone object no longer exists, therefore clones will not be processed for this object.

**User response:** No action is required.

---

**HAAB3111W Rebalance has been turned off for this Partition by Growth Tablespace**

**Explanation:** REBALANCE is not allowed for partition-by-growth table spaces.

**User response:** No action is required.

---

**HAAB312W Clone object detected. Care must be taken executing COPY, REORG, or RECOVER utilities due to exchanging base/clone objects**

**Explanation:** A clone object was detected. Clone table support in DB2 Version 9.1 added the ability to exchange the base table with the cloned table. It is therefore possible that the utility may be performed on the wrong object. In addition, if a table is cloned and exchanged after the job is built, the job may be executed on the wrong object without warning.

**User response:** Ensure that the correct object (clone or base) is being included in the job.

---

**HAAB313I** *space\_type creator | database space\_name partition\_number* **FASTSWITCH option will be ignored for clone indexes**

**Explanation:** The FASTSWITCH option of the REORG utility is not allowed for any object involved in cloning. The FASTSWITCH keyword will be ignored.

**User response:** No action is required.

---

**HAAB314I** *space\_type creator | database space\_name partition\_number* **RUNSTATS will be ignored for clone objects**

**Explanation:** RUNSTATS cannot be executed on cloned objects. The listed object will not be processed.

**User response:** No action is required.

---

**HAAB315W The Force option should be used with caution. The oldest version of the database/log will be overwritten before saving to tape**

**Explanation:** The FORCE option was specified for BACKUP SYSTEM utility. This message warns that the oldest fast replication copy of the database copy pool and/or the log copy pool might be overwritten, even if the dump to tape of the copy pools' DFSMSHsm dump classes have been initiated but are only partially completed.

**User response:** No action is required.

---

**HAAB316W** *space\_type creator | database space\_name partition\_number* **REORG SHRLEVEL(CHANGE) not supported on LOB Table spaces. SHRLEVEL will be set to NONE | REORG SHRLEVEL(CHANGE) not supported on LOB TS with base TS defined as LOG NO. SHRLEVEL set to REFERENCE**

**Explanation:** For DB2 V9 and earlier, SHRLEVEL CHANGE is not valid for a REORG of a LOB table space. SHRLEVEL has been changed to NONE for this LOB object.

For DB2 V10 and later, SHRLEVEL CHANGE is not valid when the base table space is NOT LOGGED. SHRLEVEL has been changed to REFERENCE for this LOB object.

**User response:** No action is required.

---

**HAAB317W The REALTIME statistics tables were not found. No REALTIME exception conditions will be processed**

**Explanation:** The DB2 subsystem on which the job is being generated does not contain the required real-time statistics tables. These tables are user-defined on DB2 subsystems prior to DB2 Version 9.1. DB2 Automation Tool cannot process conditions related to real-time statistics.

**User response:** No action is required.

---

**HAAB318W** *space\_type creator \ database space\_name partition\_number* **Rebalance has been turned off for this XML tablespace**

**Explanation:** REBALANCE is not allowed for XML table spaces. The REBALANCE keyword has not been included.

**User response:** No action is required.

---

**HAAB319W** *space\_type creator \ database space\_name partition\_number* **DISCARD has been set to no because it is not allowed with an XML Tablespace**

**Explanation:** The DISCARD option is not allowed for XML table spaces. The DISCARD keyword has not been included.

**User response:** No action is required.

---

**HAAB320W UNLOAD EXTERNAL not allowed with XML table space. Defaulting to UNLOAD PAUSE**

**Explanation:** The UNLOAD option EXTERNAL is not a valid option with a REORG of an XML table space. The UNLOAD option will be set to PAUSE.

**User response:** No action is required.

---

**HAAB323E Exception Profile**  
*profile\_creator.profile\_name* **is corrupted and must be recreated**

**Explanation:** The exception profile listed in the message has been damaged or corrupted and cannot be used.

**User response:** Recreate the exception profile.

---

**HAAB324W Quiesce Tablespace is not supported with LISTDEFs. LISTDEF turned off for this utility**

**Explanation:** LISDEF is not valid with QUIESCE TABLESPACESET. LISTDEF has been turned off for this utility.

**User response:** No action is required.

---

**HAAB325W Modify SYSIBM STATISTICS not supported for cloned object. Option turned off for this object**

**Explanation:** The MODIFY STATISTICS utility does not delete statistics history records for clone tables because statistics are not collected for these tables. The option has been turned off for the cloned object.

**User response:** No action is required.

---

**HAAB326W Modify RUNSTATS REPOSITORY TABLE not supported for cloned objects. Option turned off for this object**

**Explanation:** The MODIFY utility does not delete statistics records from the DB2 Automation Tool RUNSTATS repository tables for clone tables because statistics are not collected for clone tables. The option has been turned off for the cloned object.

**User response:** No action is required.

---

**HAAB327W REORG DISCARD was selected without including a Discard dataset**

**Explanation:** A REORG was specified with the DISCARD option, but the utility profile did not specify a discard data set. The discard records will not be saved.

**User response:** No action is required.

---

**HAAB328W Reallocate turned off for object related to a cloned table**

**Explanation:** The object listed is a clone of an object, has been cloned by another object, or is otherwise related to a clone. Cloned objects cannot be ALTERed. The object is skipped. This message will be generated for base objects with clones even if the Process Clones option is turned off.

**User response:** No action is required.

---

**HAAB330W** *space\_type creator \ database space\_name partition\_number* **Rebalance has been turned off for this non-partitioned table space**

**Explanation:** The REBALANCE option is not valid for non-partitioned table spaces. The REBALANCE keyword has not been included.



**User response:** No action is required.

---

**HAAB331W** *space\_type creator | database space\_name  
partition\_number* **Rebalance has been  
turned off for this non-partitioned table  
space**

**Explanation:** The REBALANCE option is not valid for non-partitioned table spaces. The REBALANCED keyword has not been included.

**User response:** No action is required.

---

**HAAB332E** **LISTDEFs must be specified when  
PROCESS RI=R is encountered**

**Explanation:** The object profile specified to process RI objects at run time, but LISTDEFs were not specified in the job profile. LISTDEF must be specified in the job options to use this feature.

**User response:** Either change the job profile and include LISTDEFs, or change the object profile to specify a different RI object processing option.

---

**HAAB338I** **Preview Exception Report..... y | n**

**Explanation:** This message is used with message HAAB027I and displays the Preview Exception Report value, as set on the job Generation Options window. If set to Y, a batch job will be built to generate a triggered objects report; no utility JCL will be generated.

**User response:** No action is required.

---

**HAAB339E** **You specified Preview Exception Report,  
but there are no exception profiles in  
the job profile**

**Explanation:** The Preview Exception Report value was set to Y on the job Generation Options window, but there is no exceptions profile in the job profile. At least one exceptions profile must be in the job profile to preview an exception report.

**User response:** Add an exceptions profile to the job profile and rebuild the job.

---

**HAAB340I** **No JCL was generated since you  
specified Preview Exception Report**

**Explanation:** The Preview Exception Report value was set to Y on the job Generation Options window. This setting produces a report of objects that would be triggered by exception processing, without generating JCL.

**User response:** No action is required.

---

**HAAB342I** **Processing jobs profile group  
*profile\_group\_name***

**Explanation:** This informational message displays the name of the job profile group currently being processed.

**User response:** No action is required.

---

**HAAB343E** **Invalid group. There must be at least  
one object and one utility profile in the  
group when the Preview Exception  
Report Jobs Generation option is No.  
Build terminated**

**Explanation:** The Job Generation option **Preview Exception Report** is set to No. When this option is specified, a group in the job profile must contain at least one object profile and one utility profile. The build terminates.

**User response:** Either delete the group from the job profile or add the required profiles to the job group.

---

**HAAB344E** **Invalid group. There must be at least  
one object profile and one exception  
profile in the group when the Preview  
Exception Report Jobs Generation  
Option is Yes or an Autonomics Director  
option is selected. Build terminated**

**Explanation:** The Job Generation option **Preview Exception Report** is set to Yes, or this profile will be used in an autonomic build. When these options are specified, a group in the job profile must contain at least one object profile and one exception profile. The build terminates.

**User response:** Either delete the group from the job profile or add the required profiles to the job group.

---

**HAAB345E** **Invalid exception rule. The exception  
rule profile for *profile\_creator.profile\_name*  
does not exist in group *job\_group\_name*.  
Build terminated**

**Explanation:** The exception rule for the profile and the job group listed in the message does not exist. The build terminates.

**User response:** Edit the job profile and define the exception rules for the job group.

---

**HAAB347I** **Exception rule in utility profile  
*profile\_creator.profile\_name* overridden to  
*Accepted* | *Rejected* | *Both***

**Explanation:** The exception rule as specified in the utility profile was overridden by the exception rules specified in the job group.

**User response:** No action is required.

---

**HAAB348W** Conditional exception profiles override the Evaluate Multiple Exception Profiles value to One at a time

**Explanation:** The Evaluate Multiple Exception Profiles field in the job generation options was set to A for all. However, exception rules are specified in a job group in the job profile, which overrides the Evaluate Multiple Exception Profiles setting, so it was set to O for One at a time.

**User response:** No action is required.

---

**HAAB349W** Conditional exception profiles override the Reallocation Utility "Use ONLY Exception Profile Criteria" to Yes

**Explanation:** In the reallocation utility profile, the Use ONLY Exception Profile Criteria is set to No. However, exception rules are specified in a job group in the job profile, which overrides the Use ONLY Exception Profile Criteria setting, so it was set to Yes.

**User response:** No action is required.

---

**HAAB350I** *space\_type creator database space\_name partition\_number* Object included via Referential Integrity explode

**Explanation:** The object listed in the message has been included in the job due to a referential integrity relationship.

**User response:** No action is required.

---

**HAAB351I** Profile *profile\_name profile\_creator* Registration step has been turned off for this job

**Explanation:** The jobs profile listed in the message has the Include Registration Step option in the Job Generation options set to N. The job will not contain a registration step.

**User response:** No action is required.

---

**HAAB352I** Override DB2 Buffer Size *buffer\_size* M

**Explanation:** This message is used with message HAAB027I and shows the size of the DB2 buffer size override as set in the Job Generation options.

**User response:** No action is required.

---

**HAAB353E** Generation user exit *exit\_name* not found. Build processing aborted

**Explanation:** The pre- or post-generation user exit specified in the job profile was not found.

**User response:** Check that the user exit has been placed in the correct library.

---



---

**HAAB354W** Generation user exit ended with return code 04. Build processing continues

**Explanation:** The pre- or post-generation user exit ended with a RC of 4. This RC means that an object was triggered. Build processing continues.

**User response:** No action is required.

---

**HAAB355E** Generation user exit ended with return code 08. Build processing aborted

**Explanation:** The pre-or post-generation user exit ended with a return code of 8. This RC indicates a severe error. Build processing is aborted.

**User response:** No action is required.

---

**HAAB356I** Override Secondary Allocation Percent *...percent%*

**Explanation:** This message is used with message HAAB027I and lists the override for the secondary allocation percent.

**User response:** No action is required.

---

**HAAB357I** Pre-Generation user exit has altered the build input

**Explanation:** This informational message states that a user exit has been called that altered the build input.

**User response:** No action is required.

---

**HAAB358I** Post-Generation user exit has altered build output

**Explanation:** This informational message states that a user exit has been called after JCL generation that altered the build output.

**User response:** No action is required.

---

**HAAB359E** Pre-Generation user exit has corrupted data

**Explanation:** A user exit was specified in the job and was called during processing. When the data was returned from processing by the user exit, DB2 Automation Tool found that the data has been corrupted. The build process is canceled.

**User response:** Check the contents of the user exit. One or more elements of the pre-generation sort key (step sequence, job sequence and/or object sequence) may have been incorrectly specified. Correct the sort key and resubmit the job.

---

---

**HAAB360E** AGE, DATE, JOBS\_PROFILE, and JOBS\_CREATOR are blank; one of these must specify a valid value

**Explanation:** You must specify either the Date, Age, Jobs Profile Like, or Jobs Creator Like fields for the modify utility.

**User response:** Edit the utility profile and specify a value in one of the fields.

---

**HAAB361I** Jobs Reporting Facility Cleanup is being performed by JOBS\_CREATOR *creator\_name* and JOBS\_PROFILE *profile\_name*

**Explanation:** This message lists the name of the job profile and job profile creator that are being used to clean up the Jobs Reporting Facility repository.

**User response:** No action is required.

---

**HAAB363W** *space\_type creator | database space\_name partition\_number* LISTDEFS are not supported for PAGE recovery. LISTDEF turned off for Recover in Step *stepname*

**Explanation:** LISTDEF is not valid with RECOVER to a page. LISTDEF has been turned off for this utility.

**User response:** No action is required.

---

**HAAB364E** No utility profiles were found in the jobs profile or no utility found in any included utility profile; build process terminated

**Explanation:** The job build was terminated because there were no utility profiles contained in the job profile, or because none of the utility profiles included in the job profile specified utilities.

**User response:** Ensure that one or more utility profiles are included in the job profile. Check the included utility profiles to ensure that one or more utilities is specified.

---

**HAAB365I** Modify utility Exception Rule set to "B"oth. Job Profile and/or Creator Like is specified. JCL is always generated in this case

**Explanation:** The exception rule for this utility has been set to B for both, since Jobs Profile Like and/or Jobs Creator Like criteria was entered. JCL will always be generated when Jobs Profile Like and/or Jobs Creator Like criteria are specified.

**User response:** No action is required.

---



---

**HAAB366W** Group Parts By for *utility* detected. However, PARALLEL NO was specified or ZPARM REORG\_LIST\_PROCESSING is SERIAL | Group Parts By for *utility* detected. However, LISTPARTS 1 was specified | Group Parts By for *utility* detected. However, LISTPARTS is blank and ZPARM REORG\_LIST\_PROCESSING is SERIAL

**Explanation:** Group Partitions By job or step was specified in a utility profile, but one of the following is true:

- The functionality will be limited due to the maximum number of list partitions that were specified.
- Group Partitions by has been turned off for one of the following reasons. The reason is displayed in the message text.
  - DB2 V8 | V9 LISTDEF does not support more than one PARTLEVEL number
  - PARALLEL NO was specified or ZPARM REORG\_LIST\_PROCESSING is SERIAL
  - LISTPARTS 1 was specified
  - LISTPARTS is blank and ZPARM REORG\_LIST\_PROCESSING is SERIAL

The following text may appear in conjunction with the message text to provide additional information: *parameter* overrides Grouping of partitioned objects. where *parameter* can be LISTDEF, LISTPARTS, or PARALLEL NO. If LISTPARTS or PARALLEL NO, grouping of objects will be performed, but DB2 will process those objects serially.

**User response:** No response is required. Processing continues; however, Group By Partitions may be disabled or limited depending on the conditions.

---

**HAAB367E** Insufficient storage for DB2 work area buffer

**Explanation:** Storage for a DB2 work area buffer could not be obtained.

**User response:** Increase your TSO region size and rerun the application.

---

**HAAB368W** *space\_type creator | database space\_name partition\_number* Sample will not be included for this LOB tablespace

**Explanation:** The Sample option is not allowed for LOB table spaces. The keyword will not be included.

**User response:** No action is required.

---

---

**HAAB369W** *space\_type creator | database space\_name  
partition\_number* **Table All has been set  
to No for this LOB tablespace**

**Explanation:** The Table All option is not allowed for LOB table spaces. The keyword will not be included.

**User response:** No action is required.

---

**HAAB370E** **Current User ID does not have  
sufficient authority to perform a  
-DISPLAY command**

**Explanation:** Your authorization ID has not been granted privileges to issue the DISPLAY GROUP command.

**User response:** Check with your DB2 administrator to verify or obtain the proper authority.

---

**HAAB372W** **A system level backup was not found  
for this object**

**Explanation:** No SLB was found was found that contains this object. The object is skipped.

**User response:** Ensure the object name was properly specified and an SLB exists that contains the object.

---

**HAAB373W** **Object was not included in the selected  
system level backup**

**Explanation:** This object was not included in the selected system level backup. The object is skipped.

**User response:** Ensure that the object name was properly specified and the correct SLB was selected.

---

**HAAB374W** **Recovery Expert Image Copy will be  
bypassed for index defined with COPY  
NO**

**Explanation:** The index was defined with COPY NO. Therefore, no image copy can be extracted from SLB. The index is skipped.

**User response:** No action is required.

---

**HAAB375I** **Maximum Number of Objects per  
Step..... nn**

**Explanation:** This message is used with message HAAB027I and displays the Maximum nbr of objects per step value, as set on the Job Breakdown Options window.

**User response:** No action is required.

---



---

**HAAB376I** **Pad Jobs if Max not  
Exceeded.....y | n**

**Explanation:** This message is used with message HAAB027I and displays the Pad Jobs if max not exceeded value, as set on the Job Breakdown Options window.

**User response:** No action is required.

---

**HAAB377I** **Partitioned Objects will be grouped  
together in the same Job/Step. This may  
override other job breakdown values.**

**Explanation:** The Group by Partitions field was set for the utility profile to J for job or S for step. This setting determines how partitions of a partitioned object are grouped in the same job. This value may override whatever job breakdown options are set.

**User response:** No action is required.

---

**HAAB378E** **Unload Pause is not compatible with the  
Group Partitions value. Defaulting to  
Continue.**

**Explanation:** You indicated that partitions are to be grouped together by job or step. REORG with UNLOAD PAUSE causes additional job steps to be generated. Therefore, the REORG option has been changed to UNLOAD CONTINUE.

**User response:** If you want REORG with UNLOAD PAUSE, you must change the Group by Partitions value to N.

---

**HAAB380E** **System Level Backup specified no  
longer exists**

**Explanation:** The SLB selected no longer exists. The object is skipped.

**User response:** Select a different SLB.

---

**HAAB381W** **Recovery Expert image copy cannot be  
performed at the PART ALL level.  
Partitions processed individually**

**Explanation:** SLBs taken with DB2 Recovery Expert do not allow image copies to be made at the all partition level. Objects in DB2 Automation Tool profiles that specify PART ALL will be exploded into individual partitions and the copies taken at the individual partition level.

**User response:** No action is required.

---

**HAAB385W** *space\_type creator | database space\_name  
partition\_number* **Underlying VSAM file  
not found; object included for Recover  
only**

**Explanation:** During a RECOVER utility JCL build, an

underlying VSAM file was not found. However, the RECOVER utility does not require a STOGROUP-managed data set to be present before execution, because RECOVER recreates the data set from an image copy. Note that this applies to STOGROUP-managed data sets only; user-managed data sets must be manually created before running the recovery.

**User response:** The object is included for RECOVER processing; for other utilities, either create the underlying file or remove the object from the object profile.

---

**HAAB386I** *dbname | tsname* **Indexes could not be obtained for Alt DB.TS. DB2 REBUILD INDEX job will build with source system indexes.**

**Explanation:** Index objects could not be found for database.tablespace specified in the **Alt Output DBNAME.TSNAME** field on the HAA\$OXLT panel. DB2 REBUILD INDEX job will generated with index names from original database.tablespace.

**User response:** User may want to correct the **Alt Output DBNAME.TSNAME** field on the HAA\$OXLT panel and rebuild a job or to change index object names manually before submit DB2 REBUILD INDEX job.

---

**HAAB386W** *space\_type creator | database space\_name partition\_number* **TableSample will not be included for this LOB table space**

**Explanation:** TableSample was specified for the RUNSTATS utility, but TableSample is not valid for LOB table spaces. The keyword will not be included.

**User response:** No action is required.

---

**HAAB387W** *space\_type creator | database space\_name partition\_number* **TableSample will not be included for this table space since it contains more than 1 table**

**Explanation:** TableSample was specified for the RUNSTATS utility, but TableSample is not valid for table spaces that contain than one table. The keyword will not be included.

**User response:** No action is required.

---

**HAAB403E** **Invalid exception | utility profile** *profile\_creator.profile\_name*. **The profile will not be executed. No other profile points to this profile. Build terminated**

**Explanation:** The profile that is listed in the message is not valid. It might have been deleted since the job profile was built. The build process was terminated.

**User response:** Re-create the missing job profile, or

modify the job profile and include a valid profile and rebuild the job.

---

**HAAB404E** **Invalid exception profile** *profile\_creator.profile\_name*. **There are no exception rules specified. However, there are conditional profiles in the jobs group. Build terminated**

**Explanation:** The exception profile that is listed in the message is not valid. No exception rules are defined in the profile. The build process was terminated.

**User response:** Update the exception profile and specify exception rules for accepted and rejected objects.

---

**HAAB405E** **Invalid exception profile** *profile\_creator.profile\_name*. **Both exception rules point to the same profile. Build terminated**

**Explanation:** The exception profile that is listed in the message is not valid. The exception rules that are defined in the profile both point to the same utility profile. The build process was terminated.

**User response:** Update the exception profile to specify a different utility profile for accepted and rejected objects.

---

**HAAB407I** **Reallocation will use DB2 real-time statistics in addition to MVS catalog statistics.**

**Explanation:** The reallocation utility settings in the utility profile specified that when calculating reallocation criteria, DB2 real-time statistics are to be used in addition to MVS catalog statistics.

**User response:** No action is required.

---

**HAAB408W** *space\_type creator | database space\_name partition\_number* **DB2 real-time statistics are unavailable for this object.**

**Explanation:** The reallocation utility settings in the utility profile specified that when calculating reallocation criteria, DB2 real-time statistics are to be used in addition to MVS catalog statistics. However, DB2 real-time statistics are not available for the object that is listed in the message.

**User response:** No action is required; MVS catalog statistics will be used for reallocation calculations.

---

**HAAB409W** **TS database space\_name partition\_number DSSIZE and/or NPAGES is 0. DB2 Real Time Statistic SPACEUSED\_PCT is set to 0.**

**Explanation:** The exception condition

SPACEUSED\_PCT was specified, but either DSSIZE or NPAGES was found to be less than or equal to 0; therefore, SPACEUSED\_PCT is set to 0.

**User response:** No response is required.

**HAAB500I** *space\_type creator | database space\_name*  
*partition\_number* **AUX has been set to YES for this Partition by Growth Tablespace**

**Explanation:** The object listed in the message is a partitioned-by-growth table space, which requires AUX YES. AUX has been changed to YES.

**User response:** No action is required.

**HAAB504I** *space\_type creator | database space\_name*  
*partition\_number* **LISTDEFS were overridden since RUNSTATS INDEX(indexname) was requested.**

**Explanation:** Object-specific utilities were specified for the object listed in the message. LISTDEFS will be turned off for this object.

**User response:** No action is required.

**HAAB505I** *space\_type creator | database space\_name*  
*partition\_number* **LISTDEFS were overridden since RUNSTATS TABLE(tablename) was requested.**

**Explanation:** Object-specific utilities were specified for the object listed in the message. LISTDEFS will be turned off for this object.

**User response:** No action is required.

**HAAB506I** *space\_type creator | database space\_name*  
*partition\_number* **RUNSTATS TABLE(ALL) was overridden since object-specific table stats were requested.**

**Explanation:** Object-specific utilities were specified for the object listed in the message. Therefore, RUNSTATS TABLE ALL was turned off.

**User response:** No action is required.

**HAAB507I** *space\_type creator | database space\_name*  
*partition\_number* **RUNSTATS INDEX(ALL) was overridden since object-specific index stats were requested.**

**Explanation:** Object-specific utilities were specified for the object listed in the message. Therefore, RUNSTATS INDEX ALL was turned off.

**User response:** No action is required.

**HAAB508I** *space\_type creator | database space\_name*  
*partition\_number* **LISTDEFS were overridden since RUNSTATS NUMCOLS was requested.**

**Explanation:** Object-specific utilities were specified for the object listed in the message. Therefore, LISTDEFS will be turned off for this object.

**User response:** No action is required.

**HAAB509W** *space\_type creator | database space\_name*  
*partition\_number* **REORG SHRLEVEL(CHANGE) mapping table will be ignored for this LOB table space**

**Explanation:** The object listed in the message is a LOB table space and REORG SHRLEVEL (CHANGE) was specified. A mapping table is not required for a REORG of a LOB space. The mapping table definitions will be ignored.

**User response:** No action is required.

**HAAB510I** *space\_type creator | database space\_name*  
*partition\_number* **AUX has been set to YES for this Partitioned Base TS**

**Explanation:** The object listed in the message is a partitioned base table space, which requires AUX YES. AUX has been changed to YES.

**User response:** No action is required.

**HAAB511W** *space\_type creator | database space\_name*  
*partition\_number* **REORG SHRLEVEL(CHANGE) not supported on BASE TS defined as LOG NO. SHRLEVEL reset to NONE**

**Explanation:** The object listed in the message is a LOB table space and REORG SHRLEVEL (CHANGE) was specified. The base table space was defined as NOT LOGGED, therefore, SHRLEVEL CHANGE is not allowed. SHRLEVEL has been set to NONE.

**User response:** No action is required.

**HAAB513W** *space\_type creator | database space\_name*  
*partition\_number* **AUX has been set to NO because DB name or Space name was not included in the template**

**Explanation:** AUX YES was specified and inline image copies will be taken on the base table space and LOB table spaces being reorganized. The COPYDDN and RECOVERYDDN keywords must specify a TEMPLATE name with &DB. or &SN for the inline copies. AUX has been changed to NO.

**User response:** Correct the template and resubmit.

---

**HAAB513I** Runstats turned on for this NPI since REORG is being performed on the related partitioned table space.

**Explanation:** RUNSTATS will be generated for the nonpartitioned secondary index because a REORG is being performed on the related partitioned table space.

**User response:** No action is required.

---

**HAAB514I** *space\_type creator | database space\_name partition\_number* RUNSTATS SAMPLE is not valid with Set, Update, or Delete Profile. Sample ignored

**Explanation:** In the utility profile, RUNSTATS SAMPLE was specified, as well as USE PROFILE, DELETE PROFILE, or SET PROFILE. This combination is invalid. The SAMPLE keyword is ignored.

**User response:** No action is required.

---

**HAAB515I** *space\_type creator | database space\_name partition\_number* RUNSTATS USE, DELETE, SET FROM EXISTING STATS profile specified. Column and Colgroup specs ignored

**Explanation:** In the object profile, column or column group statistics were specified; in addition, in the utility profile, RUNSTATS USE PROFILE, DELETE PROFILE, or SET PROFILE FROM EXISTING STATS was specified. This combination is invalid. The column or column group statistics specifications are ignored.

**User response:** No action is required.

---

**HAAB516I** *space\_type creator | database space\_name partition\_number* RUNSTATS USE, DELETE, SET FROM EXISTING STATS profile specified. Index specs ignored

**Explanation:** In the utility profile, RUNSTATS USE PROFILE, DELETE PROFILE, or SET PROFILE FROM EXISTING STATS was specified with INDEX ALL. This combination is invalid. INDEX ALL is ignored.

**User response:** No action is required.

---

**HAAB517E** FlashCopy requires templates option

**Explanation:** A FlashCopy was requested but the job profile did not specify the templates option. Templates are required for FlashCopy copies.

**User response:** Edit the job profile to specify job templates and resubmit the job.

---



---

**HAAB518I** *space\_type creator | database space\_name partition\_number* FlashCopy will be ignored. Index has COPY=NO

**Explanation:** A FlashCopy was requested for the object listed in the message, but the associated index was defined as COPY NO. The object will be skipped.

**User response:** No action is required.

---

**HAAB519I** *space\_type creator | database space\_name partition\_number* DISCARD has been set to NO because it is not allowed with versioned tables

**Explanation:** The object listed in the message is a temporal table space. The DISCARD option cannot be specified for temporal table spaces. The DISCARD option will be ignored.

**User response:** No action is required.

---

**HAAB521E** FlashCopy incompatible with CONCURRENT keyword

**Explanation:** A FlashCopy was requested, but the CONCURRENT keyword was also specified in the utility profile. This combination is not allowed.

**User response:** Either change the Concurrent field to N, or specify a copy type other than a FlashCopy.

---

**HAAB520W** *space\_type creator | database space\_name partition\_number* REORG SHRLEVEL(NONE) not supported on LOB Table spaces. SHRLEVEL will be set to REFERENCE

**Explanation:** The object listed in the message is a LOB table space and REORG SHRLEVEL (NONE) was specified. This combination is not supported. SHRLEVEL has been set to REFERENCE.

**User response:** No action is required.

---

**HAAB523W** *space\_type creator | database space\_name partition\_number* [LOB validation failed. Missing LOB TS(s) for this BASE TS] | [LOB validation failed for this TS. Incomplete LOB related TS set.] The exclusion of this object could possibly be the result of exception processing.

**Explanation:** Dependency checking failed for the object that is listed in the message. Either the dependent table space or the base table space for the listed LOB was not found, or one of those objects was excluded via exception processing.

**User response:** Ensure that when one member of a LOB referentially related table space set is present in the object profile, all members in that set are present. If the message indicates that the object may have been

---

| excluded via exception processing, examine the object  
| and exception profiles and adjust them as required.

---

| **HAAB524E** *space\_type creator | database space\_name*  
| *partition\_number* [LOB validation failed.  
| Missing LOB TS(s) for this BASE TS] |  
| [LOB validation failed for this TS.  
| Incomplete LOB related TS set.] Object  
| excluded for *utility\_name* utility. The  
| exclusion of this object could possibly  
| be the result of exception processing.

| **Explanation:** Dependency checking failed for the  
| object that is listed in the message. Either the  
| dependent table space or the base table space for the  
| listed LOB was not found, or one of those objects was  
| excluded via exception processing. The object is  
| excluded from processing.

| **User response:** Ensure that if one member of a LOB  
| referentially related table space set is present in the  
| object profile, all members in that set are present. If the  
| message indicates that the object may have been  
| excluded via exception processing, examine the object  
| and exception profiles and adjust them as required.

---

**HAAB525W** *space\_type creator | database space\_name*  
*partition\_number* **Unload external | only**  
**not allowed with Inline LOB.**  
**Defaulting to Unload Continue**

**Explanation:** The object listed in the message is an  
inline LOB. UNLOAD EXTERNAL and UNLOAD  
ONLY are not allowed with inline LOBs. UNLOAD  
was changed to CONTINUE.

**User response:** No response required. To eliminate  
this message, change the Unload Data option on panel  
HAA\$UREO to C and rebuild the job.

---

**HAAB526W** **Reallocate with Dataset Manager turned**  
**off because of Hash Access objects. DB2**  
**ALTER must be used to modify Hash**  
**Space**

**Explanation:** Dataset Manager was selected for  
reallocation, but hash space reallocation can only be  
done with DB2 ALTER.

**User response:** No action is required. DB2 ALTER will  
reallocate the hash space.

---

**HAAB527E** **Both HASHSPACE and DATASIZE**  
**percent are blank in the Reallocation**  
**Utility. Hash Space will not be**  
**reallocated**

**Explanation:** A reallocation utility job was submitted  
against hash access tables created under DB2 V10,  
however the reallocation utility profile does not contain  
the required HASHSPACE or DATASIZE parameters  
for reallocating these tables.

**User response:** Update the reallocation profile to  
define the HASHSPACE or DATASIZE parameters, then  
resubmit the job.

---

**HAAB528W** **Reallocation of hash space is requested**  
**by DATASIZE, but real time statistics**  
**are not available. HASHSPACE will be**  
**used instead**

**Explanation:** DATASIZE is a real-time statistic that is  
only available when an exception profile with real-time  
statistics exceptions is included in the job. Since an  
exception profile with real-time statistics was not  
included in the job profile, DATASIZE cannot be used.

**User response:** Add an exception profile with  
real-time statistics to the job profile and rebuild the job.

---

**HAAB529W** *space\_type creator | database space\_name*  
*partition\_number* **Reallocated HASH**  
**SPACE has been truncated to 64GB |**  
**Reallocated HASH SPACE has been**  
**truncated to 128TB**

**Explanation:** The reallocated hash space was truncated  
to the maximum value listed in the message.

**User response:** No action is required.

---

**HAAB531E** *space\_type creator | database space\_name*  
*partition\_number* **Cannot reallocate HASH**  
**SPACE. The associated IX is not**  
**included in the objects profile**

**Explanation:** Hash space for a table can only be  
altered when the associated index is included in the  
object profile.

**User response:** Include the associated index in the  
object profile.

---

**HAAB533I** **Templates are required for**  
**TEMPLATEDD. Templates have been**  
**turned on for *utility\_name*.**

| **Explanation:** If templates are set to No in job options,  
| the template value will be set to Yes for this utility  
| because it is required for TEMPLATEDD support.

| **User response:** No action is required.

---

**HAAB535W** **Default setup | *utility\_name***  
**TEMPLATEDD data set does not exist.**

| **Explanation:** The template data set that is included in  
| the utility profile, or in the setup panels, no longer  
| exists.

| **User response:** Update the utility profile and select a  
| template name from a valid data set, or specify a  
| template via DB2 Automation Tool.



---

**HAAB540W** *Reallocate with Dataset Manager turned off when DROPPing Pending Changes. DB2 ALTER must be used to DROP Pending Changes*

**Explanation:** Use of Dataset Manager for reallocation was specified in combination with DROP Pending Changes. This combination is not allowed. DB2 ALTER must be used for reallocation when pending changes will be dropped. Reallocation with Dataset Manager was turned off.

**User response:** No action is required.

---

**HAAB544W** *DROP Pending Changes will not be generated because there is no exception profile in the job*

**Explanation:** DROP pending changes was requested for an object in a reallocation utility profile, but an exception profile that specifies the PENDING\_DEF\_CHGS exception condition was not included in the job profile. The DROP pending changes request is ignored.

**User response:** If pending changes should be dropped for objects, include an exception profile with the PENDING\_DEF\_CHGS exception condition in the job profile.

---

**HAAB547W** *space\_type creator | database space\_name partition\_number RUNSTATS RESET ACCESSPATH has been turned off for this LOB table space.*

**Explanation:** RUNSTATS RESET ACCESSPATH was included in the utility profile, however, the object listed in the message is a LOB. RESET ACCESSPATH is not valid for LOBs. The keyword will be removed from the RUNSTATS utility JCL.

**User response:** No action is required.

---

**HAAB548W** *space\_type creator | database space\_name partition\_number After RUNSTATS RESET ACCESSPATH is executed, the statistics cannot be rolled back to previous values.*

**Explanation:** RUNSTATS RESET ACCESSPATH was included in the utility profile. RESET ACCESSPATH should be used only when you want to reset all the access path statistics for all the objects in a given table space. If this function is executed, all previously collected access path statistics for the objects in the target table space will be reset or removed.

**User response:** No action is required; however, resetting statistics cannot be reversed. If you want to retain the ability to roll back statistics, update the utility profile, set RESET ACCESSPATH to NO, and regenerate the JCL.

---



---

**HAAB549W** *space\_type creator | database space\_name partition\_number RUNSTATS RESET ACCESSPATH is not valid at the partition level. Partition will be ignored.*

**Explanation:** RUNSTATS RESET ACCESSPATH was included in the utility profile, and the object listed in the message was included at the partition level. RESET ACCESSPATH can be used only for ALL partitions of an object.

**User response:** No action is required.

---

**HAAB559E** *Error adding task: task\_name*

**Explanation:** An error occurred when calling the DB2 administrative task scheduler's SYSPROC.ADMIN\_TASK\_ADD stored procedure. This error lists the task name that encountered the error, and is followed by additional messages returned from the stored procedure.

**User response:** Examine the messages returned from the stored procedure to determine the course of action. Contact IBM Software Support if you require assistance.

---

**HAAB560I** *Scheduled Taskname: task\_name Dataset: data\_set\_name Trigger Task: trigger\_task\_name Trigger Cond: trigger\_condition Trigger Code: trigger\_code*

**Explanation:** This informational message displays the scheduled task name, its associated dataset, and the trigger information associated with the task.

**User response:** No action is required.

---

| **HAAB571W** *function\_type for utility\_name utility has been turned off because a required*  
| **TEMPLATEDD template name is**  
| **missing.**

| **Explanation:** A template data set has been deleted or renamed, so the template name no longer exists.

| **User response:** Update the utility profile or the setup template DD default value to specify a valid template data set, member, and name.

---

| **HAAB572E** *Required TEMPLATEDD template name missing. utility\_name has been turned off.*

| **Explanation:** A template data set may have been deleted or renamed.

| **User response:** Update the utility profile or the setup template DD default value to specify a valid template data set, member, and name.

---

---

**HAAB573I** Template data sets are not available for non-DB2 utility modes. The data set name created via Image Copy Options will be generated.

**Explanation:** An image copy utility mode was selected other than DB2, and a template data set and member was also specified. Template data sets are not valid with non-DB2 image copy modes. The image copy data set name will be generated using image copy DSN generation options.

**User response:** No action is required.

---

**HAAB574W** *database space\_name partition\_number* Tape Stacking has been turned off because this table space contains a LOB column and the AUX keyword **I** Tape Stacking has been turned off for this LOB table space with AUX Yes **I** Tape Stacking has been turned off because this table space with a LOB column will default AUX to Yes **I** Tape Stacking has been turned off for this LOB table space because AUX will default to Yes

**Explanation:** Tape stacking is not valid for the reasons that are listed in the message. The job profile uses templates and the specified unit type is a tape device. However, if one of the following conditions are met, tape stacking is turned off:

- The REORG utility profile contains the AUX YES keyword and the table space is a LOB or contains a LOB column.
- The REORG utility profile contains the AUX NO keyword or the AUX field was left blank, but the table space is LOB or contains a LOB column; therefore, DB2 requires and defaults to AUX YES.

Under certain conditions, the AUX keyword is not included in the JCL; however, DB2 defaults to AUX YES at run time. For detailed information about those conditions, consult the documentation for your version of DB2.

**User response:** No action is required.

---

**HAAB575W** LISTPARTS keyword is only valid when LISTDEFS are specified. LISTPARTS will be turned off.

**Explanation:** The LISTPARTS keyword was specified in a REORG utility profile, but LISTDEFS have not been specified. The LISTPARTS keyword has been removed from the utility JCL.

**User response:** Update the job profile and specify Y in the Generate Listdefs field in the job options.

---

**HAAB578E** No recovery information was found in SYSCOPY for this space.

**Explanation:** An image copy was specified as the source for the unload job, but no image copy information was found in SYSCOPY for the table space. The unload job cannot be generated.

**User response:** Locate the image copy data set, or specify a different source for the unload job.

---

**HAAB580W** *space\_type creator I database space\_name partition\_number* REORG TABLESPACE option SORTDATA NO is not allowed with Shrlevel Change. SORTDATA will be changed to YES.

**Explanation:** A REORG TABLESPACE SHRLEVEL CHANGE was specified with SORTDATA NO in the utility profile. This combination is not allowed. The SORTDATA keyword will be added to the utility JCL.

**User response:** No action is required.

---

**HAAB584E** *space\_type creator I database space\_name partition\_number* REORG for partition-by-growth hash TS cannot be done by partition. Object excluded.

**Explanation:** A partition-by-growth hash table space must be reorganized in its entirety. When a REORG TABLESPACE on a PBG hash table space violates this restriction, this message is issued and the object is excluded from REORG TABLESPACE processing.

**User response:** Update the object profile. On the Include Tablespace Selection panel, specify all partitions for the partition-by-growth table space by selecting the table space that contains ALL in the Part column.

---

**HAAB585E** *space\_type creator I database space\_name partition\_number* REORG for partition-by-growth hash TS missing one or more partitions. Object excluded.

**Explanation:** A partition-by-growth hash table space must be reorganized in its entirety. When a REORG TABLESPACE on a PBG hash table space violates this restriction, this message is issued and the object is excluded from REORG TABLESPACE processing.

**User response:** Update the object profile. On the Include Tablespace Selection panel, specify all partitions for the partition-by-growth table space by selecting the table space that contains ALL in the Part column.

---

**HAAB586W** *space\_type creator I database space\_name partition\_number* REPAIR CATALOG has been turned off for this LOB **I** XML table space.

**Explanation:** REPAIR CATALOG is not valid for LOB

or XML spaces. The keyword has been removed from the utility JCL.

**User response:** No action is required.

---

**HAAB587W** *space\_type creator | database space\_name partition\_number* **REPAIR CATALOG TEST has been turned off for this LOB | XML table space.**

**Explanation:** REPAIR CATALOG TEST is not valid for LOB or XML spaces. The keyword has been removed from the utility JCL.

**User response:** No action is required.

---

**HAAB588I** **ORIGINOBID keyword will be generated because it is required with COPYDDN.**

**Explanation:** COPYDDN requires the ORIGINOBID keyword. The ORIGINOBID keyword is included in the job.

**User response:** No action is required.

---

**HAAB595E** **Image Copy *data\_set\_name* not found. COPYDDN has been turned off. | Inline Image Copy *data\_set\_name* not found. COPYDDN has been turned off. | Non-inline Image Copy *data\_set\_name* not found. COPYDDN has been turned off.**

**Explanation:** The image copy data set name that is listed in the message was not found. The COPYDDN DD requires a valid image copy.

**User response:** Ensure that the data set name is valid and is available for processing. When the problem has been identified, resubmit the job.

---

**HAAB597E** **TS | IX *dbname tsname nnnn* Object defined in object profile not found in the catalog. Object was altered or dropped.**

**Explanation:** The non-wildcarded non-partitioned object could not be found in the DB2 catalog.

**User response:** Either recreate the object or delete the object from the object profile.

---

**HAAB600I** *space\_type creator | database space\_name partition\_number* **Autonomic Action inserted | updated for action Action ID=*action\_id***

**Explanation:** This message provides details about the object for which the action was generated. It also states whether the action was added to the list to be run during the maintenance window or whether the action was updated, and lists the generated action ID.

**User response:** No action is required.

---

**HAAB601I** *space\_type creator | database space\_name partition\_number* **SORTDEVT defaulted to value for autonomic build**

**Explanation:** The utility for this autonomic action requires a SORT. The SORTDEVT keyword was added to the utility with the default value that is listed in the message.

**User response:** No action is required.

---

**HAAB603W** **REORG ALL PARTS value exceeded. This table space will be converted to PART ALL.**

**Explanation:** A value was specified in the REORG utility profile for "REORG ALL PARTS if percentage exceeded". The value was exceeded; therefore, all partitions will be reorganized with the REORG TABLESPACE.

**User response:** No action is required.

---

**HAAB604I** **Autonomic Build History ID = *history\_ID***

**Explanation:** This message provides the history ID for the autonomic build.

**User response:** No action is required.

---

**HAAB605W** **The current unit of work has been rolled back due to deadlock or timeout in *module\_name***

**Explanation:** A -911 SQL code was encountered during the current unit of work. The current unit of work was the victim in a deadlock, or experienced a timeout, and must be rolled back.

**User response:** No action is required. The application terminates.

---

**HAAB606E** **TS REORG for a PBR2 requires Generate Templates = Y. TS REORG disabled.**

**Explanation:** A table space REORG was specified for a PBR2 space. This option requires the Generate Templates field in the job generation options to be set to Y. The PBR2 space is excluded from this utility.

**User response:** In the job profile, specify **Generate Templates = Y**.

---

**HAAB607E** **TS REORG for a PBR2 requires &&PART in the copy data set. TS REORG disabled.**

**Explanation:** A table space REORG was specified for a PBR2 space. This option requires that the &&PART

symbolic be included in the copy data set name. The PBR2 space is excluded from this utility.

**User response:** In the utility profile, specify the &&PART symbolic as part of the data set name.

---

#### HAAB608I Specifying the partition number for the page dsnnum.

**Explanation:** A PBR2 object was detected with the RECOVER PAGE option. The required DSNUM parameter was not specified; however, the object was included by partition number. Therefore, that partition number is used for the DSNUM parameter.

**User response:** No action is required.

---

#### HAAB609E DSNUM parameter is required for PBR2 recover to page. Recovery disabled.

**Explanation:** A PBR2 object was detected with the RECOVER PAGE option. The required DSNUM parameter was not specified, and all partitions were selected for the object. This requires that the DSNUM symbolic must be included in the copy data set name. The PBR2 object is excluded from this utility.

**User response:** Update the RECOVER utility profile to include the Page dsnnum value.

---

#### HAAB610I TS | IX dbname tsname nnnn Object defined in object profile not found in the catalog. Object may have been altered or dropped. Retrying with part nnnn

**Explanation:** The non-wildcarded non-partitioned object could not be found in the DB2 catalog. DB2 Automation Tool will retry to retrieve the object as a partitioned object.

**User response:** No action is required.

---

#### HAAB611I TS | IX dbname tsname nnnn Object was converted to a partitioned object.

**Explanation:** A non-wildcarded non-partitioned object was successfully converted to a partitioned object. The object will be treated as a partitioned object in generated JCL.

**User response:** No action is required.

---

#### HAAB612W space\_type creator | database space\_name partition\_number Unload Pause | Only | External not allowed with SHRLEVEL REFERENCE. Defaulting to Unload Continue.

**Explanation:** When a REORG with SHRLEVEL REFERENCE has been specified, the Unload parameter must be set to Continue. set the UNLOAD parameter to CONTINUE.

**User response:** No action is required.

---

#### HAAB613W space\_type database\_name tablespacespace\_name partition COPYTOCOPY turned off for this object because it is not supported.

**Explanation:** A COPYTOCOPY utility was specified for this object, but the COPYTOCOPY utility is not valid for this object. The COPYTOCOPY utility will not be run on this object.

**User response:** For information about restrictions for running the COPYTOCOPY utility, refer to the Utility Guide and Reference for your version of DB2.

---

#### HAAB616I Page Validation was selected for this utility profile in a previous release of DB2 Automation Tool, but is no longer valid.

**Explanation:** The utility profile was created in a previous release and included page validation options. The page validation option has been removed from DB2 Automation Tool; therefore, this option is not valid. The option will be removed from the utility profile.

**User response:** No action is required.

---

#### HAAB652I Table(ALL) is not valid with the Set Profile keyword. Table(tablename) will be generated.

**Explanation:** The SET PROFILE option was specified, and TABLE (ALL) was also specified. This combination is invalid. TABLE(tablename) syntax is generated.

**User response:** No action is required.

---

#### HAAB653W Tablesample will not be included with Set Profile.

**Explanation:** The SET PROFILE option was specified, and TABLESAMPLE was also specified. This combination is invalid. The TABLESAMPLE keyword is removed.

**User response:** No action is required.

---

#### HAABE01E Error: Environment initialization failed. RC=16. Aborting.

**Explanation:** Establishing the DB2 Automation Tool runtime environment failed.

**User response:** Ensure that the control file and configuration ID are correct. Ensure that plans have been correctly bound. Ensure that all data sets are correct.

---

**HAABE02E** Error: Plan fetch failed. RC=16. Aborting.

**Explanation:** The retrieval of DB2 Automation Tool plan names from the control file failed.

**User response:** Ensure that the control file update jobs have run, and the plan binds have been run. Ensure that the configuration ID is correct.

---

**HAABE03E** Error: Call attach initialization failed. Return code: *return\_code*. Reason code: *reason\_code* Setting RC=12. Terminating.

**Explanation:** Call attach facility initialization failed.

**User response:** Make sure the DB2 data sets for the SSID are correct by entering option 0.1 from the DB2 Automation Tool main menu.

---

**HAABE04E** Error: Profile not found. RC=12. Terminating. Creator: *profile\_creator* Profile name: *profile\_name*

**Explanation:** The input profile creator and name was not found in the DB2 Automation Tool repository.

**User response:** Verify the profile name, creator, and profile type.

---

**HAABE05E** Error: Export data set does not exist. RC=16. Aborting.

**Explanation:** The export data set does not exist.

**User response:** Create a valid export data set with LRECL= 4096 and retry.

---

**HAABE06E** Error: Export data set being used by another user. RC=12. Aborting.

**Explanation:** The export data set is in use by another user.

**User response:** Export requires exclusive access. Retry when the data set is accessible.

---

**HAABE07E** Error: Export data set does not exist. Please create an export data set with LRECL= 4096 and try again. RC=16.

**Explanation:** The export data set does not exist.

**User response:** Create a valid export data set and try again.

---

**HAABE08E** Error: Export data set is partitioned and no member was specified. RC=12. Aborting.

**Explanation:** The member name for the export data set does not exist.

**User response:** Specify a member name and try again.

---

**HAABE09E** Error: Export member already exists. RC=12. Aborting.

**Explanation:** The member name for the export data set already exists.

**User response:** Select a member name that does not exist and try again.

---

**HAABE10E** Error: Export member not allowed on a non-partitioned data set. RC=16. Aborting.

**Explanation:** A member name was specified but the export data set is not a partitioned data set.

**User response:** Clear the member name and try again.

---

**HAABE11E** Error: Export data set must have an LRECL of 4096. RC=16. Aborting.

**Explanation:** The export data set has an incorrect LRECL. The incorrect data set may have been specified.

**User response:** Ensure the correct data set was specified. Use a data set with LRECL = 4096.

---

**HAABE12E** Error: Open failed on export data set. RC=12. Aborting.

**Explanation:** Opening the export data set failed.

**User response:** Ensure that the data set name is correct. Try to browse or edit the data set.

---

**HAABE13E** Error: Invalid SSID. RC=16. Aborting.

**Explanation:** The SSID that the profiles are being exported to is not available in the DB2 Automation Tool control file. The SSID must exist in the control file in order to export profiles.

**User response:** Use Tools Customizer to associate the SSID and regenerate the export jobs, or add the SSID via option 0.1 on the DB2 Automation Tool main menu.

---

**HAABE14E** Error: This profile's data has been corrupted in the DLC tables. It must be re-created. RC=8. Creator: *profile\_creator* Profile name: *profile\_name*

**Explanation:** The profile that is listed in the message has been corrupted and cannot be exported.

**User response:** Try to edit the profile in the ISPF interface. You might have to delete the profile and re-create it.

---

**HAABE15E** Error: Unable to export profile. RC=8.  
 Creator: *profile\_creator* Profile name:  
*profile\_name*

**Explanation:** Export of the profile failed.

**User response:** Review related messages to determine the cause of the failure.

---

**HAABE16I** Export successful. Creator: *profile\_creator*  
 PROFNAME: *profile\_name*

**Explanation:** The profile that is listed in the message has been successfully exported.

**User response:** No action is required.

---

**HAABE17I** Printing out the exported profiles:  
*Profile1 Profile2 Profile3...*

**Explanation:** This message displays the name of each profile that was exported.

**User response:** No action is required.

---

**HAABE18I** Number of *profile\_type* profiles found:  
*nnnn*

**Explanation:** This message displays the number of profiles that were encountered. *profile\_type* is either job, exception, utility, or object.

**User response:** No action is required.

---

**HAABE19E** Error: Invalid first record of  
 HAA#DATA input file. RC=16.  
 Terminating.

**Explanation:** The HAA#DATA input data is damaged.

**User response:** Regenerate the job using Tools Customizer. If the error recurs, contact IBM Software Support.

---

**HAABE20E** Error: Internal parse routine failed.  
 RC=16. Aborting.

**Explanation:** The routine to parse the HAA#DATA input records failed.

**User response:** Contact IBM Software Support.

---

**HAABE21E** Error: Profile retrieve failed. RC=12.  
 Terminating. Internal code: *error\_code*  
 Creator: *profile\_creator* Profile name:  
*profile\_name*

**Explanation:** The profile that is listed in the message could not be found. It is likely that the profile filter did not return any profiles for export.

**User response:** Review the export profile filters.

---

**HAABE22E** Export failed. Creator: *profile\_creator*  
 PROFNAME: *profile\_name* RC=8. Internal  
 code: *error\_code*

**Explanation:** The call to HAA\$IMPD had a non-zero return code.

**User response:** Review related messages to determine the cause of the failure.

---

**HAABE23I** Number of *profile\_type* profiles  
 successfully exported: *nnnn*

**Explanation:** This message displays the number of profiles that were successfully exported. *profile\_type* is either job, exception, utility, or object.

**User response:** No action is required.

---

**HAABE24I** Number of errors found: *nnnn*

**Explanation:** This message displays the number of error messages issued.

**User response:** No action is required.

---

**HAABI01E** Error: Environment initialization failed.  
 RC=16. Terminating.

**Explanation:** Establishing the DB2 Automation Tool runtime environment failed.

**User response:** Ensure that the control file and configuration ID are correct. Ensure that plans have been correctly bound. Ensure all data sets are correct.

---

**HAABI02E** Error: Plan fetch failed. RC=16.  
 Terminating.

**Explanation:** The retrieval of DB2 Automation Tool plan names from the control file failed.

**User response:** Ensure that the control file update jobs have run, and the plan binds have been run. Ensure that the configuration ID is correct.

---

**HAABI03E** Error: Call attach initialization failed.  
 Return code: *return\_code*. Reason code:  
*reason\_code* Setting RC=12. Terminating.

**Explanation:** Call attach facility initialization failed.

**User response:** Make sure the DB2 data sets for the SSID are correct by entering option 0.1 from the DB2 Automation Tool main menu.

---

**HAABI04E** Error: The import data set could not be  
 allocated. RC=16. Terminating.

**Explanation:** The import data set could not be allocated.

**User response:** Ensure that the data set name is correct. Try to browse or edit the data set.

---

**HAABI05E**    **Error: Import data set is partitioned and no member was specified. RC=12. Aborting.**

**Explanation:** The member name was not specified for the import data set, which is partitioned.

**User response:** Specify a member name and try again.

---

**HAABI06E**    **Error: A member name is not allowed on a non-partitioned data set. RC=16. Aborting.**

**Explanation:** A member name was specified, but the import data set is not a partitioned data set.

**User response:** Clear the member name and try again.

---

**HAABI07E**    **Error: Import data set must have an LRECL of 4096. RC=16. Aborting.**

**Explanation:** The import data set has an incorrect LRECL. The incorrect data set may have been specified.

**User response:** Ensure that the correct data set was specified.

---

**HAABI08E**    **Error: Member does not exist in the partitioned data set. RC=12. Aborting.**

**Explanation:** The member name for the import data set does not exist.

**User response:** Locate or create the exported member name.

---

**HAABI10E**    **Error: Open of import data set failed. RC=12. Aborting.**

**Explanation:** Opening the export data set failed.

**User response:** Make sure the data set name is correct. Try to browse or edit the data set.

---

**HAABI12E**    **Error: Invalid SSID. RC=16. Aborting.**

**Explanation:** The SSID that the profiles are being imported to is not available in the DB2 Automation Tool control file. The SSID must exist in the control file in order to import profiles.

**User response:** Use Tools Customizer to associate the SSID and regenerate the import jobs, or add the SSID via option 0.1 on the DB2 Automation Tool main menu.

---

**HAABI13W**    **Warning: Import successful but the RECOVER RBA/LRSN was not found in SYSCOPY. This value will be discarded. RC=4. Creator: *profile\_creator* Profile name: *profile\_name***

**Explanation:** The imported profile contained a recovery scenario that contained a 6-byte recovery RBA

or LRSN, and the new SSID has 10-byte RBA/LRSN values. DB2 Automation Tool attempted to convert the RBA/LRSN from 6 to 10 bytes, but the program to convert the value failed.

**User response:** Create this profile from scratch.

---

**HAABI14I**    **Import successful. Creator: *profile\_creator* PROFNAME: *profile\_name***

**Explanation:** The import was successful.

**User response:** No action is required.

---

**HAABI15W**    **Warning: Import file contains an incompatible version. RC=8. Skipping. Creator: *profile\_creator* Profile name: *profile\_name***

**Explanation:** Import does not support profiles from DB2 Automation Tool Version 1.3 and earlier.

**User response:** Create this profile from scratch.

---

**HAABI16I**    **Printing out imported profiles: *Profile1 Profile2 Profile3...***

**Explanation:** This message displays the name of each profile that was imported.

**User response:** No action is required.

---

**HAABI19E**    **Error: Unknown utility type. RC=8. Aborting.**

**Explanation:** This is an internal error.

**User response:** Contact IBM Software Support.

---

**HAABI20E**    **Error: Object function create call failed. RC=8. Aborting. Creator: *profile\_creator* Profile name: *profile\_name***

**Explanation:** This is an internal error.

**User response:** Contact IBM Software Support.

---

**HAABI21I**    **Number of *profile\_type* profiles found: *nnnn***

**Explanation:** This message displays the number of profiles that were encountered. *profile\_type* is either job, exception, utility, or object.

**User response:** No action is required.

---

**HAABI22E**    **Error: Import data set is not a valid export data set. RC=16. Aborting.**

**Explanation:** The data set that was specified as the source for profiles to be imported is not a valid export data set.

**User response:** Make sure the import data set contains

at least one exported profile.

---

**HAABI23E**    **Error: Internal parse routine failed. RC=16. Aborting.**

**Explanation:** The routine to parse the HAA#DATA input records failed.

**User response:** Contact IBM Software Support.

---

**HAABI24E**    **Error: Invalid first record of HAA#DATA input file. RC=16. Terminating.**

**Explanation:** The HAA#DATA input data is damaged.

**User response:** Regenerate the job using Tools Customizer. If the error recurs, contact IBM Software Support.

---

**HAABI25E**    **Import failed. Creator: *profile\_creator* PROFNAME: *profile\_name* return code: *return\_code*.**

**Explanation:** A call to HAA\$IMPD received a non-zero return code. The call failed.

**User response:** Review related messages to determine the cause of the failure.

---

**HAABI26I**    **Number of *profile\_type* profiles successfully imported: *nnnn***

**Explanation:** This message displays the number of profiles that were successfully imported. *profile\_type* is either job, exception, utility, or object.

**User response:** No action is required.

---

**HAABI27I**    **Number of errors found: *nnnn***

**Explanation:** This message displays the number of error messages issued.

**User response:** No action is required.

---

**HAABI28I**    **Number of warnings issued: *nnnn***

**Explanation:** This message displays the number of warning messages issued.

**User response:** No action is required.

---

**HAAM001E**    **Invalid value entered - Please enter a valid value from the list displayed.**

**Explanation:** You have entered an invalid value.

**User response:** Enter a valid value.

---



---

**HAAM002E**    **A valid DB2 Subsystem ID is a required field. Please enter a valid Subsystem ID.**

**Explanation:** You must enter a valid DB2 subsystem ID in order to continue.

**User response:** Enter a valid DB2 subsystem ID.

---

**HAAM003E**    **User is not authorized to enter Shared Profile Support**

**Explanation:** You are not authorized to enter the Data Page Display for the specified subsystem.

**User response:** Check with your systems programmer to obtain proper authority. The entered command will not be processed.

---

**HAAM004E**    **Invalid Subsystem ID entered**

**Explanation:** An undefined subsystem ID has been encountered.

**User response:** Correct the value specified in the DB2 Subsystem ID field.

---

**HAAM005E**    **Requested object not found**

**Explanation:** The requested object was not found in the DB2 catalog.

**User response:** Change the selection criteria and retry the process.

---

**HAAM006E**    **Invalid line command entered**

**Explanation:** A invalid value was entered in the line command area.

**User response:** Enter one of the a valid line commands listed on the screen.

---

**HAAM007E**    **Page Number out of range**

**Explanation:** The page number is out of range.

**User response:** Enter a valid page number.

---

**HAAM008E**    **Page number must be numeric**

**Explanation:** The page number entered was not a valid numeric.

**User response:** Enter a valid page number.

---

**HAAM009E**    **Page number must be between 0 and *maximum\_page\_number***

**Explanation:** The page number entered was out of the valid page range for the space.

**User response:** Enter a valid page number.

---



---

**HAAM011I Page changes have been discarded**

**Explanation:** The page display editor changes have been discarded.

**User response:** To apply editor changes, exit using the PF3 key.

---

**HAAM012I STOP DATABASE command successful**

**Explanation:** The STOP DATABASE command has been issued and completed successfully.

**User response:** No action is required.

---

**HAAM013I START DATABASE command successful**

**Explanation:** The START DATABASE command has been issued and completed successfully.

**User response:** No action is required.

---

**HAAM014I Page changing is not available while in edit mode**

**Explanation:** You cannot change pages while updating a space's page.

**User response:** Locate the proper page before entering the EDIT command.

---

**HAAM015I Data set is being viewed/edited by another session**

**Explanation:** The selected DB2 data set is being viewed or edited by another DB2 Automation Tool user.

**User response:** Viewing or editing the data set is not possible until the other user exits the data set.

---

**HAAM016I Logged page data has been applied**

**Explanation:** The selected log data page has been written to the DB2 data set it originally came from.

**User response:** No action is required.

---

**HAAM017E The logged page data apply has failed**

**Explanation:** The logged page data cannot be applied. The space may have been deleted.

**User response:** Restore the deleted space or delete the logged page data.

---

**HAAM018E The space must be STOPPED to apply logged pages**

**Explanation:** Logged pages cannot be applied to a page without stopping the space.

**User response:** Issue the STOP DATABASE command to stop the space before applying the logged page.

---

---

**HAAM019E The EDIT command is not available while the space is active**

**Explanation:** You cannot use the EDIT command on a space that has not been stopped.

**User response:** Be sure to stop the space before entering the EDIT command.

---

**HAAM020E User does not have authority to use the edit plan**

**Explanation:** You do not have the proper authorization to edit data pages.

**User response:** Contact your DB2 Administrator to obtain the proper DB2 authorization.

---

**HAAM021E User does not have authority to use the logging plan**

**Explanation:** You do not have the proper authorization to use the logging facility.

**User response:** Contact your DB2 Administrator to obtain the proper DB2 authorization.

---

**HAAM022E Requested data set not found**

**Explanation:** DB2 Shared Profile Support cannot find the data set you entered on the Object Selection screen.

**User response:** Selection criteria are not allowed for data sets. Check the data set name.

---

**HAAM023E Subsystem unavailable**

**Explanation:** DB2 Shared Profile Support cannot connect to the specified subsystem. The call attach facility has failed.

**User response:** Confirm that the DB2 subsystem is active. Contact your systems administrator.

---

**HAAM024E Mapid not found**

**Explanation:** The requested map ID cannot be located. The map ID (pointer offset) most likely does not exist in the page.

**User response:** Enter the correct map ID.

---

**HAAM025E This row is deleted**

**Explanation:** The current map ID (pointer offset) has the high order bit turned on. This indicates that the row was deleted.

**User response:** Select another row to view or edit.

---

---

**HAAM026E Mapid number must be numeric**

**Explanation:** The map ID you entered is not numeric.

**User response:** Enter a numeric map ID.

---

**HAAM027E Row navigation requires a data page**

**Explanation:** Row navigation was specified, so DB2 Shared Profile Support moved to the next data page in the space.

**User response:** No action is required.

---

**HAAM028E Page number must be hexadecimal**

**Explanation:** A non-hexadecimal value was entered in the Hexadecimal field.

**User response:** Re-enter the page number in hexadecimal.

---

**HAAM029E XMapid must be hexadecimal**

**Explanation:** A non-hexadecimal value was entered in the XMapid field.

**User response:** Re-enter the map ID in hexadecimal.

---

**HAAM030E Mapid/XMapid must be 1 or greater**

**Explanation:** An invalid value was entered in the MapID or XMapid field.

**User response:** Re-enter the MapID or Xmapid value as hexadecimal.

---

**HAAM031E A Datapage can only be logged if TS STOPPED**

**Explanation:** The LOGPAGE command was entered, but the table space was not stopped, so the page cannot be logged.

**User response:** Be sure to stop the space when selecting the data set for editing.

---

**HAAM032I Datapage has been successfully logged**

**Explanation:** The data page has been successfully logged.

**User response:** No action is required.

---

**HAAM033E An error has occurred obtaining ZPARM RC=return\_code**

**Explanation:** An error has occurred attempting to access the DB2 ZPARM member.

**User response:** Ensure that the DB2 load library containing the assembled ZPARM member has also been specified during Setup. The DB2 load library name must be specified in one of the input fields (DB2

Loadlib1-5) on the Update Parameters for DB2 Subsystem SSID panel even if this load library is in the linklist.

---

**HAAM034E An original page image cannot be deleted, only removed**

**Explanation:** An original data page cannot be deleted from the data set.

**User response:** Use the R line command to remove the image from the log.

---

**HAAM035E The entered value must be an integer.**

**Explanation:** An invalid integer value was entered in this field.

**User response:** Enter a valid integer value.

---

**HAAM036E The range of a datatype of INTEGER is -2147483648 through 2147483647**

**Explanation:** An integer value was entered that is outside the specified valid range.

**User response:** Enter a valid integer value.

---

**HAAM037E The range of a datatype of SMALLINT is -32768 through 32767**

**Explanation:** A small integer value was entered that is outside the specified valid range.

**User response:** Enter a valid small integer value.

---

**HAAM038E This row no longer exists**

**Explanation:** The FORMAT command was used for a row that does not exist. The row most likely has been deleted.

**User response:** Select another row for processing.

---

**HAAM039E Non-character data is not supported in character columns**

**Explanation:** Currently, bit data is not supported in the format function, or this column is a variable datatype that is set to NULL.

**User response:** Select another row for processing.

---

**HAAM040W Variable fields will maintain their original length**

**Explanation:** Variable length fields cannot have their length changed.

**User response:** No action is required.

---

---

**HAAM041E Only non-compressed rows may be formatted**

**Explanation:** A row that is compressed or composed of non-EBCDIC characters was selected for formatting.

**User response:** This row cannot be edited.

---

**HAAM042E Formatting unavailable in data set mode**

**Explanation:** You selected a data set on the Object Selection screen for processing, then used the FORMAT command.

**User response:** Row formatting is not available for data set processing as DB2 may not be available. To edit the row, select the object first, then drill down to the desired data set.

---

**HAAM043E Unsupported datatype encountered**

**Explanation:** An unsupported datatype has been encountered.

**User response:** Verify the datatype is of a supported format.

---

**HAAM044W No profiles were found that match your selection criteria. Press enter to create a new profile or change the selection criteria.**

**Explanation:** No profiles match your selection criteria.

**User response:** Press Enter to create a new profile, or change your selection criteria to get a different list.

---

**HAAM045E Command is not supported on this screen. Please enter a valid command or clear the primary command line.**

**Explanation:** An invalid command was entered in the Option line.

**User response:** Correct the command or clear the Option line.

---

**HAAM046E You are not authorized to update or delete this profile. Enter a "V" if you would like to view this profile**

**Explanation:** A profile was selected for update or deletion that was created with the View only option.

**User response:** Type V next to the profile to view the profile contents.

---

**HAAM047E The Profile Creator is a required field. Please enter a valid creator**

**Explanation:** When creating a new profile, the Profile Creator field was left blank.

**User response:** Enter a profile creator in the Profile Creator field.

---

**HAAM048E The Profile Name is a required field. Please enter a unique name**

**Explanation:** When creating a new profile, the Profile Name field was left blank.

**User response:** Enter a unique profile name in the Profile Name field.

---

**HAAM049E Invalid value. Enter a "U" to allow other users to Update your profile, a "V" to allow other users to just View your profile or "N" to disallow other users from viewing or updating your profile**

**Explanation:** When creating a new profile, an invalid value was entered in the Update Option field.

**User response:** Correct the value as described in the message text.

---

**HAAM050E Profile "*profile\_creator.profile\_name*" already exists in DB2 SSID *subsystem\_ID*. Please enter a unique profile name and press Enter**

**Explanation:** When creating a new profile, a profile name was used that duplicates another profile name created by the same user ID.

**User response:** Enter a unique profile name and press Enter.

---

**HAAM051E Invalid Value - Please enter a "Y" if you would like to delete profile "*profile\_creator.profile\_name*" or an "N" if you do not want to delete it**

**Explanation:** An invalid value was entered in the Delete field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM052I Profile "*profile\_creator.profile\_name*" has been successfully deleted**

**Explanation:** The profile named in the message text was successfully deleted.

**User response:** No action is required.

---

**HAAM053I Object already exists**

**Explanation:** The selected object already has been included in the profile.

**User response:** No action is required.

---

**HAAM054E** Invalid value. Please enter a "Y" if you would like to add objects profiles to this jobs profile or enter an "N" if you do not want to add objects profiles to this jobs profile

**Explanation:** An invalid value was entered in the Add Objects Profile field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM055E** Invalid value. Please enter a "Y" if you would like to add utilities profiles to this jobs profile or enter an "N" if you do not want to add utilities profiles to this jobs profile

**Explanation:** An invalid value was entered in the Add Utilities Profile field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM056E** Invalid value. The only valid values are "Y" and "N".

**Explanation:** An invalid value was entered in a field that only accepts Y or N.

**User response:** Enter a valid value as described in the message text.

---

**HAAM057E** Invalid value. The only valid values are "A", "D", "U", or "V"

**Explanation:** An invalid value was entered.

**User response:** Enter a valid value as described in the message text.

---

**HAAM058E** Invalid value. Please enter a "Y" if you would like to add exception profiles to this jobs profile or enter an "N" if you do not want to add exception profiles to this jobs profile

**Explanation:** An invalid value was entered in the Add Exceptions Profile field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM059E** Invalid value. Please indicate the order you would like the profile processed during job generation. This field must be numeric and unique from any other node of its type

**Explanation:** An invalid value was entered in the Order column.

**User response:** Enter a numeric value for the job step

---

order in which the profile will be included.

---

**HAAM060E** Invalid line command entered

**Explanation:** An invalid value was entered in the line command area.

**User response:** Enter one of the valid line commands listed on the panel.

---

**HAAM061I** Object queue has been modified

**Explanation:** The object you selected has been included in or deleted from the object queue, depending on what you specified.

**User response:** No action is required.

---

**HAAM062E** The online options can only be modified when the "Online Reorg" setting is set to "Y".

**Explanation:** The online REORG options were selected to be updated but the online REORG has not been specified for inclusion in the profile.

**User response:** Type Y in the Include field next to the online REORG option, then type Y in the Update field for online REORG to update the options.

---

**HAAM063E** The valid values are "C"hange, "R"eference, and "N"one.

**Explanation:** An invalid value was entered in the Sharelevel field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM064E** The options can not be altered if they are not first selected

**Explanation:** You specified to update utility options, but the utility has not yet been selected for inclusion in the profile.

**User response:** Type Y in the Include field next to the utility, then type Y in the Update field for the utility to update the options.

---

**HAAM065E** This field cannot be left blank

**Explanation:** A field has been left blank that must be completed.

**User response:** The cursor is positioned at the field that must be completed. Fill in the field and press Enter.

---

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**HAAM066E** The valid values for MaxRO are "DEFER" or a number.

**Explanation:** An invalid value was entered for the MaxRO field.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM067E** The valid values for Drain are "W"riters, "A"ll, or "N"o.

**Explanation:** An invalid value was entered for the Drain field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM068E** The valid values for Long Log are "C"ontinue, "T"erm, and "D"rain.

**Explanation:** An invalid value was entered for the Long Log field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM069E** This field must contain a number.

**Explanation:** A non-numeric value was entered in a field that requires a number.

**User response:** Enter a valid numeric value.

---

**HAAM070E** The only valid values for timeout are "A"bend, "T"erm, or "N"o.

**Explanation:** An invalid value was entered in the Timeout field.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM071E** Unknown command

**Explanation:** An invalid command was entered.

**User response:** Correct the command or clear the Option line.

---

**HAAM072E** Invalid value. Please enter an "S" to select a column, a "D" to deselect and delete exception data, an "R" to repeat an exception condition, an "A" to select a column as an "A"nd condition, or an "O" to select a column as an "O"r condition.

**Explanation:** An invalid line command was entered on the Update Exceptions Profile Display.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM073E** Invalid condition. Valid values are "<" "LT" "<=" "LE" "=" "EQ" ">" "GT" ">=" "GE" ">" ">=" "NE" ">" ">="

**Explanation:** An invalid condition was entered for a column on the Update Exceptions Profile Display.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM074E** Invalid value - Please enter an "O" to generate the job online via your ISPF session or "B" to build the job in batch

**Explanation:** An invalid value was entered in the Build Online or Batch field.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM075E** Invalid value. Please enter a "Y" if you would like to edit the generated JCL after the job has been built

**Explanation:** An invalid value was entered in the Edit Generated Job field.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM076E** Enter required field. A fully qualified data set name is required to save the generated JCL

**Explanation:** The data set name is missing from the Build Job in Data Set field.

**User response:** Enter a fully qualified data set name in the Build job in Data Set field to hold the generated JCL.

---

**HAAM077E** Data set not found. Data set *data\_set\_name* was not found in the MVS catalog. Please enter a valid data set that is cataloged.

**Explanation:** The data set name entered in the Build Job in Data Set field does not exist.

**User response:** Enter an existing cataloged data set name in the Build Job in Data Set field.

---

**HAAM078E** A problem was encountered in allocating the files necessary for ISPF file tailoring. Please try again.

**Explanation:** An error occurred when dynamically allocating the ISPF work files ISPFIL, ISPWK1, or ISPWK2.

**User response:** Retry the operation. Contact IBM Software Support if the problem persists.

---

---

**HAAM079W** Please enter a condition and an exception value. To deselect an item, enter a "D" in the "S" field.

**Explanation:** A table was selected on the Update Exceptions Profile Display, but you must also enter conditions and exceptions for the table.

**User response:** Enter a condition and exception value for the selected table. Consult the bottom of the screen for valid condition values. Scroll right to see information about exception values.

---

**HAAM080E** A condition or exception value was specified without the other. Both a condition and an exception value must be specified.

**Explanation:** You specified either a condition without an exception value or an exception value without a corresponding condition.

**User response:** Enter both a condition and an exception value for the selected column. Consult the bottom of the screen for valid condition values. Scroll right to see information about exception values.

---

**HAAM081E** A floating point number in the form of "3.17E+05" or "317000" must be entered.

**Explanation:** The exception value was entered incorrectly.

**User response:** Enter the exception value as a floating point decimal as described in the message text.

---

**HAAM082E** The only valid values for the deadline parameter are "N"one, "T"imestamp, and "L"abeled duration expression.

**Explanation:** An invalid value was entered for the Deadline parameter.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM083E** If the Deadline value is "None", the timestamp and labeled duration fields must be blank.

**Explanation:** The Deadline field contains N for none. Timestamp and Labeled Duration Expression fields are invalid if no deadline is specified.

**User response:** Remove the values from the specified fields.

---

**HAAM084E** The valid values for the Unload field are "C"ontinue, "P"ause, "O"nly, and "E"xternal.

**Explanation:** An invalid value was entered in the Unload field.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM085I** Option is currently unavailable

**Explanation:** The selected Shared Profile option is not currently available.

**User response:** No action is required.

---

**HAAM086E** The specified qualifier code is not a supported value

**Explanation:** An invalid qualifier code was entered for the image copy data set name.

**User response:** Change the qualifier code to one of the available codes listed on the screen.

---

**HAAM087E** Invalid hexadecimal value. Valid values are 0123456789ABCDEF.

**Explanation:** An invalid hexadecimal value was entered for the exception value.

**User response:** Enter a valid hexadecimal value using the hex characters listed in the message text.

---

**HAAM088W** Truncation has occurred in building the data set qualifier

**Explanation:** The data set name for the image copy is too long as constructed.

**User response:** Shorten the data set name by using less or shorter qualifiers.

---

**HAAM089W** The symbolic data set name generation field is full

**Explanation:** The symbolic input area is out of space. The maximum number of characters allowed is 159.

**User response:** Reduce the number or type of symbolics in the generated data set name.

---

**HAAM090I** Profile "*profile\_creator.profile\_name*" saved

**Explanation:** The profile named in the message was successfully saved.

**User response:** No action is required.

---

**HAAM091E** Invalid value. Please enter an "A" to AND conditions or an "O" to OR conditions together when doing exception processing.

**Explanation:** An invalid value was entered in the Conditions To Be field.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM092E** Invalid value. Please enter an "R" to use statistics from the Shared Profile Support Repository, and "C" to use statistics from the DB2 Catalog, or an "S" to use statistics from a DB2 Shadow Catalog.

**Explanation:** An invalid value was entered in the Use Stats From field.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM093E** Sharelevel has valid values of "R"eference, and "C"hange

**Explanation:** An invalid value was entered in the Sharelevel field.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM095I** DEBUG command processed

**Explanation:** This message appears after issuing a DEBUG ON|OFF command. Some screens allow this command, but the DEBUG mode should only be used under the direction of IBM Software Support.

**User response:** No action is required.

---

**HAAM097E** Object profile contains no objects to view

**Explanation:** The object profile you selected to view does not contain any objects to view.

**User response:** Select a different profile for viewing.

---

**HAAM098E** The entered device type is not recognized by OS/390 as a valid device type

**Explanation:** An invalid device type was entered in the Unit Type field.

**User response:** Enter a valid device type or CART for tape devices.

---

**HAAM099E** When using disk type devices, expiration date and retention period are not valid

**Explanation:** A value was entered in the Expiration date or Retention period fields, when a disk type device was specified for the image copy. These fields are mutually exclusive.

**User response:** Clear the Expiration date and Retention period fields, or change the Unit Type field to CART.

---



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**HAAM104E** Both components of an LDE modifier are required.

**Explanation:** You must specify both the value and a value modifier for the labeled duration expression.

**User response:** Enter the missing value or value modifier (+ or -).

---

**HAAM133E** The data set could not be allocated

**Explanation:** The dynamic allocation of the specified data set failed.

**User response:** Verify that the data set exists and is available for allocation.

---

**HAAM134E** The member name is not allowed on a non-partitioned data set

**Explanation:** A member name was included for the specified data set, but the data set is sequential, not a PDS.

**User response:** Remove the member name or use a PDS.

---

**HAAM135E** The member name selected for the generated job cannot be the same as the member name used for the generation job (which was specified in the data set shown at the text at the beginning of this window)

**Explanation:** The same member name was specified for the batch job to generate the JCL as for the generated JCL. These two members cannot be the same.

**User response:** Change one of the member names.

---

**HAAM136E** Invalid date. Enter a valid date in the form of MM/DD/YYYY. Valid ranges are 01/01/1901 to 12/31/2041

**Explanation:** An invalid date was entered.

**User response:** Enter a valid date as specified in the message text.

---

**HAAM137E** Invalid time. Valid ranges are 00:00:00 to 23:59:59. Enter a valid time in the form of HH:MM:SS. Valid ranges are 00:00:00 to 23:59:59

**Explanation:** An invalid time was entered.

**User response:** Enter a valid time as specified in the message text.

---

---

**HAAM138E Invalid Date/Time. Enter a starting date/time combination that does not exceed the ending date and time**

**Explanation:** The date and time entered in the From dates are later than the date and time entered in the To dates.

**User response:** Enter a valid starting date in the Date From and Time From fields.

---

**HAAM143I Job *job\_name* *job\_number* has been successfully deleted**

**Explanation:** The job listed in the message has been successfully deleted from the execution reports.

**User response:** No action is required.

---

**HAAM144E This field can be blank or a number in the range of 1 to 100**

**Explanation:** An invalid value was entered in the NUMCOLS or NUMQUANTILES field.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM147E This percentage field has a valid range of range**

**Explanation:** An invalid value was entered in a percentage field.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM152I Import/export successful**

**Explanation:** The import or export of the selected profile was successful.

**User response:** No action is required.

---

**HAAM155W Export successful, but since the DB2 version is different than the source version, some exceptions may be missing**

**Explanation:** The exceptions profile was successfully exported to a DB2 subsystem that is a different version than the source. Because some exceptions are DB2-version dependent, they may not appear in the exported profile.

**User response:** When imported, check the exception profile carefully to ensure the desired results.

---



---

**HAAM157E Profile "*profile\_creator.profile.name*" already exists in DB2 SSID *subsystem\_ID*. Please enter a "Y" to replace the existing profile**

**Explanation:** The profile you selected for export already exists on the selected subsystem.

**User response:** Type Y to replace the profile, or type N to cancel the export.

---

**HAAM158E *profile\_type* Profile "*profile\_creator.profile\_name*" does not exist. The profile was deleted after the jobs profile was created. Either delete the *profile\_type* profile from the jobs profile or recreate it**

**Explanation:** The profile you selected to view or update from the Update Jobs Profile screen has been deleted since the selected job profile was created.

**User response:** Either recreate the object, utility, or exceptions profile, or delete the named profile from the job profile.

---

**HAAM159E Data set must have a LRECL of 4096**

**Explanation:** The data set that you are exporting the profile to must have been defined with an LRECL of 4096.

**User response:** Either recreate the data set with the proper LRECL, or delete it and allow DB2 Automation Tool to create it for you by typing Y in the Create Export Data Set field.

---

**HAAM160E JOBS Profile *profile\_creator.profile\_name* does not exist on DB2 SSID *ssid*. Execution terminated**

**Explanation:** The job profile you are trying to build has been renamed or deleted.

**User response:** Check for the presence of the profile. Recreate or rename the profile if necessary.

---

**HAAM165E Enter required field. A fully qualified data set name is required.**

**Explanation:** A fully qualified data set name was not specified in the **Output DSN** field.

**User response:** Enter a fully qualified data set name in the **Output DSN** field.

---

**HAAM169W No objects were triggered for exception processing**

**Explanation:** When building a job online, none of the objects in the specified object profile met the exception processing criteria. Therefore, no job is built.

---



**User response:** If you feel this message was received in error, examine the profiles to ensure accuracy.

---

**HAAM172E The import file does not contain an object profile**

**Explanation:** The source data set you are importing from does not contain an object profile.

**User response:** Check the data set name from which you are importing. Check the contents of the data set. Before importing, re-export the desired object profile if necessary.

---

**HAAM174E The import file does not contain a utility profile**

**Explanation:** The source data set you are importing from does not contain a utility profile.

**User response:** Check the data set name from which you are importing. Check the contents of the data set. Before importing, re-export the desired utility profile if necessary.

---

**HAAM175E The import file does not contain an exception profile**

**Explanation:** The source data set you are importing from does not contain an exception profile.

**User response:** Check the data set name from which you are importing. Check the contents of the data set. Before importing, re-export the desired exception profile if necessary.

---

**HAAM176E Invalid GDG limit parameter - Valid values are 1 - 255. Please enter a zero if you do not want to automatically define a GDG base or a valid value from 1 to 255 of the nbr of generations you would like to keep**

**Explanation:** An invalid value was entered for the Automatically Gen GDG Base field.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM177E Invalid Nbr of Jobs Parameter - Please enter a valid nbr between 0 and 999 of the nbr of jobs you would like Shared Profile Support to generate for this profile**

**Explanation:** An invalid value was entered for the Maximum nbr of jobs field.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM178E Invalid Nbr of Objects per Job. Please enter a valid nbr between 0 and 9999 of the maximum nbr of objects you would like in each job. Enter 9999 if you want all objects included in a single job**

**Explanation:** An invalid value was entered for the Maximum nbr of objects per job field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM179E Invalid Load Balance Jobs parameter. Please enter a "T" if you would like to balance multiple jobs by previous run times, a "D" if you would like to balance by DASD tracks or "N" for no load balancing necessary**

**Explanation:** An invalid value was entered for the Load Balance jobs by field.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM180E Invalid Capture Run Times parameter. Please enter a "Y" if you would like Shared Profile Support to compute the run times for each object of each utility executed or enter an "N" to bypass capturing runtime statistics. These run times will be used for future load balancing by time**

**Explanation:** An invalid value was entered for the Capture run times for Load Balancing field.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM181E Invalid Utility Mode parameter. Please enter a "Y" if you would like the spaces started in UT mode before running utilities or "N" to leave the spaces in the status they are currently in**

**Explanation:** An invalid value was entered for the Process spaces in utility (UT) mode field.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM184E Member does not exist in the partitioned data set**

**Explanation:** A partitioned data set and member name were specified, but the member does not exist.

**User response:** Correct the member name.

---

**HAAM185E** Data set could not be created, because it already exists

**Explanation:** A data set name was specified for creation, but the data set already exists.

**User response:** Choose a different data set name, or use the existing data set but enter N in the Create Export Data Set field.

---

**HAAM187E** You are not authorized to enter any line commands for this profile. The creator of the profile is restricting all activity

**Explanation:** The creator of the selected profile specified that no other user is to view, update, or export the selected profile.

**User response:** Choose a different profile to work with.

---

**HAAM190I** Profile "profile\_creator,profile\_name" has been successfully deleted (removed) from the jobs profile

**Explanation:** The selected object, utility, or exception profile was deleted from the job profile.

**User response:** No action is required.

---

**HAAM191I** The underlying VSAM data set not found for table space

**Explanation:** The data set for the selected table space was not found.

**User response:** Check for the existence of the VSAM data set. It may have been deleted outside of DB2.

---

**HAAM193E** Member name not allowed when Jobs option Set Member to Jobname has been turned on

**Explanation:** On the Generation Job Options screen, the Set JCL member equal to jobname field was set to Y.

**User response:** Do not specify a member name in the Build Job in Data Set member field. The member name is generated from the job name.

---

**HAAM195E** Invalid value - Please enter a "T" to override character with object type, "O" to override with the object name, "#" to increment with numerics, " to increment with alphanumerics, "P" to override with partition number, or "D" to override with the database name

**Explanation:** An invalid value was entered in the job template override byte.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM196E** Combination not allowed - The number of jobs and number of objects per job are both zero. One of these fields must be zero and the other field greater than zero

**Explanation:** You must enter a non-zero value in either the Maximum nbr of jobs field or the Maximum nbr of objects per job field.

**User response:** Enter a valid value in one field and 0 in the other field.

---

**HAAM197E** Combination not allowed - You have entered both Number of Jobs and Number of objects per job. One of these fields must be zero and the other field greater than zero

**Explanation:** You must enter a zero value in either the Maximum nbr of jobs field or the Maximum nbr of objects per job field and a valid value in the other.

**User response:** Enter a valid value in one field and 0 in the other field.

---

**HAAM198E** Invalid value - Enter a "Y" if you would like the JCL generated to be saved in the PDS with the member name equal to the job name or enter an "N" and the JCL will be generated to the member name you supply.

**Explanation:** An invalid value was entered for the Set JCL member equal to jobname field.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM199E** Invalid value - Enter a "Y" to generate the job when errors are encountered in building the job, an "N" to bypass job generation when errors, or "W" to allow job generation when warnings are found

**Explanation:** An invalid value was entered for the Generate Job when Errors encountered field.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM200E** Input required. When requesting space reallocation, one of the two available trigger fields (extents in space or percentage used) must be entered.

**Explanation:** You must specify one of the two

available trigger fields (extents in space or percentage used).

**User response:** Specify extents in space or percentage used.

---

**HAAM201W** There are unentered fields on the Space Reallocation screen that are required for processing. Because of this, the Space reallocation option on the main options screen has been set to "N".

**Explanation:** You must fill in the empty fields or the space reallocation option is automatically set to N.

**User response:** Specify all required fields or leave the space reallocation option set to N.

---

**HAAM202W** All of the Image Copy Options (for the LP, LB, RP, and RB image copies) have been set to "N". Because of this, the Copy Options field on the Reorg options screen has been set to a "N".

**Explanation:** At least one of the image copy options (for LP, LB, RP or RB image copies) must be set to Y if copy options is to be set to Y on the Reorg options screen.

**User response:** Set at least one of the image copy options (for LP, LB, RP or RB image copies) to Y if you want to specify Y in the copy options field on the Reorg options screen.

---

**HAAM203W** All of the Image copy options (for the LP, LB, RP, and RB image copies) have been set to "N". Because of this, the Image Copy field on the main utility screen has been set to a "N".

**Explanation:** An image copy was specified to be included in the profile, but the image copy type has not been selected. The Image Copy option Include field was set to N.

**User response:** If you want to include an image copy in the profile, select one or more image copy types and set their associated options on the Image Copy Options screen.

---

**HAAM207E** If the Utility Work Dataset High Level is not filled in, the Utility Work Dataset Second Qualifier cannot be specified

**Explanation:** A value was entered for the utility work data set second qualifier, but no value is entered for the utility work data set high-level qualifier. If the utility work data set high-level qualifier is not supplied, utilities that require work data sets are built with temporary data sets, and the value of the utility work data set second-level qualifier is not used.

**User response:** Enter a value in both the Utility work

dataset high level field and the Utility work dataset second qualifier field, or remove the value from both fields.

---

**HAAM208I** *command* request canceled.

**Explanation:** The request that is listed in the message was canceled.

**User response:** No action is required.

---

**HAAM225W** There are no spaces that meet the wildcard selection criteria. Press Enter to accept the wildcard anyway or change the selection criteria.

**Explanation:** The wild card field was specified, but DB2 Automation Tool could not find any spaces that meet your selection criteria.

**User response:** Press Enter to accept the wild card as is, or change your selection criteria.

---

**HAAM230E** The Export output data set does not exist. Specify the Create option to create a new data set, or specify one that exists

**Explanation:** When exporting a profile to a data set, the Create Export Data Set field was set to N, but the data set specified in the Data Set Name field does not exist.

**User response:** Enter Y in the Create Export Data Set field to create a new data set, or specify an existing data set.

---

**HAAM231E** The export data set contains a jobs profile. An exported jobs profile cannot be imported into a non-jobs profile

**Explanation:** The profile you are attempting to import from a data set is a job profile. You can only import a job profile from the Jobs Profile Display.

**User response:** Access the Jobs Profile Display and import the jobs profile from the data set.

---

**HAAM232E** Objects profile *profile\_creator.profile\_name* has been previously selected in this jobs profile, but has since been deleted from this subsystem. Job Build Process has been terminated

**Explanation:** The listed object profile has been deleted from the subsystem, so the job cannot be built.

**User response:** Follow the instructions in the message text to delete and/or recreate the object profile.

---

**HAAM233E** Utility Profile *profile\_creator.profile\_name* has been previously selected in this jobs profile, but has since been deleted from this subsystem. Job Build Process has been terminated

**Explanation:** The listed utility profile has been deleted from the subsystem, so the job cannot be built.

**User response:** Follow the instructions in the message text to delete and/or recreate the utility profile.

---

**HAAM234E** Exceptions Profile *profile\_creator.profile\_name* has been previously selected in this jobs profile, but has since been deleted from this subsystem. Job Build Process has been terminated

**Explanation:** The listed exception profile has been deleted from the subsystem, so the job cannot be built.

**User response:** Follow the instructions in the message text to delete and/or recreate the exception profile.

---

**HAAM236E** Only (A)LL or (P)art are valid explode options

**Explanation:** An invalid value was entered in the Explode field.

**User response:** Enter A to run utilities against all partitions. Enter P to run utilities against each partition individually.

---

**HAAM237I** Profile *profile\_creator.profile\_name* has been successfully added to your jobs profile

**Explanation:** The selected object, utility, or exception profile has been added to the job profile.

**User response:** No action is required.

---

**HAAM238E** You are not authorized to update, view, or use profile *profile\_creator.profile\_name*

**Explanation:** The profile you selected was created with limited access. If you are not the profile creator, you may not view, update, or use this profile.

**User response:** If you are the profile creator, you can change the Share option by updating the profile.

---

**HAAM240E** Invalid value - Enter a "Y" to view the messages from building this profile or "N" to bypass viewing the messages

**Explanation:** An invalid value was entered when viewing the messages summary window for the job build.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM241E** Invalid value - Enter a "Y" to continue building the job or "N" to exit the building of this profile

**Explanation:** An invalid value was entered when viewing the Continue Building jobname window for the job build.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM242I** Building of jobs profile *profile\_creator.profile\_name* has been canceled

**Explanation:** The job build has been canceled.

**User response:** No action is required.

---

**HAAM243I** Editing of directory spaces not supported

**Explanation:** An edit command was entered for a DB2 directory table space. This command is not supported for these spaces.

**User response:** No action is required.

---

**HAAM245E** An error was encountered attempting to execute HAA\$TSOC

**Explanation:** An error occurred while executing the listed program.

**User response:** Ensure that the CLIST installation instructions and the HAA\$TSOC authorization instructions for SYS1.PARMLIB were followed. Contact IBM Software Support if necessary.

---

**HAAM246E** Load library not APF authorized - APF authorization required

**Explanation:** The HAAMhilvl.SHAAMLOAD library must be APF authorized.

**User response:** This message is issued if you have not APF authorized the HAAM load library. This message is also issued if the HAA\$TSOC program is not added to the AUTHPGM and AUTHTSF sections of member IKJTSO00 in SYS1.PARMLIB. For more information on IKJTSO00, refer to the *z/OS Initialization and Tuning Reference* (SA22-7533-05).

**Note:** Changes you make to SYS1.PARMLIB require an IPL for the PARMLIB updates to take effect.

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**HAAM247E Subsystem ID could not be found in the operating system**

**Explanation:** A symbolic data set name calls for the subsystem ID, but the subsystem ID could not be found to resolve the data set name.

**User response:** Contact IBM Software Support.

---

**HAAM248E A critical error has occurred attempting to resolve the subsystem RC=return\_code**

**Explanation:** A symbolic data set name calls for the subsystem ID, but the subsystem ID could not be found to resolve the data set name.

**User response:** Contact IBM Software Support.

---

**HAAM249E Invalid data set node detected length greater than 8 characters**

**Explanation:** The substring entered caused a data set node to be greater than eight characters.

**User response:** Shorten the substring to less than eight characters.

---

**HAAM250E Invalid data set node detected - first character not alphabetic or national**

**Explanation:** The first character of the entered substring resolved to an invalid character. Data set nodes must begin with alphabetic or national characters.

**User response:** Change the starting character to a valid character.

---

**HAAM251E Invalid data set node detected - 2 consecutive periods**

**Explanation:** The qualifier string contains two consecutive periods as resolved. Data set names cannot contain two consecutive periods.

**User response:** Change the qualifier string so that two periods do not appear consecutively.

---

**HAAM252W Data set truncation may occur**

**Explanation:** When resolved, the data set name may be too long. The maximum number of characters allowed for data set names is 44.

**User response:** Shorten the data set name so it resolves to less than 44 characters.

---

---

**HAAM253E Invalid characters detected in data set node**

**Explanation:** An invalid character was entered into a data set node. The first character must be alphabetic or national and the remaining seven characters must be alphabetic, numeric, national, or a hyphen.

**User response:** Correct the data set name.

---

**HAAM254E Invalid ending period detected**

**Explanation:** The data set name as resolved contains a period as the last character, which is invalid.

**User response:** Correct the data set name.

---

**HAAM255E Invalid data set node detected after a GDG**

**Explanation:** If used, the GDG substring must be the last node in the symbolic data set name.

**User response:** Ensure the GDG is the last node in the data set name.

---

**HAAM256E Invalid value. Enter a "Y" to set the options for utilities to generate Templates, Listdefs or Option keywords or "N" to bypass updating utility options**

**Explanation:** An invalid value was entered in the Update Template/Listdef/Option parms field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM257E Duplicate Entry. Change the Object Database, Object Name, or Object Type fields**

**Explanation:** Duplicate object prioritization entries are not allowed.

**User response:** Enter a unique value in the Object Database, Object Name, or Object Type fields.

---

**HAAM258E Invalid member name. Only A-Z, 0-9, @, #, and \$ are valid; First character must be A-Z, @, #, or \$**

**Explanation:** An invalid partitioned data set member name was entered.

**User response:** Enter a valid member name as specified in the message text.

---

---

**HAAM259W** If the utility work data set high level is not filled in, your utilities requiring work data sets will be built with temporary data sets. Using temp work data sets in utilities will eliminate the utility from being restarted

**Explanation:** The utility work data set high level qualifier field was left blank, so temporary data sets will be used for work data sets. Utilities cannot be restarted if temporary data sets are used for work data sets.

**User response:** If you want to restart utilities in the event of job failure, enter a work data set high level qualifier.

---

**HAAM262E** Jobs Profile *profile\_creator.profile\_name* on DB2 SSID *ssid* is empty and does not contain any exception, object, or utility profiles

**Explanation:** An attempt was made to build a job profile that is empty.

**User response:** Cancel the job build. Update the profile to add the appropriate object, utility, and/or exception profiles.

---

**HAAM263E** Invalid starting position entered. Enter a numeric value for the starting position in the symbolic to substring

**Explanation:** An invalid value was entered in the Enter Starting Position field.

**User response:** Enter a valid numeric as specified in the message text.

---

**HAAM264E** Invalid substring length entered. Enter a numeric value greater than 1 to substring the symbolic

**Explanation:** An invalid value was entered in the Enter Substring Length field.

**User response:** Enter a valid numeric as specified in the message text.

---

**HAAM265E** Invalid substring starting position entered. Enter a starting position that is within the range of generated symbolic

**Explanation:** An invalid value was entered for the starting position of the substring.

**User response:** Enter a valid numeric as specified in the message text.

---

**HAAM266E** Invalid substring length. Length exceeds end of data. Enter a length where the starting position plus length are less than or equal to the maximum length of data

**Explanation:** An invalid length was entered for the selected qualifier in the substring. The length is longer than the longest possible value for the substring.

**User response:** Enter a valid length as specified in the message text.

---

**HAAM277E** Varchar column has a length of zero and cannot be viewed

**Explanation:** A VARCHAR column was selected for editing, but the column length is 0. There is no data to view.

**User response:** Select a different column for editing.

---

**HAAM278I** Varchar column has a length of zero and cannot be viewed

**Explanation:** While processing the UPDATE FIRST VOLUME request, some stogroup defined target data sets were located with target stogroups that are SMS managed. First volume update processing was bypassed for all applicable data sets.

**User response:** Do not specify volume information for stogroup defined data sets when the stogroup is SMS managed.

---

**HAAM280I** Unable to display another product's utility profile

**Explanation:** You attempted to view or update a utility profile that was created in a DB2 Tool other than the product you are using. This is not allowed.

**User response:** No action is required.

---

**HAAM281E** No table spaces found on volume

**Explanation:** No DB2 table spaces reside on the selected volume.

**User response:** Select another volume to view.

---

**HAAM282E** Invalid value - The only valid values are "A", "T", or "I"

**Explanation:** For a volume object selection, you can specify to process all objects, table spaces only, or index spaces only.

**User response:** Enter a valid value as listed in the message text.

---

---

**HAAM283E** Invalid value - Enter a "J" if you would like to prefix the utility ID with the jobname, an "S" if you would like to prefix the utility ID with the stepname, a "B" if you would like to prefix the utility ID with jobname.stepname or "N" for no prefix

**Explanation:** An invalid value was entered in the Prefix Utility ID with jobname field.

**User response:** Enter a valid value as listed in the message text.

---

**HAAM284E** Required field - Please enter a profile creator

**Explanation:** When renaming a profile, the new profile creator was not specified.

**User response:** Enter the new profile creator in the Creator field.

---

**HAAM285E** Required field - Please enter a profile name

**Explanation:** When renaming a profile, the new profile name was not specified.

**User response:** Enter the new profile name in the Profile Name field.

---

**HAAM286E** Duplicate profile - Please change the profile creator or profile name to make it unique

**Explanation:** When renaming the profile, the combination of profile name and profile creator entered is identical to another profile.

**User response:** Enter a different profile creator or name to make the profile unique.

---

**HAAM287I** Profile was successfully renamed

**Explanation:** The profile has been successfully renamed.

**User response:** No action is required.

---

**HAAM288E** New profile already exists for profile type *profile\_type*. Please enter a unique profile name and press Enter

**Explanation:** When renaming the profile, the combination of profile name and profile creator entered is identical to another profile.

**User response:** Enter a different profile creator or name to make the profile unique.

---



---

**HAAM289E** Invalid value - Enter an "A" to have all exception profiles processed as ONE big exception profile, i.e., all exception conditions are merged together into one unit, or an "O" to have multiple exception profiles processed one at a time, i.e., on an individual basis. Press Help for more information

**Explanation:** The Evaluate Multiple Exception Profiles field contains an invalid value. When there is more than one exception profile in a jobs profile, the exception profiles can be evaluated and processed differently based on this value.

**User response:** Enter a valid value as specified in the message text. Press PF1 for an explanation of the evaluation process.

---

**HAAM290E** Invalid value - Enter a "D" to delete job data, "S" to select step data, or "O" to select object data

**Explanation:** An invalid line command was entered next to a job name on the Execution Reports Job Display.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM291E** Invalid value - Enter a "J" to display job level data or "O" to display object level data

**Explanation:** An invalid value was entered in the View Type field.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM292E** Invalid value - Enter a "S" to display job related data for the selected object

**Explanation:** An invalid line command was entered next to an object on the Execution Reports Object Display.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM293E** Invalid value - Enter a "I" to limit the display to indices, "T" to limit displays to table spaces or "A" for no filtering of object data

**Explanation:** An invalid value was entered in the Space Type field.

**User response:** Enter a valid value as specified in the message text.

---

---

**HAAM294E Invalid value - Enter a "Y" to recall migrated spaces**

**Explanation:** An invalid value was entered in the Recall Migrated Spaces field.

**User response:** Enter a valid value as specified in the message text.

---

**HAAM295E Invalid value - Enter an "R" if you would like to Restart job or an "F" if you would like to Force this job completed and regenerate another job**

**Explanation:** An invalid value was entered in the Restart or Force Completion field.

**User response:** Enter a valid value as listed in the message text.

---

**HAAM296E Invalid value - Enter a "Y" if you would like DB2 Shared Profile Support to submit the new job or "N" to bypass job submission**

**Explanation:** An invalid value was entered in the Submit Job field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM297E Invalid member name - You must specify a different member name when restarting the job in the same data set**

**Explanation:** When restarting a job, you cannot use the same data set and member name that was used for the original JCL.

**User response:** Specify a different member name, or use a different data set to generate the JCL.

---

**HAAM298E Utility profile *profile\_creator.profile\_name* is included in this jobs profile but no longer exists. The job cannot be built. Update the jobs profile to either delete the utility profile from the jobs profile or create the utility profile**

**Explanation:** The listed utility profile has been deleted from the subsystem, so the job cannot be built.

**User response:** Follow the instructions in the message text to delete and/or recreate the utility profile.

---

**HAAM299I Job *jobname, job\_number* was successfully forced complete**

**Explanation:** The job listed in the message was successfully forced to completion.

**User response:** No action is required.

---



---

**HAAM300E Option not allowed - The only valid option is "V" for View while you are in View mode**

**Explanation:** An invalid line command was entered next to a profile. When viewing job profiles, you can only view the associated object, utility, and exception profiles.

**User response:** Enter V to view the object, utility, or exception profile.

---

**HAAM301E Invalid value - Enter a "Y" to terminate the existing DB2 utility ID or "N" to have the utility restarted where it left off**

**Explanation:** An invalid value was entered in the Terminate existing utility ID field.

**User response:** Enter a valid value as described in the message text. If you are attempting to restart a utility, terminating the utility ID will not allow the utility to restart. Refer to *DB2 UDB for z/OS V8 Messages* (GC18-9602-01) and *DB2 UDB for z/OS V8 Codes* (GC18-9603-01) for more information about re-startability and the utility ID.

---

**HAAM302E Allocation failed - Dynamic allocation failed for the input build data set during restart processing**

**Explanation:** The data set containing the JCL for restart processing could not be allocated.

**User response:** Ensure the data set exists and is available for use.

---

**HAAM303E Allocation failed - Dynamic allocation failed for the output build data set during restart processing**

**Explanation:** The data set specified to contain the output JCL for restart processing could not be allocated.

**User response:** Ensure the data set exists and is available for use.

---

**HAAM304E Return code *return\_code* reason code *reason\_code* received from the DB2 command processor attempting to terminate the utility**

**Explanation:** An error was encountered when attempting to terminate a utility. The return and reason codes are provided in the message.

**User response:** Refer to *DB2 UDB for z/OS V8 Messages* (GC18-9602-01) and *DB2 UDB for z/OS V8 Codes* (GC18-9603-01) for message information. Contact IBM Software Support if additional assistance is required.

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**HAAM305E An excluded object cannot be exploded**

**Explanation:** You entered the explode line command next to an object or objects that are being excluded from the profile. Excluded objects cannot be exploded.

**User response:** To continue, clear the line command from the excluded object.

---

**HAAM306E Object already excluded**

**Explanation:** The object you selected to exclude from the object list has already been excluded.

**User response:** To continue, clear the line command from the excluded object.

---

**HAAM307E No objects meet wildcard criteria**

**Explanation:** You entered the explode line command next to an object detail line that contains wildcard selection criteria. However, no objects exist on the DB2 subsystem that meet the wildcard criteria. The object or objects may have been dropped.

**User response:** Press Enter to continue.

---

**HAAM308E No indexes found on volume**

**Explanation:** There are no indexes on the selected volume.

**User response:** Enter a valid line command or select a different volume.

---

**HAAM309E Non hexadecimal value entered. All page changes discarded**

**Explanation:** Invalid data was entered on the selected page. That change and all page changes have been discarded.

**User response:** Enter page changes in hexadecimal.

---

**HAAM310E Invalid Value - Please enter the Maximum Primary Space Allocation quantity that you want Shared Profile Support Services to generate when generating utility JCL. This value must be numeric and be > 0 and <= 999999**

**Explanation:** An invalid value was entered for the Max Primary Space Allocation field on the Setup panel or the Override Setup options panel.

**User response:** Enter a valid value as described in the message text.

---

**HAAM311E Invalid Value - Please enter either (C)ylinders, (T)racks, or (M)egabytes. This value represents the unit type of the maximum primary space, i.e., how many cylinders, tracks, or megabytes that you want Shared Profile Support Services to generate when generating utility JCL**

**Explanation:** An invalid unit was entered for the maximum primary space allocation.

**User response:** Enter one of the valid units listed in the message text.

---

**HAAM312E Invalid Value - Please enter the REGION Size in megabytes that you want Shared Profile Support Services to generate when generating utility JCL. This value must be numeric and be >= 0 and <= 2047**

**Explanation:** An invalid value was entered when specifying utility region size.

**User response:** Enter one of the valid values listed in the message text.

---

**HAAM313E Invalid Value - Please enter the number of subtasks, i.e., parallel processes, that you want Shared Profile Support Services to create when performing MVS catalog LOCATES. This value must be numeric and be > 0 and <= 99**

**Explanation:** An invalid value was entered when specifying the number of subtasks that can be initiated when performing parallel MVS catalog locates.

**User response:** Enter one of the valid values listed in the message text.

---

**HAAM314E Invalid Value - Please enter either (Y)es or (N)o. This value indicates whether you want Shared Profile Support Services to generate termination JCL for utilities if an abend occurs**

**Explanation:** An invalid value was entered when specifying whether Shared Profile Support will terminate a utility upon abend.

**User response:** Enter one of the valid values listed in the message text.

---

**HAAM315E Invalid Value - Please enter the unit device (SYSDA, DISK, etc.) that you want Shared Profile Support Services to generate when generating SORT WORK file DDs**

**Explanation:** An invalid value was entered when specifying the device for sort work files.

**User response:** Enter one of the valid values listed in the message text.

---

**HAAM316E Invalid Value - Please enter the primary space allocation quantity in cylinders that you want Shared Profile Support Services to generate when generating SORT WORK JCL. This value must be > 0 and <= 99999**

**Explanation:** An invalid value was entered for the amount of primary space allocation for sort work JCL.

**User response:** Enter one of the valid values listed in the message text.

---

**HAAM317E Invalid Value - Please enter the secondary space allocation quantity in cylinders that you want Shared Profile Support Services to generate when generating SORT WORK JCL. This value must be numeric and be > 0 and <= 999999**

**Explanation:** An invalid value was entered when specifying the amount of secondary space allocation for sort work JCL.

**User response:** Enter one of the valid values listed in the message text.

---

**HAAM318E Invalid Value - Please enter the number of DDs that you want Shared Profile Support Services to generate when generating SORT WORK JCL. This value must be numeric and be > 0 and <= 99**

**Explanation:** An invalid value was entered for the number of DDs to be generated for sort work JCL.

**User response:** Enter a valid value as listed in the message text.

---

**HAAM319E At least one of the Shared Profile Support Services Setup Parameters is missing or invalid for DB2 Subsystem *subsystem* Please review and update the Setup Parameters on the Option 3 Setup panel. Enter an "S" in the Option field of the Main panel, then "3" in the Command field of the following panel. Specify the appropriate value(s)**

**Explanation:** This message appears when attempting to use DB2 Automation Tool on a subsystem, but the DB2 Shared Profile Support setup parameters for this subsystem have not yet been configured.

**User response:** Access the setup panel as described in the message text. Enter the subsystem ID to configure on the first screen, then choose option 3 to complete configuration.

---

**HAAM320E Invalid Update Setup Override Options parameter. Please enter a "Y" if would like to update the setup parameters for this job or an "N" to bypass updating the setup parameters for this job**

**Explanation:** An invalid value was entered in the Update Setup Override Options field.

**User response:** Enter a valid value as listed in the message text.

---

**HAAM321E Invalid Value - Please enter the Unit Device (SYSDA, DISK, etc.) that you want Shared Profile Support Services to generate when generating utility JCL**

**Explanation:** A value was not entered for the work file unit devices.

**User response:** Specify a valid unit device that DB2 Shared Profile Support can use when generating utility JCL.

---

**HAAM322E Invalid Value - Please enter the DB2 subsystem ID that you want Shared Profile Support Services to use when capturing job runtime statistics**

**Explanation:** An invalid job tracking subsystem ID was specified on the Override Setup Options screen.

**User response:** Enter a valid job tracking subsystem name.

---

**HAAM323E Input member not found. The input build member is missing for the restart job**

**Explanation:** The output from the job profile you want to build previously ended in an abend. Re-startability was enabled, but the input member required for re-startability does not exist or has been deleted. Therefore, the job cannot be restarted.

**User response:** Check for the existence of the data set and/or member where the job profile was last built. Contact IBM Software Support if assistance is required.

---

**HAAM326E Invalid Value - Please enter either (Y)es or (N)o. This value indicates whether you want Shared Profile Support Services to generate STEPLIB DDs when generating utility JCL**

**Explanation:** An invalid value was entered when specifying whether to generate STEPLIB DDs in the utility JCL.

**User response:** Enter a valid value as specified in the message text. Note that if you specify N, the DB2 Automation Tool and DB2 Shared Profile Support libraries must be in your site's LINKLIST data set.

---

**HAAM327E Invalid Value - Please enter either (Y)es or (N)o. This value indicates whether you want Shared Profile Support Services to generate Greenwich Mean Time (GMT) values rather than local time when generating utility JCL**

**Explanation:** An invalid value was entered when specifying whether to use GMT (Greenwich Mean Time) time format when generating image copy data set names.

**User response:** Enter a valid value as listed in the message text.

---

**HAAM328E Quotations are not accepted in the data set field. Please specify the fully qualified data set name without quotations**

**Explanation:** An invalid value was entered when specifying the data set name. Quotations are not permitted in the data set name field.

**User response:** Enter a fully qualified data set name without quotations.

---

**HAAM329E Field Required - The data set entered is a partitioned data set and the member name is required**

**Explanation:** An invalid value was entered when specifying the data set and member name. The specified data set is a PDS and the existing member name is required.

**User response:** Enter the member name in the member field. The member name must already exist.

---

**HAAM330E Parm not allowed. A secondary quantity can not be entered without a primary quantity**

**Explanation:** You entered a secondary quantity without entering a primary quantity.

**User response:** Enter a primary quantity to set or override, then specify the secondary quantity.

---

**HAAM331E UNICODE/ASCII formatting not supported prior to DB2 V8**

**Explanation:** DB2 Shared Profile Support only displays Unicode and ASCII characters on DB2 V8 or higher subsystems.

**User response:** No action is required.

---



---

**HAAM332E An error has occurred attempting to use Unicode conversion services Return Code=return\_code Reason Code=reason\_code**

**Explanation:** An error occurred during a call to Unicode Conversion Services. The return and reason codes are supplied in the message.

**User response:** Ensure Unicode Conversion Services is installed at your site. Call IBM Software Support for additional assistance.

---

**HAAM333E Invalid Value - Enter a "Y" if you would like TEMPLATES generated for image copy data sets or "N" to have image copy DDs generated**

**Explanation:** An invalid value was entered when specifying whether to generate TEMPLATE syntax.

**User response:** Enter a valid value as listed in the message text.

---

**HAAM334E Invalid Value - Enter a "Y" if you would like LISTDEFS generated for object lists or "N" to have objects generated within a utility**

**Explanation:** An invalid value was entered when specifying whether to generate utility control statements using LISTDEFS.

**User response:** Enter a valid value as listed in the message text. If you want to use LISTDEFS, you must also specify Y in the Generate Templates field.

---

**HAAM335E Invalid Value - Enter a "Y" if you would like to run the utility with the OPTIONS PREVIEW to bypass utility execution and check utility syntax**

**Explanation:** An invalid value was entered when specifying PREVIEW mode. PREVIEW mode checks for syntax errors in all utility control statements, but normal utility execution does not take place.

**User response:** Enter a valid value as listed in the message text.

---

**HAAM336E Invalid Value - Enter a "Y" if you would like the utility to continue processing when errors are encountered or "N" to halt execution when errors are encountered**

**Explanation:** An invalid value was specified when entering the Continue on Item Error field.

**User response:** Enter a valid value as listed in the message text.

---

---

**HAAM337E** Invalid Value - Enter a "Y" if you would like the utility return code to zero when warnings are encountered or "N" to leave the return code to a 4 when warnings are encountered

**Explanation:** An invalid value was specified when entering the Return Code 0 on Warnings field.

**User response:** Enter a valid value as listed in the message text. **CAUTION:** Specifying this option should generally be avoided. Warning messages should not generally be disregarded. Use this option only when RC 4 is expected, is acceptable, and other mechanisms are in place to validate the results of a utility execution.

---

**HAAM338E** Option not Allowed - Utilities that Image Copy spaces require TEMPLATES be used when generating LISTDEFS. Enter a "Y" for TEMPLATES in order to generate LISTDEFS

**Explanation:** You specified a Y in the Generate Listdefs field, but did not specify Y in the Generate Templates field.

**User response:** If you want to use LISTDEFS, you must specify Y in the Generate Templates field. Otherwise, set the Generate Listdefs field to N.

---

**HAAM339E** Table space *creator.tablespace* is not in a read/write status. DB2 Automation Tool cannot continue until this invalid status is resolved. Please resolve the problem with this space and try your request again

**Explanation:** The table space listed in the message cannot be accessed because it is not in read/write status.

**User response:** Attempt to resolve the status of the space and retry the request.

---

**HAAM340E** The entire database *database* is not in a read/write status. DB2 Automation Tool can not continue until this invalid status is resolved. Please resolve the invalid status and try your request again

**Explanation:** The DB2 Shared Profile Support HAAM database is not available because it is not in read/write status. Availability of the HAAM database is required for processing to continue.

**User response:** Attempt to resolve the status of the space and retry the request.

---

**HAAM341E** Invalid Value - Enter a "Y" to Use the DSNACCOR EXCEPT\_TBL when generating JCL for selected objects or "N" to not use the DSNACCOR EXCEPT\_TBL

**Explanation:** An invalid value was specified in the Use DSNACCOR Exception Table field.

**User response:** Enter a valid value as listed in the message text.

---

**HAAM342E** An invalid Return code of *return\_code* Reason *reason\_code* was encountered issuing -DISPLAY DATABASE(*database\_name*) command to verify Shared Profile Services repository spaces are available

**Explanation:** An error was encountered when attempting to verify the availability of the DB2 Shared Profile Support database.

**User response:** Examine the return and reason codes provided in the message and attempt to correct the error. Contact IBM Software Support if assistance is required.

---

**HAAM343E** User is not authorized to issue -DISPLAY DATABASE(*database\_name*) to verify Shared Profile Services repository spaces are available

**Explanation:** Your authorization ID has not been granted privileges to issue the DISPLAY DATABASE command for the listed database.

**User response:** Check with your DB2 administration programmer to verify or obtain proper authority.

---

**HAAM344E** Graphic data is currently not supported

**Explanation:** The FORMAT command was entered, but the page contains graphic data. Graphic data cannot be displayed with the FORMAT command.

**User response:** No action is required.

---

**HAAM345W** User is not authorized to overwrite existing profile. You must change the profile creator or name

**Explanation:** A profile already exists on this subsystem with a Share Option of V(iew). This profile cannot be overwritten.

**User response:** Change the profile creator or the profile name to create a new copy of the profile.

---

---

**HAAM346W** Input data set is not a valid export data set

**Explanation:** The data set you entered is not a valid export data set.

**User response:** Enter a valid export data set name that contains the profiles you want to import.

---

**HAAM347I** Profile could not be imported. You may Edit or Overwrite the profile or PF3 to cancel

**Explanation:** A duplicate profile exists on the subsystem. You must specify to edit the profile creator and/or name, or overwrite the existing profile with the imported profile.

**User response:** Enter the "O" or "E" line commands as appropriate.

---

**HAAM348I** Overwrite command is only valid for duplicate profiles. Command ignored

**Explanation:** You entered the O line command next to a profile that is not a duplicate profile. Only duplicate profiles can be overwritten.

**User response:** Clear the line command.

---

**HAAM349E** Unable to export profile(s). Press PF3 to cancel

**Explanation:** There was a severe error trying to export one or more of the profiles.

**User response:** Contact IBM Software Support.

---

**HAAM350E** Command not allowed. Profile was not exported

**Explanation:** When exporting a job profile, there was a problem exporting one of the object, utility, or exception profiles contained in the job profile. During import, a line command was entered next to one of these profiles, but the profile cannot be imported.

**User response:** Clear the line command from the profile.

---

**HAAM351E** Invalid data set/member/alias - the data set, member name, or Alias entered does not meet the MVS data set naming standards

**Explanation:** The data set, member name, or alias entered is not valid for MVS data set names. The first character must be capitalized alphabetic (A-Z, @, \$, #) and the remaining characters must be capitalized alphanumeric (A-Z, 0-9, @, \$, #).

**User response:** Correct the data set, member name, or alias.

---

---

**HAAM352E** Only 1 data set may be selected

**Explanation:** You selected multiple image copy data sets on the Recovery File Selection screen. However, you can only select one image copy data set at a time for recovery.

**User response:** Select only one image copy data set for recovery.

---

**HAAM353E** Invalid data set DSORG - The file containing the jobcards must be a sequential file or a PDS/PDSE. VSAM and other data types are not supported for jobcard retrieval

**Explanation:** The data set organization of the file you entered is not supported for job card retrieval. The data set must be a QSAM sequential or partitioned data set.

**User response:** If you want to retrieve the job card from a data set, use the specified data set type.

---

**HAAM354E** Export data set in use by another user

**Explanation:** The data set specified as the export data set is in use by another user.

**User response:** You may wait for the data set to be released or specify a different data set.

---

**HAAM355E** The page number must be decimal digits or hex digits enclosed in single quotation marks

**Explanation:** The page number must be a 1 to 8 digit base 10 number or a 1 to 5 digit base 16 number enclosed in a hexadecimal indicator. (X'89ABC').

**User response:** Correct the page number and press Enter.

---

**HAAM356E** File tailoring skeleton *member\_name* does not exist for utility *utility*

**Explanation:** An attempt to perform file tailoring failed because the tailoring process could not locate a required tailoring skeleton.

**User response:** Assure that all required files are allocated to perform file tailoring.

---

**HAAM357E** Unexpected error returned from *program\_name*, RC=*return\_code*

**Explanation:** An unexpected error was encountered. Processing has aborted.

**User response:** Note the program name and return code and contact IBM Software Support.

---

---

**HAAM358E Invalid data set DSORG - The job can only be built into a sequential file or a PDS/PDSE. VSAM and other data types are not supported for job generation**

**Explanation:** The data set organization of the file you entered is not supported for job generation. The data set must be a QSAM sequential or a partitioned data set.

**User response:** Specify a data set of the proper type.

---

**HAAM359E If volume information is entered, a data set name must also be entered**

**Explanation:** Entering volume serial information without a related data set is not consistent. A data set name must be entered as well.

**User response:** Enter a data set name or remove the value from the volume serial field.

---

**HAAM360E If sequence number information is entered, a data set name must also be entered**

**Explanation:** Entering volume sequence information without entering a related data set is not allowed. A data set name must be entered as well.

**User response:** Enter a data set name or select a data set using the Select recovery file field.

---

**HAAM361E If sequence number information is entered, volume information must also be entered**

**Explanation:** Entering volume sequence information without entering volume serial information is not allowed. A volume serial must be entered as well.

**User response:** Enter the volume serial of the data set.

---

**HAAM362E Profile creator/name conflicts with another profile being imported**

**Explanation:** The creator or name of the profile being edited conflicts with another profile being exported within the same job profile.

**User response:** Change the name and/or the creator name to ensure the profile is unique.

---

**HAAM363E Import file contains a profile with an incompatible version**

**Explanation:** The import file contains a profile that was created prior to DB2 Shared Profile Support V1.3. Profiles created in prior versions must be converted to the current version before export.

**User response:** Before exporting the profile, convert the previous version of the profile using the

HAACVBCT in *hilevel*.SAMPLIB. Then import the profile again.

---

**HAAM364I Data set attribute change detected. Enter "Y" to export to data set**

**Explanation:** A value in the Data Set Name or Member fields was changed, but the Export to Data Set field is set to N.

**User response:** Press Enter to export to the target subsystem rather than a data set. If you want to export to a file, enter Y in the Export to Data Set field before pressing Enter.

---

**HAAM365E Dataset must be a partitioned data set because multiple members will be generated**

**Explanation:** The data set to hold the generated Restore System utility JCL must be a partitioned data set because multiple jobs are generated.

**User response:** Enter a partitioned data set and two unique member names.

---

**HAAM366E The member name entered for the Conditional Restart job cannot be the same as the Restore System Utility member. Please enter a different member for one of the jobs**

**Explanation:** The member names entered must be unique because two jobs are generated to support the Restore System utility. The first job contains JCL to create the conditional restart control record. The second job contains JCL to invoke the Restore System utility.

**User response:** Enter two unique member names.

---

**HAAM367E The only valid values to the exception rule are "A"cepted, "R"ejected, and "B"oth**

**Explanation:** An invalid value was entered in the Exception Rule field. This field determines when the utility is run on the objects accepted or rejected as a result of exception processing

**User response:** Type A in this field to run the utility on objects accepted (included) as a result of exception processing. Type R to run the utility on objects that are rejected (excluded) as a result of exception processing. Type B to run this utility on all objects regardless of exception processing.

---

**HAAM370E Invalid Value - Please enter the DB2 Buffer Size in Megabytes that you want to allocate. This buffer is used to improve SQL performance for DB2 Version 8 and above. This value must be numeric and be >= 1 and <= 2047**

**Explanation:** An invalid value was entered in the DB2 Fetch Buffer size field.

**User response:** Enter a valid value as described in the message text.

**HAAM371E Invalid Value - Please enter the Secondary Space Allocation as a Percentage of the Primary Space. This value must be numeric and be  $\geq 1$  and  $\leq 999$**

**Explanation:** An invalid value was entered in the Secondary Allocation Percent field.

**User response:** Enter a valid value as described in the message text.

**HAAM372E The maximum value for the drain wait is 1800 seconds**

**Explanation:** The maximum value for drain wait is 1800 seconds.

**User response:** Enter a value between 0 and 1800 seconds.

**HAAM373E The maximum value for the number of retries is 255**

**Explanation:** An invalid value was entered in the Retry field.

**User response:** Enter a valid value that is less than or equal to the maximum of 255.

**HAAM374E The range of valid values for the retry delay is 1-1800 seconds**

**Explanation:** An invalid value was entered in the Retry Delay field.

**User response:** Enter a valid value that is in the range of 1 to 1800 seconds.

**HAAM375E The object has been dropped from DB2, yet still exists in this object profile. OBIDXLAT functions cannot be selected.**

**Explanation:** The object has been dropped from DB2 but is still present in the object profile.

**User response:** Remove the object from your object profile.

**HAAM380E The Input DSN and RBA/LRSN, if specified, have to be specified together.**

**Explanation:** You must specify an RBA/LRSN value if you specify a input DSN.

**User response:** You must specify a value in the RBA/LRSN field for the input DSN you specified.

**HAAM382E Single quote (apostrophe) not allowed in profile name.**

**Explanation:** You included a single quote (apostrophe) in a profile name. Single quotes are not allowed in a profile name.

**User response:** Remove the single quote character.

**HAAM390E The Group command can only be used on a group profile**

**Explanation:** The G(roup) line command was entered next to an object, utility, or exception profile. The G command can only be used on a job group.

**User response:** Clear the line command from the Cmd line.

**HAAM391E The Repeat command can only be used on a group or an exception profile**

**Explanation:** The R(epeat) line command was entered next to an object or utility profile. The R command can only be used on a group or an exception profile.

**User response:** Clear the line command from the Cmd line.

**HAAM392E Profiles can only be added to a group when the group is not hidden**

**Explanation:** The A(dd) line command was entered next to a job group that is hidden.

**User response:** Enter the G command next to the job group to display all the profiles in the group, then use the A command to add more profiles.

**HAAM393E Invalid group. There must be at least one object profile and one utility profile in the group when the Preview Exception Report Jobs Generation Option is No. Either delete the group and all of its profiles or add the missing profiles**

**Explanation:** The Job Generation option **Preview Exception Report** is set to No. When this option is specified, a group in the job profile must contain at least one object profile and one utility profile.

**User response:** Either delete the group or add the required profiles to the group.

---

**HAAM394E Invalid group.** There must be at least one object profile and one exception profile in the group when the Preview Exception Report Jobs Generation Option is Yes or an Autonomics Director option is selected. Either delete the group and all its profiles or add the missing profiles.

**Explanation:** The Job Generation option **Preview Exception Report** is set to Yes or an Autonomics Director option is selected. When either of these are specified, a group in the job profile must contain at least one object profile and one exception profile.

**User response:** Either delete the group from the job profile or add the required profiles to the job group.

---

**HAAM395E Invalid exception rule.** The exception rule profile does not exist in the group or points to itself. Either delete the exception rule or specify a valid profile number within the group.

**Explanation:** The Excp Rule Accp or Excp Rule Rjct field points to a utility profile that does not exist or it points to itself.

**User response:** Specify a valid utility profile or remove the integer from the exception rule field.

---

**HAAM396E Invalid repeated profile.** The profile is an exact duplicate of another profile. Either delete the profile or change the exception rule to point to another profile within the group

**Explanation:** An exception profile was repeated in a group.

**User response:** Either remove the duplicate exception profile or change the exception rules to point to a different profile in the group.

---

**HAAM397E Invalid *utility\_type* profile.** The profile will not be executed. No other profile points to this profile. Either delete the profile or link an exception profile to it

**Explanation:** A utility profile was included in the group, but no exception rule points to this utility profile.

**User response:** Delete the profile or link an exception rule to the utility profile.

---

**HAAM398E Invalid exception profile.** There are no exception rules specified. However, there are conditional profiles in this jobs group. Either delete the profile or specify an exception rule

**Explanation:** Exception rules were defined for some of

the exception profiles in the group, but not all.

**User response:** Either delete the exception profile or define exception rules for all of the exception profiles.

---

**HAAM399E Invalid exception rule.** Indicate the order number of the profile to be executed next. If specified, it must be numeric and point to another exception profile after the current profile or to a utility profile

**Explanation:** An invalid value was entered in an exception rule field.

**User response:** Enter a valid value in the exception rule field to point to a utility profile, or delete the exception profile.

---

**HAAM400E The online options can only be modified when the "Online 'Rebuild" setting is set to "Y."**

**Explanation:** The online REORG options were selected to be updated, but the online REORG has not been specified for inclusion in the utility profile.

**User response:** Type Y in the Include field next to the online REORG option, then type Y in the Update field for online REORG to update the options.

---

**HAAM401E This option is only valid when using a version 9 or higher DB2 subsystem**

**Explanation:** You set an option to a setting that requires DB2 Version 9 or higher.

**User response:** Change the option setting to an appropriate setting for your version of DB2.

---

**HAAM402E Invalid RESTOREBEFORE Log RBA/LRSN.** Specify *number* hexadecimal digits, or leave blank for none

**Explanation:** An invalid value was entered in the RESTOREBEFORE Log RBA/LRSN field.

**User response:** Enter a valid value as listed in the message text, or enter Y in the Select RESTOREBEFORE field to locate an appropriate RBA or LRSN.

---

**HAAM403E A RESTOREBEFORE Log RBA/LRSN point must be before the point-in-time Log RBA/LRSN (TOLOGPOINT) value**

**Explanation:** A RESTOREBEFORE Log RBA/LRSN must be *before* the specified point-in-time Log RBA/LRSN.

**User response:** Enter a RESTOREBEFORE Log RBA/LRSN that is *before* the point-in-time RBA/LRSN, or enter Y in the Select RESTOREBEFORE Log



RBA/LRSN field to locate an appropriate RBA or LRSN.

---

**HAAM404E Invalid value. The only valid values are "E" and "I"**

**Explanation:** The value specified in the Exclude field is invalid. Valid values are E (Exclude) and I (Include).

**User response:** Enter a valid value as described in the message text.

---

**HAAM405E Invalid Value – Please enter the number of DDs that you want Shared Profile Support Services to generate when generating SORT WORK JCL. For tape SORT work datasets this field can be left blank or must be numeric and be >=3 and <=99.**

**Explanation:** An invalid value was entered for the number of DDs to be generated for tape sort work JCL. For tape sort work data sets this field can be left blank or must be numeric and be >= 3 and <= 99.

**User response:** Enter a valid value as described in the message text.

---

**HAAM406E Invalid Value - Please enter either (D)fsort or (S)yncsort. This value indicates which sort program you want to use for sort processing.**

**Explanation:** An invalid value was entered when specifying which sort program to use for sort processing.

**User response:** Enter a valid value as described in the message text.

---

**HAAM407E Invalid Value - Please specify the SORTLIB data set name. If Sort Work File Unit Device is set to Tape, then Sortlib DSN has to be specified.**

**Explanation:** A value was not entered for the SORTLIB data set name.

**User response:** Specify a valid SORTLIB data set name. If Sort Work File Unit Device is set to Tape, then Sortlib DSN has to be specified.

---

**HAAM408E The specified data set could not be found in the MVS catalog**

**Explanation:** The specified data set could not be found in the MVS catalog.

**User response:** Verify that the data set you specified is correct.

---

**HAAM409E Invalid value. Valid values are "Y", "N", "B", "R"**

**Explanation:** An invalid value was entered in the Process Referentially Dependent Tablespaces field.

**User response:** Enter one of the following valid values:

- B: Include RI at build time regardless of LISTDEF job option.
- R: Include RI at run time. LISTDEF job option must be Yes.
- Y: Process RI. LISTDEF job option determines when RI is included. LISTDEF Yes causes RI to be included at runtime. LISTDEF No causes RI to be included at build time.
- N: Do not process RI.

---

**HAAM410E Duplicate group number. Each group must be unique. Change the group number to be unique among all groups in the jobs profile**

**Explanation:** A group number (in the Order column) is a duplicate of another group.

**User response:** Change the group's order number so that it is unique.

---

**HAAM411E Duplicate order number. Each order number must be unique among all other profiles of its type**

**Explanation:** An order number duplicates the order number of another of the same type of profile.

**User response:** Change one of the order numbers so that it is unique among profiles of that type.

---

**HAAM412E Cannot reorder a repeated profile. To reorder a profile that is repeated, reorder the "original" line**

**Explanation:** You cannot reorder a profile or group that was repeated.

**User response:** Change the order number of the original profile or group.

---

**HAAM413E Invalid exception profile. Both exception rules point to the same profile**

**Explanation:** The same utility profile was specified for objects both accepted and rejected by exception processing.

**User response:** Change the exception rule so that different utility profiles are paired with accepted and rejected objects.

---

**HAAM414E** When a control card data set is specified, only 39 job groups are allowed. Press the help key for more information

**Explanation:** When a control card data set is specified, only 39 job groups are allowed in the job profile. This is because each job group's JCL is generated into a unique member name. The last character of the member name is generated by the build process. The build process uses numbers 1 - 9 for the first nine job groups, letters A through Z for the next 26 job groups, then 0, \$, #, and @ for the remaining job groups.

**User response:** Either reduce the number of job groups in the jobs profile or clear the control card data set name in the job options.

---

**HAAM415E** Invalid value. Enter a "Y" if you would like to add a new group to this jobs profile or enter an "N" if you do not want to add a new group to this jobs profile

**Explanation:** An invalid value was entered in the **Add a Group** field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM416E** Invalid group name. The group name cannot be blank. Enter a group name

**Explanation:** The group name is blank. A name must be specified for a group.

**User response:** Enter a valid group name.

---

**HAAM417E** Invalid value. The "U" and "V" commands are not valid on a job group

**Explanation:** An invalid line command was entered for a group.

**User response:** Remove the invalid line command.

---

| **HAAM423E** Invalid Value - Enter either (A)ll to  
| process non-partitioned objects altered  
| to partitioned objects at the All Level or  
| P(art) to process altered objects at the  
| Partition Level

| **Explanation:** An invalid value was entered in the  
| Altered Object Adjustment field.

| **User response:** If you want DB2 Automation Tool to  
| treat ALTERed objects at the ALL Level, enter A. If you  
| want DB2 Automation Tool to treat ALTERed objects at  
| the PART Level, enter P.

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| **HAAM424E** The number field can be blank or in the  
| range of 2 - 255.

| **Explanation:** An invalid value was entered in the  
| number field.

| **User response:** Enter a valid value as specified in the  
| message text.

---

**HAAM427I** Copy pool name has already been selected.

**Explanation:** The selected copy pool name already exists as the alternate copy pool name for this RECOVER utility profile.

**User response:** Press PF3 or enter the Cancel command to retain the copy pool name that has already been selected, or choose a different copy pool name.

---

**HAAM428I** *copy-pool-name* has been selected as the alternate copy pool name.

**Explanation:** The copy pool name that is listed in the message has been selected as the alternate copy pool for the current RECOVER utility profile.

**User response:** No action is required.

---

**HAAM429E** Only one copy pool name can be selected. Choose one copy pool name and resubmit.

**Explanation:** You entered multiple select line commands.

**User response:** Remove the additional line commands and enter S next to only one copy pool name to select it.

---

**HAAM430E** Invalid Value. Enter 0-6, SUN-SAT, or \*

**Explanation:** An invalid value was entered in the Day of the Week field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM431E** Invalid Value. Enter 1-12, JAN-DEC, or \*

**Explanation:** An invalid value was entered in the Month field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM432E** Invalid Value. Enter 1-31, or \*

**Explanation:** An invalid value was entered in the Day of Month field.

**User response:** Enter a valid value as described in the message text.

---

---

**HAAM433E Invalid Value. Enter a time between 00:00 - 23:59. \* may be used in the hour to indicate each hour of the day**

**Explanation:** An invalid value was entered in the Time of Day field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM434E Invalid Value. Enter a length of time in the format HHHH:MM:SS, between 0000:00:00 and 9999:59:59**

**Explanation:** An invalid value was entered in the field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM435I No time periods were found. Press enter to create a time period**

**Explanation:** No time periods have been created for this maintenance window.

**User response:** Press Enter to create a time period.

---

**HAAM436E Duration must be greater than 0000:00:00**

**Explanation:** The duration of a time period must be greater than zero.

**User response:** Enter a value between 0000:00:00 and 9999:59:59.

---

**HAAM437E There are no defined time periods available to schedule or unschedule**

**Explanation:** The S or X line command was used to schedule or unschedule a maintenance window, but no time periods are defined for the maintenance window.

**User response:** Press Enter to continue.

---

**HAAM438I There are multiple time periods available to schedule/unschedule. Select the time periods that you want to schedule/unschedule**

**Explanation:** You specified to schedule or unschedule a maintenance window, but multiple time periods are defined in the maintenance window.

**User response:** Select the time periods that you want to schedule or unschedule.

---

**HAAM439I This time period is not currently scheduled in Admin Scheduler**

**Explanation:** The X line command to unschedule a maintenance window was entered next to a time period that is not currently scheduled.

**User response:** Clear the line command and press Enter.

---

**HAAM440E Unschedule command is only available for AUTODIRECTOR windows**

**Explanation:** The X line command to unschedule a maintenance window was entered next to an autonomic statistics maintenance window. This command is only available for Autonomics Director maintenance windows.

**User response:** Clear the line command and press Enter.

---

**HAAM441E Source must be D - autoDirector or S - autoStats**

**Explanation:** An invalid value was entered in the Source field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM442E When Source is 'S', Window Like must be '\*'**

**Explanation:** When you are viewing autonomic statistics maintenance windows, the only valid value for the Window Like field is \*.

**User response:** Enter \* in the Window Like field.

---

**HAAM447I No timeperiods defined for this maintenance window.**

**Explanation:** There are no defined time periods to view for this maintenance window.

**User response:** To add time periods, enter the U line command to update the maintenance window.

---

**HAAM448E Valid values are N-None or R-Reassign.**

**Explanation:** An invalid value was entered in the Action Disposition field. Valid values are N (none) to leave actions assigned to current maintenance window or R (reassign) to reassign to a different maintenance window.

**User response:** Enter a valid value as listed in the message text.

---

**HAAM449I Actions reassigned to *maintenance\_window*.**

**Explanation:** Action(s) have been reassigned to the maintenance window that is listed in the message.

**User response:** No action is required.

---

**HAAM450E** No maintenance window selected for reassignment.

**Explanation:** A maintenance window was not selected for reassignment of actions.

**User response:** If you want to reassign actions, select a maintenance window.

---

**HAAM500E** Acquire must be "A"llocate, "U"se, or Blank(existing value)

**Explanation:** An invalid value was entered in the Acquire field.

**User response:** Valid values are A to specify that resources for DBRMs are acquired when the plan is allocated or U to specify that resources are acquired when the application first accesses them.

---

**HAAM501E** Cachesize must be 0-4096 or Blank(existing value)

**Explanation:** An invalid value was entered in the Cachesize field.

**User response:** Enter the size of the authorization cache acquired in the EDM pool for the plan. Valid values are from 0 to 4096.

---

**HAAM502E** This option is only valid when using a version 9 or higher DB2 subsystem

**Explanation:** You set an option to a setting that requires DB2 Version 9.1 or later.

**User response:** Change the option setting to an appropriate setting for your version of DB2.

---

**HAAM503E** Degree must be "1", "A"ny, or Blank(existing value)

**Explanation:** An invalid value was entered in the Degree field.

**User response:** Type A to allow parallel processing; type 1 to prohibit parallel processing.

---

**HAAM504E** Disconnect must be "A"utomatic, "C"onditional, "E"xplicit, or Blank(existing value)

**Explanation:** An invalid value was entered in the Disconnect field.

**User response:** Type A to destroy all remote connections. Type C to destroy all remote connections unless an open cursor defined as WITH HOLD is associated with the connection. Type E to destroy only connections in the release pending state.

---



---

**HAAM505E** When either Histogram NUMCOLS or NUMQUANTILES is specified, then both values must be specified

**Explanation:** You entered a value for one of the Histogram fields.

**User response:** You must specify a value for both of the Histogram fields.

---

**HAAM506E** Encoding must be "A"SCII, "E"BCDIC, "U"NICODE, numeric CCSID, or Blank(existing value)

**Explanation:** An invalid value was entered in the Encoding field. This field sets the application encoding for all host variables static statements in the plan or package.

**User response:** Enter a valid value as described in the message text.

---

**HAAM507E** Flag must be "C", "E", "I", "W", or Blank(existing value)

**Explanation:** An invalid value was entered in the Flag field.

**User response:** Enter one of the following:

- C: Completion messages only
  - E: Error and completion messages
  - I: Information, warning, error and completion messages
  - W: Warning, error and completion messages
  - blank: Previous value
- 

**HAAM508E** Isolation must be "CS", "NC", "RR", "RS", "UR", or Blank (existing value)

**Explanation:** An invalid value was entered in the Isolation field.

**User response:** Enter one of the following:

- CS: Cursor stability
  - NC: No commit
  - RR: Repeatable read
  - RS: Read stability
  - UR: Uncommitted read
- 

**HAAM509E** Release must be "C"ommit, "D"eallocate, or Blank (existing value)

**Explanation:** An invalid value was entered in the Release field.

**User response:** Type C to release at each commit point. Type D to release when the program terminates.

---

---

**HAAM510E** Reopt must be "A"lways, "N"one, "O"nce, or Blank (existing value)

**Explanation:** An invalid value was entered in the Reopt field.

**User response:** Enter one of the following:

- A: Always: Determines the access path again at run time each time the statement is run.
- N: None: Does not determine an access path at run time.
- O: Once: Determines the access path for any dynamic statement only once, at the first run time or at the first time the statement is opened.

---

**HAAM511E** SQL Rules must be "D"B2, "S"tandard, or Blank (existing value)

**Explanation:** An invalid value was entered in the SQL RULES field.

**User response:** Enter D to indicate that no error occurs if CONNECT identifies an existing SQL connection. Enter S to indicate that an error occurs if CONNECT identifies an existing SQL connection.

---

**HAAM512E** Validate must be "B"ind, "R"un, or Blank (existing value)

**Explanation:** An invalid value was entered in the Validate field.

**User response:** Enter B to indicate that if not all objects or needed privileges exist at bind time, the process issues error messages, and does not bind or rebind the plan or package. Enter R to indicate that if not all objects or privileges exist at bind time, the process issues warning messages, but the bind succeeds.

---

**HAAM513E** Invalid value. The only valid values are "Y"es, "N"o, and "V"iew.

**Explanation:** The value specified is not valid.

**User response:** Specify a valid value, "Y"es, "N"o, or "V"iew.

---

**HAAM514I** There are additional options on the Rebind Utility Options screen. Press <PF8> to scroll down and view them

**Explanation:** This informational message appears upon accessing a scrollable screen as a reminder to scroll down to view all fields. Press PF8 to scroll down and view the rest of the fields. Press PF7 to scroll up.

**User response:** No action is required.

---

**HAAM515E** Field must be "Y"es, "N"o, or Blank (existing value)

**Explanation:** An invalid value was entered in a field. The cursor is positioned on the invalid entry.

**User response:** Correct the invalid value.

---

**HAAM516E** Invalid value. The OBID must be in the range of 1-32767.

**Explanation:** The specified OBID value is not valid.

**User response:** Specify an OBID value in the range of 1-32767.

---

**HAAM517E** The Translate data set name must be specified.

**Explanation:** The translate data set name was not specified.

**User response:** Specify the translate data set name.

---

**HAAM518E** The value must be between 1 and 65535, or if negative, between -32768 and -1.

**Explanation:** The specified value is not valid.

**User response:** Specify a value between 1 and 65535, or if negative, between -32768 and -1.

---

**HAAM519E** Invalid value. The only valid values are "Y"es, "N"o, and "V"iew.

**Explanation:** The value specified is not valid.

**User response:** Specify a valid value, "Y"es, "N"o, or "V"iew.

---

**HAAM522E** Field must be "Y"es, "N"o, or Blank (existing value)

**Explanation:** An invalid value was entered in a field. The cursor is positioned on the invalid entry.

**User response:** Correct the invalid value.

---

**HAAM523E** REOPTSCOPE may only be specified with REOPT(ONCE) or REOPT(AUTO)

**Explanation:** You entered N or A in the Reopt field, but entered a value other than blank in the Reopt Scope field. This combination is not allowed.

**User response:** Change either Reopt or Reopt Scope so that the values do not conflict.

---

**HAAM525E** *field\_name* is only valid for DB2 version *version* or higher. It will be set to a *valid\_value*

**Explanation:** You set an option to a setting that requires a DB2 higher than the version you are using.

**User response:** This option will be set to a valid value for your version of DB2.

---

**HAAM525E** *field\_name* **is only valid for DB2 version *version* or higher. It will be set to a *valid\_value***

**Explanation:** You set an option to a setting that requires a DB2 higher than the version you are using.

**User response:** This option will be set to a valid value for your version of DB2.

---

**HAAM528E** *field\_name* **must be in range *range***

**Explanation:** An invalid value was entered in the Exceptions field.

**User response:** Enter a numeric value for the maximum number of exceptions allowed, from 0 to 9999999.

---

**HAAM529E** *field* **must be blank or in range *valid\_range***

**Explanation:** An invalid value was entered in the field listed in the message.

**User response:** Enter a valid value as described in the message text.

---

**HAAM530E** **LOB dependency checking not available before DB2 V10**

**Explanation:** LOB dependency checking is not available in the current release.

**User response:** Set this field to N or CANCEL out of the current panel.

---

**HAAM531E** **LOB exclude function not available before DB2 V10**

**Explanation:** LOB exclude function is not available in the current release.

**User response:** Set this field to N or CANCEL out of the current panel.

---

**HAAM532E** **Cannot exclude LOBs unless checking LOB dependencies**

**Explanation:** Exclude objects that failed Dependency check was selected, but Perform LOB Dependency checks was not selected. The exclude selection is only available when the dependency check is also selected.

**User response:** Set this field to N, or set the Perform LOB Dependency Checks field to Y, or cancel out of the current panel.

---

**HAAM534E** **Switch must be "O"riginal, "P"revious, or Blank(existing value)**

**Explanation:** Switch restores all previous or original package/plan information in the catalog and directory to that of the specified package/plan copy. This option allows fallback to an older copy in the event of a performance regression.

**User response:** Set this field to P for Previous or O for Original.

---

**HAAM535E** **Switch option may not be specified with any other rebind option.**

**Explanation:** The Switch rebind option may not be specified with any other rebind option.

**User response:** Either remove the Switch option or remove all other rebind options.

---

**HAAM536E** **Invalid device type. Must be D, T, or blank**

**Explanation:** You selected a device type that was not D (DASD), T (tape), or blank.

**User response:** Specify D or T to indicate that the device should be accepted as a valid DASD or tape device. If the device entered was a mistake, leave the device type blank.

---

**HAAM537E** **Access Path Retain Duplicate only applies when Plan Management is Basic or Extended**

**Explanation:** You specified Access Path Retain Duplicate REBIND option. This is only valid when Plan Management is Basic or Extended.

**User response:** Either remove the Access Path Retain Duplicate option or change Plan Management to Basic or Extended.

---

**HAAM544E** **Invalid Value - Please enter either (Y)es or (N)o. This value indicates whether you want to preview what objects are triggered by exception processing without generating JCL**

**Explanation:** An invalid value was entered in the Preview Exception Report field.

**User response:** Enter Y if you want to preview the objects that exception processing triggers without generating utility JCL. This allows you to see which objects are triggered by using only object and exception profiles. Enter N to have DB2 Automation Tool generate utility JCL based on the specified object, utility, and exception profiles.

---

**HAAM546E Invalid value. The only valid values are "Y" and "N", "C" and blank.**

**Explanation:** An invalid value was entered in the FlashCopy Options field.

**User response:** Enter one of the following valid values:

- Y: Generate FLASHCOPY YES.
- C: Generate FLASHCOPY CONSISTENT.
- N: Generate FLASHCOPY NO.
- blank: Omit the FLASHCOPY keyword. If there is a system default setting for FLASHCOPY, it will be honored when this field is left blank.

---

**HAAM547E FlashCopy Dataset option can be Y only when FlashCopy is Y or C.**

**Explanation:** A Y was entered in the View/Update FlashCopy Dataset Options field, but no value was entered in the FlashCopy Options field.

**User response:** Change the value in the View/Update FlashCopy Dataset Options field to N, or change the FlashCopy Options field to Y or C.

---

**HAAM550E Command conflict.**

**Explanation:** Two conflicting line commands have been specified.

**User response:** Remove one of the conflicting line commands.

---

**HAAM551E Block command incomplete.**

**Explanation:** The line commands that are required to complete a block action were not specified.

**User response:** Specify the required line commands to complete the block action.

---

**HAAM552I The SQL statement returned 0 rows.**

**Explanation:** The WHERE clause returned no rows.

**User response:** If this result is unexpected, edit the WHERE clause.

---

**HAAM553I Move/Copy pending.**

**Explanation:** Either the B (Before) or A (After) command is missing for a move or copy command or a B (Before) or A (After) command is specified and the move or copy command is missing.

**User response:** Reenter the line command to comply.

---

**HAAM554E Data set must have an LRECL of 80.**

**Explanation:** The data set that you are importing must be defined with an LRECL of 80.

**User response:** Re-create the data set with the correct LRECL.

---

**HAAM555E Update SQL cannot be "Y" if Advanced SQL is not selected.**

**Explanation:** You specified to update SQL, but the Advanced SQL feature was not specified.

**User response:** Either set the Update SQL field to N, or set the Advanced SQL field to Y.

---

**HAAM556E SQL statement does not conform to rules.**

**Explanation:** The statement does not conform to the rules for SQL statements.

**User response:** The statement must be a SELECT statement that meets the following requirements:

- Two or three columns must follow the SELECT keyword.
- The first column must be a column of a DB2 table that represents a database name.
- The second column must be a column of a DB2 table that represents a table space name.
- The third column is optional, but if specified must be a column of a DB2 table that represents a partition number.
- The FROM keyword must follow the select columns.

Correct the SQL statement. To test the validity of the statement, enter the EXECUTE command in the **Option** field.

---

**HAAM557E No SQL statement specified. Resetting Advanced SQL to "N".**

**Explanation:** Advanced SQL was specified, but no SQL statement was provided. The Advanced SQL field was set to N.

**User response:** To specify an SQL statement, enter Y in the Update SQL field.

---

**HAAM558E There is no SQL statement to execute.**

**Explanation:** The EXECUTE command was ignored because no SQL statement was specified.

**User response:** Before you enter the EXECUTE command, enter a valid SQL statement.

---

**HAAM559E Invalid substring. Required trailing period missing.**

**Explanation:** A substring was detected that did not have a trailing period. This is required for template variables.

**User response:** Before you enter the EXECUTE command, enter a valid SQL statement.

---

**HAAM560E Autonomic Director features not enabled**

**Explanation:** DB2 Autonomic Director features are available only for DB2 Version 10 New Function Mode and above, and only when IBM DB2 Utilities Solution Pack is purchased and configured.

**User response:** Change the value in the field so that you are not attempting to view or use Autonomics Director features.

---

**HAAM562E Dsnum number must be decimal digits or hex digits enclosed in single quotation marks.**

**Explanation:** An invalid value was entered in the Page Dsnum field. If specified, the DSNUM must be a 1- through 8-character base 10 number, or a 1- through 5-character base 16 number that is enclosed in a hexadecimal indicator (for example, X'89ABC').

**User response:** Correct the invalid value and press Enter.

---

**HAAM564E The profile cannot be saved due to a shortage of virtual storage.**  
*Reason=reason\_code.*

**Explanation:** An attempt was made to save the profile. Prior to saving the profile, all exception conditions are verified to ensure there are no errors. Additional storage must be obtained to perform the verification; however, the total amount of storage could not be obtained. The hexadecimal reason code is displayed in the message.

**User response:** Contact IBM Software Support if additional assistance is required.

---

**HAAM600I No inline data to format in CLOB column**

**Explanation:** You selected a CLOB item to format, but it has no inline portion. Format only supports the inline portion of a CLOB.

**User response:** No action is required.

---

---

**HAAM601E Invalid time zone format**

**Explanation:** A timestamp with time zone column was being saved, but the zone format is invalid. The correct zone format is Sdd:dd, where S is +/- (plus or minus), and d are valid decimal digits.

**User response:** Changes are discarded.

---

**HAAM602E DB2 Autonomic Statistics is only valid for DB2 Version 10 NFM and above**

**Explanation:** DB2 Autonomic Statistics is not valid for your version of DB2.

**User response:** Verify that you have the correct version of DB2.

---

**HAAM603E SPRMADMT is missing.**

**Explanation:** The SPRMADMT field is missing. This field is found in the ZPARMS load module. It is required when scheduling a task to the DB2 administrative task scheduler.

**User response:** Ensure that the DB2 load libraries and the DB2 ZPARMS member, which are specified in the setup options (option 0.1 from the DB2 Automation Tool main menu), are correct.

---

**HAAM605W Import successful but the RECOVER RBA/LRSN was not found in SYSCOPY. This value will be discarded.**

**Explanation:** The point-in-time LOG RBA/LRSN and/or RESTOREBEFORE LOG RBA/LRSN values were not found in SYSCOPY. These values will be discarded.

**User response:** No action is required.

---

**HAAM606E When TO Method=L(og), the value for Verifyset should be Y(es) or N(o).**

**Explanation:** In DB2 V10 NFM and above, when the field TO Method=L(og), the value for the Verifyset field should be Y(es) or N(o).

**User response:** Enter a valid value in the Verifyset field.

---

**HAAM607E Invalid value. The only valid values are "Y", "N", and blank.**

**Explanation:** An invalid value was entered in a field that only accepts Y, N, or blank.

**User response:** Enter a valid value as described in the message text.

---



---

**HAAM608E When TO Method=C(opy), the value for VERIFYSET should be blank.**

**Explanation:** In DB2 V10 NFM and above, when the field **TO Method=C(opy)**, the value for the **Verifyset** field should be blank.

**User response:** Enter a valid value as described in the message text.

---

**HAAM610E Invalid TO method. Specify "L" for Log, "C" for Copy, or "E" for Error**

**Explanation:** An invalid value was entered in the TO method field. Valid values are L to recover to a point on the log, C to recover to an image copy, or E to recover pages with reported I/O errors.

**User response:** Enter a valid value as listed in the message text.

---

**HAAM611E Invalid site. Specify "L" for Local, "R" for Recovery, or blank for current**

**Explanation:** An invalid value was entered in the Site field. This field specifies which image copies are used during the recovery. If no value is specified, the RECOVER utility will use image copies from the current site of invocation.

**User response:** Enter a valid value as listed in the message text.

---

**HAAM612E Invalid object event. Specify "Q" for Quiesce, or blank for none**

**Explanation:** An invalid value was entered in the Object Event field. This field is used to specify the type of log recovery:

- If you enter Q in the Object event field, and enter a value in the Event generation field other than 00 (such as -2), recovery will be to the specified number of quiesce points back from the last quiesce point.
- If you leave the field blank, you must select a point-in-time recovery and select options for the recovery.

**User response:** Enter a valid value as listed in the message text.

---

**HAAM613E Invalid event generation. Specify "00" for the most recent event, "-1" for the one before that, and so on, up to a maximum of "-9"**

**Explanation:** An invalid value was entered in the Event generation field. This field is used to specify the copy to which to recover:

- If you enter L, F, or I in the Object event field, and enter 00 in the Event generation field, recovery will be to the last (most recent) specified copy.

- If you enter L, F, or I in the Object event field, and enter a value in the Event generation field other than 00 (such as -2), recovery will be to the specified number of copies back from the last (most recent) copy.

**User response:** Enter a valid value as listed in the message text.

---

**HAAM614E Invalid Log RBA/LRSN. Specify *number* hexadecimal digits, or leave blank for current**

**Explanation:** An invalid value was entered in the Log RBA/LRSN field.

**User response:** Enter a valid value as listed in the message text, or enter Y in the Select point-in-time field to locate an appropriate RBA or LRSN.

---

**HAAM615E Invalid log reuse. Specify "Y" for Yes, "N" for No, or "L" for Log Only**

**Explanation:** An invalid value was entered in the Reuse existing data sets field.

**User response:** Enter a valid value as listed in the message text. Y in this field specifies that RECOVER should logically reset and reuse DB2-managed data sets without deleting and redefining them. N specifies that the DB2-managed data sets should be deleted and redefined to reset them. L (log only) specifies that the target objects should be recovered from their existing data sets by applying only log records (no image copies) to the data sets.

---

**HAAM616E Invalid object event. Specify "L" for Last, "F" for Full, "I" for Incremental, "N" for Nosyscopy, or blank for none**

**Explanation:** An invalid value was entered in the Object Event field. This field is used to specify the type of recovery to a copy:

- If you enter L, F, or I in the Object event field, and enter 00 in the Event generation field, recovery will be to the last (most recent) specified copy.
- If you enter L, F, or I in the Object event field, and enter a value in the Event generation field other than 00 (such as -2), recovery will be to the specified number of copies back from the last (most recent) copy.
- If you leave this field blank, you must enter or select a recovery file from which to recover.
- For DB2 V12 and later, you can enter N to recover from a copy that is not included in SYSIBM.SYSCOPY. You must enter a recovery file from which to recover.

**User response:** Enter a valid value as listed in the message text.

---

**HAAM617E Invalid copy reuse. Specify "Y" for Yes, or "N" for No**

**Explanation:** An invalid value was entered in the Reuse existing data sets field.

**User response:** Enter a valid value as listed in the message text.

---

**HAAM618E Invalid RBA/LRSN value. Specify number hexadecimal digits.**

**Explanation:** The RBA/LRSN value you specified is not valid.

**User response:** Correct the JCL and resubmit the job.

---

**HAAM619E Invalid timestamp. Format "CCYY-MM-DD-HH.MM.SS.thmiju", from "1990-01-01-00.00.00.000000", to "2042-09-17-00.00.00.000000"**

**Explanation:** An invalid timestamp was entered in the Start or End timestamp fields.

**User response:** Enter a valid value as listed in the message text.

---

**HAAM620E FlashCopy dsn requires dsnum qualifier code**

**Explanation:** FlashCopy data sets must include the dsnum number variable as part of the data set name. A substring of the dsnum variable will also work.

**User response:** Enter a dsnum as part of the data set name. Qualifier code 32 will insert the required value.

**Note:** The dsnum variable is numeric, so it cannot stand alone as a data set qualifier.

---

**HAAM621E FlashCopy is only valid when using a version 10 or higher DB2 subsystem**

**Explanation:** Support for DB2 FlashCopy was introduced in DB2 V10. The current subsystem is not at a level capable of supporting FlashCopy.

**User response:** Select a different method for the image copy.

---

**HAAM622E Specify all disposition values or none of them**

**Explanation:** You have specified at least one of the three data set disposition values, but not all of them.

**User response:** Either specify all of the disposition values or none of them.

---



---

**HAAM623E The retention period and expiration date fields cannot be entered at the same time**

**Explanation:** You entered a value in both the Expiration date and Retention period fields. This combination is not allowed.

**User response:** Clear the value from either the Expiration date or Retention period field.

---

**HAAM624E Invalid value. The expiration date must be in the form of YYDDD or YYYYDDD. Please correct and resubmit**

**Explanation:** An invalid value was entered in the Expiration Date Field.

**User response:** Enter a value in the format YYDDD or YYYYDDD.

---

**HAAM625E Invalid value. Days entered for a leap year cannot exceed 366**

**Explanation:** An invalid value was entered in the Expiration Date Field. The year entered is a leap year and the day exceeds 366.

**User response:** Correct and resubmit.

---

**HAAM626E Invalid value. Days entered cannot exceed 365**

**Explanation:** An invalid value was entered in the Expiration Date Field. The year entered is not a leap year and the day exceeds 365.

**User response:** Correct and resubmit.

---

**HAAM627E Use Freeform Literal option was selected with no value entered for Free Form Literal**

**Explanation:** Freeform Literal qualifier code was selected with no value entered for Freeform Literal.

**User response:** Include a value for Freeform Literal or deselect the Freeform qualifier code.

---

**HAAM628E The entered device type is not recognized by z/OS as a valid DASD device type**

**Explanation:** An invalid device type was entered in the Unit Type field.

**User response:** Enter a valid DASD device type or clear the field.

---

---

**HAAM631E** The only valid values are "S" for the Set command, "D" for the DBD command, and "L" for the LevelID command

**Explanation:** An invalid value was entered in the Process field.

**User response:** Enter a valid value as listed in the message text.

---

**HAAM632E** The only valid values are "N" for no DBD control statement extra options, "D" for the Drop control card, "T" for the Test control card, "I" for the Diagnose control card, and "R" for the Rebuild control card

**Explanation:** An invalid value was entered in the DB2 Process Option field.

**User response:** Enter a valid value as listed in the message text.

---

**HAAM633E** If the DBD option is selected, the DBD sub-option selection cannot be set to "N"o

**Explanation:** You selected the DBD option for repair (D in the Process field), but an N still appears in the DBD Process Option field.

**User response:** Specify one of the DBD Process Options of Drop, Test, Diagnose, or Rebuild.

---

**HAAM634E** If the process mode is not DBD, the DBD sub-option field must be set to "N"o

**Explanation:** An invalid value was entered in the DB2 Process Option field.

**User response:** Enter a valid value as listed in the message text.

---

**HAAM635E** If the process mode is not DBD, the output DDNAME for the DBD processing mode cannot be specified

**Explanation:** You entered a DD name in the Output DDname field for the DBD options, but DBD processing has not been specified.

**User response:** Either clear the Output DDname field or change the Process field to D to select DBD processing.

---

**HAAM637E** At least one repair type function must be selected when repair is used

**Explanation:** If the Process field is set to S, one of the repair functions must be selected. This option resets the pending statuses of the objects.

---

**User response:** Select one of the repair functions (No Copy Pending, No Recover Pending, No Check Pending, No Auxiliary Warning, No Auxiliary Check Pending, or No Rebuild Pending).

---

**HAAM638W** Because an invalid combination of options existed in the Repair Options screen, the Repair option has been set to "N"o

**Explanation:** The repair utility option was set to N.

**User response:** No action is required.

---

**HAAM639E** Invalid Update option. Specify "A" for All, "P" for Path, "S" for Space, or "N" for None

**Explanation:** An invalid value was entered in the Update catalog tables or Update history tables field.

**User response:** Enter a valid value as listed in the message text.

---

**HAAM639E** Invalid Update option. Specify "A" for All, "P" for Path, "S" for Space, or "N" for None

**Explanation:** An invalid value was entered in the Update catalog tables or Update history tables field.

**User response:** Enter a valid value as listed in the message text.

---

**HAAM640E** Allocation Error - The ISPFIL DD is already allocated and cannot be deallocated - Process not completed

**Explanation:** The ISPFIL DD allocation failed. The DD is already allocated and cannot be deallocated for this TSO session. The process did not complete successfully.

**User response:** Free the ISPFIL DD. You must exit the product and re-enter, then rebuild the job.

---

**HAAM641E** Allocation Error - An error was encountered allocating the ISPWRK1 or ISPWRK2 DD - Process not completed

**Explanation:** The ISPWRK1 or ISPWRK2 DD allocation failed. The process did not complete successfully.

**User response:** Verify TSO session parameters are set correctly for your site prior to allocation of these DD statements.

---

---

**HAAM642E** Field Required - The data set entered is a partitioned data set and the member name is required

**Explanation:** A required field was not entered. The data set entered is a PDS (partitioned data set) and a member in this PDS must be referenced.

**User response:** Enter a valid member name for PDS access.

---

| **HAAM643W** The Static Job Build data set was  
| specified in job options, but is either  
| invalid or no longer exists in the MVS  
| catalog. Pre-existing data set and  
| member values will be used.

| **Explanation:** A value was specified for the Static Job  
| Build Dataset and Member fields, but the data set is  
| either invalid or it no longer exists in the MVS catalog.

| **User response:** Update the Generation Options panel  
| to include a valid job build data set and member, or  
| enter the desired values here.

---

**HAAM644E** The only valid values are "N"o to not use the skeletal, "B"efore to insert the skeletal before generated JCL, and "A"fter to insert the skeletal after the generated JCL

**Explanation:** An invalid value was entered in the Run User Step field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM645E** If the skeletal control is "B"efore or "A"fter, at least one skeletal member name must be entered in the following fields

**Explanation:** You specified to run a user step either before or after the generated job, but no JCL skeleton member has been specified. You must enter a member name in the JCL Skeletal, Control Cards Skeletal, and/or Step End Skeletal fields.

**User response:** Enter the member name of the skeleton you wish to use in the appropriate field.

---

**HAAM646E** Invalid Value. Enter a "Y" if you would like to Rebind dependent Plans and Packages or "N" to bypass Rebind

**Explanation:** An invalid value was entered in the Rebind Dependent Plans / Packages field.

**User response:** Enter a valid value as listed in the message text.

---



---

**HAAM647E** Invalid Value. Enter a "Y" if you would like to pad unused jobs with IEFBR14 jobs or "N" to build only the nbr of jobs necessary

**Explanation:** An invalid value was entered in the Pad Jobs if max not exceeded field.

**User response:** Enter a valid value as listed in the message text.

---

**HAAM648E** Invalid value. The Utility ID, if entered, must be an alphabetic character followed by alphanumerics, "#", "\$", ".", "€", "!", "-", or "@" characters with no embedded blanks.

**Explanation:** An invalid value was entered in the Utility ID field.

**User response:** Enter a valid value as listed in the message text.

---

**HAAM649W** Line commands were cleared for a cursor sensitive screen command.

**Explanation:** When a screen command such as "FORM" is entered, the screen navigation follows the cursor position, not any entered line command. Non-blank line commands have been cleared.

**User response:** No action is required.

---

**HAAM650E** Invalid value - Enter a "B" to build the job, "D" to delete job data, "S" to select step data, or "O" to select object data.

**Explanation:** An invalid line command was entered next to a job name on the Execution Reports Job Display.

**User response:** Enter a valid value as listed in the message text.

---

**HAAM651E** "R" command invalid on successfully completed job

**Explanation:** An R command was entered next to a job that successfully completed. You cannot restart a job that has a RC of 0.

**User response:** Clear the R command from the line command area.

---

**HAAM652E** Process RI must be N when partition is specified

**Explanation:** The Process RI field cannot be set to Y for a partitioned space.

**User response:** Change the Process RI field to N.

---

---

**HAAM653E** Control card data set must be a valid, existing partitioned data set

**Explanation:** An invalid data set was entered for the control card data set.

**User response:** Enter an existing partitioned data set in the Control Card Dataset field.

---

**HAAM654E** Invalid member name. Only A-Z, 0-9, @, #, and \$ are valid; First character must be A-Z, @, #, or \$

**Explanation:** An invalid member name was entered.

**User response:** Enter a valid member name or press END to exit the panel.

---

**HAAM655E** An Exception CONDition has been corrupted in this profile. Page through the profile to find the corrupted CONDition or enter the END command (default PF3) to position to the corrupted condition. Update the condition and save the updated profile

**Explanation:** One or more of the exception conditions in this exception profile has been corrupted.

**User response:** Press PF3 (END) to exit the help panel, then press PF3 (END) again to position the cursor on the corrupted condition. Update the condition and save the updated profile.

---

**HAAM656E** An exception condition has been corrupted in this profile. Page through the profile to find the corrupted condition. Update the exception profile to specify the missing condition

**Explanation:** One or more of the exception conditions in this exception profile has been corrupted.

**User response:** Press PF3 (END) to exit the help panel, then press PF3 (END) again to locate the corrupted condition. You must then exit view mode and update the exception profile to correct the condition. Save the updated profile.

---

**HAAM658E** User does not have sufficient authority to perform a -DISPLAY command. This command is used to determine the current DB2 operating Mode

**Explanation:** Your authorization ID has not been granted privileges to issue the DISPLAY GROUP command.

**User response:** Check with your DB2 administrator to verify or obtain the proper authority.

---



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**HAAM659E** Insufficient storage for DB2 work area buffer

**Explanation:** Storage for a DB2 work area buffer could not be obtained.

**User response:** Increase your TSO region size and rerun the application.

---

**HAAM660E** A name of a valid partitioned data set and member name are required

**Explanation:** The partition data set name and member name are required.

**User response:** Specify a valid partitioned data set and member name.

---

**HAAM661E** LISTAPARS Job *jobname* successfully submitted.

**Explanation:** The job was successfully submitted.

**User response:** No action is required.

---

**HAAM662E** Invalid Value - Enter "N" for None, "B" for Basic, "E" for Extended, or blank.

**Explanation:** An invalid value was entered in the RBALRSN\_CONVERSION field.

**User response:** Enter one of the following valid values:

- N: No conversion is to be performed.
  - B: Convert objects in extended format to basic format.
  - E: Convert objects in basic format to extended format.
  - blank: The conversion specified in the UTILITY\_OBJECT\_CONVERSION ZPARM setting will be honored.
- 

**HAAM664E** Data set must be a partitioned data set because multiple members will be generated

**Explanation:** The data set to hold the generated JCL must be a partitioned data set. Multiple members are generated since a control card data set is specified and multiple job groups are being built. Each job group's JCL is generated into a unique member name. The last character of the member name is generated by the build process. The build process uses numbers 1 - 9 for the first nine job groups, letters A - Z for the next 26 job groups, then 0, \$, #, and @ for the remaining job groups.

**User response:** Change the output data set to a partitioned data set.

---

---

**HAAM665E** The JCL member name must be less than or equal to 7 characters

**Explanation:** Multiple members will be generated since a control card data set is specified and multiple job groups are being built. Each job group's JCL is generated into a unique member name. The last character of the member name is generated by the build process. The build process uses numbers 1 - 9 for the first nine job groups, letters A - Z for the next 26 job groups, then 0, \$, #, and @ for the remaining job groups. If a batch job is being generated, this restriction prevents a duplicate member name from being generated when the same job build data set is specified for the batch build job output and the output data set that holds the generated utility JCL.

**User response:** Change the member name to 7 characters or less.

---

**HAAM700I** Private Protocol is not supported in this release of DB2. Defaulting to blank

**Explanation:** Private protocol is only supported for DB2 V9 and earlier. The value is removed from the Database Connect Protocol field.

**User response:** Specify a different value or leave this field blank.

---

**HAAM701E** Reopt Scope must be "A"ll, "D"ynamic, "S"tatic, or Blank(existing value)

**Explanation:** An invalid value was entered in the Reopt Scope field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM702E** Access Path Compare must be "W"arn, "E"rror, "N"one, or Blank(existing value)

**Explanation:** An invalid value was entered in the Access Path Compare field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM703E** Access Path Reuse must be "Y"es, "N"o, or Blank(existing value)

**Explanation:** An invalid value was entered in the Access Path Reuse field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM704E** Plan Management must be "O"n, o"F"f, "B"asic, "E"xtended, or Blank(existing value)

**Explanation:** An invalid value was entered in the Plan Management field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM705E** Plan Management Scope must be "A"ll, "D"ynamic, "S"tatic, or Blank(existing value)

**Explanation:** An invalid value was entered in the Plan Management Scope field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM706E** Explain must be "Y"es, "N"o, "O"nly or Blank(existing value)

**Explanation:** An invalid value was entered in the Explain field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM707E** Explain "O"nly is valid for DB2 Version 10 and above. Resetting to blank.

**Explanation:** The value you specified is not valid for your version of DB2.

**User response:** Correct the JCL and resubmit the job.

---

**HAAM708E** Concurrent Access Resolution must be "U"se Currently Committed, "W"ait for Outcome, or Blank(existing value)

**Explanation:** Concurrent Access Resolution option must be one of the following values: U - Use currently committed, W - Wait for outcome or blank - use previous value.

**User response:** Specify a different value or leave this field blank.

---

**HAAM709E** Utilities cannot be defined on excluded objects.

**Explanation:** You attempted to define a utility on an excluded object.

**User response:** Modify the utility so it does not reference an excluded object.

---

**HAAM710E** *field* must not be blank

**Explanation:** The field listed in the message is blank. This field is required.

**User response:** Type a valid value in this field and press Enter.

---

**HAAM711E Invalid Value. Job Wait must be Y, N, or P**

**Explanation:** An invalid value was entered in the Job Wait field.

**User response:** Enter Y to indicate synchronous execution; enter N to indicate asynchronous execution; or enter P to specify synchronous execution after which the job status in z/OS is purged.

---

**HAAM712E Invalid Value. Job Condition must be GT, GE, EQ, LT, LE or NE**

**Explanation:** An invalid value was entered for the trigger task Cond field.

**User response:** Enter a valid value as listed in the message text.

---

**HAAM713E Task name already exists**

**Explanation:** The task name entered duplicates another task name. The task name must be unique.

**User response:** Enter a unique task name and press Enter.

---

**HAAM714I Specify selection criteria and press <Enter>**

**Explanation:** To display a list of tasks for the DB2 administrative task scheduler, enter criteria in the Task Name Like and Task Creator Like fields and press Enter.

**User response:** No action is required.

---

**HAAM715I Task *task\_name* has been successfully deleted**

**Explanation:** The task listed in the message has been successfully deleted.

**User response:** No action is required.

---

**HAAM716I No tasks were found that meet selection criteria. Press enter to create a task or change the selection criteria**

**Explanation:** There are no tasks that meet the selection criteria entered in the Task Name Like and Task Creator Like fields.

**User response:** Press Enter to create a new task, or change the selection criteria in those fields.

---

**HAAM717I Task *task\_name* has been successfully added**

**Explanation:** The task listed in the message has been successfully added.

**User response:** No action is required.

---

**HAAM718E A JCL library or Procedure must be specified**

**Explanation:** An execution source must be provided for the task.

**User response:** Enter either a JCL job in a data set or a stored procedure, then press Enter.

---

**HAAM719I Task *task\_name* has been updated.**

**Explanation:** The task listed in the message has been successfully updated.

**User response:** No action is required.

---

**HAAM720E *Begin* | *End* Timestamp must be later than current time.**

**Explanation:** The beginning or ending timestamp listed in the message is before the current time.

**User response:** Enter a timestamp that is after the current timestamp and press Enter.

---

**HAAM721I *Window* | *time\_period* *task\_name* has been successfully unscheduled**

**Explanation:** The window or time period specified in the message text has been successfully unscheduled.

**User response:** No action is required.

---

**HAAM722I This task has not been executed**

**Explanation:** The task you selected to check the status of has not been executed.

**User response:** No action is required.

---

**HAAM723E Invalid CRON minute**

**Explanation:** The CRON minute in the Point in Time field is not valid.

**User response:** Valid values are:

- A numeric from 0 to 59
- A range (two numbers separated with a hyphen, such as 2-50)
- A list (numbers separated with commas, such as 1,3,5)
- An asterisk (\*), which represents all possible values

For more information on the unix CRON format for the DB2 administrative task scheduler, refer to the DB2 Administration Guide for your version of DB2.

---

**HAAM724E Invalid CRON hour**

**Explanation:** The CRON hour in the Point in Time field is not valid.

**User response:** Valid values are:

- A numeric from 0 to 23

- A range (two numbers separated with a hyphen, such as 1-3)
- A list (numbers separated with commas, such as 1,3,5)
- An asterisk (\*), which represents all possible values

For more information on the unix CRON format for the DB2 administrative task scheduler, refer to the DB2 Administration Guide for your version of DB2.

---

### HAAM725E Invalid CRON day of month

**Explanation:** The CRON day of the month in the Point in Time field is not valid.

**User response:** Valid values are:

- A numeric from 0 to 31
- A range (two numbers separated with a hyphen, such as 1-3)
- A list (numbers separated with commas, such as 1,3,5)
- An asterisk (\*), which represents all possible values

For more information on the unix CRON format for the DB2 administrative task scheduler, refer to the DB2 Administration Guide for your version of DB2.

---

### HAAM726E Invalid CRON month

**Explanation:** The CRON month in the Point in Time field is not valid.

**User response:** Valid values are:

- A numeric from 1 to 12
- A range (two numbers separated with a hyphen, such as 1-3)
- A list (numbers separated with commas, such as 1,3,5)
- An asterisk (\*), which represents all possible values
- Upper-, lower-, or mixed-case three-character strings, based on the English name of the month: jan, feb, mar, apr, may, jun, jul, aug, sep, oct, nov, or dec

For more information on the unix CRON format for the DB2 administrative task scheduler, refer to the DB2 Administration Guide for your version of DB2.

---

### HAAM727E Invalid CRON day of week

**Explanation:** The CRON day of the week in the Point in Time field is not valid.

**User response:** Valid values are:

- A numeric from 1 to 7
- A range (two numbers separated with a hyphen, such as 1-3)
- A list (numbers separated with commas, such as 1,3,5)
- An asterisk (\*), which represents all possible values
- Upper-, lower-, or mixed-case three-character strings, based on the English name of the day: mon, tue, wed, thu, fri, sat, or sun

For more information on the unix CRON format for the DB2 administrative task scheduler, refer to the DB2 Administration Guide for your version of DB2.

---

### HAAM728E Invalid CRON character

**Explanation:** An invalid character was entered in the Point in Time field.

**User response:** For more information on the unix CRON format for the DB2 administrative task scheduler, refer to the DB2 Administration Guide for your version of DB2.

---

### HAAM729E Incomplete CRON definition

**Explanation:** The point in time field is incomplete. The field must be in unix CRON format.

**User response:** The format is:

```
minute hour day_of_the_month
month_of_the_year day_of_the_week
```

where:

- *minute* can be 0-59
- *hour* can be 0-23
- *day\_of\_the\_month* can be 1-31
- *month\_of\_the\_year* can be 1-12 or upper-, lower-, or mixed-case three-character strings, based on the English name of the month: jan, feb, mar, apr, may, jun, jul, aug, sep, oct, nov, or dec
- *day\_of\_the\_week* can be 1-7 or upper-, lower-, or mixed-case three-character strings, based on the English name of the day: mon, tue, wed, thu, fri, sat, or sun

Each field must be separated by a blank.

For more information on the unix CRON format for the DB2 administrative task scheduler, refer to the DB2 Administration Guide for your version of DB2.

---

### HAAM740E Invalid CRON range

**Explanation:** The range entered in the Point in Time field is not in valid CRON format. The range must be two numbers separated with a hyphen, such as 1-3.

**User response:** For more information on the unix CRON format for the DB2 administrative task scheduler, refer to the DB2 Administration Guide for your version of DB2.

---

### HAAM741E Invalid CRON step

**Explanation:** The step entered in the Point in Time field is not in valid CRON format. Step values can be used in conjunction with ranges.

**User response:** The syntax is:  
range/step



This defines the range and an execution interval. If you specify *first-last/step*, execution takes place at *first*, then at all successive values that are distant from *first* by *step*, until *last*. If you specify *\*/step*, execution takes place at every interval of *step* through the unrestricted range.

For more information on the unix CRON format for the DB2 administrative task scheduler, refer to the DB2 Administration Guide for your version of DB2.

---

#### HAAM742E Invalid subsystem ID entered

**Explanation:** An invalid DB2 subsystem ID was entered.

**User response:** Enter a valid DB2 subsystem.

---

#### HAAM743E Invalid data set DSORG. Only a sequential file or a PDS/PDSE is allowed

**Explanation:** An invalid data set was entered. The data set organization must be a PDS, a PDSE, or a sequential file.

**User response:** Enter a different data set.

---

#### HAAM744E JCL Dataset and Procedure are mutually exclusive

**Explanation:** Both a JCL job and a stored procedure were entered in the Execution Source fields.

**User response:** Enter either a JCL job or a stored procedure, not both.

---

#### HAAM745E If no invocation options are specified, max invocations must be 1

**Explanation:** A value greater than 1 was entered in the Max Invocations field, but an invocations option was not specified.

**User response:** If you want the job or procedure to be invoked more than once, you must specify one of the invocation options (minutes, trigger task, or point in time). Otherwise, enter 1 in the Max Invocations field.

---

#### HAAM746I Admin Scheduler feature is disabled

**Explanation:** The DB2 Admin Scheduler function is not enabled within DB2 Automation Tool. It must be enabled in the Setup panels before it can be used.

**User response:** Enable the DB2 administrative scheduler interface feature via the DB2 Automation Tool Setup panels.

**Note:** Enabling the feature does not configure the DB2 administrative task scheduler, but allows users to access it via DB2 Automation Tool.

---

#### HAAM747E Trigger Cond is not valid without Trigger Task

**Explanation:** A trigger condition value was entered but a trigger task was not specified.

**User response:** Either clear the value from the Trigger Cond field or enter a Trigger Task Name.

---

#### HAAM748E Trigger Code is not valid without Trigger Cond

**Explanation:** A trigger condition code was entered but a trigger condition was not specified.

**User response:** Either clear the value from the Trigger Code field or enter a trigger condition.

---

#### HAAM749E Interval, Trigger, and Point in Time are mutually exclusive

**Explanation:** A value was entered in more than one of the Interval, Trigger, or Point in Time fields. Only one of these options can be used to invoke the administrative scheduler task.

**User response:** Enter the desired invocation options and clear the extraneous fields.

---

#### HAAM750E JCL member cannot be specified without a JCL data set

**Explanation:** A JCL member name was entered for the Execution Source, but the data set name has not been provided.

**User response:** Enter the data set name that holds the JCL member.

---

#### HAAM751E PDS member does not exist

**Explanation:** The JCL member name entered for the Execution Source does not exist.

**User response:** Correct the member name.

---

#### HAAM752I The following tasks have been scheduled

**Explanation:** This informational message confirms the task or tasks that have been scheduled.

**User response:** No action is required.

---

#### HAAM754E Error scheduling job *jobname*. Hit <PF1> for info

**Explanation:** An error occurred when attempting to add a task to the DB2 administrative task scheduler. This error lists the job name that encountered the error, and is followed by additional messages returned from the DB2 administrative task scheduler.

**User response:** Examine the messages returned from

the DB2 administrative task scheduler to determine the course of action. Contact IBM Software Support if you require assistance.

---

**HAAM755E Task not deleted. RC = *return\_code***

**Explanation:** An error occurred when attempting to delete a task from the DB2 administrative task scheduler. This message lists the return code from the DB2 administrative task scheduler ADMIN\_TASK\_REMOVE stored procedure.

**User response:** Examine the return code from the DB2 administrative task scheduler to determine the course of action. Contact IBM Software Support if you require assistance.

---

**HAAM756E Point in Time is not in unix CRON format**

**Explanation:** The point in time field is not in the unix CRON format. The format is:

minute hour day-of-the-month month-of-the-year  
day-of-the-week

where:

- minute can be 0-59
- hour can be 0-23
- day-of-the-month can be 1-31
- month-of-the-year can be 1-12 or upper-, lower-, or mixed-case three-character strings, based on the English name of the month: jan, feb, mar, apr, may, jun, jul, aug, sep, oct, nov, or dec
- day-of-the-week can be 1-7 or upper-, lower-, or mixed-case three-character strings, based on the English name of the day: mon, tue, wed, thu, fri, sat, or sun

Each field must be separated by a blank.

**User response:** Enter a valid unix CRON format in the Point in time field.

---

**HAAM757E Procedure name must be specified if Procedure schema is specified**

**Explanation:** A value was entered in the Procedure Schema field, but the Procedure Name was not provided.

**User response:** Enter the procedure name.

---

**HAAM758E Trigger Cond is not valid without Trigger Code**

**Explanation:** A trigger condition was entered, but a trigger condition code was not specified.

**User response:** Specify a trigger condition code.

---

**HAAM759E Trigger Task does not exist**

**Explanation:** The trigger task entered in the Task Name field does not exist.

**User response:** Enter a task from the DB2 Admin Task Scheduler panel that will trigger this task.

---

**HAAM765E Reserved word WHERE is not valid**

**Explanation:** The word WHERE is a reserved word and may not be used in the Restrict Tablespace field.

**User response:** Enter the WHERE clause criteria without the restricted word.

---

**HAAM769E Variable names are not permitted in Trigger Task Name**

**Explanation:** Variables are not allowed for the Trigger Task Name.

**User response:** Remove all variables from the TriggerTask Name.

---

**HAAM770E Invalid Op Code. Valid values are GT, LT, GE, LE, EQ.**

**Explanation:** An invalid value was entered in the Op Code field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM772E If the Static Job Build Dataset field is specified and Set JCL member equal to jobname is Yes, the static job build member must be blank.**

**Explanation:** The Static Job Build data set field was specified, and Set JCL member equal to jobname is set to Yes. Because the job name will be used for the JCL, the static job build member name must be blank.

**User response:** Remove the member name from the Static Job Build Dataset member field.

---

**HAAM773E Invalid value - The Op Code and Return code fields cannot be blank.**

**Explanation:** A valid value must be entered for both Op Code and Return Code.

**User response:** Enter a valid value in both fields.

---

**HAAM775E A valid *field\_name* must be selected to receive notifications**

**Explanation:** An invalid value was entered in the field that is listed in the message. This field is required to update notification options.

**User response:** Correct the invalid field name.

---

**HAAM776E Invalid Value - Type must be Email or Text**

**Explanation:** An invalid value was entered in the Type field.

**User response:** Enter E for email notifications or T for text notifications.

---

---

**HAAM778E Invalid email address. Enter a valid email address to receive a notification**

**Explanation:** The email address entered was invalid.

**User response:** Enter a valid email address.

---

---

**HAAM779I Profile *profile\_creator.profile\_name* has been selected and is now the default notification profile**

**Explanation:** The profile that is listed in the message been selected and is now the default notification profile.

**User response:** No action is required.

---

---

**HAAM780E Only one profile can be selected. Choose one profile and resubmit**

**Explanation:** More than one notification profile was selected as the default notification profile.

**User response:** Clear the S line command from all profiles except from the notification profile that you want to use as the default.

---

---

**HAAM781E Invalid value - Sysout class must be A-Z or 1-9**

**Explanation:** An invalid value was entered for the SYSOUT class.

**User response:** Enter a valid value as described in the message text.

---

---

**HAAM782I Profile *profile\_creator.profile\_name* has been selected as the notification profile for this job**

**Explanation:** The profile that is listed in the message been selected and is now the notification profile for this job.

**User response:** No action is required.

---

---

**HAAM783I The *selected\_type* profile has been removed**

**Explanation:** The profile that is listed in the message was removed.

**User response:** No action is required.

---

---

**HAAM784I There is no designated *selected\_type* profile to be removed.**

**Explanation:** The REMOVE command was entered, but there is no selected or designated default profile to removed.

**User response:** No action is required.

---

---

**HAAM787E Template data set must be a valid, existing, partitioned data set.**

**Explanation:** The data set is invalid or does not exist.

**User response:** Enter a valid data set name.

---

---

**HAAM788E When a template *data\_set\_name* | *member\_name* is entered, a valid template *data\_set\_name* | *member\_name* must also be included.**

**Explanation:** A template data set name was entered but the member name is blank, or a template member name was entered but the data set name is blank.

**User response:** Enter both the template data set name and a member name.

---

---

**HAAM789I Template name *template\_name* was successfully selected | removed.**

**Explanation:** A template name was selected or removed from the template selection panel.

**User response:** No action is required.

---

---

**HAAM790E When a template data set and member are specified and *function\_or\_type* is selected, a template name must also be included.**

**Explanation:** When a template data set and member name are included, a template name must also be selected.

**User response:** Select a template name for the function or type displayed in the message text.

---

---

**HAAM791E OUTDDN | LOADDDN *data\_set\_name* | *template\_name* missing for Table Sel Name *table\_name*.**

**Explanation:** A template data set and member name was entered, and Include Select Table and Columns is set to Yes on HAA\$HPUO. However, a template name is missing for one of the tables, or a data set name is missing when a template data set and member name are not specified. The table in question is described by the *table\_name* in the message text. This table is defined on panel HAA\$HPTB (HPU Table Selection).

**User response:** On HAA\$HPUO, enter Update for Select Table and Columns, then select the table that

---

| matches the *table\_name* value to include the missing  
| template name.

---

| **HAAM792E Duplicate Template name found. The**  
| *type matches the type for Select*  
| *select\_name. Provide a unique name for*  
| *each.*

| **Explanation:** A template name matches another  
| template name within DB2 HPU.

| **User response:** Select a unique template name for  
| each type.

---

| **HAAM793E A valid data set and member name must**  
| **be included for *utility\_name* before**  
| **including or selecting a template name.**

| **Explanation:** A template data set and member name  
| was not entered before attempting to select or include a  
| template name.

| **User response:** Enter a valid existing template data set  
| and member name for the desired utility before  
| including or selecting a template name.

---

| **HAAM794E No template names exist in the specified**  
| **data set and member.**

| **Explanation:** A template data set and member were  
| selected, but no template names exist in the member.

| **User response:** Update the data set member to include  
| the desired template, or specify a different data set or  
| member.

---

| **HAAM795W A *type* template name must be included**  
| **to continue.**

| **Explanation:** For UNLOAD and DB2 HPU utilities,  
| some types are required before building JCL.

| **User response:** Enter the required template name as  
| described in the message text.

---

| **HAAM796W Since a template name was not included**  
| **for type, the Include and Update fields**  
| **have been set to "N" for *type*.**

| **Explanation:** A valid template name is required for  
| the *type* listed in the message text. Because a valid  
| template name was not included, the Include and  
| Update fields have been set to N for *type*.

| **User response:** No action is required. If you want to  
| include the *type* that is described in the message text,  
| include a template name.

---

| **HAAM797W The include *type* option was selected**  
| **and no *type* template name exists. Select**  
| **a *type* template name.**

| **Explanation:** The include *type* option that is specified  
| in the message is set to Yes, but the template name is  
| blank.

| **User response:** Select a template name for the *type*  
| that is described in the message text.

---

| **HAAM798W Since a template name was not included**  
| **for OUTDDN, the *select\_name* Select**  
| **Statement has been set to "N".**

| **Explanation:** A table was selected for DB2 HPU, but  
| upon exit from the HPU Select Format panel, the  
| required OUTDDN template name was blank.

| **User response:** No action is required. If the table in  
| question must be included, a template name must be  
| selected for OUTDDN.

---

| **HAAM799E Duplicate template name found. The**  
| *type name matches the type name.*  
| **Provide a unique name for each.**

| **Explanation:** Duplicate template names were found.  
| For UNLOAD or DB2 HPU utilities, these template  
| names must be unique to avoid errors at run time.

| **User response:** Enter a unique template name for each  
| type described in the message text.

---

| **HAA800I Entry was successfully deleted**

| **Explanation:** The entry was successfully deleted.

| **User response:** No action is required.

---

| **HAA801I Entry was successfully created**

| **Explanation:** The entry was successfully created.

| **User response:** No action is required.

---

| **HAA802I Entry was successfully updated**

| **Explanation:** The entry was successfully updated.

| **User response:** No action is required.

---

| **HAA803E Invalid value - The pattern is restricted**  
| **to a single asterisk at the end of the**  
| **object *database | name***

| **Explanation:** A wildcard pattern was specified in the  
| middle of an object database or object name. The  
| pattern is restricted to a single asterisk at the end of the  
| object name.

| **User response:** Remove the wildcard pattern from the  
| middle of the name.

---

**HAAM810E** Template name required for *utility*. Enter at least one template name to continue.

**Explanation:** A data set and member name were specified, but no template name was included.

**User response:** Include at least one template name.

---

**HAAM811E** A local backup template name cannot be selected without a local primary template name.

**Explanation:** A local backup template name was selected without first specifying a local primary template name.

**User response:** Select a local primary template name.

---

**HAAM812E** A recovery backup template name cannot be selected without a recovery primary template name.

**Explanation:** A recovery backup template name was selected without first specifying a recovery primary template name.

**User response:** Select a recovery primary template name.

---

**HAAM813E** Invalid template name. The template name does not meet the template naming standards.

**Explanation:** A value was entered for template name that is not supported by DB2.

**User response:** Correct the template name as described in the help text or in the DB2 utility guide and reference under template-name.

---

**HAAM814E** Only one template can be selected.

**Explanation:** More than one template name was selected for the specified type.

**User response:** Select only one template name.

---

**HAAM815E** Invalid value. Enter U for Updated, or A for All.

**Explanation:** An invalid value was entered in the Scope field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM816E** Invalid value. Enter N for No, P for PNMO, M for PMP, or R for PMR.

**Explanation:** An invalid value was entered in the FLASHCOPY\_PPRCP field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM817E** Invalid value. The Update alternate copy pool field must be Y - Yes, N - No, or C - Clear.

**Explanation:** An invalid value was entered in the Update alternate copy pool field.

**User response:** Enter a valid value as described in the message text.

---

**HAAM900E** If the Object event field is blank, a data set name is required.

**Explanation:** A blank value in the Object event field requires you to supply the data set name to which to recover.

**User response:** Enter a data set name in the Copy data set name field.

---

**HAAM901E** Invalid value. Enter Y to rename profile. Enter N or press PF3 to exit

**Explanation:** An invalid value was specified.

**User response:** Enter Y to rename profile; enter N or press PF3 to cancel and exit.

---

**HAAM902E** Invalid value. Enter Y to Include Registration Step or N to exclude

**Explanation:** An invalid value was specified.

**User response:** Enter Y to include the registration step or N to exclude the registration step.

---

**HAAM903E** The only valid value is A to Add Objects, Utility or Exception Profiles to the Job profile

**Explanation:** An invalid value was specified.

**User response:** Enter A to add object, utility, or exception profiles to the job profile.

---

**HAAM904E** This option is only valid when using a version 10 or higher subsystem

**Explanation:** An invalid value was entered in the field in which the cursor is positioned. DB2 V10 or later is required for the setting you selected.

**User response:** Change the value to a valid value for the DB2 version you are using.

---

**HAAM907W** The selected event notification profile for this job has been removed because it does not exist on DB2 subsystem *ssid*.

**Explanation:** The event notification profile that was selected for this job in job options no longer exists on the DB2 subsystem that is listed in the message. The

event notification profile will be removed from the job profile.

**User response:** No action is required.

---

**HAAM908E Invalid value. Valid options are 1, 2 and 3.**

**Explanation:** An invalid value was specified in the Option line

**User response:** Enter a valid value of 1, 2, or 3.

---

**HAAM909E Invalid value. Valid options are 1, 2 and 3.**

**Explanation:** An invalid value was specified for Parameter List Selection.

**User response:** Enter a valid value of 1, 2, or 3.

---

**HAAM910E No recipient has been selected for this event notification profile. Enter line command C to create a recipient.**

**Explanation:** At least one recipient is required for each event notification profile.

**User response:** Enter the C line command to create a recipient.

---

**HAAM911E Invalid combination. The Recipient, Sender, and Type can not match other entries.**

**Explanation:** The Type, Recipient, and Sender fields must be unique for each entry.

**User response:** Change the entries so they are unique.

---

**HAAM912E No events have been selected for this recipient. Enter line command U | A to add | update events for this recipient.**

**Explanation:** At least one event is required for each recipient.

**User response:** Enter the line command that is listed in the message to events for this recipient.

---

**HAAM913I Profile *profile\_creator.profile\_name* saved.**

**Explanation:** The profile name that is listed in this message was successfully saved.

**User response:** No action is required.

---

**HAAM914E Event has already been selected.**

**Explanation:** The event that you selected already has been selected for the recipient.

**User response:** Deselect the event, select a different event, or press PF3 (END) to cancel.

---

**HAAM915I Profile *profile\_creator.profile\_name* has been selected as the notification profile for this maintenance window.**

**Explanation:** The profile that is specified in this message has been assigned to the maintenance window.

**User response:** No action is required.

---

**HAAM916I Event has been successfully selected.**

**Explanation:** This event has been selected and successfully added to the specified recipient.

**User response:** No action is required.

---

**HAAM917I Enter Type E for Email, or T for Text, and include an address for both Recipient and Sender.**

**Explanation:** Type must be E for email or T for text. The Recipient field must include the phone number or email address that will be notified of the selected events. The Sender field must include the phone number or email address that will display as the From address in the notification. If the type is Text, a valid mobile phone number must be entered in the following format: 1112223333@carrier.com This system uses an email to SMS messaging format. Either refer to your mobile phone carrier's website for your valid SMS email address, or use an SMTP to SMS gateway.

**User response:** No action is required.

---

**HAAM918E A valid Type must be selected to receive notifications. Enter E for Email, or T for Text.**

**Explanation:** An invalid value was entered in the Type field. Type cannot be blank and must be E for Email or T for text

**User response:** Enter a valid value as described in the message text.

---

**HAAM919I No description has been defined for this event.**

**Explanation:** No description was defined for the selected event.

**User response:** No action is required.

---

**HAAM920E If Object event is N (Nosyscopy), a copy data set name is required.**

**Explanation:** A value of N (Nosyscopy) in the Object event field requires that you enter a data set from which to recover.

**User response:** Enter a data set name in the Copy data set name field.

---

**HAAM921E Object event = N (Nosyscopy) not supported for DB2 version less than V12.**

**Explanation:** A value of N in the **Object event** field is not supported in DB2 versions earlier than V12.

**User response:** Choose a different value.

---

**HAAM922I Nosyscopy type not supported for DB2 version less than V12. Value cleared.**

**Explanation:** Nosyscopy type is not supported until DB2 V12.

**User response:** No action is required. The value is cleared.

---

**HAAM923E Nonblank Nosyscopy type only allowed when Object event is N.**

**Explanation:** Nosyscopy type is only supported when the **Object event** field is set to N (Nosyscopy).

**User response:** Clear the **Nosyscopy type** field, or change the **Object event** field to N.

---

**HAAM940E The specified data set could not be found in the MVS catalog.**

**Explanation:** The data set could not be located in the MVS catalog.

**User response:** Verify that you specified the correct data set.

---

**HAAM951E Invalid Value - Please select a valid value from the list provided or press**

## WTO messages

The following messages may appear as write-to-operator (WTO) messages in your SYSLOG or other appropriate output for your site.

---

**HAA1001I DB2 SHARED PROFILE SERVICES STARTED VvRr**

**Explanation:** The DB2 Shared Profile Support job tracking started task has been invoked. The DB2 Shared Profile Support version and release is listed in the message.

**User response:** None required.

---

**HAA1002I DB2 SHARED PROFILE SERVICES INITIALIZATION COMPLETE**

**Explanation:** The DB2 Shared Profile Support job tracking started task has been invoked and has successfully completed initialization.

**User response:** None required.

---

## PF1 for more information

**Explanation:** One or more invalid values was entered in the DISP fields. The DISP parameters include the following options:

- Status: M - Modify; N - New; O - Old; S - Share
- Normal Termination: C - Catalog; D - Delete; K - Keep; U - Uncatalog
- Abnormal Termination: C - Catalog; D - Delete; K - Keep; U - Uncatalog

**User response:** Enter valid parameters for all three DISP fields, or clear all three fields.

---

**HAAM952E Invalid Option - Backout Yes is only valid when LOG RBA LRSN is specified**

**Explanation:** The Backout keyword was set to Yes but the LOG RBA/LRSN field has been left blank.

**User response:** Specify a value for LOG RBA/LRSN before selecting Backout Yes.

---

**HAAM954E An error occurred while executing advanced SQL. Ensure that the syntax is correct and resubmit.**

**Explanation:** An error occurred while executing the advanced SQL statement.

**User response:** Ensure that the SLQ syntax is correct and resubmit.

---



---

**HAA1003E SUBSYSTEM *ssid* ALREADY ACTIVE**

**Explanation:** The DB2 Shared Profile Services job tracking started task is already active on the specified subsystem. Only one job tracking started task is required per LPAR.

**User response:** If you need to restart the job tracking task, stop the task using the MVS STOP command before restarting the task.

---

**HAA1004I DB2 SHARED PROFILE SERVICES TERMINATION IN PROGRESS**

**Explanation:** The DB2 Shared Profile Support job tracking started task is terminating. This message appears during normal shutdown.

**User response:** None required.

---

---

**HAA1005I DB2 SHARED PROFILE SERVICES  
TERMINATION COMPLETE**

**Explanation:** The DB2 Shared Profile Support job tracking started task has terminated. This message appears during normal shutdown.

**User response:** None required.

---

**HAA1007I COLD START IN PROGRESS**

**Explanation:** This message appears when the DB2 Shared Profile Support job tracking started task is started using the parameter setting COLDSTART (Y).

**User response:** None required.

---

**HAA1008E INVALID USERID SPECIFIED FOR  
AUTHID**

**Explanation:** The user ID entered in the AUTHID parameter in the HAAPARMS data set has not been defined to RACF or an equivalent security system.

**User response:** Correct the user ID, or ensure the ID is defined to your security system.

---

**HAA1010E NOT APF AUTHORIZED**

**Explanation:** The DB2 Shared Profile Support load library is not APF authorized.

**User response:** APF authorize the DB2 Shared Profile Support load library.

---

**HAA1202E INVALID SUBSYSTEM SPECIFIED *ssid***

**Explanation:** Either the specified subsystem is not a valid DB2 Shared Profile Support subsystem, or the DB2 Shared Profile Support job tracking subsystem has not been started.

**User response:** Ensure that the subsystem entered is a valid DB2 Shared Profile Support subsystem. If it is, then start the DB2 Shared Profile Support job tracking started task.

---

**HAA1203E REGISTRATION WITH SUBSYSTEM  
*ssid* FAILED**

**Explanation:** A DB2 Shared Profile Support job could not register its status with the job tracking started task.

**User response:** You must start the job tracking subsystem.

---

**HAA1204I REGISTRATION WITH SUBSYSTEM  
*ssid* SUCCESSFUL**

**Explanation:** A DB2 Shared Profile Support job successfully registered its status with the job tracking started task.

**User response:** None required.

---

---

**HAA1205E TRACKING SUBSYSTEM *subsystem*  
NOT ACTIVE**

**Explanation:** The job tracking subsystem is not active.

**User response:** You must start the job tracking subsystem.

---

**HAA1206E SEVERE ERROR ENCOUNTERED  
DURING REGISTRATION  
PROCESSING**

**Explanation:** A internal error occurred during job registration processing. An SVC dump was produced. The task is terminating.

**User response:** Contact IBM Customer Support.

---

**HAA1207E *ddname* DD STATEMENT MISSING**

**Explanation:** The specified DD statement is missing from the JCL for the DB2 Shared Profile Support job tracking started task.

**User response:** Create the appropriate DD and code the appropriate parameters in the data set. Refer to the JCL in the HAAPROC member of *HAAh1vlv.SHAASAMP* for an example of the correct JCL.

---

**HAA2100E PARAMETER ERROR DETECTED FOR  
*parameter***

**Explanation:** An error was encountered when processing one of the parameters in the HAAPARMS DD for the DB2 Shared Profile Support job tracking started task. The message names the parameter that contained the error.

**User response:** Correct the parameter error and restart the started task.

---

**HAA2101E PARAMETER ERROR DETECTED FOR  
*parameter***

**Explanation:** An error was encountered when processing one of the parameters in the HAAPARMS DD for the DB2 Shared Profile Support job tracking started task. The message names the parameter that contained the error.

**User response:** Correct the parameter error and restart the started task.

---

**HAA2103E DUPLICATE PARAMETER DETECTED  
FOR *parameter***

**Explanation:** A duplicate parameter was entered in HAAPARMS for the DB2 Shared Profile Support job tracking started task. The message names the duplicated parameter.

---



**User response:** Remove the duplicate parameter error and restart the started task.

---

**HAA3010E DB2 SUBSYSTEM *subsystem* NOT ACTIVE**

**Explanation:** The subsystem listed in the message is not active.

**User response:** Ensure that the requested DB2 subsystem is active.

---

**HAA3011I INVALID DB2 SUBSYSTEM *subsystem***

**Explanation:** The subsystem listed in the message is not valid.

**User response:** Specify a valid DB2 subsystem.

---

**HAA3012I INVALID DB2 SUBSYSTEM *subsystem***

**Explanation:** The subsystem listed in the message is not valid. Group attach names cannot be used for this job.

**User response:** Enter a valid DB2 subsystem ID of a data sharing group member; the group member must be running on the LPAR on which this job will be executing.

---

**HAA4001E CONNECT FAILED - RETURN CODE *return\_code* REASON CODE *reason\_code***

**Explanation:** While attempting to store job tracking information, the job tracking subsystem failed to connect to DB2. The return and reason codes are given in the message.

**User response:** Refer to the DB2 Messages and Codes guide for your version of DB2 to resolve.

---

**HAA4004E INVALID OPERAND FOR COMMAND**

**Explanation:** An invalid operand was entered on the MVS modify command.

**User response:** Correct the operand and enter the modify command again.

---

**HAA4005E INVALID COMMAND SYNTAX**

**Explanation:** Invalid command syntax was entered for the MVS modify command.

**User response:** Correct the invalid syntax and enter the modify command again.

---

**HAA4010I DEBUG MODE ON**

**Explanation:** The job tracking started task is now running in debug mode.

**User response:** None required.

---

**HAA4011I DEBUG MODE OFF**

**Explanation:** Debug mode has been turned off. The job tracking started task is running in normal mode.

**User response:** None required.

---

**HAA9xxxx *message text***

**Explanation:** HAA9xxxx messages are internal messages that are provided when the job tracking started task is running in debug mode. These messages provide additional diagnostics and are intended for use with IBM Customer Support.

**User response:** None required.

---

**HADM0010 INPUT PARAMETERS LOCATED ARE AS FOLLOWS**

**Explanation:** All input parameters located in the HADMPARM input parameter data set are displayed following this message.

**User response:** None required.

---

**HADM0020 HH:MM:SS.TTT PROCESSING OF INPUT PARAMETERS HAS STARTED**

**Explanation:** Processing of all input parameters located within the HADMPARM data set has started. Parameter syntax and validity will be evaluated.

**User response:** None required.

---

**HADM0021 HH:MM:SS.TTT PROCESSING OF INPUT PARAMETERS ENDED IN ERROR, EXECUTION TERMINATED**

**Explanation:** While processing the input parameters from the HADMPARM data set, an error was located within the control cards.

**User response:** Additional messages will be issued to assist in locating and correcting the error. Correct the error and submit the job again.

---

**HADM0022 HH:MM:SS.TTT PROCESSING OF INPUT PARAMETERS ENDED SUCCESSFULLY**

**Explanation:** All parameters within the HADMPARM input parameter data set were successfully processed. This indicates that parameter syntax and content have passed validity checking. Execution processing will continue.

**User response:** None required.

---

**HADM0023 HH:MM:SS.TTT CHECK PARAMETERS  
EXECUTION SUCCESSFULLY  
COMPLETED**


---

**Explanation:** The input parameter HADMPARM data set contained the CHECKPARMS(YES) control card. This message indicates that processing has ended successfully.

**User response:** None required.

---

**HADM0030 HH:MM:SS.TTT ID=move\_ID ASSIGNED  
TO DSN=data\_set\_name**


---

**Explanation:** Move processing has assigned move ID=move\_id to the move of DSN=data\_set\_name. The ID value assigned is used to correlate all messages for the selected data set.

**User response:** None required.

---

**HADM0031 HH:MM:SS.TTT ID=move\_ID MOVE  
STARTED DSN=data\_set\_name**


---

**Explanation:** Move processing has started for the data set.

**User response:** None required.

---

**HADM0032 HH:MM:SS.TTT ID=move\_ID MOVE  
ENDED SUCCESSFULLY  
DSN=data\_set\_name**


---

**Explanation:** Move processing has successfully completed for the data set.

**User response:** None required.

---

**HADM0033 HH:MM:SS.TTT EXECUTION COMPLETE  
ALL DSNs SUCCESSFULLY  
PROCESSED**


---

**Explanation:** Execution has completed for all data sets. All data sets were moved successfully.

**User response:** None required.

---

**HADM0034 HH:MM:SS.TTT MOVE PROCESSING  
STARTED**


---

**Explanation:** Execution has entered the move data set phase. All input parameters were successfully processed and move processing for all data sets requested has started.

**User response:** None required.

---

**HADM0035 HH:MM:SS.TTT ID=move\_ID MOVE  
\*\*\*FAILED\*\*\* FOR DSN=data\_set\_name**


---

**Explanation:** Move of the data set has failed.

**User response:** Other messages are issued indicating the reason the selected data set move failed. Locate

other messages and determine cause of failure. Perform necessary actions and re-execute a move for the selected data set.

---

**HADM0036 HH:MM:SS.TTT ID=move\_ID BACKOUT  
SUCCESSFUL FOR DSN=data\_set\_name**


---

**Explanation:** While processing the move of the data set, an error was incurred. Other messages are issued indicating the reason for failure. When an error is incurred during a data set move, Dataset Manager attempts to restore the data set status to its state prior to the attempted move. This message indicates that backout of the move request was successful and status of the data set was successfully restored the state which existed prior to the move request.

**User response:** None required.

---

**HADM0037 HH:MM:SS.TTT ID=move\_ID BACKOUT  
\*\*\*FAILED\*\*\* FOR DSN=data\_set\_name**


---

**Explanation:** While processing the move of the data set, an error was incurred. Other messages are issued indicating the reason for failure. When an error is incurred during a data set move, Dataset Manager attempts to restore the data set status to its state prior to the attempted move. This message indicates that backout of the move request failed.

**User response:** Determine the current status of the data set. Perform necessary manual intervention to restore data set status. Contact IBM Customer Support if assistance is required.

---

**HADM0038 HH:MM:SS.TTT ID=move\_ID MOVE  
INIT PROCESS ERROR**


---

**Explanation:** During move processing initialization, an environmental type of error was incurred.

**User response:** Other messages are issued regarding the origin of the error. Attempt to correct the error. Contact IBM Customer Support if assistance is required.

---

**HADM0050 HH:MM:SS.TTT ID=move\_ID MOVE IN  
PROGRESS DSN=data\_set\_name**


---

**Explanation:** Data set move processing has started for the selected data set.

**User response:** None required.

---

**HADM0051 HH:MM:SS.TTT ID=move\_ID  
RCPUTIME=HH:MM:SS.TTTTT  
WCPUTIME=HH:MM:SS.TTTTT**


---

**Explanation:** This message contains CPU time-related values for the move of the selected data set. RCPUTIME consists of CPU time attributable to reading the source data set and other processing

requirements. WCPUTIME consists of CPU time attributable to writing to the new target data set.

**User response:** None required.

---

**HADM0053** *HH:MM:SS.TTT ID=move\_ID*  
**EXECUTION ELAPSED**  
**TIME=HH:MM:SS.TTT CPU**  
**TIME=HH:MM:SS.TTTTT**

**Explanation:** This message contains time-related values for the move of the selected data set. The wall clock, elapsed time and CPU time attributable to the data set move are provided.

**User response:** None required.

---

**HADM0054** *HH:MM:SS.TTT ID=move\_ID RECORDS*  
**READ=records\_read RECORDS**  
**WRITTEN=records\_written**

**Explanation:** The message contains record counts for the move of the selected data set. Records read is the number of 4K records read from the source data set. Records written is the number of 4K records written to the target data set. The counts will should be equal.

**User response:** None required.

---

**HADM0055** *HH:MM:SS.TTT ID=move\_ID MOVE*  
**SUCCESSFULLY COMPLETED**

**Explanation:** Move processing for the selected data set has successfully completed.

**User response:** None required.

---

**HADM0056** *HH:MM:SS.TTT ID=move\_ID MOVE*  
**HAS \*\*\*FAILED\*\*\***

**Explanation:** Move processing for the selected data set has failed. Other messages are issued indicating the origin of the error.

**User response:** When a data set move fails, backout processing attempts to restore the status of the data set to its status prior to the move request. Either message HADM0036 or HADM0037 is issued regarding backout success. If HADM0036 was issued, backout was successful; in this case, attempt to determine the cause of data set move failure by viewing other messages issued. Attempt to resolve the issue and resubmit the move request for the selected data set. If HADM0037 was issued, refer to message description for HADM0037 and proceed as described.

---

**HADM0060** *HH:MM:SS.TTT ID=move\_ID STOP*  
**COMMAND SUCCESSFUL DB=database**  
**SP=spacename PT=partition\_number**

**Explanation:** A DB2 STOP command was successfully processed for the selected database, spacename, and partition. The data set that is owned by a partitioned

space needed to be stopped for data set move processing to proceed.

**User response:** None required.

---

**HADM0061** *HH:MM:SS.TTT ID=move\_ID START*  
**COMMAND SUCCESSFUL DB=database**  
**SP=spacename PT=partition\_number**

**Explanation:** A DB2 START command was successfully processed for the selected database, spacename, and partition. This is done when the data set move was successful, or, when the data set move failed and backout of the failed data set move was successful.

**User response:** None required.

---

**HADM0062** *HH:MM:SS.TTT ID=move\_ID*  
**SOURCEDSN CLUSTER RENAME**  
**SUCCESSFUL DSN=data\_set\_name**

**Explanation:** Data set move processing has successfully renamed the data set name being moved. Rename processing renames the data set being moved by changing the .I000. node within the data set name to .IOLD.

**User response:** None required.

---

**HADM0063** *HH:MM:SS.TTT ID=move\_ID*  
**TARGETDSN RENAME SUCCESSFUL**  
**TDSN=data\_set\_name**

**Explanation:** Data set move processing has successfully renamed the new data set that was created by the move. Rename processing renames the new data set by changing the .INew. node within the data set name to .I000.

**User response:** None required.

---

**HADM0064** *HH:MM:SS.TTT ID=move\_ID*  
**TARGETDSN=data\_set\_name**

**Explanation:** This message provides the name of the new target data set which will be created as a result of the move. The data set name may differ from the original data set name if the VCAT name changes as a result of the move request.

**User response:** None required.

---

**HADM0065** *HH:MM:SS.TTT ID=move\_ID*  
**TARGETDSN DEFINE SUCCESSFUL**  
**TDSN=data\_set\_name**

**Explanation:** The new data set that is the target data set of the move request was successfully created using the IDCAMS DEFINE service.

**User response:** None required.

---

**HADM0067** *HH:MM:SS.TTT ID=move\_ID*  
**SOURCEDSN DELETE SUCCESSFUL**  
*SDSN=data\_set\_name*

**Explanation:** The data set being moved has been deleted. The data set is deleted after the new data set is successfully created and populated.

**User response:** None required.

---

**HADM0068** *HH:MM:SS.TTT ID=move\_ID ALTER*  
**VCAT SUCCESSFUL VCAT=VCAT\_name**

**Explanation:** Necessary DB2 ALTER VCAT SQL was successfully completed for the selected data set.

**User response:** None required.

---

**HADM0070** *OPEN ERROR MOD=module\_name*  
**DDNAME=DDname RC=return\_code**

**Explanation:** A data set OPEN request failed for a data set during move processing.

**User response:** Attempt to determine the reason for the OPEN failure. Contact IBM Customer Support if assistance is required.

---

**HADM0071** *CLOSE ERROR MOD=module\_name*  
**DDNAME=DDname RC=return\_code**

**Explanation:** A data set CLOSE request failed for a data set during move processing.

**User response:** Attempt to determine the reason for the CLOSE failure. Contact IBM Customer Support if assistance is required.

---

**HADM0073** *HH:MM:SS.TTT ID=move\_ID BACKOUT*  
**SOURCEDSN CLUSTER RENAME**  
**SUCCESSFUL**

**Explanation:** During move processing for a data set, an error occurred that caused the move to fail. As a result of the original error, move data set backout processing is under way. During the backout process, the data set being moved was successfully renamed back to its original data set name as it existed prior to the move request being processed. This message is normal and should be seen during backout processing after the source data set is successfully renamed.

**User response:** None required.

---

**HADM0074** *HH:MM:SS.TTT ID=move\_ID BACKOUT*  
**DEFINE TARGETDSN SUCCESSFUL**

**Explanation:** During move processing for a data set, an error occurred that caused the move to fail. As a result of the original error, move data set backout processing is under way. During the backout process, the new target data set created during the move request was successfully deleted. This message is

normal and should be seen during backout processing after the target data set is successfully defined.

**User response:** None required.

---

**HADM0077** *HH:MM:SS.TTT ID=move\_ID ALTER*  
**DEADLOCK/TIMEOUT INCURRED**  
**ALTER RETRY IN PROGRESS**

**Explanation:** A lock timeout or deadlock was incurred while attempting to execute an ALTER VCAT or ALTER STOGROUP SQL call. As a result of the error, the request is being retried.

**User response:** None required.

---

**HADM0078** *HH:MM:SS.TTT ID=move\_ID*  
**SOURCEDSN DATA SET NAME DOES**  
**NOT EXIST**

**Explanation:** The source data set name specified in the SOURCEDSN parameter does not exist. Correct the data set name and resubmit the move request.

**User response:** None required.

---

**HADM0079** *HH:MM:SS.TTT ID=move\_ID*  
**SOURCEDSN DATA SET NAME IS**  
**INVALID**

**Explanation:** The source data set name specified in the SOURCEDSN parameter is invalid.

**User response:** Correct the data set name and resubmit the move request.

---

**HADM0080** *HH:MM:SS.TTT ID=move\_ID*  
**SOURCEDSN COPY STARTED**

**Explanation:** The copy of the selected data set to be moved has started.

**User response:** None required.

---

**HADM0081** *HH:MM:SS.TTT ID=move\_ID*  
**SOURCEDSN COPY SUCCESSFUL**

**Explanation:** The copy of the selected data set to be moved has completed successfully. Move processing will now complete additional processing required to complete the move data set request.

**User response:** None required.

---

**HADM0090** *INVALID KEYWORD LOCATED,*  
**KW=keyword**

**Explanation:** During input parameter processing, a control card with an invalid keyword was located.

**User response:** The invalid keyword is located in the message. Correct the error and resubmit the request.

---

**HADM0091 MOVEDATASET COMMAND NOT FOLLOWED BY A "("**

**Explanation:** During input parameter processing, a MOVEDATASET keyword was located containing invalid syntax.

**User response:** Correct the error and resubmit the request.

---

**HADM0092 MOVEDATASET CONTAINS INVALID KEYWORD, KW=*keyword***

**Explanation:** During input parameter processing of a MOVEDATASET keyword, an invalid keyword was located. The invalid keyword is located in the message.

**User response:** Correct the error and resubmit the request.

---

**HADM0093 DUPLICATE KEYWORD LOCATED, KW=*keyword***

**Explanation:** During input parameter processing, invalid duplicate keywords were located. The duplicate keyword is named in the message.

**User response:** Correct the error and resubmit the request.

---

**HADM0094 INVALID DATA VALUE LOCATED FOR KW=*keyword***

**Explanation:** During input parameter processing, an invalid data value was located for a selected keyword. The keyword containing the invalid data value is named in the message.

**User response:** Correct the error and resubmit the request.

---

**HADM0095 REQUIRED KEYWORD IS MISSING, KW=*keyword***

**Explanation:** During input parameter processing, a required keyword could not be located. The missing keyword is named in the message text.

**User response:** Correct the error and resubmit the request.

---

**HADM0096 TARGETVCAT AND TARGETSTOGROUP ARE MUTUALLY EXCLUSIVE KEYWORDS**

**Explanation:** A MOVEDATASET request contains both the TARGETVCAT and TARGETSTOGROUP keywords. This is not allowed. One or the other must be specified.

**User response:** Correct the error and resubmit the request.

---

---

**HADM0097 TARGETVCAT SPECIFIED, TARGETVOLUMES OR TARGET SMS CLASS KEYWORDS MISSING**

**Explanation:** A MOVEDATASET request contains the TARGETVCAT keyword, but TARGETVOLUMES or TARGETSMS keywords are missing. When the target data set of a move request is to a user-defined VCAT (non-STOGROUP), either target volumes or target SMS information must be supplied to specify where the target data set should be placed.

**User response:** Correct the error and resubmit the request.

---

**HADM0098 TARGETVOLUMES SPECIFIED BUT TARGETVCAT IS MISSING**

**Explanation:** A MOVEDATASET request contains the TARGETVOLUMES keyword, but TARGETVCAT is not present. Use of TARGETVOLUMES implies the target data set is a user-defined data set. TARGETVCAT must be provided.

**User response:** Correct the error and resubmit the request.

---

**HADM0099 TARGETVOLUMES OR TARGET SMS CLASS KEYWORDS CANNOT BE SPECIFIED WHEN TARGETSTOGROUP USED**

**Explanation:** A MOVEDATASET request contains the TARGETVOLUMES or TARGETSMS keywords, but the target data set is a STOGROUP-defined data set. Neither of these keywords are allowed if the target data set is a STOGROUP-defined data set.

**User response:** Correct the error and resubmit the request.

---

**HADM0100 EITHER TARGETVCAT OR TARGETSTOGROUP MUST BE SPECIFIED**

**Explanation:** A MOVEDATASET request does not contain either the TARGETVCAT or TARGETSTOGROUP keywords. One of the two keywords must be specified to specify if the target data set should be user-defined or STOGROUP-defined.

**User response:** Correct the error and resubmit the request.

---

**HADM0101 END OF MOVEDATASET NOT LOCATED, ")" IS MISSING**

**Explanation:** A MOVEDATASET request keyword contains invalid syntax.

**User response:** Correct the error and resubmit the request.

---

---

**HADM0102 TARGETVOLUMES CANNOT BE SPECIFIED WITH SMS CLASS KEYWORDS**

**Explanation:** A MOVEDATASET request contains both TARGETVOLUMES and TARGETSMS keywords. This is not allowed.

**User response:** Correct the error and resubmit the request.

---

**HADM0103 DSNDB06 DATA SETS REQUIRE TARGETVCAT TO BE USED**

**Explanation:** A MOVEDATASET request for a catalog DSNDB06 data set does not contain the TARGETVCAT keyword. DSNDB06 data sets must have the TARGETVCAT operand specified.

**User response:** Correct the error and resubmit the request.

---

**HADM0104 MODIFICATION OF A DSNDB06 DATA SET VCATNAME IS NOT ALLOWED**

**Explanation:** The TARGETVCAT keyword for a DSNDB06 data set is different from the VCAT currently in use for the data set. You cannot change the VCAT name of a DSNDB06 data set.

**User response:** Correct the error and resubmit the request.

---

**HADM0105 MOVEMENT OF DSNDB01 DATA SETS NOT CURRENTLY SUPPORTED**

**Explanation:** A move data set request to move a DSNDB01 data set was located. Dataset Manager does not currently support the move of a DSNDB01 data set.

**User response:** None required.

---

**HADM0106 MOVEMENT OF DSNDB07 DATA SETS NOT CURRENTLY SUPPORTED**

**Explanation:** A move data set request to move a DSNDB07 data set was located. Dataset Manager does not currently support the move of a DSNDB07 data set.

**User response:** None required.

---

**HADM0161 HH:MM:SS.TTT ID=*move\_ID* SOURCEDSN DATA RENAME \*\*\*FAILED\*\*\***

**Explanation:** During data set move processing of the selected data set, the attempt to rename the source data set failed.

**User response:** Locate and review any additional messages related to the error. Attempt to resolve the

error incurred. If necessary, contact IBM Customer Support for assistance.

---

**HADM0162 HH:MM:SS.TTT ID=*move\_ID* SOURCEDSN CLUSTER RENAME \*\*\*FAILED\*\*\***

**Explanation:** During data set move processing of the selected data set, the attempt to rename the source data set failed.

**User response:** Locate and review any additional messages related to the error. Attempt to resolve the error incurred. If necessary, contact IBM Customer Support for assistance.

---

**HADM0163 HH:MM:SS.TTT ID=*move\_ID* TARGETDSN RENAME \*\*\*FAILED\*\*\***

**Explanation:** During data set move processing of the selected data set, the attempt to rename the target data set failed.

**User response:** Locate and review any additional messages related to the error. Attempt to resolve the error incurred. If necessary, contact IBM Customer Support for assistance.

---

**HADM0165 HH:MM:SS.TTT ID=*move\_ID* TARGETDSN DEFINE \*\*\*FAILED\*\*\***

**Explanation:** During data set move processing of the selected data set, the attempt to create the new target data set failed.

**User response:** Locate and review any additional messages related to the error. Attempt to resolve the error incurred. If necessary, contact IBM Customer Support for assistance.

---

**HADM0167 HH:MM:SS.TTT ID=*move\_ID* SOURCEDSN DELETE \*\*\*FAILED\*\*\***

**Explanation:** During data set move processing of the selected data set, the attempt to delete the source data set failed.

**User response:** Locate and review any additional messages related to the error. Attempt to resolve the error incurred. If necessary, contact IBM Customer Support for assistance.

---

**HADM0172 HH:MM:SS.TTT ID=*move\_ID* BACKOUT SOURCEDSN DATA RENAME \*\*\*FAILED\*\*\***

**Explanation:** During move processing for a selected data set, an error occurred that caused the move to fail, triggering move data set backout processing. During the backout process, the source data set was being renamed back to its original data set name, but the rename failed.

**User response:** Determine the reason for the failure. Attempt to rename the data set using IDCAMS ALTER command. After rename is completed, issue the necessary START DATABASE command to re-enable use of the data set. Contact IBM Customer Support if assistance is needed.

---

**HADM0173** *HH:MM:SS.TTT ID=move\_ID BACKOUT SOURCEDSN CLUSTER RENAME \*\*\*FAILED\*\*\**

**Explanation:** During move processing for a selected data set, an error occurred that caused the move to fail, triggering move data set backout processing. During the backout process, the source data set was being renamed back to its original data set name, but the rename failed.

**User response:** Determine the reason for the failure. Attempt to rename the data set using IDCAMS ALTER command. After rename is completed, issue the necessary START DATABASE command to re-enable use of the data set. Contact IBM Customer Support if assistance is needed.

---

**HADM0174** *HH:MM:SS.TTT ID=move\_ID BACKOUT TARGETDSN DEFINE \*\*\*FAILED\*\*\**

**Explanation:** During move processing for a selected data set, an error occurred that caused the move to fail, triggering move data set backout processing. During the backout process, the new target data set which was created is being deleted, but the delete failed.

**User response:** Determine the reason for the delete failure. Attempt to delete the data set using IDCAMS DELETE command. Locate and review all messages related to data set move request. Verify the state of the source data set. Contact IBM Customer Support if assistance is needed.

---

**HADM0180** *HH:MM:SS.TTT ID=move\_ID ALLOC \*\*\*FAILED\*\*\* RC=X'return\_code' RS=X'reason\_code' ID=internal\_ID*

**Explanation:** A dynamic allocation request failed while processing a move request for the selected data set.

**User response:** Attempt to determine the cause of the allocation failure. Contact IBM Customer Support if assistance is needed.

---

**HADM0181** *HH:MM:SS.TTT ID=move\_ID DEALLOC \*\*\*FAILED\*\*\* RC='return\_code' RS=X'reason\_code' ID=internal\_ID*

**Explanation:** A dynamic deallocation request failed while processing a move request for the selected data set.

**User response:** Attempt to determine the cause of the

deallocation failure. Contact IBM Customer Support if assistance is needed.

---

**HADM0182** *HH:MM:SS.TTT ID=move\_ID OPEN \*\*\*FAILED\*\*\* RC=X'return\_code' ID=internal\_ID*

**Explanation:** A data set OPEN request failed while processing a move request for the selected data set.

**User response:** Attempt to determine the cause of the OPEN failure. Contact IBM Customer Support if assistance is needed.

---

**HADM0183** *HH:MM:SS.TTT ID=move\_ID CLOSE \*\*\*FAILED\*\*\* RC=X'return\_code' ID=internal\_ID*

**Explanation:** A data set CLOSE request failed while processing a move request for the selected data set.

**User response:** Attempt to determine the cause of the CLOSE failure. Contact IBM Customer Support if assistance is needed.

---

**HADM0184** *HH:MM:SS.TTT ID=move\_ID SOURCEDSN OPEN \*\*\*FAILED\*\*\* RC=X'return\_code' ACBERFLG=X'access\_control\_block\_error\_flag'*

**Explanation:** The move data set request for the selected data set failed due to an error incurred while attempting to OPEN the source data set.

**User response:** Try to determine the cause of the OPEN failure using the error information provided in the message text. Resubmit the move request for the selected data set if the cause of the failure is corrected. Contact IBM Customer Support if assistance is needed.

---

**HADM0185** *HH:MM:SS.TTT ID=move\_ID SOURCEDSN CLOSE \*\*\*FAILED\*\*\* RC=X'return\_code' ACBERFLG=X'access\_control\_block\_error\_flag'*

**Explanation:** The move data set request for the selected data set failed due to an error incurred while attempting to CLOSE the source data set.

**User response:** Try to determine the cause of the CLOSE failure using the error information provided in the message text. Resubmit the move request for the selected data set if the cause of the failure is corrected. Contact IBM Customer Support if assistance is needed.

---

**HADM0186** *HH:MM:SS.TTT ID=move\_ID TARGETDSN OPEN \*\*\*FAILED\*\*\* RC=X'return\_code' ACBERFLG=X'access\_control\_block\_error\_flag'*

**Explanation:** The move data set request for the

selected data set failed due to an error incurred while attempting to OPEN the target data set.

**User response:** Try to determine the cause of the OPEN failure using the error information provided in the message text. Resubmit the move request for the selected data set if the cause of the failure is corrected. Contact IBM Customer Support if assistance is needed.

---

**HADM0187** *HH:MM:SS.TTT ID=move\_ID*  
**TARGETDSN CLOSE \*\*\*FAILED\*\*\***  
**RC=X'return\_code'**  
**ACBERFLG=X'access\_control\_**  
**block\_error\_flag'**

**Explanation:** The move data set request for the selected data set failed due to an error incurred while attempting to CLOSE the target data set.

**User response:** Try to determine the cause of the CLOSE failure using the error information provided in the message text. Resubmit the move request for the selected data set if the cause of the failure is corrected. Contact IBM Customer Support if assistance is needed.

---

**HADM0188** *HH:MM:SS.TTT ID=move\_ID VSAM*  
**ALTER REMOVEVOLUMES**  
**\*\*\*FAILED\*\*\***

**Explanation:** In processing the data set move request for the selected data set, an attempt was made to remove undesired candidate volumes using the IDCAMS ALTER REMOVEVOLUMES. The request failed.

**User response:** Attempt to locate additional messages related to the error incurred. Try to determine the cause of the failure. Determine whether data set move backout processing was initiated and verify the status of the move request for the data set. Contact IBM Customer Support if assistance is needed.

---

**HADM0189** *HH:MM:SS.TTT ID=move\_ID VSAM*  
**ALTER REMOVEVOLUMES**  
**SUCCESSFUL**

**Explanation:** In processing the data set move request for the selected data set, an attempt was made to remove undesired candidate volumes using the IDCAMS ALTER REMOVEVOLUMES. The request completed successfully.

**User response:** None required.

---

**HADM0200** *HH:MM:SS.TTT ID=move\_ID TARGET*  
**STOGROUP DOES NOT EXIST**  
**TARGETSTOGROUP=storage\_group**

**Explanation:** The target storage group name specified in the move request for the selected data set was invalid. The storage group name does not exist on the DB2 subsystem.

**User response:** Correct the target storage group name and resubmit the move request for the selected data set.

---

**HADM0210** *HH:MM:SS.TTT ID=move\_ID ALTER*  
**SUCCESSFUL**

**Explanation:** In processing the data set move request for the selected data set, the data set was successfully altered.

**User response:** None required.

---

**HADM0211** *HH:MM:SS.TTT ID=move\_ID ALTER*  
**\*\*\*FAILED\*\*\* SQLCODE=SQL\_code**

**Explanation:** As part of the move request a DB2 SQL ALTER statement was done to alter the DB2 catalog, the DB2 VCAT, or the DB2 storage group. The ALTER statement failed with return code listed in the message.

**User response:** Refer to the documentation to resolve the SQL error.

---

**HADM0212** *HH:MM:SS.TTT ID=move\_ID ALTER*  
**NOT REQUIRED AND BYPASSED**

**Explanation:** As part of the move request, a DB2 SQL ALTER was bypassed. This is an informational message.

**User response:** None required.

---

**HADM0213** *HH:MM:SS.TTT ID=move\_ID ALTER*  
**TEXT ABOVE NEEDS TO BE**  
**EXECUTED MANUALLY, MOVE**  
**COMPLETED, ALTER FAILED**

**Explanation:** This message immediately follows HADM0211. The SQL error described in HADM0211 is the reason the ALTER did not complete as part of the move request.

**User response:** The ALTER must still be done to complete the move request. When the SQL error is resolved, issue the ALTER statement manually to complete the move.

---

**HADM0218** *HH:MM:SS.TTT ID=move\_ID message\_text*

**Explanation:** This message displays the SQL ALTER text issued to DB2.

**User response:** Non required.

---

**HADM0219** *HH:MM:SS.TTT ID=move\_ID ALTER*  
**ISSUED; ALTER TEXT AS FOLLOWS:**

**Explanation:** An ALTER statement is being issued to DB2 for the move request. Message HADM0218 contains the entire ALTER statement text.

**User response:** None required.



---

**HADM0400** *HH:MM:SS.TTT ID=move\_ID STOP  
COMMAND \*FAILED\*  
CAFRC=X'return\_code'  
CAFRS=X'reason\_code'*

**Explanation:** When processing the move request for the selected data set, a DB2 STOP command was issued for the necessary object. The STOP request failed.

**User response:** Use the error information contained in the message and attempt to determine the cause of the failure. Resubmit the move request for the selected data set. Contact IBM Customer Support if assistance is needed.

---

**HADM0401** *HH:MM:SS.TTT ID=move\_ID START  
COMMAND \*\*\*FAILED\*\*\*  
CAFRC=X'return\_code'  
CAFRS=X'reason\_code'*

**Explanation:** When processing the move request for the selected data set, a DB2 START command was issued for the necessary object. The START request failed.

**User response:** Use the error information contained in the message and attempt to determine the cause of the failure. Resubmit the move request for the selected data set. Contact IBM Customer Support if assistance is needed.

---

**HADM0402** *HH:MM:SS.TTT ID=move\_ID DISPLAY  
COMMAND \*FAILED\*  
CAFRC=X'return\_code'  
CAFRS=X'reason\_code'*

**Explanation:** When processing the move request for the selected data set, a DB2 DISPLAY command was issued for the necessary object. The DISPLAY request failed.

**User response:** Use the error information contained in the message and attempt to determine the cause of the failure. Verify the status of the move request for the selected data set. Resubmit the move request for the selected data set if necessary. Contact IBM Customer Support if assistance is needed.

---

**HADM0403** *HH:MM:SS.TTT ID=move\_ID CAFINIT  
\*FAILED\* CAFRC=X'return\_code'  
CAFRS=X'reason\_code'*

**Explanation:** Call attach facility initialization failed while processing the move request for the selected data set.

**User response:** Attempt to determine the cause of the failure using the CAF return code and reason code provided in the message text. Correct the problem and resubmit the move request for the selected data set. Contact IBM Customer Support if assistance is needed.

---

**HADM0404** *HH:MM:SS.TTT ID=move\_ID CONNECT  
\*FAILED\* CAFRC=X'return\_code'  
CAFRS=X'reason\_code'*

**Explanation:** Call attach facility CONNECT failed while processing the move request for the selected data set.

**User response:** Attempt to determine the cause of the failure using the CAF return code and reason code provided in the message text. Correct the problem and resubmit the move request for the selected data set. Contact IBM Customer Support if assistance is needed.

---

**HADM0406** *HH:MM:SS.TTT ID=move\_ID  
SOURCEDSN COPY \*\*\*FAILED\*\*\**

**Explanation:** The copy of the source data set to the new target data set has failed. Other messages are issued concerning the cause of the failure.

**User response:** Determine the cause of the failure. Contact IBM Customer Support if assistance is needed.

---

**HADM0407** *HH:MM:SS.TTT ID=move\_ID REQUEST  
BACKOUT IN PROGRESS*

**Explanation:** The move request for the selected data set has failed. As a result of the failure, data set move backout processing has begun. Backout processing will attempt to restore the status of the data set to the state that existed prior to the move request.

**User response:** None required.

---

**HADM0408** *HH:MM:SS.TTT ID=move\_ID  
TARGETDSN WRITER HAS ABENDED*

**Explanation:** An abend was incurred by the writer task during the move request for the selected data set. The move request has failed. Backout processing should have been initiated for the failed move request.

**User response:** Attempt to determine the cause of the failure. Locate and retain any dumps produced for the abend. Locate and retain the joblog for the failing job execution. Verify backout success and determine the state of the source data set name. Contact IBM Customer Support if assistance is required.

---

**HADM0409** *HH:MM:SS.TTT ID=move\_ID  
TARGETDSN WRITE ERROR  
RPLRTNCD=X'return\_code'  
RPLERRCD=X'error\_code'*

**Explanation:** A write error was incurred by the writer task during the move request for the selected data set. Backout processing should have been driven for the failed move request.

**User response:** Attempt to determine the cause of the write error using the information contained within the message text. Verify backout success and determine the

state of the source data set name. Contact IBM Customer Support if assistance is required.

---

**HADM0410** *HH:MM:SS.TTT ID=move\_ID*  
**TARGETDSN WRITE ERROR DATA**  
**SET EXTEND \*\*\*FAILED\*\*\***

**Explanation:** While writing data to the target data set for the selected move request, an attempt was made to obtain an additional data set extent. The extend request failed. Move processing for the data set is terminated. Move data set backout is initiated as a result of the error.

**User response:** The data set extend failure is most likely due to lack of space on the volumes selected, or the target data set having reached the maximum extents allowed. Determine the cause of the extend failure. Modify the target data set PQTY/SQTY values or the target volumes of the request and resubmit the data set move request.

---

**HADM0411** *HH:MM:SS.TTT ID=move\_ID*  
**TARGETDSN WRITER INTERNAL**  
**ERROR DETECTED**

**Explanation:** A write internal error was incurred by the writer task during the move request for the selected data set.

**User response:** Determine if any other error related messages have been issued for the move request. Attempt to resolve the cause of the problem. Contact IBM Customer Support if assistance is required.

---

**HADM0412** *HH:MM:SS.TTT ID=move\_ID* **REQUEST**  
**BACKOUT SUCCESSFUL**

**Explanation:** This message is issued after successful backout of a move request for the selected data set. Backout processing is initiated if an error is incurred while processing the move request that caused the move request to fail. Backout processing has successfully restored the source data set being moved to its state prior to the move request.

**User response:** None required.

---

**HADM0413** *HH:MM:SS.TTT ID=move\_ID* **REQUEST**  
**BACKOUT HAS \*\*\*FAILED\*\*\***

**Explanation:** This message is issued when backout processing fails for a move request that has ended in error. Backout processing is initiated if an error occurs while processing the move request that caused the move request to fail. Backout processing has failed.

**User response:** Determine the state of the source data set of the move request. Contact IBM Customer Support if assistance is required.

---

**HADM0414** *HH:MM:SS.TTT ID=move\_ID*  
**SOURCEDSN READ ERROR**  
**RPLRTNCD=X'return\_code'**  
**RPLERRCD=X'error\_code'**

**Explanation:** A read error was incurred while reading the source data set. Backout processing should have been initiated for the failed move request.

**User response:** Attempt to determine the cause of the read error using the information contained within the message text. Verify backout success and determine the state of the source data set. Contact IBM Customer Support if assistance is required.

---

**HADM0415** *HH:MM:SS.TTT ID=move\_ID* **WRITER**  
**ATTACH \*\*\*FAILED\*\*\***  
**RC=X'return\_code'**

**Explanation:** The attach of a writer task during processing of the move request for the selected data set has failed.

**User response:** Attempt to determine the cause of the failure using the attach return code provided in the message text. Contact IBM Customer Support if assistance is required.

---

**HADM0416** *HH:MM:SS.TTT ID=move\_ID* **MODULE**  
**LOAD \*\*\*FAILED\*\*\* FOR**  
**LMOD=load\_module**

**Explanation:** A LOAD of a load module failed while processing the move request for the selected data set.

**User response:** View the execution joblog for additional messages issued relating to the LOAD failure. Attempt to resolve the cause of the LOAD failure. Contact IBM Customer Support if assistance is required.

---

**HADM0417** *HH:MM:SS.TTT ID=move\_ID* **WAITING**  
**FOR STOP COMMAND COMPLETION**  
**STOPWAITTIME=minutes IN USE**

**Explanation:** Move processing has issued a DB2 STOP command for the selected data set object. The STOP command has not yet successfully completed. Dataset Manager is waiting for the STOP command to be honored and will wait for the number of minutes contained in the message text.

**User response:** If the STOP command does not complete in the amount of time specified, the move request will terminate in error. Use the DB2 DISPLAY command to determine who is currently using the object.

---

**HADM0418** *HH:MM:SS.TTT ID=move\_ID STOP  
COMMAND \*\*\*FAILED\*\*\*  
STOPWAITTIME LIMIT EXCEEDED*

**Explanation:** Move processing has issued a DB2 STOP command. The STOP command has not successfully completed in the amount of time specified in the STOPWAITTIME parameter value. The pending STOP command cannot be terminated; however, DB2 will honor the STOP command in the future. The move request is terminated as a result of the STOP command failure.

**User response:** Use the DB2 DISPLAY command to determine who is currently using the object. You must START the data set object manually as a result of this failure. Resubmit the move request during a timeframe in which a STOP command can be processed for the selected data set.

---

**HADM0419** *HH:MM:SS.TTT ID=move\_ID STOP  
COMMAND \*\*\*FAILED\*\*\* CURRENT  
OBJECT STATUS=object\_status*

**Explanation:** Move processing for the selected data set has issued a DB2 STOP command. The STOP command failed due the current status of the object. This message is issued when the data set object is in any state other than RW, RO, or STOP.

**User response:** Determine the reason for the existing state. Resubmit the move request after the data set state has been corrected.

---

**HADM0420** *HH:MM:SS.TTT ID=move\_ID STOP  
COMMAND \*\*\*FAILED\*\*\* STOP  
BYPASSED DUE TO CURRENT USERS*

**Explanation:** Move processing for the selected data set has failed due to current users referencing the source data set of the selected move request. Move execution evaluates the data set being moved for any existing user activity. If user activity is located, Dataset Manager continues to recheck the current user status using an internal value. When the length of time it has spent rechecking for user activity to cease exceeds the STOPWAITTIME value, the move request terminates abnormally and this message is issued.

**User response:** Determine current users of the data set object using the DISPLAY command. Attempt to resubmit the data set move request when data set use is minimal and a STOP command can be issued.

---

**HADM0421** *HH:MM:SS.TTT ID=move\_ID WAITING  
TO ISSUE STOP, ACTIVE USERS  
LOCATED, STOPWAITTIME=minutes  
IN USE*

**Explanation:** Move processing has detected current users referencing the source data set of the move request. Move processing must issue a DB2 STOP command for the selected data set object. The STOP command will not be issued if users are currently using the object. This message indicates execution is waiting for the user activity within the object to cease so a subsequent STOP command can be issued. Move execution will continue to recheck the current use of the object using an internal value for a period of time equal to the STOPWAITTIME minutes contained in the message text. This message is informational; use the DISPLAY command if you wish to determine current users of the object.

**User response:** None required.

---

## Gathering diagnostic information

Before you report a problem with DB2 Automation Tool to IBM Software Support, you need to gather the appropriate diagnostic information.

### Procedure

1. Provide the following information for all DB2 Automation Tool problems:
  - A clear description of the problem and the steps that are required to re-create the problem
  - All messages that were issued as a result of the problem
  - The version of DB2 that you are using and the type and version of the operating system that you are using
  - The product and release number.
  - The number of the last program temporary fix (PTF) and any relevant authorized program analysis reports (APARs) that were applied. APARs can be determined by using the LISTAPARS command, as follows:
    - a. On the DB2 Automation Tool Main Menu, enter **LISTAPARS** in the Option line and press Enter.
    - b. On the Build Job for LISTAPARS Utility window, provide a data set, member name, and job cards, and press Enter. The job is submitted to the

internal reader. When the job completes, the job's SYSOUT DD will contain a list of each DB2 Automation Tool module and its current maintenance level.

2. Provide additional information based on the type of problem that you experienced:

**For online abends, provide the following information:**

- A screen shot of the panel that you were using when the abend occurred
- The job log from the TSO session that encountered the abend
- A description of the task that you were doing before the abend occurred

**For errors in batch processing, provide the following information:**

- The complete job log
- Print output
- Contents of the any data sets that were used during the processing

---

## Tools Customizer troubleshooting

Use this information to diagnose and correct problems that you experience with Tools Customizer.

### Gathering diagnostic information

Before you report a problem with Tools Customizer to IBM Software Support, you need to gather the appropriate diagnostic information.

#### Procedure

Provide the following information for all Tools Customizer problems:

- A clear description of the problem and the steps that are required to re-create the problem
- Relevant screen captures
- All messages that were issued as a result of the problem
- Product release number and the number of the last program temporary fix (PTF) that was installed
- The version of DB2 that you are using and the type and version of the operating system that you are using
- The Tools Customizer trace data set
- The Tools Customizer data store data set and the *high\_level\_qualifier*.SCCQTENU data set

### Determining the trace data set name

You will need to identify the name of the trace data set if you cannot allocate the trace data set, the trace data set runs out of space, or IBM Software Support asks for it.

The name of the trace data set depends on the prefix setting in the TSO profile. To identify the name of the trace data set, you must know the prefix setting.

- If PREFIX is set, the name of the trace data set is *prefix*.CCQ.TRACE, where *prefix* is the TSO prefix that you specified in the profile.

- If NOPREFIX is set, the name of the trace data set is *user\_ID.CCQ.TRACE*, where *user\_ID* is your TSO user ID.



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## Chapter 24. Tools Customizer reference

Before you use Tools Customizer, you should understand the Tools Customizer terminology and the data sets that Tools Customizer uses during customization.

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### Tools Customizer terminology and data sets

Before you use Tools Customizer, you should understand the Tools Customizer terminology and the data sets that Tools Customizer uses during customization.

#### Tools Customizer terminology

Tools Customizer uses several unique terms that you should be familiar with before you begin to use Tools Customizer.

##### Products and components

How an IBM Tool is packaged determines whether it is referred to as a product or as a component in the Tools Customizer documentation and interface. An IBM Tool that is ordered as a stand-alone entity (that is, not as part of a solution pack) is referred to as a product. An IBM Tool that is part of a solution pack is referred to as a component. Some IBM Tools are available in both formats; therefore, the same IBM Tool can be referred to as a product or as a component depending on how it is packaged.

##### DB2 entry

You can customize DB2 Automation Tool on one or more DB2 entries. A DB2 entry can be any of the following items:

##### DB2 subsystem

A distinct instance of a relational database management system (RDBMS) that is not part of a data sharing group. An example of a DB2 subsystem name is DB01.

##### DB2 group attach name

The name that is used by the TSO/batch attachment, the call attachment facility (CAF), DL/I batch, utilities, and the Resource Recovery Services attachment facility (RRSAF) as a generic attachment name. An example of a group attach name is DSG1.

##### DB2 data sharing member

A DB2 subsystem that is assigned by the cross-system coupling facility (XCF) to a data sharing group. An example of a DB2 data sharing member name is DB02.

Tools Customizer maintains the following lists of DB2 entries:

##### Associated list

The list of DB2 entries that are associated with DB2 Automation Tool. If the product to be customized requires DB2 entries, you can customize DB2 Automation Tool only on DB2 entries that are in the associated list. When you customize DB2 Automation Tool, this list is displayed in the DB2 Entries, Associations, and Parameter Status section of the Customizer Workplace panel.

You can add and copy DB2 entries to the associated list. When you add or copy DB2 entries to the associated list, the entries are associated with DB2 Automation Tool.

### **Master list**

The list of all DB2 entries that are defined but are not associated with DB2 Automation Tool. Tools Customizer obtains information about these DB2 entries either from entries that were created manually or from the customizations of other products that were discovered. If you remove a DB2 entry from the associated list, the DB2 entry is added to the master list. When you create a new DB2 entry, it is added to the master list, and when you associate the new entry with DB2 Automation Tool, it is removed from the master list and added to the associated list. The master list is displayed on the Associate a DB2 Entry for Product panel.

If the associated list does not have the DB2 entries on which you want to customize DB2 Automation Tool, you can associate existing entries from the master list to the associated list.

You can create new DB2 entries and copy existing entries to the master list.

### **High-level qualifier**

The high-level qualifier is considered to be all of the qualifiers except the lowest level qualifier. A high-level qualifier includes a mid-level qualifier.

### **Product parameters**

Parameters that are specific to DB2 Automation Tool. These parameters are defined by DB2 Automation Tool and are stored in a data member that is defined by DB2 Automation Tool.

### **LPAR parameters**

Parameters on the local LPAR that are required to customize DB2 Automation Tool. These parameters are defined by Tools Customizer and are stored in an LPAR parameter data member.

### **DB2 parameters**

Parameters for a DB2 entry. These parameters are defined by Tools Customizer and are stored in a DB2 parameter data member.

### **Status type**

#### **Product, LPAR, and DB2 entry status type**

After you specify the product that you want to customize, the product, the LPAR, and the DB2 entries have a status. The status is partly based on whether required parameters are defined. For some products, LPAR parameters or DB2 parameters might not be required. In these cases, the status is Not Required.

To customize DB2 Automation Tool, all of the required parameters must be defined.

If required parameters for the the product parameters, LPAR parameters, or DB2 parameters are not defined, the status of the parameters is Incomplete. Define values for parameters by manually editing them or by generating the customization jobs and specifying values for all of the required parameters that are displayed on the panels.

When values for all of the required parameters are defined, the status is Ready to Customize. Customization jobs can be generated



only when all of the required parameters are defined and the status is Ready to Customize or Customized for the product parameters, LPAR parameters, and DB2 parameters for the DB2 entries on which DB2 Automation Tool will be customized.

The following table shows the meaning of the status types. Each status is defined differently for each type of parameter.

*Table 48. Status types for the product, the LPAR, and the DB2 entries*

Status	Product	LPAR	DB2 entries
Incomplete	The required product parameters are not defined.	The required parameters are not defined.	The required parameters are not defined.
Discovered	The product parameter definitions were discovered by using the product Discover EXEC.	N/A	N/A
Ready to Customize	The required product, is Ready to Customize or Customized for the LPAR and at least one associated DB2 entry. You can generate the customization jobs.	The required LPAR parameters are defined or LPAR parameters are not required.	The required DB2 parameters are defined or DB2 parameters are not required.
Verify Values	The required product or component parameter values are defined but they either have not been verified or verification is not enabled on the Product or Component Parameters panel.	The required LPAR parameter values are defined, but they either have not been verified or verification is not enabled on the LPAR Parameters panel.	The required DB2 parameter values are defined, but they either have not been verified or verification is not enabled on the DB2 Parameters panel.
Customized	The jobs are customized on the local LPAR.	The jobs are customized for the product or for all of the associated DB2 entries on the local LPAR.	The jobs are customized for the DB2 entry.
Errors in Customization	N/A	N/A	Errors occurred while the customization jobs were being generated.
Not Required	N/A	LPAR parameters are not required.	DB2 parameters are not required.

**Related tasks:**

“Creating and associating DB2 entries” on page 68

You can create new DB2 entries and associate them with DB2 Automation Tool.

“Copying DB2 entries” on page 79

You can copy associated and not associated DB2 entries to other DB2 entries or to

new DB2 entries.

“Removing DB2 entries” on page 81

You can remove DB2 entries from the associated list.

## Data sets that Tools Customizer uses during customization

Tools Customizer uses several unique data sets during the customization process. Familiarize yourself with these data sets before you begin to use Tools Customizer.

Several different data sets are required to customize DB2 Automation Tool with Tools Customizer. These data sets are supplied by DB2 Automation Tool, supplied by Tools Customizer, or allocated by Tools Customizer.

DB2 Automation Tool provides the following data sets:

### Metadata library

Contains the metadata for the product to be customized. Tools Customizer uses the metadata to determine which tasks, steps, and parameters to display on the Product Parameters panel, the LPAR Parameters panel, and the DB2 Parameters panel. This data set also contains the templates that Tools Customizer uses to generate the customization jobs.

The metadata library naming convention is *high\_level\_qualifier*.SHAADENU, where *high\_level\_qualifier* is all of the segments of the data set name except the lowest-level qualifier.

You specify the metadata library on the Specify the Metadata Library panel. READ access to this data set is required.

### Discover EXEC library

Contains the DB2 Automation Tool Discover EXEC. When you customize DB2 Automation Tool, you can use the Discover EXEC to automatically retrieve and store product information, such as parameter values from an already customized product. Tools Customizer saves the discovered information in the data store.

The default name of the data set is the high-level qualifier for the metadata library plus a lowest-level qualifier. For DB2 Automation Tool, the lowest-level qualifier is SHAADENU. You can change the default value on the Discover Customized Product Information panel. EXECUTE access to this data set is required.

Tools Customizer provides the following data sets:

### Tools Customizer metadata library

Contains the metadata for the DB2 and LPAR parameters that are required to customize DB2 Automation Tool. Tools Customizer uses the metadata to determine which parameters to display on the DB2 Parameters panel and the LPAR Parameters panel. In addition, Tools Customizer uses information in the metadata library to determine whether additional DB2 and LPAR parameters need to be displayed on these panels. As you customize different products, different DB2 and LPAR parameters might need to be defined.

The default name of the data set is DB2TOOL.CCQ110.SCCQDENU. You can change the default value on the Tools Customizer Settings panel. READ access to this data set is required.

### Tools Customizer table library

Stores information about jobs that are customized. Job information that is

stored includes a description of the job, its member name and template name, the SSID, group attach name, and when the job was generated.

The default name of the data set is DB2TOOL.CCQ110.SCCQTENU. WRITE access to this data set is required.

Tools Customizer requires that the following data sets exist during the customization process. If the data sets do not exist, Tools Customizer automatically allocates them.

#### Discover output data set

Contains the output that is generated when you run the DB2 Automation Tool Discover EXEC. The DB2 Automation Tool Discover EXEC retrieves the metadata and values for the parameters from a previous customization of DB2 Automation Tool.

The default name of the data set is DB2TOOL.CCQ110.DISCOVER. You can change the default value on the Tools Customizer Settings panel or the Discover Customized Product Information panel. WRITE access to this data set is required.

#### Data store data set

Contains product, LPAR, and DB2 parameter values, and DB2 entry associations. Tools Customizer uses this data set to permanently store all information that is acquired about the product, DB2 subsystems or data sharing groups, and LPAR when you customize products on the local LPAR.

The default name of the data set is DB2TOOL.CCQ110.DATASTOR. You can change the default value on the Tools Customizer Settings panel. WRITE access to this data set is required.

#### Customization library

Contains the customization jobs that Tools Customizer generates for DB2 Automation Tool.

Tools Customizer checks whether a customization library name was specified for more than one instance of the same version of the same product. If the same customization library name is specified for more than one product of the same version, the CCQD123E message is issued to prevent you from overwriting previously generated customization jobs. Ensure that you specify unique qualifier for the customization library for each instance of the product.

To customize DB2 Automation Tool, submit the members of the data set in the order in which they are displayed on the Finish Product Customization panel.

The data set naming convention is *hlq*.\$LPAR\_name\$.xyzvrm, where:

- *hlq* is the value of the **Customization library qualifier** field on the Tools Customizer Settings panel (CCQPSET)
- *LPAR\_name* is the four-character LPAR name
- *xyzvrm* is the three-letter product identifier with the version, release, and modification level

For example, the data set name might be DB2TOOL.PRODUCT.CUST.\$MVS1\$.XYZ410.

WRITE access to this data set is required.

Tools Customizer allocates the data sets for the discover output, the data store, and the customization library with the attributes that are shown in the following table:

*Table 49. Data set attributes for allocating the Discover output, data store, and customization library data sets*

Data set	Organization	Record format	Record length	Block size	Data set name type
Discover output data set	PO	Variable block	16383	32760	LIBRARY
Data store data set	PO	Variable block	16383	32760	LIBRARY
Product customization library	PO	Fixed block	80	32720	LIBRARY

**Restrictions:**

- Multiple users cannot simultaneously share the discover output data set, data store data set, Tools Customizer metadata library, and metadata library.

---

## Chapter 25. Reference

These reference topics are designed to provide you with quick access to information about DB2 Automation Tool customization, skeleton members, column display functions, sample profiles and other product usage considerations.

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### Skeleton variables

DB2 Automation Tool uses ISPF skeletons to build most of the JCL and control cards needed for execution. The variables contained in the skeletons are documented in this topic.

If you want to modify skeletons for your own purposes, you can use this appendix as a reference. These variables can be called from your skeletons during job building. You can copy the DB2 Automation Tool skeletons in the SHAASLIB and modify them, but you must place the modified skeletons in your own library, and concatenate your library before the DB2 Automation Tool skeleton libraries. To do this, update the HAAV42C CLIST to specify your skeleton library. This is accomplished by inserting your skeleton library into the HAASLIB1 library in the CLIST, as shown following:

```
HAASLIB1(user.skeleton.library)      +
HAASLIB2(HAALVL.SHAASLIB)           +
```

#### CAUTION:

**Do not modify the value of these variables in your skeletons. Doing so will produce unpredictable results when the job is built.**

### General variables

The general variables available in DB2 Automation Tool skeletons may appear in multiple skeletons.

These variables are defined and maintained by ISPF and are for reference only.

**&Z** This value is blank or not set.

**&ZUSER**  
User ID.

### HAABCHJ

This topic describes the variables available in DB2 Automation Tool skeleton HAABCHJ. This skeleton contains JCL for batch build of HAA jobs, and is used for all jobs built in batch.

The following variables are included in this skeleton:

#### **&WORKDEV**

A device name. If the device type was not specified in the DB2 Automation Tool setup panels, the skeleton logic defaults the device type to SYSDA.

#### **&CLTFMID**

The client product FMID. This variable resolves to HAA for DB2 Automation Tool.

**&UEMCSNAP**

The type of job. Valid values are: D: EMC Snap data set C: DB2 Automation Tool utility that cleans up its repository tables. R: Disaster recovery jobs to be executed at the DR site. S: Disaster recovery job step to be run at the DR site to ensure spaces are in RW mode. Blank: Any other type of job not specified.

**&PROFCRTR**

The profile creator name.

**&PROFNAME**

The profile name.

**&FMEMBER**

If the data set that will contain the generated job is a PDS, this variable contains the member name.

**&FDATASET**

The data set name that will contain the generated job.

**&ISPTLIB1**

The ISPF table library; this library name is obtained from the startup CLIST.

**&CLTDESC**

The client product name. This variable resolves to DB2 Automation Tool for HAA.

**&REGION**

The region size for the job card.

**&DB2CNTFL**

The DB2PARMS control file, this name is obtained from the startup CLIST.

**&CLIB**

The CLIST library name, obtained from the startup CLIST. If present, the SYSPROC DD statement is inserted in the JCL.

**&STEPLIBS**

Step libraries. The step libraries are included if you specify Y in the Generate Steplib DDs on the DB2 Shared Profile Support setup screen or the Override Setup Options screen.

**&CLTLOAD1, &CLTLOAD2**

The DB2 Automation Tool load libraries; these are obtained from the CLIST.

**&FECLOAD1, &FECLOAD2**

The DB2 Tools common code load libraries; these are obtained from the CLIST.

**&EMCLOAD1, &EMCLOAD2**

The EMC load libraries; these are obtained from the CLIST.

**&FDRLOAD1, &FDRLOAD2**

The FDR load libraries; these are obtained from the CLIST.

**&DB2LOAD1, &DB2LOAD2, &DB2LOAD3, &DB2LOAD4, &DB2LOAD5**

The DB2 load libraries. These are obtained from the DB2 Automation Tool setup screen.

**&CLTPLIB1, &CLTPLIB2**

DB2 Automation Tool panel libraries; these are obtained from the CLIST.

**&FECPLIB1, &FECPLIB2**

The DB2 Tools common code panel libraries; these are obtained from the CLIST.

**&ISPTLIB1, &ISPTLIB2, &ISPTLIB3**

The ISPF table libraries; these are obtained from the CLIST.

**&ISPMLIB1, &ISPMLIB2, &ISPMLIB3**

The ISPF message libraries; these are obtained from the CLIST.

**&CLTMLIB1, &CLTMLIB2**

The DB2 Automation Tool message libraries; these are obtained from the CLIST.

**&FECMLIB1, &FECMLIB2**

The DB2 Tool common code message libraries; these are obtained from the CLIST.

**&CLTSLIB1, &CLTSLIB2**

The DB2 Automation Tool skeleton libraries; these are obtained from the CLIST.

**&FECSLIB1, &FECSLIB2**

The DB2 common code skeleton libraries; these are obtained from the CLIST.

**&SSID**

The DB2 subsystem ID; this value is obtained from the DB2 Automation Tool main menu.

**&USERIND**

The DB2 Automation Tool user indicator; this is obtained from the CLIST.

**&DLCSQLID**

The user SQL ID; this value is obtained from the DB2 Automation Tool main menu.

**&JOBBCRD11, &JOBBCRD12, &JOBBCRD21, &JOBBCRD22, &JOBBCRD31,  
&JOBBCRD32, &JOBBCRD41, &JOBBCRD42**

These variables hold the job card information. The job card is input on the Build Job window, or from a data set if the job generation options are set to retrieve the job card from a data set.

**&EMCORESS**

The type of EMC backup. Valid values are: EMCSNAPDATASET  
FLASHCOPYDATASET FLASHCOPYVOLUME

**&UCSHRLVL**

This variable determines the SHRLEVEL syntax, if any. If it is set to R, SHRLEVEL REFERENCE is generated; if set to C, SHRLEVEL CHANGE is generated.

**&UMDATE, &UMAGE**

These variables come from the Modify utility screen and refer to the time frame in which records are to be deleted.

**&UMCLN\***

These variables are set on the Modify utility screen. These variables should not be altered.

## HAABRBC

This topic describes the variables available in DB2 Automation Tool skeleton HAABRBC. This skeleton contains control cards for the rebind utility.

The following variables are included in this skeleton:

### **&RBTYPE**

Specifies whether the REBIND PACKAGE or REBIND PLAN syntax is to be built. Valid values: P: Plan K: Package

### **&RBCC1, &RBCC2, &RBCC3, &RBCC4, &RBCC5, &RBCC6, &RBCC7, &RBCC8**

The plan or package name or names to be bound.

## HAABRBJ

This topic describes the variables available in DB2 Automation Tool skeleton HAABRBJ. This skeleton contains JCL for the rebind utility.

The following variables are included in this skeleton:

### **&STEPNAME**

This variable is used to aid in creating a unique step name generated by DB2 Automation Tool. The variable resolves to 8 alphanumeric characters in the form xxxnnyyy, where xxx = utility type (such as RTS for REORG TABLESPACE), nn = job number, and yyy = step number.

### **&REGION**

The region size for the job card.

### **&SSID**

The DB2 subsystem ID; this value is obtained from the DB2 Automation Tool main menu.

## HAABTMP

This topic describes the variables available in DB2 Automation Tool skeleton HAABTMP. This skeleton contains JCL for capturing run-time statistics.

The following variables are included in this skeleton:

### **&SELECT1**

Used to create a unique step name in the job card and the comments. Generates one of these single characters based on the type of utility job being built: C: Image copy I: Index copy R: REORG T: COPYTOCOPY

### **&STEPNAME**

A three-digit number used by DB2 Automation Tool to generate a unique step name.

### **&CONDSTEP**

An eight-character step name variable used to check the condition code of the previous utility step.

### **&ORIND**

This variable is used to insert an OR indicator in the generated JCL.

### **&REGION**

The region size for the job card.

### **&UWKALIAS**

A work data set.



**&JOBNAME**

A unique job name.

**&SSID**

The DB2 subsystem ID; this value is obtained from the DB2 Automation Tool main menu.

**&DB2CNTFL**

The DB2PARMS control file, this name is obtained from the startup CLIST.

## HAABTSOC

This topic describes the variables available in DB2 Automation Tool skeleton HAABTSOC. This skeleton contains control cards for stopping and starting spaces in UT or RW mode.

The following variables are included in this skeleton:

**&SELECT1**

Control variable that is used to build the appropriate syntax for starting and stopping spaces. X: Stop table space U or Y: Start table space in specified mode R or Z: Start table space in RW mode D: Start database in specified mode E: Start database in RW mode C: End of input

**&SELECT2**

Signifies what the status the space will be in for processing. Valid values: R: Read-only Any other value: Utility mode

**&PARTNBR**

Object partition number; 0 if object is not partitioned.

**&DLCDB**

Database name

**&DLCTS**

Table space name

**&MODE**

Access mode for start/stop. Valid values are: RO: Read-only UT: Utility

## HAABTSOJ

This topic describes the variables available in DB2 Automation Tool skeleton HAABTSOJ. This skeleton contains JCL for stopping and starting spaces in various modes (UT, RW).

The following variables are included in this skeleton:

**&STEPNAME**

This variable is used to aid in creating a unique step name generated by DB2 Automation Tool. The variable resolves to 8 alphanumeric characters in the form xxxnnyyy, where xxx = utility type (such as RTS for REORG TABLESPACE), nn = job number, and yyy = step number.

**&SELECT1**

Control variable that is used to build the appropriate comments and JCL for starting and stopping spaces.

**&SELECT2**

Control variable that determines which comments are inserted into JCL. R: Read-only mode U: Utility mode

**&CONDDSTEP**

An eight-character step name variable used to check the condition code of the previous utility step.

**&REGION**

Region size for the job card.

**&SSID**

The DB2 subsystem ID; this value is obtained from the DB2 Automation Tool main menu.

**&JDATASET**

The input data set containing the control cards for starting spaces in disaster recovery jobs.

**&UTSRUTIL**

The utility ID to be terminated; either specified on the screen or defaulted to userID.jobname.

**&JOBNAME**

The unique job name.

## **HAABULDJ**

This topic describes the variables available in DB2 Automation Tool skeleton HAABULDJ. This skeleton contains JCL for batch build of HAA jobs.

The following variables are included in this skeleton:

**&WORKDEV**

A device name. If the device type was not specified in the DB2 Automation Tool setup panels, the skeleton logic defaults the device type to SYSDA.

**&CLTFMID**

The client product FMID. This variable resolves to HAA for DB2 Automation Tool.

**&UEMCSNAP**

The type of job. Valid values are: B: EMC BCV split D: EMC Snap data set V: EMC Snap volume F: IBM Flash Data Set S: IBM Flash Volume C: DB2 Automation Utility that cleans up its repository tables. R: Disaster recovery jobs to be executed at the DR site. Blank: Any other type of job not specified.

**&PROFCRTR**

The profile creator name.

**&PROFNAME**

The profile name.

**&FMEMBER**

If the data set that will contain the generated job is a PDS, this is the member name.

**&FDATASET**

The data set name that will contain the generated job.

**&CLTDESC**

The client product name. This variable resolves to "DB2 Automation Tool" for IBM DB2 Automation Tool

**&CLTFMID**

The client product FMID. This variable resolves to HAA for IBM DB2 Automation Tool.

**&REGION**

The region size for the job card.

**&U**

Internal variable which is set to the value of UEMCSNAP for purposes of skeletal line length limitations.

**&DB2CNTFL**

The DB2PARMS control file, this name is obtained from the startup CLIST.

**&EMCORESS**

An internal variable used to set the type of processing. Valid values are:  
EMC\_BCV\_SPLIT EMC\_SNAP\_DATASET EMC\_SNAP\_VOLUME  
IBM\_FLASH\_DATASET IBM\_FLASH\_VOLUME FLASHCOPYVOLUME

**&SSID**

The DB2 subsystem ID; this value is obtained from the DB2 Automation Tool main menu.

**&USERIND**

The DB2 Automation Tool user indicator; this is obtained from the CLIST.

**&DLCNAME**

New VCAT name for the copied objects.

**&DLCSQLID**

The user SQL ID; this value is obtained from the DB2 Automation Tool main menu.

**&UEPARLEL**

Specifies how many parallel subtasks can be initiated during processing.

**&SELECT1**

Specifies what happens if the volume containing data sets to be copied is not available. Valid values: W: wait, S: Stop.

**&SELECT10**

If this variable is set to C, builds ERRORS\_ENCOUNTERED CONTINUE syntax; if it is set to anything else, builds ERRORS\_ENCOUNTERED STOP syntax.

**&DLCDSETI**

If this variable is not blank, it is the MVS user catalog data set name.

**&DLCVOL**

If this variable is not blank, contains the user catalog name and builds CATALOG\_VOLSER syntax.

**&UDATCLAS**

SMS Data class.

**&UMGTCLAS**

SMS Management class.

**&USTOCLAS**

SMS Storage class.

**&SELECT3**

BCV Split control card. Valid values are V: split volume, any other value: split data set.

**&SELECT4**

Backup vendor. valid values are F: FDR; any other value: DFSMSdss.

**&UCSHRLVL**

This value determines the SHRLEVEL syntax, if any. R generates SHRLEVEL REFERENCE and C generates SHRLEVEL CHANGE.

**&CLTLOAD1, &CLTLOAD2**

The DB2 Automation Tool load libraries; these are obtained from the CLIST.

**&FECLOAD1, &FECLOAD2**

The DB2 Tools common code load libraries; these are obtained from the CLIST.

**&JOBICRD11, &JOBICRD12, &JOBICRD21, &JOBICRD22, &JOBICRD31, &JOBICRD32, &JOBICRD41, &JOBICRD42**

These variables hold the job card information. The job card is input on the Build Job window, or from a data set if the job generation options are set to retrieve the job card from a data set.

**&UMDATE, &UMAGE**

These variables come from the Modify utility screen and refer to the time frame in which records are to be deleted.

**&UMCLN\***

These variables are set on the Modify utility screen. These variables should not be altered.

## HAACOPYC

This topic describes the variables available in DB2 Automation Tool skeleton HAACOPYC. This skeleton contains control cards for COPY and COPYTOCOPY image copies.

The following variables are included in this skeleton:

**&SELECT1**

If set to C, this skeleton builds the control cards specific to each object in the job. If set to R, the skeleton builds the remainder of the syntax that is required once per each COPY or COPYTOCOPY utility control statement.

**&UICTYPE**

Type of object. Valid values: TS: Table space IX: Index space

**&LISTNAME**

Determines whether LISTDEFS are used. Valid values: Blank: Use table space names Not blank: Use LISTDEFS

**&UTILTEXT**

Hold the text for the name of the utility, for example COPY or COPYTOCOPY.

**&PARTNBR**

Object partition number. If blank, syntax does not include partition number.

**&TSIXIND**

Used to insert the proper object type into the control card. Is set to TABLESPACE if &UICTYPE is TS; set to INDEXSPACE if &UICTYPE is IX.

**&DLADB**

Database name

**&DLCTS**

Table space name

**&SELECT3**

Determines whether COPYTOCOPY syntax is built. If set to C, FROMLASTCOPY syntax is built; if set to F, FROMLASTFULLCOPY syntax is built; if set to I, FROMLASTINCRCOPY syntax is built.

**&COPYDDN1, &COPYDDN2**

Contains DD names for the primary (&COPYDDN1) and backup (&COPYDDN2) copy data sets for the local site image copy.

**&COMMA**

Internal variable set to a comma if a local or recovery backup copy is specified.

**&RCVYDDN1, &RCVYDDN2**

Contains DD names for the primary (&RCVYDDN1) and backup (&RCVYDDN2) copy data sets for the recovery site image copy.

**&UCHGLIM1**

If blank, does not build CHANGELIMIT syntax; if not blank, contains the value for the first value in the CHANGELIMIT range and builds syntax with that value.

**&UONCURR**

If set to Y, builds CONCURRENT syntax.

**&UFULLCPY**

If set to Y, builds FULL YES syntax; if set to N, builds FULL NO syntax.

**&UCHGLIM2**

If not blank, contains the value for the second value in the CHANGELIMIT range and builds syntax with that value. If blank, does not include the second value in the syntax.

**&UCREPTON**

If set to Y, builds REPORTONLY syntax.

**&UPARALEL**

If set to Y, builds PARALLEL syntax.

**&UNUMBOBJ**

If not blank, contain the number of objects for PARALLEL syntax.

**&UNUMTUNT**

If not blank, contain the number of tape units for PARALLEL syntax.

**&UCCHKPAG**

If set to Y, builds CHECKPAGE syntax.

**&UONCURR**

If set to Y, builds CONCURRENT syntax.

**&UFILTRDD**

If not blank, contains the filter DD name for FILTER syntax.

**&UCSHRLVL**

If set to C, builds SHRLEVEL CHANGE syntax; if set to R, builds SHRLVL REFERENCE syntax.

**&UTCLONE**

If set to Y, adds CLONE syntax; the utility will act only on clone objects.

### **&UCSCOPE**

(DB2 V9 and above) If set to P, builds SCOPE PENDING syntax; otherwise, SCOPE ALL is assumed.

## **HAACOPYJ**

This topic describes the variables available in DB2 Automation Tool skeleton HAACOPYJ. This skeleton contains JCL for COPY and COPYTOCOPY copies.

The following variables are included in this skeleton:

### **&UTSRUTIL**

The utility ID; either specified on the screen or defaulted to userID.jobname.

### **&STEPNAME**

This variable is used to aid in creating a unique step name generated by DB2 Automation Tool. The variable resolves to 8 alphanumeric characters in the form xxxnnyyy, where xxx = utility type (such as RTS for REORG TABLESPACE), nn = job number, and yyy = step number.

### **&SELECT3**

Valid values: blank: COPY utility Any other value: COPYTOCOPY utility

### **&REGION**

Region size for job card

### **&SSID**

The DB2 subsystem ID; this value is obtained from the DB2 Automation Tool main menu.

### **&UTILID**

The utility ID specified on the utility options screen; if the job options specify to prefix the utility ID with the job name, step name, or both, the utility ID may be prefixed with those.

### **&SELECT2**

Determines type of SYSPRINT DD. If set to Y, builds SYSPRINT DD with temporary data set; if set to any other value, the SYSPRINT DD goes to SYSOUT=.

### **&UWKALIAS**

If not blank, is set to the utility work data set high level qualifier, specified on the Job Generation Options screen, and generates a SYSPRINT DD with the specified high level qualifier. If not blank, the SYSPRINT DD is a temporary work data set.

### **&WORKDEV**

The work unit device

## **HAADATEC**

This topic describes the variables available in DB2 Automation Tool skeleton HAADATEC. This skeleton sets the variable for displaying month in job generation.

The following variables are included in this skeleton:

### **&ZMONTH**

Numbers 1-12 correspond to the month, January through December.

## HAADSMC

This topic describes the variables available in DB2 Automation Tool skeleton HAADSMC. This skeleton contains control cards for Dataset Manager space reallocation step.

The following variables are included in this skeleton:

### **&SSID**

The DB2 subsystem ID; this value is obtained from the DB2 Automation Tool main menu.

### **&DLCDB2**

The plan name of the DB2 Automation Tool plan created during the installation of DB2 Automation Tool on the DB2 subsystem owning the data sets being moved.

## HAADSMMD

This topic describes the variables available in DB2 Automation Tool skeleton HAADSMMD. This skeleton contains control cards for global parameters for Dataset Manager space reallocation step.

The following variables are included in this skeleton:

### **&OREALPRI**

Original size of the data set.

### **&SELECT2, &SELECT3, &SELECT4**

Triggers comment box when the code has determined that one or more truncation conditions has occurred

### **&ICDSN**

The source data set to be moved.

### **&PARTNBR**

Whether the space is partitioned; non-blank value is partitioned; blank is non-partitioned.

### **&DLCDB**

DB2 database name.

### **&DLCIX**

Index space name; if non-blank, an index is included.

### **&DB2VER**

DB2 version of the subsystem.

### **&IXV8DSM1, &IXV8DSM2, &IXV8DSM3, &IXV8DSM4, &IXV8DSM5**

An index name. These variables allow for a long index name to be included as part of the move syntax.

### **&DLCNAME**

Target VCAT name for user-managed data sets; if value is > 0, the TARGETVCAT keyword is generated.

### **&DLCDBS**

Target storage group name for DB2-managed data sets; if value is > 0, the TARGETSTOGROUP keyword is generated.

### **&USTOCLAS**

If not blank, contains the name of the target SMS storage class for the data set.

**&UMGTCLAS**

If not blank, contains the name of the target SMS management class for the data set.

**&UDATCLAS**

If not blank, contains the name of the target SMS data class for the data set.

**&UREALPRI**

If not blank, contains the number of kilobytes to be used as the primary space quantity when the data set is moved.

**&UREALSEC**

If not blank, contains the number of kilobytes to be used as the secondary space quantity when the data set is moved.

**HAADSME**

This topic describes the variables available in DB2 Automation Tool skeleton HAADSME. This skeleton contains a step end card for Dataset Manager space reallocation.

No variables are available in this skeleton.

**HAADSMJ**

This topic describes the variables available in DB2 Automation Tool skeleton HAADSMJ. This skeleton contains JCL for Dataset Manager space reallocation.

The following variables are available in this skeleton:

**&DB2CNTFL**

The DB2PARMS control file, this name is obtained from the startup CLIST.

**HAADSMV**

This topic describes the variables available in DB2 Automation Tool skeleton HAADSMV. This skeleton contains a target volume control card for Dataset Manager space reallocation.

The following variables are available in this skeleton:

**&DLCVOL**

The target volume to which the data set will be moved.

**HAADSQLC**

This topic describes the variables available in DB2 Automation Tool skeleton HAADSQLC. This skeleton contains control cards for space reallocation.

The following variables are available in this skeleton:

**&UICTYPE**

Type of object to be reallocated. Valid values: TS: table space IX: index space

**&DLCDB**

Database name of object to be reallocated.

**&DLCTS**

Table space name to be reallocated.



**&DB2VER**

DB2 version of the subsystem.

**&DLCIX**

Index name to be reallocated.

**&IXV8LN1B**

This variable is used to properly build syntax for long index names. If blank, the syntax will fit on one line; if not blank, the syntax is built on multiple lines.

**&IXV8LN1A**

Set to the index\_creator.index\_name; if the index name is short, it will fit into this variable. For long index creator names, the name is continued in variable &IXV8LN1B.

**&IXV8LN1, &IXV8LN2, &IXV8LN3, &IXV8LN4**

An index name. These variables allow for a long index name (up to 128 bytes) to be included as part of the syntax.

**&OREALPRI**

Current primary allocation in tracks

**&SELECT2**

If set to Y, includes comment box for primary space truncation due to MAXPRIME.

**&SELECT3**

If set to Y, includes comment box for primary space truncation due to PIECESIZE for index.

**&SELECT4**

If set to Y, includes comment box for secondary space truncation due to PIECESIZE for index.

**&PARTNBR**

Object partition number; if blank, object is not partitioned.

**&UREALPRI**

Primary quantity for reallocation.

**&UREALSEC**

Secondary quantity for reallocation.

**&URETPERI**

PCTFREE for reallocation.

**&UINDREFL**

FREEPAGE for reallocation.

**HAADUMYJ**

This topic describes the variables available in DB2 Automation Tool skeleton HAADUMYJ. This skeleton generates a dummy step for exception processing.

No variables are available in this skeleton.

**HAAEOfSJ**

This topic describes the variables available in DB2 Automation Tool skeleton HAAEOfSJ. This skeleton contains JCL to end a SYSIN DD \* card.

No variables are available in this skeleton.

## HAAGDGC

This topic describes the variables available in DB2 Automation Tool skeleton HAAGDGC. This skeleton contains control cards for defining or deleting a GDG.

The following variables are available in this skeleton:

### **&SELECT1**

Determines whether the job will be a delete or define of a GDG. Valid values: 1=delete a GDG; Any other value = define a GDG.

### **&ICDSN**

GDG name.

### **&GDGBASE**

GDG scratch limit .

### **&DLCDSET**

GDG base to be deleted.

## HAAGDGJ

This topic describes the variables available in DB2 Automation Tool skeleton HAAGDGJ. This skeleton contains JCL for defining or deleting a GDG.

The following variables are available in this skeleton:

### **&SELECT1**

Generates comment blocks for deleting or defining GDGs. Valid values: 1=Delete a GDG; any other value = Define a GDG.

### **&STEPNAME**

This variable is used to aid in creating a unique step name generated by DB2 Automation Tool. The variable resolves to 8 alphanumeric characters in the form xxxnnyyy, where *xxx* = utility type (such as RTS for REORG TABLESPACE), *nn* = job number, and *yyy* = step number.

### **&REGION**

Region size for job card.

## HAAGGCC

This topic describes the variables available in DB2 Automation Tool skeleton HAAGGCC. This skeleton contains control cards for including DB2 Change Accumulation Tool jobs.

The following variables are available in this skeleton:

### **&SELECT1**

Controls the type of DB2 Change Accumulation Tool syntax. Valid values: C: DB2 Change Accumulation Tool job G: DB2 Change Accumulation Tool Group keyword E: DB2 Change Accumulation Tool Mini Log jobs S: DB2 Change Accumulation Tool job for a single space X: Generates several control cards at the end of the job.

### **&ICDSN**

Mini log data set name.

### **&DLCDB**

Data base name.

### **&DLCTS**

Table space name.

**&PARTNBR**

Partition number.

**&SELECT2**

The specified point. Valid values: C: To current Q: To quiesce S: To End RBA or End LRSN

**&DSGRPNAM**

Set if the subsystem is a data sharing group. If blank, use end RBA; if not blank, use end LRSN.

**&UTILRBA**

The end RBA or LRSN, depending on if the subsystem is a data sharing group.

**&SELECT3**

If set to Y, generates a SYSCOPY control card; if set to N, generates a NO\_SYSCOPY\_ROW control card.

**&SELECT4**

If set to 1, generates a ONE\_PASS control card; if set to 2, generates a TWO-PASS control card.

**&SELECT5**

If set to L, generates a LOCAL\_SITE control card; if set to R, generates a RECOVERY\_SITE control card.

**&SELECT6**

If set to V, generates a WRITE\_TO\_VSAM control card; if set to B, generates a WRITE\_TO\_BOTH control card; if set to I, generates a WRITE\_TO\_COPIES control card.

**&SELECT7**

If set to Y, generates a BUFFERS\_IN\_31\_BIT control card.

**&SELECT8**

If set to Y, generates a FORCE\_COPIES control card.

**&SELECT9**

If set to S, incremental mode Sort is used; if set to M, incremental mode Merge is used.

**&SELECT10 - &SELECT13**

These variables are used to build the LOG\_COPY\_PREFERENCE syntax.

**HAAGGCJ**

This topic describes the variables available in DB2 Automation Tool skeleton HAAGGCJ. This skeleton contains JCL for including DB2 Change Accumulation Tool jobs.

The following variables are available in this skeleton:

**&SELECT1**

This variable determines whether JCL or a DD is generated. Valid values: J: Generates the job cards. S: Generates the control card DD.

**&STEPNAME**

This variable is used to aid in creating a unique step name generated by DB2 Automation Tool. The variable resolves to 8 alphanumeric characters in the form xxxnnyyy, where xxx = utility type (such as RTS for REORG TABLESPACE), nn = job number, and yyy = step number.

**&REGION**

The region size for the job card.

**&SSID**

The DB2 subsystem ID; this value is obtained from the DB2 Automation Tool main menu.

**&DB2CNTFL**

The DB2PARMS control file, this name is obtained from the startup CLIST.

**HAAICDDJ**

This topic describes the variables available in DB2 Automation Tool skeleton HAAICDDJ. This skeleton contains JCL for creating image copy data set DDs.

The following variables are available in this skeleton:

**&UCVOLCNT**

Controls the volume count subparameter for the VOLUME parameter. Its value is assigned to the variable VC in the skeleton.

**&DDNAME**

The DD name for the DD statement.

**&ICDSN**

The image copy data set name.

**&UCATALOG**

Sets the CATLG subparameter for the DD statement. Valid values: C: DISP=(NEW, CATLG, DELETE) Y: DISP=(MOD, CATLG, CATLG) N: DISP=(NEW, KEEP, DELETE)

**Note:** Only the Y and N values are supported on the product panel for image copy options.

**&REFBKDDN**

If not blank, contains the DD name to be used in the referback syntax for subsequent DDs. If blank, there is no "refer back" DDN.

**&USTOCLAS**

If not blank, includes the STORCLAS subparameter.

**&UDATCLAS**

If not blank, includes the DATACLAS subparameter.

**&UMGTCLAS**

If not blank, includes the MGMTCLAS subparameter.

**&UNITTYPE**

If set to T, the unit type set on the Image Copy options screen is a tape device. If set to D, the unit type is a disk device.

**&REFBKSTP**

If not blank, contains the step name used when a "refer-back" DDN is available in a previous step to be used in creating the VOLUME parameter.

**&UCPYUNIT**

Device type for the UNIT parameter

**&FDATASET**

If not blank, includes the GDG base model DSN entered in on the DB2 Automation Tool Systems parameters setup screen.

**&SELECT5**

If set to Y, the data set name in &FDATASET is a GDG.

**&UREALPRI**

Primary quantity for space subparameter.

**&UREALSEC**

Secondary quantity for space subparameter.

**&VC** Set to the variable &UCVOLCNT (volume count parameter).

**&URETPERI**

If not blank, the retention period for the LABEL parameter.

**&UIDELAY**

If not blank, the expiration date for the LABEL parameter.

## HAAICDMJ

This topic describes the variables available in DB2 Automation Tool skeleton HAAICDMJ. This skeleton builds dummy DDs for REORG UNLOAD PAUSE.

The following variables are available in this skeleton:

**&DDNAME**

If the REORG requires a DDNAME, this is a DD name included that is consistent with what the utility requires.

**&AMP**

Generates two ampersands (&&) into the output JCL.

**&WORKDEV**

The work unit device name.

## HAAJCLIN

This topic describes the variables available in DB2 Automation Tool skeleton HAAJCLIN. This skeleton contains JCL for user job cards and the comment box for job generation.

The following variables are available in this skeleton:

**&SELECT1**

This value is set to J to generate JCL if the job card is to be retrieved from a data set, as specified in job generation options. When set to C, only the comment box is generated.

**&JCLLINE**

This variable contains a line of JCL; it is called multiple times if necessary to build the JCL that was input into the data set.

**&CLTDESC**

The client product name. This variable resolves to DB2 Automation Tool for HAA.

**&CLTVER**

The client product version.

**&DLCPTF**

The client product release level.

**&SSID**

The DB2 subsystem ID.

**&DLCSQLID**

The user SQL ID; this value is obtained from the DB2 Automation Tool main menu.

**&PROFCRTR**

The profile creator name.

**&PROFNAME**

The profile name.

**&PROFDESC**

The profile description.

**&ZUSER**

This ISPF variable is set to the user ID of the user building the job.

**&ZDAYOFWK**

This ISPF variable is set to the day of the week.

**&DLCMONTH**

The month.

**&ZDAY**

This ISPF variable is set to the date.

**&ZSTDYEAR**

This ISPF variable is set to the year.

**&ZTIMEL**

This ISPF variable is set to the current timestamp.

## **HAAJOB**

This topic describes the variables available in DB2 Automation Tool skeleton HAAJOB. This skeleton contains JCL for user job cards and the comment box for job generation.

The following variables are available in this skeleton:

**&JOBCARD1**

First line of job card

**&JOBCARD2**

If not blank, second line of job card.

**&JOBCARD3**

If not blank, third line of job card.

**&JOBCARD4**

If not blank, fourth line of job card.

**&CLTDESC**

The client product name. This variable resolves to DB2 Automation Tool for IBM DB2 Automation Tool.

**&CLTVER**

The client product version.

**&DLCPTF**

The client product release level.

**&SSID**

The DB2 subsystem ID.

**&DLCSQLID**

The user SQL ID; this value is obtained from the DB2 Automation Tool main menu.

**&PROFCRTR**

The profile creator name.

**&PROFNAME**

The profile name.

**&PROFDESC**

The profile description.

**&ZUSER**

This ISPF variable is set to the user ID of the user building the job.

**&ZDAYOFWK**

This ISPF variable is set to the day of the week.

**&DLCMONTH**

The month.

**&ZDAY**

This ISPF variable is set to the date.

**&ZSTDYEAR**

This ISPF variable is set to the year.

**&ZTIMEL**

This ISPF variable is set to the current timestamp.

## **HAALISTC**

This topic describes the variables available in DB2 Automation Tool skeleton HAALISTC. This skeleton contains control cards for LISTDEF statements.

The following variables are available in this skeleton:

**&PARTNBR**

If not blank, contains the partition number or 0.

**&UICTYPE**

The object type. Valid values: TS: Table space IX: Index space

**&UTILTEXT**

Hold the text for the name of the utility, for example COPY or RECOVER.

**&LISTNAME**

The list name in the LISTDEF parameter.

**&DLCDB**

Database name

**&CLTVER**

The client product version.

**&DLCTS**

Table space name or index space name, depending on value in &UICTYPE variable.

**&PARTLEVL**

Specifies the partition granularity for partitioned table spaces, partitioning indexes, and data-partitioned secondary indexes that are to be contained in the list. If &PARTNBR is greater than 0, the syntax is built as PARTLEVEL (&PARTNBR).

### **&UTCLONE**

If set to Y, adds the CLONED YES keywords to the INCLUDE expression. The expression then will only return the names of clone tables, table spaces that contain clone tables, indexes on clone tables or index spaces that contain indexes on clone tables.

## **HAALPSTC**

This topic describes the variables available in DB2 Automation Tool skeleton HAALPSTC. This skeleton contains control cards for the registration step of job tracking. This skeleton is included only when the job tracking task has been started.

The following variables are available in this skeleton:

### **&SSID**

The job tracking started task subsystem ID.

### **&PROFNAME**

The profile name

### **&PROFCRTR**

The profile creator.

### **&URMOUTIL**

An internal job identifier.

### **&SELECT1**

Determines whether ABEND processing is included. Valid values: Y: ABEND (YES) syntax is included N: ABEND(NO) syntax is included

### **&SELECT2**

Determines whether WTO messages are to be produced. Valid values: Y: WTO (YES) syntax is included N: WTO (NO) syntax is included

## **HAALPSTJ**

This topic describes the variables available in DB2 Automation Tool skeleton HAALPSTJ. This skeleton contains JCL for the registration step of job tracking. This skeleton is included only when the job tracking task has been started.

The following variables are available in this skeleton:

### **&STEPNAME**

This variable is used to aid in creating a unique step name generated by DB2 Automation Tool. The variable resolves to 8 alphanumeric characters in the form xxxnnyyy, where xxx = utility type (such as RTS for REORG TABLESPACE), nn = job number, and yyy = step number.

### **&REGION**

The region size for the job card.

## **HAAMAPTC**

This topic describes the variables available in DB2 Automation Tool skeleton HAAMAPTC. This skeleton contains control cards to build DDL to create or drop the online REORG mapping table.

The following variables are available in this skeleton:



**&SELECT1**

Specifies whether skeleton will build create or drop DDL for the temporary mapping table. Valid values: C: Create the database and associated tables  
D: Drop the database

**&JOBNAME**

A temporary database name used for the mapping table; DB2 Automation Tool uses the job name for the database name.

**&UMAPSTGR**

Specifies the storage group for the temporary mapping table. Valid values: Blank: Storage group is SYSDEFLT Any other value: The storage group specified on the Change options screen for the dynamic mapping table.

**&UMAPBPOL**

Specifies the buffer pool for the temporary mapping table. Valid values: Blank: Buffer pool is BP0 Any other value: The buffer pool specified on the Change options screen for the dynamic mapping table.

**&STEPNAME**

This variable is used to aid in creating a unique step name generated by DB2 Automation Tool. The variable resolves to 8 alphanumeric characters in the form xxxnnyyy, where *xxx* = utility type (such as RTS for REORG TABLESPACE), *nn* = job number, and *yyy* = step number.

**&UMAPPQTY**

Specifies the primary and secondary quantity for the temporary mapping table. Valid values: Blank: Primary and secondary quantity is set to 18000 kb. Any other value: The primary quantity specified on the Change options screen is used for the dynamic mapping table.

**HAAMODFC**

This topic describes the variables available in DB2 Automation Tool skeleton HAAMODFC. This skeleton contains control cards for the MODIFY utility.

The following variables are available in this skeleton:

**&UICTYPE**

The object type. Valid values: TS: Table space IX: Index space

**&SELECT2**

Specifies which set of statistics is deleted from the SYSIBM statistics tables; used to set the DELOPT variable. Valid values: A: ALL C: ACCESSPATH S: SPACE

**&SELECT1**

Determines whether MODIFY RECOVERY or MODIFY STATISTICS syntax is built. Valid values: R: MODIFY RECOVERY S: MODIFY STATISTICS

**&LISTNAME**

Determines whether LISTDEFs are used. Valid values: Blank: Use table space names Not blank: Use LISTDEFs

**&PARTNBR**

Object partition number; 0 if object is not partitioned.

**&DLCDB**

Database name

**&DLCTS**

Table space name

**&UTCLONE**

If set to Y, adds CLONE syntax; the utility will act only on clone objects.

**&UMRETAIN**

(DB2 Version 9.1 or later) Determines how the RETAIN keyword is generated; blank if not used. Valid values: L: RETAIN LAST (&UMRETNBR) O: RETAIN LOGLIMIT G: RETAIN GDGLIMIT T: RETAIN GDGLIMIT LAST (&UMRETNBR) M: RETAIN GDGLIMIT LOGLIMIT

**&UMRETNBR**

(DB2 Version 9.1 or later) If specifying the RETAIN LAST or RETAIN GDGLIMIT LAST keywords, the number of records to be retained.

**&OBJTYPE**

Contains either TABLESPACE or INDEXSPACE, depending on which type of object is being processed.

**&UMDATE**

If not blank, this variable is used to set the DATE parameter for the MODIFY utility.

**&UMAGE**

If not blank, this variable is used to set the AGE parameter for the MODIFY utility.

**HAAMODFJ**

This topic describes the variables available in DB2 Automation Tool skeleton HAAMODFJ. This skeleton contains JCL for the MODIFY utility.

The following variables are available in this skeleton:

**&UTSRUTIL**

If not blank, sets the UTILID to the utility ID specified on the Job Generation Options screen.

**&STEPNAME**

This variable is used to aid in creating a unique step name generated by DB2 Automation Tool. The variable resolves to 8 alphanumeric characters in the form xxxnnyyy, where xxx = utility type (such as RTS for REORG TABLESPACE), nn = job number, and yyy = step number.

**&REGION**

The region size for the job card.

**&SSID**

The DB2 subsystem ID.

**&UTILID**

The utility ID specified on the utility options screen; if the job options specify to prefix the utility ID with the job name, step name, or both, the utility ID may be prefixed with those.

**HAAOPTNC**

This topic describes the variables available in DB2 Automation Tool skeleton HAAOPTNC. This skeleton contains control cards for the OPTIONS utility control statement.

The following variables are available in this skeleton:

**&SELECT7**

If set to Y, generates OPTIONS PREVIEW syntax. If set to any other value, generates OPTIONS EVENT syntax.

**&SELECT8**

If set to Y, generates OPTIONS EVENT(ITEMERROR) syntax. If set to N, generates OPTIONS EVENT(WARNING) syntax.

**&SELECT9**

If set to Y, generates WARNING,RC syntax for the event. If set to N, does not include WARNING,RC syntax.

**HAAQUIEC**

This topic describes the variables available in DB2 Automation Tool skeleton HAAQUIEC. This skeleton contains control cards for the QUIESCE utility.

The following variables are available in this skeleton:

**&UQTBLSPC**

If set to Y on Quiesce options screen, generates TABLESPACESET syntax for the QUIESCE.

**&SELECT1**

When this variable is set to C, the utility control statement is built with the utility name and object names or LISTDEFS. When set to R, adds the remaining control cards (WRITE YES|NO syntax).

**&LISTNAME**

Determines whether LISTDEFS are used. Valid values: Blank: Use table space names Not blank: Use LISTDEFS

**&UTILTEXT**

Hold the text for the name of the utility, for example QUIESCE.

**&PARTNBR**

Object partition number; if blank, object is not partitioned.

**&TSS** Set to TABLESPACESET if specified on the Quiesce options screen; otherwise, blank.

**&DLCDB**

Database name.

**&DLCTS**

Table space name.

**&UQWRITE**

Generates WRITE YES syntax if set to Y on the Quiesce options screen.  
Generates WRITE NO syntax if set to N on the Quiesce options screen.

**&UTCLONE**

If set to Y, adds CLONE syntax; the utility will act only on clone objects.

**HAAQUIEJ**

This topic describes the variables available in DB2 Automation Tool skeleton HAAQUIEJ. This skeleton contains JCL for the QUIESCE utility.

The following variables are available in this skeleton:

**&UTSRUTIL**

If not blank, sets the UTILID to the utility ID specified on the Job Generation Options screen.

**&STEPNAME**

This variable is used to aid in creating a unique step name generated by DB2 Automation Tool. The variable resolves to 8 alphanumeric characters in the form xxxnnyyy, where xxx = utility type (such as RTS for REORG TABLESPACE), nn = job number, and yyy = step number.

**&REGION**

The region size for the job card.

**&SSID**

The DB2 subsystem ID.

**&UTILID**

The utility ID specified on the utility options screen; if the job options specify to prefix the utility ID with the job name, step name, or both, the utility ID may be prefixed with those.

**HAARBLDC**

This topic describes the variables available in DB2 Automation Tool skeleton HAARBLDC. This skeleton contains control cards for the REBUILD INDEX utility.

The following variables are available in this skeleton:

**&SELECT2**

Determines what function is being performed in this call of the skeletal. Valid values: 1: generates REBUILD syntax 2: includes FREQVAL syntax 3: includes UPDATE syntax 4: inserts a control card separator.

**&UICTYPE**

If set to TS, generates INDEX ALL TABLESPACE syntax. If set to IX, generates individual INDEX or INDEXSPACE syntax.

**&PARTNBR**

Object partition number; if blank, object is not partitioned.

**&DLCDB**

Database name.

**&DLCTS**

Table space name.

**&DB2VER**

DB2 version of the subsystem.

**&UBREUSE**

If set to Y, REUSE syntax is included.

**&UTCLONE**

If set to Y, adds CLONE syntax; the utility will act only on indexes that are on clone tables.

**&WORKDEV**

The work device type for temporary data sets.

**&UBONLINE**

If set to Y, online REBUILD INDEX is included.

**&UBSHRLVL**

If set to R, SHRLEVEL REFERENCE syntax is included. If set to C, SHRLEVEL CHANGE syntax is included.

**&UBDRAINW**

If set to a value greater than 0, the DRAINWAIT keyword is included with the specified value.

**&UBTRETRY**

If set to a value greater than 0, the RETRY keyword is included with the specified value.

**&UBRETRYD**

If set to a value greater than 0, the RETRY\_DELAY keyword is included with the specified value.

**&UBMAXROW**

If set to a value greater than 0, the MAXRO keyword is included with the specified value.

**&UBLNGLOG**

If set to C, LONGLOG CONTINUE syntax is included. If set to T, LONGLOG TERM syntax is included. If set to D, LONGLOG DRAIN syntax is included.

**&UBDELAY**

If set to a value greater than 0, the DELAY keyword is included with the specified value.

**&UBSTATIS**

If set to Y, STATISTICS syntax is included.

**&UBREPORT**

If set to Y, REPORT YES syntax is included.

**&UBKEYCAR**

If set to Y, KEYCARD syntax is included.

**&UBFRQCOL**

If FREQVAL syntax is included, contains the value for the NUMCOL keyword.

**&UBFRQCNT**

If FREQVAL syntax is included, contains the value for the COUNT keyword.

**&UBUPDATE**

Determines which UPDATE syntax is built. Valid values: A: UPDATE ALL P: UPDATE PATH S: UPDATE SPACE N: UPDATE NONE

**&UBHISTOR**

Determines which HISTORY syntax is built. Valid values: A: HISTORY ALL P: HISTORY PATH S: HISTORY SPACE N: HISTORY NONE

**HAARCDDJ**

This topic describes the variables available in DB2 Automation Tool skeleton HAARCDDJ. This skeleton contains control cards for building a DD for a recovery data set.

The following variables are available in this skeleton:

**&DDNAME**

The DD name for the DD statement.

**&RCDSN**

The data set name for the recovery data set.

## HAARCVRC

This topic describes the variables available in DB2 Automation Tool skeleton HAARCVRC. This skeleton contains control cards for the RECOVER utility.

The following variables are available in this skeleton:

**&UICTYPE**

Type of object. Valid values: TS: Table space IX: Index space

**&SELECT1**

Valid values: C: Builds the RECOVER syntax that is required per object F: Builds the remaining syntax for the RECOVER that is required only once per utility statement.

**&UTILTEXT**

Hold the text for the name of the utility, for example RECOVER.

**&PARTNBR**

Object partition number. If blank, syntax does not include partition number.

**&TSIXIND**

Used to insert the proper object type into the control card. Is set to TABLESPACE if &OBJTYPE is TS; set to INDEXSPACE if &OBJTYPE is IX.

**&DLADB**

Database name

**&DLCTS**

Table space name

**&PARTNBR**

Object partition number. If blank, syntax does not include partition number.

**&SELECT2**

Determines which type of RECOVER syntax is included. If set to L and &UESPOINT is not blank, builds TOLOGPOINT syntax. If set to C, TOCOPY syntax is included. If set to E, ERROR RANGE syntax is built.

**&UESPOINT**

If the recovery point is TOLOGPOINT, contains the log RBA/LRSN to which to recover.

**&UERPOINT**

If the recovery point is RESTOREBEFORE, contains the log RBA/LRSN to which to recover.

**&UETODSN**

If the recovery point is to a copy, contains the data set name to which to recover.

**&UETOVOL**

If not blank, contains the volume name where the image copy data set is located for TOVOLUME syntax.

**&UETOSEQ**

If not equal to 000, contains the file sequence number for TOSEQNO syntax.

**&UEREUSE**

If set to Y, REUSE syntax is included.

**&UERSITE**

If set to L, LOCALSITE syntax is included. If set to R, RECOVERYSITE syntax is included.

**&UEERRRNG**

If set to Y, ERROR RANGE syntax is included.

**&UEEPGCNT**

If set to Y, sets an internal variable to CONTINUE for ERROR RANGE syntax.

**&UEEPGNBR**

Contains a page number for error range recovery.

**&PAGECNTN**

Contains CONTINUE if the page continue option was selected on the Recovery Utility Error Options screen.

**&UEPARLEL**

If not blank, builds PARALLEL syntax. If equal to 0, includes only the PARALLEL keyword; if not equal to 0, contains the number of objects to be processed in parallel and builds PARALLEL (num-objects) syntax.

**&UETAPUNT**

If not blank, builds TAPEUNITS syntax. If equal to 0, includes only the TAPEUNITS keyword; if not equal to 0, contains the number of tape drives to be used with parallel processing and builds TAPEUNITS (num-tapeunits) syntax.

**&UTCLONE**

If set to Y, adds CLONE syntax; the utility will act only on clone objects.

**HAARCVRJ**

This topic describes the variables available in DB2 Automation Tool skeleton HAARCVRJ. This skeleton contains JCL for the RECOVER utility.

The following variables are available in this skeleton:

**&UTSRUTIL**

If not blank, sets the UTILID to the utility ID specified on the Job Generation Options screen.

**&STEPNAME**

This variable is used to aid in creating a unique step name generated by DB2 Automation Tool. The variable resolves to 8 alphanumeric characters in the form xxxnnyyy, where *xxx* = utility type (such as RTS for REORG TABLESPACE), *nn* = job number, and *yyy* = step number.

**HAAREGJ**

This topic describes the variables available in DB2 Automation Tool skeleton HAAREGJ. This skeleton contains JCL for the registration step of job tracking. This skeleton is included only when the job tracking task has been started.

The following variables are available in this skeleton:

**&LPSSID**

This variable contains the job tracking task subsystem ID. If blank, a comment box is produced, stating the registration step was bypassed.

**&REGION**

The region size for the job card.

**&DB2CNTFL**

The DB2PARMS control file, this name is obtained from the startup CLIST.

**&SSID**

The DB2 subsystem ID.

**&CLTFMID**

The client product FMID. This variable resolves to HAA for DB2 Automation Tool.

**&USERIND**

The DB2 Automation Tool user indicator; this is obtained from the CLIST.

**&PROFNAME**

The profile name

**&PROFCRTR**

The profile creator.

**&UTSRUTIL**

An internal profile identifier assigned during build processing.

**&UTSCUTIL**

An internal job identifier.

## HAAREOIC

This topic describes the variables available in DB2 Automation Tool skeleton HAAREOIC. This skeleton contains control cards for the REORG INDEX or REORG INDEXSPACE utility.

The following variables are available in this skeleton:

**&LISTNAME**

Determines whether LISTDEFS are used. Valid values: Blank: Use index or indexspace names Not blank: Use LISTDEFS

**&DB2VER**

DB2 version of the subsystem.

**&DLCCEATR**

The index creator name.

**&DLCIX**

The index name.

**&DLCDB**

Database name.

**&DLCTS**

Table space name

**&PARTNBR**

Object partition number. If blank, syntax does not include partition number or FORCEROLLUP syntax.



**&UTREUSE**

If set to Y, REUSE syntax is included.

**&URSHRLVL**

This value determines the SHRLEVEL syntax, if any. R generates SHRLEVEL REFERENCE; C generates SHRLEVEL CHANGE; N generates SHRLEVEL NONE.

**&UDEADLNE**

This value determines the DEADLINE syntax, if any. N generates DEADLINE NONE; T generates DEADLINE *timestamp*; L generates DEADLINE CURRENT TIMESTAMP.

**&UDEADTIM**

The timestamp value for DEADLINE *timestamp* syntax.

**&ULD\***

These variables are used when DEADLINE syntax has been specified and a labeled duration expression is to be used for the deadline. These variables are set on the Deadlines Options screen for the REORG INDEX utility.

**&UTDRAINW**

If not blank, contains the drain wait value for DRAIN\_WAIT syntax.

**&UTTRETRY**

If not blank, contains the number of retries for RETRY syntax.

**&UTRETRYD**

If not blank, contains the number of delay seconds for RETRY\_DELAY syntax.

**&UMAXROWS**

If not blank, contains the value for MAXRO syntax.

**&UDRAIN**

Determines drain syntax. A: DRAIN ALL, W: DRAIN WRITERS

**&ULONGLOG**

Determines LONGLOG syntax. C: LONGLOG CONTINUE; T: LONGLOG TERM; D: LONGLOG DRAIN

**&UDELAY**

If not blank, contains the value for DELAY syntax.

**&UTIMEOUT**

Determines TIMEOUT syntax. A: TIMEOUT ABEND, T: TERM

**&UILEAFDS**

If not blank, contains the value for LEAFDISTLIMIT syntax.

**&UIREPORT**

If set to Y, generates REPORTONLY syntax.

**&SELECT3**

Determines FASTSWITCH syntax for online REORGs. If set to Y, generates FASTSWITCH YES syntax; if set to N, generates FASTSWITCH NO syntax.

**&USTATOPT**

If set to Y, generates STATISTICS syntax.

**&USTREPOR**

If set to Y, generates REPORT YES syntax. If set to N, generates REPORT NO syntax.

**&USTUPDTE**

Determines UPDATE syntax for statistics. A: UPDATE ALL; C: UPDATE ACCESSPATH; S: UPDATE SPACE; N: UPDATE NONE

**&USSTATKY**

If set to Y, generates KEYCARD syntax.

**&USNUMCOL**

If not blank, contains the value for the NUMCOLS portion of FREQVAL syntax.

**&USCOUNT**

Contains the value for the COUNT portion of FREQVAL syntax.

**&USHISTORY**

Determines HISTORY syntax for statistics. A: HISTORY ALL; C: HISTORY ACCESSPATH; S: HISTORY SPACE; N: HISTORY NONE

**&USFORCER**

If set to Y, generates FORCEROLLUP YES syntax. If set to N, generates FORCEROLLUP NO syntax.

**&USORTDVT**

If not blank, contains the device type for SORTDEVT syntax.

**&USORTNUM**

If not blank, contains the number of temporary data sets for SORTNUM syntax.

**&UIPREFOR**

If set Y, generates PREFORMAT syntax.

**&UTCLONE**

If set to Y, adds CLONE syntax; the utility will act only on clone objects.

## HAAREOIJ

This topic describes the variables available in DB2 Automation Tool skeleton HAAREOIJ. This skeleton contains JCL for the REORG INDEX or REORG INDEXSPACE utility.

The following variables are available in this skeleton:

**&UTSRUTIL**

If not blank, sets the UTILID to the utility ID specified on the Job Generation Options screen.

**&STEPNAME**

This variable is used to aid in creating a unique step name generated by DB2 Automation Tool. The variable resolves to 8 alphanumeric characters in the form xxxnnyyy, where xxx = utility type (such as RTS for REORG TABLESPACE), nn = job number, and yyy = step number.

**&REGION**

The region size for the job card.

**&SSID**

The DB2 subsystem ID.

**&UTILID**

The utility ID specified on the utility options screen; if the job options specify to prefix the utility ID with the job name, step name, or both, the utility ID may be prefixed with those.

**&SELECT2**

If set to Y, builds the SYSPRINT DD to a data set. If set to any other value, builds SYSPRINT DD to SYSOUT=\*

**&UWKALIAS**

If not blank, is set to the utility work data set high level qualifier, specified on the Job Generation Options screen, and generates a SYSPRINT DD with the specified high level qualifier. If not blank, the SYSPRINT DD is a temporary work data set.

**&JOBNAME**

A unique job name.

**&WORKDEV**

The work device type for temporary data sets.

**HAAREORC**

This topic describes the variables available in DB2 Automation Tool skeleton HAAREORC. This skeleton contains JCL for the control cards for the REORG TABLESPACE utility.

The following variables are available in this skeleton:

**&LISTNAME**

Determines whether LISTDEFs are used. Valid values: Blank: Use table space names Not blank: Use LISTDEFS

**&DLCDB**

Database name.

**&DLCTS**

Table space name

**&PARTNBR**

Object partition number. If blank, syntax does not include partition number or FORCEROLLUP syntax.

**&UTREUSE**

If set to Y, REUSE syntax is included.

**&ULOG**

If set to Y, generates LOG YES syntax. If set to N, generates LOG NO syntax.

**&USORTDAT**

If set to Y, generates SORTDATA syntax.

**&UNOSYSRC**

If set to Y, generates NOSYSREC syntax.

**&USORTKEY**

If Y, generates SORTKEYS syntax.

**&COPYDDN1, &COPYDDN2**

Contains DD names for the primary (&COPYDDN1) and backup (&COPYDDN2) copy data sets for the local site image copy.

**&COMMA**

Internal variable set to a comma if a local or recovery backup copy is specified.

**&RCVYDDN1, &RCVYDDN2**

Contains DD names for the primary (&RCVYDDN1) and backup (&RCVYDDN2) copy data sets for the recovery site image copy.

**&URSHRLVL**

This value determines the SHRLEVEL syntax, if any. R generates SHRLEVEL REFERENCE; C generates SHRLEVEL CHANGE; N generates SHRLEVEL NONE.

**&UDEADLNE**

If set to Y, generates DEADLINE syntax.

**&UDEADVAL**

This value determines the DEADLINE syntax, if any. N generates DEADLINE NONE; T generates DEADLINE *timestamp*; L generates DEADLINE CURRENT DATE or CURRENT TIMESTAMP.

**&UDEADTIM**

The timestamp value for DEADLINE *timestamp* syntax.

**&SELECT6**

If a labeled duration expression is chosen, specifies CURRENT DATE or CURRENT TIMESTAMP. D: Generates CURRENT DATE; T: generates CURRENT TIMESTAMP

**&ULD\***

These variables are used when DEADLINE syntax has been specified and a labeled duration expression is to be used for the deadline. These variables are set on the Deadlines Options screen for the REORG INDEX utility.

**&DB2VER**

DB2 version of the subsystem.

**&UTDRAINW**

If not blank, contains the drain wait value for DRAIN\_WAIT syntax.

**&UTTRETRY**

If not blank, contains the number of retries for RETRY syntax.

**&UTRETRYD**

If not blank, contains the number of delay seconds for RETRY\_DELAY syntax.

**&UMAPCRTR**

If not blank, contains an existing mapping table creator name.

**&UMAPTBLN**

If not blank, contains an existing mapping table name.

**&UMAXROWS**

If not blank, contains the value for MAXRO syntax.

**&UDRAIN**

Determines drain syntax. A: DRAIN ALL, W: DRAIN WRITERS

**&ULONGLOG**

If set to C, generates LONGLOG CONTINUE syntax. If set to T, generates LONGLOG TERM syntax. If set to D, generates LONGLOG DRAIN syntax.

**&UDELAY**

If not blank, contains the value for DELAY syntax.

**&UTIMEOUT**

If set to A, generates TIMEOUT ABEND syntax. If set to T, generates TIMEOUT TERM syntax.

**&SELECT3**

If set to Y, generates FASTSWITCH YES syntax; if set to N, generates FASTSWITCH NO syntax.

**&UOFFPOS**

If not blank, contains the value for OFFPOSLIMIT syntax.

**&UINDREFL**

If not blank, contains the value for INDREFLIMIT syntax.

**&URREPTON**

If set to Y, generates REPORTONLY syntax.

**&SELECT13**

Determines UNLOAD syntax. P: UNLOAD PAUSE, C: UNLOAD CONTINUE; E: UNLOAD EXTERNAL; O: UNLOAD ONLY

**&UKEEPDIC**

If set to Y, generates KEEPDICTIONARY keyword.

**&USTATOPT**

If Y, generates STATISTICS syntax.

**&SELECT4**

If set to a value other than N, generates STATISTICS TABLE (ALL) syntax.

**&USTSMPL**

If not blank, contains the percentage for the SAMPLE keyword.

**&SELECT5**

If set to a value other than N, generates STATISTICS INDEX (ALL) syntax.

**&USTREPOR**

If Y, generates REPORT YES syntax. If N, generates REPORT NO syntax.

**&USTUPDTE**

Determines UPDATE syntax for statistics. A: UPDATE ALL; C: UPDATE ACCESSPATH; S: UPDATE SPACE; N: UPDATE NONE

**&USSTATKY**

If set to Y, generates KEYCARD syntax.

**&USNUMCOL**

If not blank, contains the value for the NUMCOLS portion of FREQVAL syntax.

**&USCOUNT**

Contains the value for the COUNT portion of FREQVAL syntax.

**&USHISTORY**

Determines HISTORY syntax for statistics. A: HISTORY ALL; C: HISTORY ACCESSPATH; S: HISTORY SPACE; N: HISTORY NONE

**&USFORCER**

If Y, generates FORCEROLLUP YES syntax. If N, generates FORCEROLLUP NO syntax.

**&USORTDVT**

If not blank, contains the device type for SORTDEVT syntax.

**&USORTNUM**

If not blank, contains the number of temporary data sets for SORTNUM syntax.

**&UIPREFOR**

If set to Y, generates PREFORMAT syntax.

**&SELECT11**

If set to Y, generates DISCARDDN syntax and sets internal variable NOPAD to blanks.

**&NOPAD**

If DISCARD NOPAD is specified, contains NOPAD; otherwise, contains blanks.

**&SELECT12**

If set to Y, sets internal variable NOPAD so the DISCARD NOPAD syntax is generated.

**&DDNAME**

Contains the DD for the discard data set. If blank, set to SYSDISC.

**&UTCLONE**

If set to Y, adds CLONE syntax; the utility will act only on clone objects.

## HAAREORD

This topic describes the variables available in DB2 Automation Tool skeleton HAAREORD. This skeleton contains control cards for a REORG TABLESPACE utility when disjointed partitions or partition ranges for partitioned table spaces are included, and when the Group Partitions By field in the utility profile is set to "job" or "step".

The following variables are available in this skeleton:

**&GENPAREN**

Generates required parentheses. If it is the last partition that is generated for the current object, this variable sets &RP to ")".

**&LP** Used to insert the LISTPARTS keyword.

**&RP** Used to insert a right parenthesis.

**&LISTNAME**

Determines whether LISTDEFS are used. Valid values: Blank: Use index or index space names Not blank: Use LISTDEFS.

**&LISTPART**

Determines the maximum number of partitions to be reorganized in a single REORG on a LISTDEF.

**&DLCDB**

Database name.

**&DLCTS**

Table space name.

**&PARTRANG**

If greater than 0, generates all selected partitions for the current database name and table space name in a single LISTDEF statement.

**&GENPART**

Determines which portion of the JCL to generate: the REORG TABLESPACE statement or disjointed partition statements.

**&PARTLEVL**

Contains the disjointed partitions as they are generated.

**HAAREORJ**

This topic describes the variables available in DB2 Automation Tool skeleton HAAREORJ. This skeleton contains JCL for the REORG TABLESPACE utility.

The following variables are available in this skeleton:

**&UTSRUTIL**

If not blank, sets the UTILID to the utility ID specified on the Job Generation Options screen.

**&STEPNAME**

This variable is used to aid in creating a unique step name generated by DB2 Automation Tool. The variable resolves to 8 alphanumeric characters in the form xxxnnyyy, where *xxx* = utility type (such as RTS for REORG TABLESPACE), *nn* = job number, and *yyy* = step number.

**&REGION**

The region size for the job card.

**&SSID**

The DB2 subsystem ID.

**&UTILID**

The utility ID specified on the utility options screen; if the job options specify to prefix the utility ID with the job name, step name, or both, the utility ID may be prefixed with those.

**&UTILREST**

This variable is set to 'RESTART' if the utility is to be restarted.

**&SELECT2**

If set to Y, builds the SYSPRINT DD to a data set. If set to any other value, builds SYSPRINT DD to SYSOUT=\*

**&UWKALIAS**

If not blank, is set to the utility work data set high level qualifier, specified on the Job Generation Options screen, and generates a SYSPRINT DD with the specified high level qualifier. If not blank, the SYSPRINT DD is a temporary work data set.

**&JOBNAME**

A unique job name.

**&UNITTYPE**

If set to T, the unit type set on the Image Copy options screen is a tape device. If set to D, the unit type is a disk device.

**&UCVOLCNT**

If not blank, contains the value for the unit count parameter.

**&WORKDEV**

The work device type for temporary data sets.

**&UNOSYSRC**

Generates the appropriate comment box based on whether the NOSYSREC option was specified.

**&SELECT9**

This variable is set to 1 if NOSYSREC Y is specified in the utility profile,

but DB2 Automation Tool determines that the NOSYSREC keyword is not required. If set to 1, a comment box is generated stating that the NOSYSREC keyword is not included.

**&SELECT8**

This variable is set to 1 if NOSYSREC N is specified in the utility profile, but DB2 Automation Tool determines that the NOSYSREC keyword is required. If set to 1, the required SYSREC DD is included, and a comment box is generated stating that the NOSYSREC option and the required SYSREC DD were included.

**&CONDDSTEP**

An eight-character step name variable used to check the condition code of the previous utility step.

**&SELECT14**

If set to P, indicates REORG UNLOAD PAUSE and sets  
DISP=(MOD,CATLG,CATLG); otherwise sets  
DISP=(MOD,DELETE,CATLG).

**&USORTKEY**

If set to Y, includes a SYSUT1 DD to rebuild indexes in parallel.

**&ICDSN**

If not blank, contains the name of the discard data set and generates the discard SYSPUNCH DD.

**&USORTDVT**

If not blank, contains the device type for SORTDEVT syntax.

**&SORTWKPS**

Primary quantity for sort work data sets.

**&SORTWKSS**

Secondary quantity for sort work data sets.

## **HAAREOTJ**

This topic describes the variables available in DB2 Automation Tool skeleton HAAREOTJ. This skeleton builds temporary and SORTWK DDs for REORG and determines the volume count.

The following variables are available in this skeleton:

**&WORKDEV**

The work device type for temporary data sets. Its value is assigned to &WD in the skeleton.

**&UCVOLCNT**

If not blank, contains the volume count for DASD or tape, used for the sort DD UNIT and VOLUME parameters. Its value is assigned to &VC in the skeleton.

**&UREALPRI**

Primary quantity for SPACE parameter. Its value is assigned to &PS in the skeleton.

**&UREALSEC**

Secondary quantity for SPACE parameter. Its value is assigned to &SS in the skeleton.



**&UNITTYPE**

If set to T, the unit type is a tape device. If set to D, the unit type is a disk device.

**&SORTDDNM**

Generates the name of a single DD; if blank, can be used to generate a UNIT parm for certain DDs that have already been built.

**&DD** Set to the text "DD". If blank, can be used to generate a UNIT parm for certain DDs that have already been built.

**&WD** Internal variable which is set to the value of &WORKDEV for purposes of skeletal line length limitations.

**&VC** Internal variable which is set to the value of &UCVOLCNT for purposes of skeletal line length limitations.

**&PS** Internal variable which is set to the value of &UREALPRI for purposes of skeletal line length limitations.

**&SS** Internal variable which is set to the value of &UREALSEC for purposes of skeletal line length limitations.

**HAAREPRC**

This topic describes the variables available in DB2 Automation Tool skeleton HAAREPRC. This skeleton contains control cards for the REPAIR utility.

The following variables are available in this skeleton:

**&UPLOG**

If set to Y, sets internal variable &LOGTEXT to YES. If not set to Y, sets internal variable &LOGTEXT to NO.

**&PARTNBR**

Object partition number. If blank, syntax does not include partition number.

**&UPPROCES**

Specifies the type of REPAIR processing: D: REPAIR DBD S: REPAIR SET L: REPAIR LEVELID

**&UPDBDPRC**

Specifies REPAIR DBD processing: D: REPAIR DBD DROP; T: REPAIR DBD TEST; I: REPAIR DBD DIAGNOSE; R: REPAIR DBD REBUILD.

**&DLCDB**

Database name.

**&DLCDBID**

Database descriptor identifier (DBID).

**&UFILTRDD**

If not blank, contains the DD name for the OUTDDN output data set.

**&UICTYPE**

Type of object. Valid values: TS: Table space IX: Index space

**&UPCPYPND**

If set to Y, specifies that the COPY-pending status of the specified object is to be reset.

**&LOGTEXT**

Contains YES if changes are to be logged; contains NO if changes are not to be logged.

**&DLCTS**

Table space name.

**&PARTTEXT**

This variable is set to blanks if the object being repaired is not partitioned; otherwise, the syntax PART is generated.

**&UPRCVPND**

If set to Y, specifies that the RECOVER-pending status of the specified object is to be reset.

**&UPCHKPND**

If set to Y, specifies that the CHECK-pending status of the specified object is to be reset.

**&SELECT1**

If this variable is set to Y, the space being repaired is a LOB.

**&UPAUXWRN**

If set to Y, specifies that the auxiliary warning status of the specified object is to be reset.

**&UPAUXCHK**

If set to Y, specifies that the auxiliary CHECK-pending status of the specified object is to be reset.

**&DB2VER**

DB2 version of the subsystem.

**&DLCCEATR**

The index creator name.

**&DLCIX**

The index name.

**&UPREBPND**

If set to Y, specifies that the REBUILD-pending status of the specified index is to be reset.

## HAAREPRJ

This topic describes the variables available in DB2 Automation Tool skeleton HAAREPRJ. This skeleton contains JCL for the REPAIR utility.

The following variables are available in this skeleton:

**&UTSRUTIL**

If not blank, sets the UTILID to the utility ID specified on the Job Generation Options screen.

**&STEPNAME**

This variable is used to aid in creating a unique step name generated by DB2 Automation Tool. The variable resolves to 8 alphanumeric characters in the form xxxnnyyy, where *xxx* = utility type (such as RTS for REORG TABLESPACE), *nn* = job number, and *yyy* = step number.

**&REGION**

The region size for the job card.

**&SSID**

The DB2 subsystem ID.

**&UTILID**

The utility ID specified on the utility options screen; if the job options specify to prefix the utility ID with the job name, step name, or both, the utility ID may be prefixed with those.

**&UFILTRDD**

If not blank, contains the DD name for the OUTDDN output data set.

**&UWKALIAS**

Used in the &UFILTRDD DD statement as the data set high level qualifier.

**&JOBNAME**

A unique job name.

**&WORKDEV**

The work device type for temporary data sets.

## HAARICD

This topic describes the variables available in DB2 Automation Tool skeleton HAARICD. This skeleton contains JCL for the integrity checker utility.

The following variables are available in this skeleton:

**&JOBCARD1**

First line of job card

**&JOBCARD2**

If not blank, second line of job card.

**&JOBCARD3**

If not blank, third line of job card.

**&JOBCARD4**

If not blank, fourth line of job card.

**&SSID**

The DB2 subsystem ID.

**&ZUSER**

This ISPF variable is set to the user ID of the user building the job.

**&ZDAYOFWK**

This ISPF variable is set to the day of the week.

**&DLCMONTH**

The month.

**&ZDAY**

This ISPF variable is set to the date.

**&ZSTDYEAR**

This ISPF variable is set to the year.

**&ZTIMEL**

This ISPF variable is set to the current timestamp.

## HAARICJ

This topic describes the variables available in DB2 Automation Tool skeleton HAARICJ. This skeleton contains JCL for page validation in online or batch mode.

The following variables are available in this skeleton:

**&STEPNAME**

This variable is used to aid in creating a unique step name generated by DB2 Automation Tool. The variable resolves to 8 alphanumeric characters in the form xxxnnyyy, where xxx = utility type (such as RTS for REORG TABLESPACE), nn = job number, and yyy = step number.

**&SELECT9**

If set to 0, processing is online; if set to any other value, processing is batch mode.

**&LLIB**

The load library's DSN suffix.

**&CLTFMID**

The client product FMID. This variable resolves to HAA for DB2 Automation Tool.

**&REGION**

The region size for the job card.

**&SSID**

The DB2 subsystem ID.

**&USERIND**

The DB2 Automation Tool user indicator; this is obtained from the CLIST.

**&DB2CNTFL**

The DB2PARMS control file, this name is obtained from the startup CLIST.

## HAARUNSC

This topic describes the variables available in DB2 Automation Tool skeleton HAARUNSC. This skeleton contains control cards for the RUNSTATS utility.

The following variables are available in this skeleton:

**&UICTYPE**

Type of object. Valid values: TS: Table space IX: Index space

**&LISTNAME**

Determines whether LISTDEFS are used. Valid values: Blank: Use index or indexspace names Not blank: Use LISTDEFS

**&DLCDB**

Database name.

**&DLCTS**

Table space name

**&PARTNBR**

Object partition number. If blank, syntax does not include partition number.

**&DLCLOG**

If this variable contains an L, the space is a LOB. If blank, the space is not a LOB.

**&SELECT4**

If this variable contains Y, TABLE ALL syntax is included in the utility.

**&USSAMPLE**

If not blank, this variable contains the value for the SAMPLE parameter.

**&SELECT5**

If this variable contains Y, INDEX ALL syntax is included in the utility.

**&DB2VER**

DB2 version of the subsystem.

**&DLCCEATR**

The index creator name.

**&DLCIX**

The index name.

**&IXV8LNE1, &IXV8LNE2, &IXV8LNE3, &IXV8LNE4**

An index name. These variables allow for a long index name to be included as part of the syntax.

**&USSTATKY**

If Y, the KEYCARD keyword is included.

**&USNUMCOL**

If not blank, the KEYCARD keyword is included and this variable contains the value for the NUMCOLS keyword.

**&USSCOUNT**

Contains the value for the COUNT keyword.

**&USHNCOLS**

If not blank, the HISTOGRAM keyword is included and this variable contains the value for the NUMCOLS keyword.

**&USHNQNTL**

Contains the value for the NUMQUANTILES keyword.

**&USSHRLVL**

This value determines the SHRLEVEL syntax, if any. R generates SHRLEVEL REFERENCE; C generates SHRLEVEL CHANGE.

**&USREPORT**

If Y, generates REPORT YES syntax. If N, generates REPORT NO syntax.

**&USUPDATE**

This value indicates which collected statistics are to be inserted into the catalog tables. A generates UPDATE ALL; N generates UPDATE NONE; C generates UPDATE ACCESSPATH; S generates UPDATE SPACE.

**&USHISTORY**

This value indicates which statistics are to be recorded in the catalog history tables. A generates HISTORY ALL; N generates HISTORY NONE; C generates HISTORY ACCESSPATH; S generates HISTORY SPACE.

**&USFORCER**

If set to Y, generates FORCEROLLUP YES syntax. If set to N, generates FORCEROLLUP NO syntax.

## HAARUNSJ

This topic describes the variables available in DB2 Automation Tool skeleton HAARUNSJ. This skeleton contains JCL for the RUNSTATS utility.

The following variables are available in this skeleton:

**&UTSRUTIL**

If not blank, sets the UTILID to the utility ID specified on the Job Generation Options screen.

**&STEPNAME**

This variable is used to aid in creating a unique step name generated by DB2 Automation Tool. The variable resolves to 8 alphanumeric characters in the form xxxnnyyy, where *xxx* = utility type (such as RTS for REORG TABLESPACE), *nn* = job number, and *yyy* = step number.

**&SSID**

The DB2 subsystem ID.

**&UTILID**

The utility ID specified on the utility options screen; if the job options specify to prefix the utility ID with the job name, step name, or both, the utility ID may be prefixed with those.

**&SELECT8**

Determines type of SYSPRINT DD. If set to R, builds SYSPRINT DD with temporary data set; if set to any other value, the SYSPRINT DD goes to SYSOUT=.

**&WORKDEV**

The work device type for temporary data sets.

**HAASORTJ**

This topic describes the variables available in DB2 Automation Tool skeleton HAASORTJ. This skeleton builds sort work files DDs.

The following variables are available in this skeleton:

**&WORKDEV**

The work device type for temporary data sets. The original value of this variable is saved in &WORKDEV2 and then restored at the end of skeletal, in order to preserve the variable value needed by other skeletons.

**&UNITTYPE**

The sort device type. The original value of this variable is saved in &UNITTYP2 and then restored at the end of skeletal, in order to preserve the variable value needed by other skeletons.

**&SORTDEV**

Sort work device.

**&SRTDEVTP**

Sort work device type.

**&SORT#DDS**

The number of sort DDs. If blank, the number of sort DDs is set to 3.

**&SELECT7**

Defines whether the REORG sort work files are built for table space or index REORGs. Valid values: I: Index REORGs R: Table space REORGs

**&UNUMBOBJ**

A descending number used to create a unique sort WORK DD for the sort work data set.

**&UTPRINT**

DD name for a sort work data set for index builds.

**&SW** Used to generate sort DD names.

**&SELECT15**

If set to Y, creates DATAWK DDs.

**&SWPREF**

If set to Y, this variable is set to DATAWK and used to build the DATAWK DDs.

**HAASTEPL**

This topic describes the variables available in DB2 Automation Tool skeleton HAASTEPL. This skeleton contains JCL for including STEPLIBS.

The following variables are available in this skeleton:

**&STEPLIBS**

Step libraries. The step libraries are included if you specify Y in the Generate Steplib DDs on the DB2 Shared Profile Support setup screen or the Override Setup Options screen.

**&CLTLOAD1, &CLTLOAD2**

The DB2 Automation Tool load libraries; these are obtained from the CLIST.

**&FECLOAD1, &FECLOAD2**

The DB2 Tools common code load libraries; these are obtained from the CLIST.

**&UEMCSNAP**

If set to B or D, includes an EMC load library in the STEPLIB.

**&EMCLOAD1, &EMCLOAD2**

The EMC load libraries; these are obtained from the CLIST.

**&FDRLOAD1, &FDRLOAD2**

The FDR load libraries; these are obtained from the CLIST.

**&DB2LOAD1, &DB2LOAD2, &DB2LOAD3, &DB2LOAD4, &DB2LOAD5**

The DB2 load libraries. These are obtained from the DB2 Automation Tool setup screen.

**HAASYSNJ**

This topic describes the variables available in DB2 Automation Tool skeleton HAASYSNJ. This skeleton contains JCL for including the SYSIN DD \* card.

No variables are available in this skeleton.

**HAATEMPC**

This topic describes the variables available in DB2 Automation Tool skeleton HAATEMPC. This skeleton contains control cards for TEMPLATE utility control statements.

The following variables are available in this skeleton:

**&DDNAME**

The template name

**&UCPYUNIT**

Contains the unit name for the data set.

**&DLCDSET**

Contains the template for the z/OS data set name.

**&DATALINE**

Contains the templated data set name from the Image Copy DSN generation screen.

**&JCLLINE**

This variable contains the continuation of the template name from &DATALINE, if required.

**&FDATASET**

If not blank, this variable contains the data set that contains the model DCB for GDGs.

**&SELECT5**

DB2 Automation Tool sets this variable to Y if the data set name in &DATALINE and/or &JCLLINE is a GDG. If set to Y, and FDATASET is not blank, MODELDCB syntax is built.

**&UNITTYPE**

If set to T, the unit type is a tape device. If set to D, the unit type is a disk device.

**&MAXPRIME**

If not blank, contains the value for MAXPRIME syntax.

**&UCVOLCNT**

If not blank, contains the value for the UNCNT syntax

**&UDATCLAS**

If not blank, contains the value for DATACLAS syntax.

**&UMGTCLAS**

If not blank, includes the value for MGMTCLAS syntax.

**&USTOCLAS**

If not blank, includes the value for STORCLAS syntax.

**&URETPERI**

If not blank, contains the retention period for RETPD syntax.

**&UIDELAY**

If not blank, contains the expiration date for the EXPDL parameter.

**&UCATALOG**

Specifies the DISP subparameter for the DD statement. Valid values: Y: DISP=(MOD, CATLG, CATLG) N: DISP=(NEW, KEEP, DELETE)

**&USTACK**

If set to Y, stacks control statements under one COPY statement. If set to N, each object is listed in its own control statement.

**&GDGBASE**

If not set to 0, contains the value for GDGLIMIT syntax.

**&THRESDD**

If not blank, contains the template name for the threshold unit device that will be used for allocations.

**&THRESLIM**

If &THRESDD is specified, the threshold quantity.

**&THRESTYP**

If &THRESDD is specified, the threshold unit (megabytes, gigabytes, tracks, or cylinders).



## HAAUREPJ

This topic describes the variables available in DB2 Automation Tool skeleton HAAUREPJ. This skeleton contains JCL cards for updating the DB2 Automation Tool repository from the RUNSTATS report.

The following variables are available in this skeleton:

### **&STEPNAME**

This variable is used to aid in creating a unique step name generated by DB2 Automation Tool. The variable resolves to 8 alphanumeric characters in the form xxxnnyyy, where *xxx* = utility type (such as RTS for REORG TABLESPACE), *nn* = job number, and *yyy* = step number.

### **&CONDSTEP**

An eight-character step name variable used to check the condition code of the previous utility step.

### **&REGION**

The region size for the job card.

### **&SSID**

The DB2 subsystem ID.

### **&DB2CNTFL**

The DB2PARMS control file, this name is obtained from the startup CLIST.

### **&CLTFMID**

The client product FMID. This variable resolves to HAA for DB2 Automation Tool.

---

## Using the sample profiles

DB2 Automation Tool provides some sample profiles that can be used to perform some common tasks.

The sample profiles provide examples of common object, utility, exception, and job profiles containing typical defaults that can be tailored for your site's needs.

The best practice sample profiles can help you take advantage of IBM-advised industry trends and DB2 enhancements. For example, for better performance, IBM might recommend the use of a parameter that is available in a new release over a parameter from a previous release. With these best practice sample profiles, you can leverage the technology of new releases of DB2 out of the box.

In addition, the sample profiles can generate copy and recovery JCL for backing up and recovering your DB2 catalog and directory.

### Installing the sample profiles

The sample profiles are installed using Tools Customizer. For more information, see Chapter 2, "Preparing to customize DB2 Automation Tool," on page 11.

After installation, you should rename the profiles using the R line command. If you do not rename the sample profiles, and the sample profiles are accidentally reinstalled with the same creator name, your changes will be overwritten. Alternatively, you could make the sample profiles read-only after they have been modified for your use. To do so, update each sample profile and set the Share

Option field to "V" for view only. Users can export and import these profiles under their own creator ID and modify them for their own use.

Before using the sample profiles, modify them to fit your location's data set naming conventions and other location-specific information.

## Sample profiles reference

The sample profiles that are installed are listed in the following tables. The default content that is provided can easily be modified to suit your needs.

The sample profiles that are installed are listed in the following tables. The default contents listed can easily be modified to suit your needs.

*Table 50. Sample object profiles*

Name	Default contents
AUTOMATION TOOL REPOSITORY	The DB2 Automation Tool and shared profile support database, stored in DLCDB*. Partitions for any partitioned object are processed together when utility JCL is generated.
DB2 CATALOG	All DSNDB06 table spaces.
DB2 CATALOG AND DIRECTORY	All DSNDB01 and DSNDB06 table spaces.
DB2 DIRECTORY	All DSNDB01 table spaces.
SAMPLE DATABASE	Spaces in the DB2 sample database that is optionally installed with DB2. The specified database is DSN8D*1A; the wild card is used for the DB2 version to allow the profile to function with any version of DB2.
SAMPLE DATABASE WITH EXCLUDE	Spaces in the DB2 sample database (DSN8D*1A), but excluding all partitions of DSN8S*1R table space. This is an example of how to exclude objects in a profile.
SAPR3	All table spaces and indexes that belong to an SAP/R3 subsystem (with the creator SAPR3).

*Table 51. Sample utility profiles*

Name	Default contents
BEST PRACTICE INCR COPY	Incremental copy of a table space using IBM's advice for optimally running a COPY utility.
BEST PRACTICE FULL COPY	Full copy of a table space using IBM's advice for optimally running a COPY utility.
BEST PRACTICE ONLINE REORG	Oline REORG of a table space using IBM's advice for optimally running a REORG.
BEST PRACTICE RUNSTATS	Collect statistics on a table space using IBM's advice for optimally running RUNSTATS.
COPY TO COPY	Use COPYTOCOPY to make local backup to tape from most recent image copy. The copy data set is a GDG data set with partition numbers. This profile contains an example on how to use the substring substitution variables.
COPY TO DASD	Full image copy with SHRLEVEL REFERENCE to DASD.

Table 51. Sample utility profiles (continued)

Name	Default contents
COPY TO TAPE	Full image copy with SHRLEVEL REFERENCE to tape using a GDG data set with partition numbers.
MODIFY RECOVERY	Delete recovery information over 30 days old from the DB2 catalog.
ONLINE IX REORG	REORG of an index with SHRLEVEL CHANGE. The catalog is updated with inline statistics.
ONLINE TS REORG	REORG of a table space with SHRLEVEL CHANGE. The mapping is automatically created. The catalog is updated with inline statistics. An inline image copy is made. The copy data set is a GDG on DASD.
QUIESCE	Quiesce with WRITE set to YES.
RECOVER	Recover to current point-in-time.
REPAIR SET NOCOPYPEND	Uses the REPAIR utility to reset the COPY PENDING status of a space.
REPOSITORY MAINTENANCE	Clean up the DB2 Automation Tool repository of data older than 30 days.
RESIZE	Resize space data sets when more than 50 extents or percentage in use greater than 80%.
RUNSTATS CATALOG	Run RUNSTATS with SHRLEVEL REFERENCE and update all DB2 catalog statistics.
RUNSTATS REPOSITORY	Run RUNSTATS with SHRLEVEL REFERENCE and update all DB2 Automation Tool repository statistics. The DB2 catalog is not updated.
STANDARD IX REORG	REORG index with SHRLEVEL NONE.
STANDARD TS REORG	REORG table space with SHRLEVEL NONE.
VERIFY	Generate object page validation reports and check for inconsistent pages.

Table 52. Sample exception profiles

Name	Default contents
BEST PRACTICE IMAGE COPY FULL	Determine when to take a full image copy by using these exceptions at regular intervals.
BEST PRACTICE REORG AVOIDANCE	Detect when a REORG can be avoided by using these exception conditions.
BEST PRACTICE RUNSTATS	Determine when to collect fresh statistics by using these exceptions at regular intervals.
CLUSTERRATIO VALUE RANGE	Check the DB2 catalog for a cluster ratio of less than 95% but great than 1%. This example shows how to set a range of values for a single condition.
COPY CONDITIONS	Common conditions for a copy: 1) more than 14 days since last full image copy; 2) changed since the last image copy or 3) in COPY PENDING status.
LARGE OBJECTS	For objects allocated greater than 3,000 tracks.
NEVER COPIED	For objects that have not had a full image copy taken.

Table 52. Sample exception profiles (continued)

Name	Default contents
REORG CONDITIONS	<p>Common conditions for a REORG:</p> <ul style="list-style-type: none"> <li>• Data sets with more than 50 extents</li> <li>• Data sets that are more than 80% used</li> <li>• More than 5% of rows in a space have been relocated</li> <li>• More than 10% of the space contains rows from dropped tables</li> <li>• Index CLUSTERRATIO is less than 95% (the related table space is also selected for REORG <i>or</i> index leaf distance is greater than 200)</li> </ul> <p>CARDF for table spaces and indexes is checked to make sure empty spaces are not selected. Statistics are collected by RUNSTATS with REPORT YES immediately before conditions are evaluated. Neither the DB2 catalog nor the DB2 Automation Tool repository are updated with these statistics. This is a good example of how conditions can be combined with AND and OR in the same profile.</p>
SATURDAY ONLY	Check for a day of the week (Saturday is the default).
SMALL OBJECTS	For objects allocated less than 3,000 tracks.

Table 53. Sample job profiles

Name	Default contents
BEST PRACTICE FULL INCR COPY	Use this job profile to generate JCL for both incremental image copies and full image copies. If an object meets the criteria for a full image copy, it is generated with full image copy control cards. If an object does not meet the criteria for a full image copy, it is generated with incremental copy control cards.
BEST PRACTICE REORG AVOIDANCE	In this job profile, table spaces that meet the exception criteria of needing a REORG are generated into the utility JCL. With this job profile, no utility is generated; instead, a preview report is created, enabling you to view the objects that would be included for a REORG had the utility JCL actually been created. This enables you to review the workload before the utility JCL is generated.
BEST PRACTICE RUNSTATS	In this job profile, objects are included in the RUNSTATS utility JCL based upon the number of inserts, updates, and deletes that have occurred on a given table space. Best practice standards are used when generating this utility JCL.
COPY CATALOG AND DIRECTORY	The DB2 catalog and directory table spaces are copied in the correct order, with separate COPY statements and job steps where necessary. One job is generated. Copy data sets will reside on DASD. Includes object profile DB2 CATALOG AND DIRECTORY and utility profile COPY TO DASD.

Table 53. Sample job profiles (continued)

Name	Default contents
COPY LARGE SPACES TO TAPE	Common copy conditions are used to select spaces that are larger than 3,000 tracks and copy them to tape. Multiple jobs are generated. Even though no job name template override is specified, a unique job name is generated for each job. Each job resides in its own PDS member, with the member name equal to the job name; as such, exactly 10 jobs are generated. If fewer than 10 objects are selected, one utility job is generated for each object. All remaining jobs contain only an IEFBR14 step. If more than 10 objects are selected, they are distributed among the 10 jobs. Utility IDs are prefixed with the job name. If a GDG base does not exist for any copy data set, it is created. This method of generating jobs is useful when using a job scheduler to automatically submit the jobs.
COPY SMALL SPACES TO DASD	Common copy conditions are used to select spaces that are 3,000 tracks or smaller and copy them to DASD. Multiple jobs are generated. In this case, only one PDS member, containing up to 10 jobs, is created. As such, it is possible to have fewer than the maximum number of jobs created. If fewer than 10 objects are selected, one utility job is created for each object, and no IEFBR14 jobs will be generated.
COPY TO DASD	This job profile contains multiple exception profiles. Normally, exception profiles are combined for evaluating objects. In this case, each profile is evaluated separately. Common copy conditions are used to select the spaces to be copied. If an object is not selected by the common copy conditions, then it is evaluated by the NEVER COPIED exception profile. The COPY utility is run to create an LP copy with SHRLEVEL REFERENCE, followed by the COPYTOCOPY utility to create an LB copy. One job is generated.
ONLINE REORG	Common REORG conditions are used to select table spaces and indexes for REORG with SHRLEVEL CHANGE. The mapping table is automatically created. Any object data sets that have more than 50 extents or are more than 80% full are resized. One job is generated.
RECOVER CATALOG AND DIRECTORY	The DB2 catalog and directory table spaces are recovered in the correct order, with separate RECOVER statements and job steps where necessary. One job is generated.
REPOSITORY STATS	The DB2 Automation Tool repository is populated with current statistics collected by RUNSTATS and statistics older than 30 days are removed for all objects in the object profile. One job is generated.
RUNSTATS CATALOG	The DB2 catalog is populated with current statistics collected by RUNSTATS for all objects in the object profile. One job is generated.
STANDARD REORG	Common REORG conditions are used to select table spaces and indexes for REORG with SHRLEVEL NONE. Any object data sets that have more than 50 extents or are more than 80% full are resized. One job is generated.

## Using the catalog and directory sample profiles

The sample profiles include two job profiles that make it easy for you to backup and recover your DB2 catalog and directory.

These profiles are called COPY CATALOG AND DIRECTORY and RECOVER CATALOG AND DIRECTORY. These job profiles use the three following profiles:

- An object profile named **DB2 CATALOG AND DIRECTORY**. This profile includes all DSNDB01 and DSNDB06 objects. The objects are selected using wild cards, so all objects in those databases will be selected.
- A utility profile called **COPY TO DASD**. This profile specifies a full image copy with share level reference. The default image copy data set name is *database.spacename.LP.timestamp*, but can easily be modified for your site's needs.
- A utility profile called **RECOVER**. This profile specifies a recovery to the current point in time, using the local site image copies.

### Copying the catalog and directory

The profile for copying the catalog and directory uses the DB2 CATALOG AND DIRECTORY and COPY TO DASD profiles.

The DB2 catalog and directory table spaces will be copied in the correct order, with separate COPY statements and job steps where necessary. One job will be generated. The copied data sets will reside on DASD.

The following figure shows the COPY CATALOG AND DIRECTORY jobs profile.

```
AUTOTOOL V4R2  ----- Update Jobs Profile Display ----- 2017/09/20 21:28:16
Option ==>                                           Scroll ==> CSR
-----
Line Commands: V - View  A - Add  D - Delete  U - Update  R - Repeat
                G - show/hide Group
-----
Creator: REGRSAMP      Profile: COPY CATALOG AND DIRECTORY      User: TWUSR
                        DB2 Subsystem: SS01
-----
Share Option U  (U - Update,      Description DSNDB01 DSNDB06 TABLESPACES
                 V - View,
                 N - No)
Update Job Generation Options N  (Yes/No)  Row 1 of 3          >
-----
      Excp Rule
Cmd  Order  Accp Rjct  Type  Name                      Creator
   1       1          GRP   DEFAULT GROUP #1          HAA
   1       1          OBJS  DB2 CATALOG AND DIRECTORY    REGRSAMP
   2       2          UTIL  COPY TO DASD                REGRSAMP
***** Bottom of Data *****
```

Figure 348. COPY CATALOG AND DIRECTORY sample profile

To use this profile, update the object and utility profiles as necessary for your site and build the profile.

The resulting job should be submitted on a regular basis to ensure recoverability of your DB2 catalog and directory.

### Recovering the catalog and directory

The profile for recovery the catalog and directory uses the DB2 CATALOG AND DIRECTORY and RECOVER profiles.

The DB2 catalog and directory table spaces will be recovered in the correct order, with separate RECOVER statements and job steps where necessary. One job will be generated.

The following figure shows the RECOVER CATALOG AND DIRECTORY jobs profile.

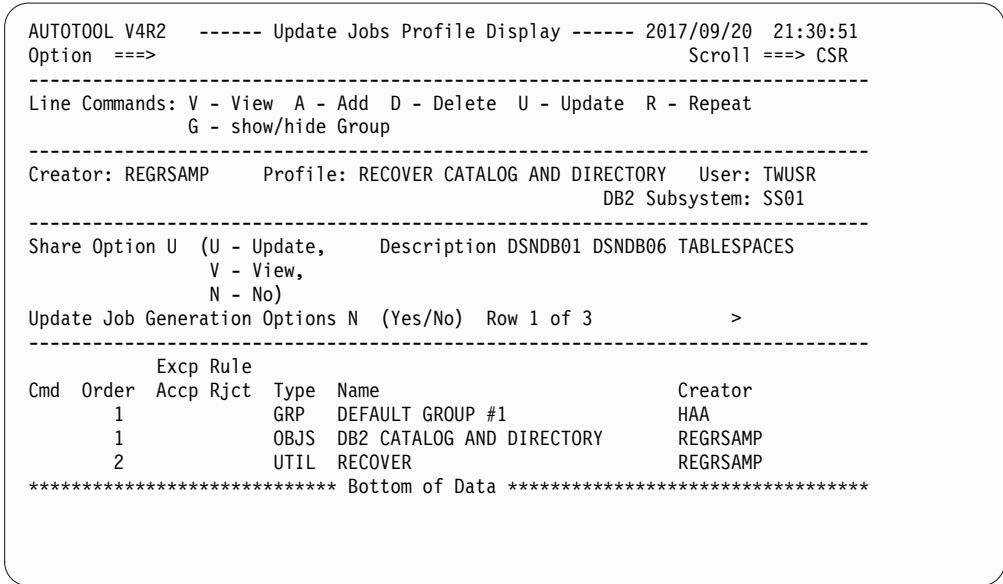


Figure 349. RECOVER CATALOG AND DIRECTORY sample profile

To use this profile, update the object and utility profiles as necessary for your site and build the profile.

The resulting job should be placed on tape along with the image copies from the COPY DB2 CATALOG AND DIRECTORY.

## User exits for rearranging jobs, steps, or objects before job generation

The following user exits provided in the SHAASAMP library of DB2 Automation Tool can be coded to help you rearrange the job, steps, or objects in the job before job generation. These sample exits provide a framework for coding your own user exit to accomplish the desired tasks.

The user exit is passed an array with elements representing the job numbers, step numbers, and objects included in the job generation. The Build Jobs Display offers a good reference of the elements passed in the array. You may view the Build Jobs Display by running a build online and specifying Y in the View job summary option on the Messages Generated for *job\_profile* panel.

### Assembler exit sample programs

#### HAAUXPRE

Specify this module in the Pre-Generation User Exit Name field on the Generation Options window. This member is an assembler stub that runs through the array, checking for a particular job, job step, and object. There are additional details in the comment section to aid in understanding the array elements.

## HAA\$UXPR

The DSECT used to map the parameters passed to the user exit and to map the array elements. Within each object element, there may be object statistics that can be used as the programmer needs. The statistics available to the user exit depend upon the exceptions that were selected in the exception profile.

## C exit sample programs

### HAAUAPRE

Specify this module in the Pre-Generation User Exit Name field on the Generation Options window. This member is an assembler stub that calls the C program.

### HAAUCPRE

C exit program skeleton; this program runs through the array, checking for a particular job, job step, and object.

### HAAUHPRE

C header file required by HAAUCPRE. Maps the parameters passed to the user exit and to map the array elements.

Each element in the array has a set of sequence numbers that together composes a sort key. Upon returning from the user exit, the objects in the array are sorted, effectively reordering the jobs, steps, and objects. The following sequence numbers may be altered by the user exit:

Table 54. Symbol names in user exits

Description	Symbol (Assembler)	Symbol (C)
Job sequence	PREGEN_JOB_SEQ	pregen_job_seq
Step sequence	PREGEN_STEP_SEQ	pregen_step_seq
Object sequence	PREGEN_OBJ_SEQ	pregen_obj_seq
Object sequence 2 (provided to allow an object to be inserted between two existing objects)	PREGEN_OBJ_SEQ2	pregen_obj_seq2

## Tips for coding the exits

These exits could be coded in a number of ways to manipulate the array containing the job sequence number, step sequence number, and object sequence number(s). For example, to move all partitions of a certain table space to the same job for a REORG TABLESPACE, the following logic could be used:

1. Start at the beginning of the array.
2. Look for a REORG TABLESPACE step. Refer to the DSECT for the appropriate symbol and value.
  - a. When found, save the job and step sequence numbers.
  - b. For each object in step, save the object sequence number, database and table space names.
3. Look ahead in the rest of array for a subsequent REORG TS step with a different job sequence number.
  - a. If found, look for objects that match the database/table space saved in step 2.



- b. If a match is found, move the saved job/step/object sequence numbers into the current element, and place a unique sequence number in PREGEN\_OBJ\_SEQ2 field.

## Using the pre-generation user exit

To execute a pre-generation user exit, enter the exit load module name in the Pre-Generation User Exit Name field on the Generation Options panel. The load module specified must reside in a load library that is allocated by the DB2 Automation Tool CLIST.

## Calculations used for maximum potential size of an object for exception processing

This topic lists (by object type) the calculations for the maximum potential size of an object. The calculations are used in exception processing when processing the conditions PERCENT\_MAXALLOC and PERCENT\_MAXUSED.

### Non-partitioned table spaces

Table 55. Maximum size calculations for non-partitioned table spaces

If:	Max size used by DB2 Automation Tool
Space is a LOB	DSSIZE x 256 potential data sets
Space is a LOB and DSSIZE not specified	64 GB x 256 potential data sets
All other non-partitioned table spaces	64 GB

### Partitioned table spaces

Table 56. Maximum size calculations for partitioned table spaces

If:	And:	And:	And:	Max size used by DB2 Automation Tool
DSSIZE specified when space was created	Space is a PBG	-	-	MAXPARTITIONS value x DSSIZE = maxsize in GB
	All other partitioned TS	-	-	DSSIZE

Table 56. Maximum size calculations for partitioned table spaces (continued)

If:	And:	And:	And:	Max size used by DB2 Automation Tool
DSSIZE not specified when space was created	If the LARGE keyword was specified when space was created	-	-	4 GB
	No LARGE keyword was specified	Space has <16 parts	-	4 GB
		Space has 17-32 parts	-	2 GB
		Space has 33-64 parts	-	1 GB
		Space has > 64 parts and is on V9 or later	Space has 65-256 parts (V9 or later)	4 GB
			Space has > 256 parts (v9 or later)	Maxsize = table space page size, but KB replaced with GB. For example: if page size = 32 KB, then maxsize = 32 GB.
		Space has > 64 parts and is on V8	Space has 65-254 parts (V8)	4 GB
			Space has > 254 parts (V8)	Maxsize = table space page size, but KB replaced with GB. For example: if page size = 32 KB, then maxsize = 32 GB.

## Non-partitioned index spaces

Table 57. Maximum size calculations for non-partitioned index spaces

If:	And:	Max size used by DB2 Automation Tool
PIECESIZE specified when index was created	-	PIECESIZE x 32 potential data sets
No PIECESIZE specified when index was created	If the index is an auxiliary IX	4 GB default PIECESIZE x 256 potential data sets = 1 TB
	If DSSIZE was defined on the TS when created	4 GB default PIECESIZE x 32 potential data sets = 128 GB
	If the LARGE keyword was specified when space was created	4 GB default PIECESIZE x 32 potential data sets = 128 GB
	All other cases	64 GB

## Partitioned index spaces

Table 58. Maximum size calculations for partitioned index spaces

If:	And:	And:	And:	Max size used by DB2 Automation Tool
PIECESIZE was specified when index was created	-	-	-	PIECESIZE
No PIECESIZE specified when index was created	If the LARGE keyword was specified when table space was created	-	-	4 GB
		-	-	4 GB
	No LARGE keyword was specified when table space was created	Space has <16 parts	-	4 GB
		Space has 17-32 parts	-	2 GB
		Space has 33-64 parts	-	1 GB
		Space has > 64 parts and is on V9 or later	Space has 65-256 parts (V9 or later)	4 GB
			Space has > 256 parts (v9 or later)	Maxsize = index space page size, but KB replaced with GB. For example: if page size = 32 KB, then maxsize = 32 GB.
		Space has > 64 parts and is on V8	Space has 65-254 parts (V8)	4 GB
			Space has > 254 parts (V8)	4 GB

## Product usage considerations

This topic provides some general considerations for using DB2 Automation Tool.

### Wildcard use in selection fields

You can use wildcards when selecting or listing objects, profiles, and execution reports in DB2 Automation Tool.

#### Allowed characters

The wildcard characters allowed are:

- The asterisk (\*) or the percent sign (%) represents a string of zero or more characters.
- The underscore (\_) specifies a single character.

#### Examples

\_\_\_DB\* (3 underscores, DB and asterisk)

would return a list of objects with 'DB' in the 4th and 5th position, such as AAADB, and D01DB.

\*DB or %DB (asterisk or percent sign and DB)

would return a list of objects with 'DB' in any position, such as AAADB and D01DB, but also would return objects like ADB and DH0010DB.

## The SSID selection function

On the DB2 Automation Tool main menu and the System Parameters panels, you can enter a ? in the SSID field to get a list of valid DB2 subsystems that exist in the active DB2 control data set.

To access this panel, enter a ? in the SSID field and press Enter. The SSID Selection panel is displayed, as shown in the following figure:

```
FECSLST ----- SSID Selection ----- 2008/06/27 10:58:59
Option ==> Scroll ==> CSR

Select with S line command or just place cursor and press ENTER; To Exit: PF3
-----
Row 1 of 7

Cmd SSID Status
A8D Active
CMD9 Active
SS01 Active
A71Q Inactive
C88R Inactive
CRC8 Active
AW71 Active
***** Bottom of Data *****
```

Figure 350. SSID Selection panel

This panel list all DB2 subsystems that have been defined in the DB2 control data set, which is configured in the System Parameters section of DB2 Automation Tool setup. Next to each SSID is the subsystem's current status. To select a subsystem, type S next to the SSID and press Enter. To cancel, press PF3.

## Primary commands

DB2 Automation Tool supports a number of primary commands that enable you to find information, navigate panels, modify the display of data, and print information.

### FIND *abc*

Finds a unique string within a panel of data where *abc* is the string for which you are searching. If the specified string is found, the cursor moves to the first position of the found string. If the specified string is not found a message displays to indicate that is the case. You should be as specific as possible when using the **FIND** command to ensure the correct return.

The **FIND** command can be issued with the following keywords:

**NEXT** Finds the next instance of the search string.

**PREV** Finds the previous instance of the search string.

**FIRST** Finds the first instance of the search string.

**LAST** Finds the last instance of the search string.

**ALL** Finds all instances of the search string.

The syntax is:

FIND <string> <keyword>

OR

FIND <keyword> <string>

where <string> is the text you want to find and <keyword> is a valid keyword for the **FIND** command (NEXT, PREV, FIRST, LAST, or ALL).

If none of these keywords is explicitly specified, the default behavior is for the next instance of the search term to be found. If a keyword is the only parameter, it is treated as a search string. Two keyword parameters can coexist as long as one of them is identified by surrounding quotes as the search string. Otherwise, the occurrence of multiple instances of keywords causes an error.

**Examples:**

To find the first instance of the word "apple", issue the command:

FIND apple FIRST

To find the next instance of the word "apple":

FIND apple

To find the last instance of the word "apple":

FIND apple LAST

To find all instances of the word "apple":

FIND apple ALL

To find all instances of the word "all", use single quotes to distinguish the search term from the keyword:

FIND 'all' ALL

Or:

FIND ALL 'all'

**FORM**

Reformats the display of a selected line item on a report panel such that each column becomes a row and values display in list format. To use the **FORM** command, type **FORM** in the option line, place your cursor on the line item of interest, and press Enter. The data for the selected line item will be displayed in list format showing column names and their associated values.

**Notes:**

1. To return to the original view from **FORM** view, press PF3.
2. CSETUP functions are not accessible when in **FORM** view. Exit **FORM** view to access CSETUP functionality.

**NROW *n***

Displays the report for a subsequent row of interest where *n* is the number of rows (after to the currently displayed row) that you want to scroll forward (when viewing reports in **FORM** view). The default value of *n* is 1.

**Note:** The **NROW** command is only valid when viewing a report in **FORM** view.

## **PROW *n***

Displays the report for a previous row of interest where *n* is the number of rows (prior to the currently displayed row) that you want to scroll back (when viewing reports in FORM view). The default value of *n* is 1.

**Note:** The **PROW** command is only valid when viewing a report in **FORM** view.

## **PRINTX**

The **PRINTX** command takes a screen shot of a report and sends it to an output queue. The default output destination is the default output queue for your site. For example, if your site's default output class is configured to send output to the hold queue, the **PRINTX** command sends the currently displayed report to the hold queue. You can then view the output using SDSF.

You can change the output class designation for the **PRINTX** command by entering **PRINTX S** in the command line and pressing Enter. The following panel is displayed:

Figure 351. *PRINTX Setup panel*

```
SETUP ----- PRINTX Setup ----- 2010/02/25 14:27:15
Command ==> _____

Specify new output class and press ENTER
      or
press END to cancel.

If new output class is blank, default output class is used.

Current Output Class ==> DEFAULT OUTPUT MESSAGE CLASS
New Output Class      ==> _
```

Enter the desired output class in the **New Output Class** field and press Enter. The new output class is saved across sessions and remains in effect unless you change it. For appropriate output classes available at your site, check with your systems programmer. To change the class back to the default output message class, blank out the value in the **New Output Class** field.

For a snapshot of the current display (print screen), the ISPF Print command can be used. The ISPF Print command writes output to the ISPF LIST data set. See the *ISPF User's Guide* (SC34-4822, SC34-4823) for more information about ISPF Print.

## **SORT *column\_number direction***

Sorts data (on panels of scrollable or tabular data) by column where *column\_number* is the number of the column by which you want to sort and *direction* can be either **A** (to sort data in ascending order) or **D** (to sort data in descending order).

You can refer to columns only by the column number (not the column name). Column numbers are not displayed on the panel. The CMD column is column 1 and columns to the right are incremented sequentially.

Data can be sorted in ascending (A) or descending (D) order. To specify sort order, append the A or D to the end of the SORT command. The default is ascending (A). For example, to sort column 2 in descending order, type:

```
SORT 2 D
```

in the command line and press Enter. Data will be sorted by column 2 in descending order.

## Column display functions

Column display functions (**CSETUP** functions) enable you to rearrange report columns, change the width of individual columns, and control the vertical ordering of columns.

**CSETUP** functionality enables you to:

- Rearrange report columns horizontally using the **CFIX** and **CORDER** options.
- Change the width of individual columns using the **CSIZE** option.
- Control the vertical ordering of columns using the **CSORT** option.

Additional column display functions enable you to:

- Scroll horizontally between columns, in both left and right directions.
- Scroll horizontally within a single report column while other report columns remain stationary on the screen.
- Insert column numbers above each display column.
- Generate a ruler at the top of the report columns beneath the headings.
- Display an entire row-column data element.

The customizations, or views, you configure using **CFIX**, **CORDER**, **CSIZE**, and **CSORT** can be saved across sessions.

The following syntax restrictions apply to the use of **CSETUP** functionality:

- Underlined text indicates the minimum acceptable abbreviation for each keyword.
- Variables are shown in italicized lowercase type.
- Keyword options are separated by vertical lines ( | ).

### Accessing the CSETUP Primary Option Menu

The **CSETUP** primary option menu enables you to access the various **CSETUP** options and configure column display functions according to your display needs.

#### About this task

The **CSETUP** command uses the following syntax:

**CSETUP**

Launches the CSETUP Primary Option Menu.

To access and use the CSETUP Primary Option Menu:

#### Procedure

1. On any dynamic display (for example, the Objects Profile Display panel, the Utilities Profile Display panel, or the Jobs Profile Display panel), type **CSETUP** (or **CSET**) in the Option line and press Enter. The Setup Primary Option Menu

displays as shown in the following figure:

```
SETUP ----- Setup Primary Option Menu ----- YYYY/MM/DD HH:MM:SS
Command ==>

Temporary View

1 CFIX      Select columns to be fixed on the left side of the report
2 CORDER    Modify the horizontal placement of unfixed columns
3 CSIZE     Customize the size of columns
4 CSORT     Select columns to sort
5 CRESET    Reset column values
6 CREMOVE   Remove all customizations, including original defaults
7 PVIEW     Permanent View (toggle between temporary and permanent)

HELP      Setup Tutorial
```

Figure 352. Setup Primary Option Menu panel

2. Type the number corresponding to the option you want to access in the Command line and press Enter. The following options are available on the Setup Primary Option Menu:

**CFIX** Option 1, **CFIX**, enables you to fix and unfix columns.

**CORDER** Option 2, **CORDER**, enables you to reposition columns.

**CSIZE** Option 3, **CSIZE**, enables you to change the displayed width of columns.

**CSORT** Option 4, **CSORT**, enables you to select one or more columns for sorting and thus modify the order of the rows displayed.

**CRESET** Option 5, **CRESET**, enables you to reset all customizations.

**CREMOVE** Option 6, **CREMOVE**, enables you to remove all customizations.

**PVIEW** Option 7, **PVIEW**, enables you to toggle between permanent view and temporary view.

**Note:** You can also directly invoke each **CSETUP** option by typing the corresponding command (for example, **CFIX**, **CORDER**, **CSIZE**, **CSORT**, **CRESET**, **CREMOVE**, or **PVIEW**) in the option line on any dynamic display and pressing Enter.

## Fixing a column

The CFIX option enables you to fix and unfix columns. A fixed column is always located at the far left side of the display.

## About this task

It does not shift horizontally (as unfixed columns do) when scrolling to the left or right. INNER COLUMN SCROLLING and CEXPAND may be used on a fixed column if the column is narrower than its maximum width. Certain columns may be permanently fixed in the report and cannot be unfixed by the user. Such a column has a fix status of P (permanently fixed).

A column cannot be fixed if it is larger than the available display area. There are also restrictions for fixing columns related to the size requirements of other columns.

To fix a column:



## Procedure

1. Type **CFIX** in the option line on any display panel and press Enter. The Define Fixed Columns panel displays as shown in the following figure:

```
CFIX ----- Define Fixed Columns ----- YYYY/MM/DD HH:MM:SS
Option ==>                               Scroll ==> PAGE
-----+>
                                           ROW 1 OF 9

Column Function ==> 1 (1-Fix/Unfix, 2-Order, 3-Size, 4-Sort)
Permanent View ==> Y (Y-Perm, N-Temp) Reset View ==> N (Y,N)

Device_Width : 80
Old_Fixed_Width: 37      Old_Unfixed_Width: 43
New_Fixed_Width:         New_Unfixed_Width:
-----

Cmd New Old Len Column_Name
P  P  P    5  CMD
P  P  P   32  NAME
-          10  CREATOR
-          5   UPDT
-          32  DESCRIPTION
-          10  LAST_USER

Enter: Process selections; PF3: Exit and save; CAN: Exit without save
Line Cmds: F Fix U Unfix
```

Figure 353. Define Fixed Columns panel

The following fields appear on the Define Fixed Columns panel:

### Column Function

Enables you to jump to any of the CSET functions by typing in the appropriate number. The number corresponding to the current option displays in this field.

### Permanent View

Indicates whether the view you define is permanent or temporary. Valid values are:

- **Y**–View customizations are permanent.
- **N**–View customizations are temporary.

### Reset View

Resets all customizations.

### Device\_Width

Shows the current display device size (screen width).

### Old\_Fixed\_Width

Shows the sum of the FIXED column widths prior to any changes in the current CFIX panel.

### Old\_Unfixed\_Width

Shows the UNFIXED area prior to any changes in the current CFIX panel.  $\text{Old\_Unfixed\_Width} = \text{Device\_Width} - \text{Old\_Fixed\_Width}$ .

### New\_Fixed\_Width

Shows the sum of the FIXED column widths that will result if the FIX/UNIFIX changes are saved.

### New\_Unfixed\_Width

Shows the UNFIXED area that will result if the FIX/UNFIX changes are saved.  $\text{New\_Unfixed\_Width} = \text{Device\_Width} - \text{New\_Fixed\_Width}$ .

**Cmd** Field where you specify line commands. Valid line commands are F (fix) and U (unfix).

**New** Displays the new CFIX view settings.

**Old** Displays the previous CFIX view settings.

**Len** Shows the length of the column.

**Column\_Name**

Shows the name of the column.

2. Type F in the **Cmd** field next to column(s) you want to fix.
3. Type U in the **Cmd** field next to column(s) you want to unfix.
4. Press Enter. The changed values display in the **New** column next to the corresponding column(s).
5. Press PF3 to save changes and return to the display panel.

## Repositioning columns

The **CORDER** option enables you to reposition report columns. If any columns are fixed, they are grouped together as the leftmost report columns. The unfixed columns are grouped together to the right of any fixed columns.

### About this task

**CORDER** does not move a column out of its group. A fixed column cannot be relocated to the right of an unfixed column. Likewise, an unfixed column cannot be relocated to the left of a fixed column.

To reposition columns:

### Procedure

1. Type **CORDER** in the option line on any display panel and press Enter. The Define Column Display Order panel displays as shown in the following figure:

```
CTCORD ----- Define Column Display Order ----- YYYY/MM/DD HH:MM:SS
Option  ===>                                     Scroll ===> PAGE
----->
ROW 1 OF 9

Column Function ===> 2 (1-Fix/Unfix, 2-Order, 3-Size, 4-Sort)
Permanent View  ===> N (Y-Perm, N-Temp) Reset View ===> N (Y,N)

Cmd Fix New Old Column_Name
___ P      1 CMD
___ P      2 NAME
___        3 CREATOR
___        4 UPDT
___        5 DESCRIPTION
___        6 LAST_USER
___        7 LAST_UPDATED
___        8 CRTD_USER
___        9 CREATED_USER
***** Bottom of Data *****

Enter: Process selections; PF3: Exit and save; CAN: Exit without save
Line Cmds: Specify number for column position
```

Figure 354. Define Column Display Order panel

The following fields appear on the Define Column Display Order panel:

**Column Function**

Enables you to jump to any of the CSET functions by typing in the appropriate number. The number corresponding to the current option displays in this field.

**Permanent View**

Indicates whether the view you define is permanent or temporary. Valid values are:

- Y–View customizations are permanent.
- N–View customizations are temporary.

**Reset View**

Resets all customizations.

**Cmd** Field where you specify the number for column position.

**Fix** Displays fixed columns. Valid values are:

- F–Indicates the column is fixed.
- P–Indicates the column is permanently fixed.

**New** Displays the new CORDER view settings.

**Old** Displays the previous CORDER view settings.

**Column\_Name**

Shows the name of the column.

2. Type a number next to a column to specify its order.
3. Press Enter. The new column order numbers display in the **New** column next to each column.
4. Press **PF3** to return to the display panel.

**Resizing columns**

The CSIZE option enables you to change the displayed width of columns.

**About this task**

This function is primarily intended for non-numeric data where there are large blank areas in all (or most) rows in a given column. Although the displayed width may change, the underlying data does not change.

If a column's size is less than the column maximum, it is possible that some data is not displayed. INNER COLUMN SCROLLING and CEXPAND can be used to see data outside the display range of the resized column.

**Note:** If the minimum and maximum column widths are equal, the column cannot be resized.

To resize columns:

**Procedure**

1. Type **CSIZE** in the option line on any display panel and press Enter. The Define Column Size panel displays as shown in the following figure:

```

CSIZE ----- Define Column Size ----- YYYY/MM/DD HH:MM:SS
Option ==>                               Scroll ==> PAGE
-----+>
ROW 1 OF 9

Column Function ==> 3 (1-Fix/Unfix, 2-Order, 3-Size, 4-Sort)
Permanent View ==> N (Y-Perm, N-Temp) Reset View ==> N (Y,N)

Device_Width : 80
Old_Fixed_Width: 37      Old_Unfixed_Width: 43
New_Fixed_Width:         New_Unfixed_Width:
-----

Cmd New Old Min Max Fix Column_Name
  5   5   5   5   5 P   CMD
 32  32  32  32  32 P  NAME
 10  10  10  10   10  CREATOR
  5   5   5   5   5  UPDT
 32  32  32  32  32  DESCRIPTION
 10  10  10  10   10  LAST_USER

Enter: Process selections; PF3: Exit and save; CAN: Exit without save
Line Cmds: Column size, between MIN and MAX

```

Figure 355. Define Column Size panel

The following fields appear on the Define Column Size panel:

#### Column Function

Enables you to jump to any of the CSET functions by typing in the appropriate number. The number corresponding to the current option displays in this field.

#### Permanent View

Indicate whether the view you define is permanent or temporary. Valid values are:

- Y–View customizations are permanent.
- N–View customizations are temporary.

#### Reset View

Resets all customizations.

#### Device\_Width

Shows the current display device size (screen width).

#### Old\_Fixed\_Width

Shows the sum of the FIXED column widths.

#### Old\_Unfixed\_Width

Shows the UNFIXED area.

#### New\_Fixed\_Width

Shows the sum of the FIXED column widths.

#### New\_Unfixed\_Width

Shows the UNFIXED area.

**Cmd** Field where you specify the number for column position.

**New** Displays the new CSIZE view settings.

**Old** Displays the previous CSIZE view settings.

**Min** Displays the minimum column length.

**Note:** If the minimum and maximum column widths are equal, the column cannot be resized.

**Max** Displays the maximum column length.

**Note:** If the minimum and maximum column widths are equal, the column cannot be resized.

**Fix** Displays fixed columns. Valid values are:

- **F**—Indicates the column is fixed.
- **P**—Indicates the column is permanently fixed.

**Column\_Name**

Shows the name of the column.

2. Type the desired column size in the **Cmd** field next to the column you want to resize.

**Note:** The column size you specify must be between the Min and Max values shown for that column.

3. Press Enter. The new view criteria display in the **New** column.
4. Press **PF3** to return to the display panel.

### Sort functionality

**CSORT** functionality enables you to select one or more columns for sorting and thus modify the order of the rows displayed on many product panels.

Columns are selected by sort priority and direction. Direction is either ascending (default) or descending. When more than one column is selected for sorting, the second column only differentiates when rows have matching data in the first column. Similarly, a third column only impacts the sort when data in both the first two columns are identical.

#### Defining sort columns:

You can sort display data by columns. You can select up to nine columns for sorting.

#### About this task

A maximum of nine columns can be selected for sorting at one time. Internal requirements may create a smaller maximum. A message is issued if the maximum number of columns selected for sorting is exceeded.

**Note:** **CSORT** and **SORT** are synonymous.

#### Procedure

1. Type **CSORT** (or **SORT**) in the option line on any display panel and press Enter. The Define Sort Columns panel displays as shown in the following figure:

```

SORT ----- Define Sort Columns ----- YYYY/MM/DD HH:MM:SS
Option ==>                               Scroll ==> PAGE
----->
ROW 1 OF 9

Column Function ==> 4 (1-Fix/Unfix, 2-Order, 3-Size, 4-Sort)
Permanent View ==> N (Y-Perm, N-Temp) Reset View ==> N (Y,N)
Stop Sorting    ==> N (Y,N)

Cmd Dir New Old Column_Name
-----
- - - - - CMD
- - - - - NAME
- - - - - CREATOR
- - - - - UPDT
- - - - - DESCRIPTION
- - - - - LAST_USER
- - - - - LAST_UPDATED
- - - - - CRTD_USER
- - - - - CREATED_USER

Enter: Process selections; PF3: Exit and save; CAN: Exit without save
Ord: 1-9 Dir: A Asc D Desc

```

Figure 356. Define Sort Columns panel

The following fields appear on the Define Sort Columns panel:

#### Column Function

Enables you to jump to any of the CSET functions by typing in the appropriate number. The number corresponding to the current option displays in this field.

#### Permanent View

Indicate whether the view you define is permanent or temporary. Valid values are:

- **Y**–View customizations are permanent.
- **N**–View customizations are temporary.

#### Stop Sorting

Indicates whether to stop sorting as specified. Valid values are:

- **Y**–Stop sorting.
- **N**–Continue sorting.

**Cmd** Field where you specify the sort order.

**Dir** Specifies the lexicographic order for the column. Valid values are:

- **A**–(Default) Values are listed in ascending order, smallest to largest.
- **D**–Values are listed in descending order, largest to smallest.

**New** Displays the new CSORT view settings.

**Old** Displays the previous CSORT view settings.

#### Column\_Name

Shows the name of the column.

2. Type **A** or **D** in the **Cmd** field next to the columns on which you want to base your sort.
3. Press Enter. The new sort preferences are displayed in the **New** column.
4. Press **PF3** to return to the display panel.

### Fast-path SORT command:

The SORT command can be used as a primary (fast-path) command by typing the appropriate SORT syntax in the Option line of any report panel and pressing Enter.

The functionality supports both single and multi-column sorting and enables users to specify sort order (ascending or descending) for each column in the sort.

### Syntax for single-column sorting

The syntax for single-column sorting is as follows:

`SORT column_identifier dir`

Where *column\_identifier* is either the **column name** or the **relative column number** and *dir* is the direction in which to sort the column data. Valid values for *dir* are:

asc (Default) Sorts data in ascending order.

desc Sorts data in descending order.

#### Notes:

1. There must be a space between the *column\_identifier* and its *dir* (if used).
2. The **relative column number** for a column is determined based on the column's placement when visible on the screen. Thus, relative column numbers are only available for columns currently visible on the screen. Relative column numbers are determined by counting the displayed columns from left to right, with the leftmost visible column being assigned the number '1' and each successive column (reading left to right) being assigned a relative column number that is incremented by 1. **Hint:** To quickly determine the column number, use the **CNUM** command to toggle on the column numbers for each display column.
3. You can sort on a column that is not displayed if you use the **column name** (instead of the **relative column number**) as the *column\_identifier* in the SORT syntax.

### Multi-column sorting

The syntax for multi-column sorting is as follows:

`SORT column_identifier dir column_identifier dir`

Where *column\_identifier* is either the column name or the relative column number and *dir* is an optional indication of the direction in which to sort the column data. Valid values for *dir* are:

asc (Default) Sorts data in ascending order.

desc Sorts data in descending order.

The *column\_identifier* and *dir* values must all be separated by spaces. The maximum number of columns that can be sorted at once is 9.

### Usage examples

For a report display that has three columns, all of which display on the screen:

Column 1: Name

Column 2 Creator

Column 3: Status

The following examples show how you can sort these columns:

**SORT NAME**

Sorts display data in ascending order based on the value in the **Name** column (when no dir value is specified, the default sort order is ascending, thus **SORT NAME** and **SORT NAME A** are synonymous).

**SORT NAME D**

Sorts display data in descending order based on the value in the **Name** column.

**SORT NAME DESC**

Sorts display data in descending order based on the value in the **Name** column.

**SORT NAME A CREATOR D**

Sorts display data first in ascending order based on the value in the **Name** column and then sorts data in descending order based on the value in the **Creator** column.

**SORT NAME ASC CREATOR DESC**

Sorts display data first in ascending order based on the value in the **Name** column and then sorts data in descending order based on the value in the **Creator** column.

**SORT 1 A**

Sorts display data in ascending order based on the value in the **Name** column.

**SORT 1 A CREATOR D**

Sorts display data first in ascending order based on the value in the **Name** column and then sorts data in descending order based on the value in the **Creator** column.

**SORT 3 2 1**

Sorts the display data first in ascending order based on the value in the **Status** column, then in ascending order based on the value in the **Creator** column, and finally in ascending order based on the value in the **Name** column.

**Note:** When you specify a column name using any of the above formats, you may enclose it in single quotes, double quotes, or be without any quotes. For example, the following are equivalent:

**SORT NAME D**

**SORT 'NAME' D**

**SORT "NAME" D**

## **Resetting CSET customizations**

The **CRESET** option enables you to reset all customizations.



## About this task

After **CRESET** is issued, all fixed columns are unfixed (except for any permanently fixed columns), all selected sort columns are deselected and sorting is disabled, all column sizes are set to the initial values or maximum values if no suggested value previously existed, and original column locations are restored.

### Procedure

1. To issue the **CRESET** option, access the Setup Primary Option Menu by typing **CSET** in the option line of any report display and pressing Enter. The Setup Primary Option Menu displays.
2. Type **5** in the command line and press **Enter**. **CRESET** is issued and all fixed columns are unfixed (except for any permanently fixed columns), all selected sort columns are deselected and sorting is disabled, all column sizes are set to the initial values or maximum values if no suggested value previously existed, and original column locations are restored.
3. Alternatively, you can issue the **CRESET** command as a primary command using the following syntax:

#### **CRESET**

Resets all customizations (unfixes fixed columns, deselects selected sort columns, sorting disabled, column sizes set to initial values, original column locations restored).

**Note:** **CRESET** differs from **CREMOVE** in that **CREMOVE** sets all column sizes to their maximum values ignoring any initial, suggested sizes.

## Removing CSET customizations

The **CREMOVE** option enables you to remove all customizations.

## About this task

After you issue the **CREMOVE** command, all fixed columns are unfixed (except for those that are permanently fixed), all selected sort columns are deselected and sorting is disabled, all column sizes are set to their maximum values, and original column locations are restored.

### Procedure

1. To issue the **CREMOVE** option, access the Setup Primary Option Menu by typing **CSET** in the option line of any report display and pressing Enter. The Setup Primary Option Menu displays.
2. Type **6** in the Command line and press Enter. The **CREMOVE** command is issued.
3. Alternatively, you can issue the **CREMOVE** command as a primary command using the following syntax:

#### **CREMOVE**

Removes all customizations (unfixes fixed columns, deselects selected sort columns, sorting disabled, column sizes set to maximum values, original column locations restored).

**Note:** **CREMOVE** differs from **CRESET** in that **CREMOVE** sets all column sizes to their maximum values ignoring any initial, suggested sizes.

## Column scroll

Column scrolling enables you to scroll horizontally between columns, in both left and right directions.

Use the following commands when viewing any dynamic display panel to scroll horizontally between columns:

**CRIGHT *n***

Enables you to scroll the left side of the display window *n* report columns to the right.

**CLEFT *n***

Enables you to scroll the left side of the display window *n* report columns to the left.

### Inner column scroll

Inner column scroll enables you to scroll horizontally within a single report column while other report columns remain stationary on the screen.

Inner column scrolling may be useful for columns that have been shortened using the **CSIZE** functionality. Use the following commands when viewing any dynamic display panel to scroll horizontally within a single report column:

**ICRIGHT**

Enables you to scroll to the right within one report column while the other report columns remain stationary.

**ICLEFT**

Enables you to scroll to the left within one report column while the other report columns remain stationary.

### Column numbers

Column numbers can be inserted above each display column.

The inserted column numbers are relative to the leftmost display column. Use the following command to invoke column numbering:

**CNUM**

Enables you to toggle on/off the column numbers above each display column.

#### Notes:

1. The leftmost displayed column is always numbered one (1) regardless of how far to the right you scroll.
2. You can use column numbers when issuing the **SORT** fast-path command.
3. Column numbers are not removed by **CRESET** nor **CREMOVE**. To remove column numbers, reissue the **CNUM** command.

### Ruler display

The **COLS** command enables you to generate a ruler at the top of the report columns beneath the headings.

This ruler tracks the current position within the column. The < > symbols indicate whether there is additional column data to the left or right of the displayed data. For example:

```
<-5----2-----5-->
```

In this example, positions 13 through 28 are displayed. There is data both to the left and right of the currently displayed area.

The **COLS** command can be issued by itself, as a toggle switch, or with one parameter (ON|OFF). The syntax is as follows:

### **COLS (ON|OFF)**

Enables you to generate a ruler at the top of the report columns to track the current position within the column.

## **Expanding columns**

The **CEXPAND** command enables you to display an entire row-column data element.

### **About this task**

This command can be useful in instances when the **CSIZE** command has reduced a column to a width that is too narrow to display all data. Expanding columns using the **CEXPAND** command provides you with an alternative to inner column scrolling.

### **Procedure**

To invoke CEXPAND, place the cursor on a row-column element and issue the **CEXPAND** command. The cursor position determines the row-column that expands. The **CEXPAND** command can be issued by itself or with two parameters (row and column). The syntax is as follows:

### **CEXPAND (row column)**

Enables you to display an entire row-column data element where *row* is the number of the row and *column* is the number of the column (non-heading lines only) that you want to expand.

## **Restrictions**

The following restrictions apply to CSET options.

- Total fixed column sizes cannot exceed screen width.
- Total fixed column sizes must leave enough unfixed space for the minimum allowed size for all unfixed columns. If a column is not eligible for resizing, the column's minimum size requirement is the same as its maximum size. Minimum and maximum sizes for all columns are shown in the CSIZE display.
- If a column has been resized, then its current width is treated as its smallest allowable size. When a column is resized its current size must fit on the screen completely. For example, on an 80-byte screen with no fixed columns, a 128-byte column can only be resized to 80 bytes or less (assuming no conflicting minimum size associated with the column). If there were two 10-byte fixed columns, for a total fixed area size of 20-bytes, the 128-byte column would be limited to 60 bytes or its minimum allowed size, whichever was smaller.



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