IBM

Program Directory for

IBM Db2 High Performance Unload for z/OS

V05.02.00

Program Number 5655-HP5

FMIDs HINZ520

for Use with
z/OS

Document Date: November 2023

Note

Before using this information and the product it supports, be sure to read the general information under 7.0, "Notices" on page 23.

Contents

Figures

1.0 Introduction

This program directory is intended for system programmers who are responsible for program installation and maintenance. It contains information about the material and procedures associated with the installation of IBM Db2 High Performance Unload for z/OS. This publication refers to IBM Db2 High Performance Unload for z/OS as Db2 High Performance Unload.

The Program Directory contains the following sections:

- 2.0, "Program Materials" on page 4 identifies the basic program materials and documentation for Db2 High Performance Unload.

- 3.0, "Program Support" on page 6 describes the IBM support available for Db2 High Performance Unload.

- 4.0, "Program and Service Level Information" on page 8 lists the APARs (program level) and PTFs (service level) that have been incorporated into Db2 High Performance Unload.

- 5.0, "Installation Requirements and Considerations" on page 9 identifies the resources and considerations that are required for installing and using Db2 High Performance Unload.

- 6.0, "Installation Instructions" on page 16 provides detailed installation instructions for Db2 High Performance Unload. It also describes the procedures for activating the functions of Db2 High Performance Unload, or refers to appropriate publications.

Before installing Db2 High Performance Unload, read the *CBPDO Memo To Users* and the *CBPDO Memo To Users Extension* that are supplied with this program in softcopy format and this program directory; after which, keep the documents for your reference. Section 3.2, "Preventive Service Planning" on page 6 tells you how to find any updates to the information and procedures in this program directory.

Db2 High Performance Unload is supplied in a Custom-Built Product Delivery Offering (CBPDO, 5751-CS3). The program directory that is provided in softcopy format on the CBPDO is identical to the hardcopy format if one was included with your order. All service and HOLDDATA for Db2 High Performance Unload are included on the CBPDO.

Do not use this program directory if you install Db2 High Performance Unload with a ServerPac. When you use one of those offerings, use the jobs and documentation supplied with the offering. The offering will point you to specific sections of this program directory as needed.

Db2 High Performance Unload Description

IBM Db2 High Performance Unload for z/OS, V5.2 (5655-HP5) is a Db2 utility that enables fast and efficient Db2 data unload across enterprise systems. Key enhancements in this release:

- Simple run reporting and overall utility monitoring

    – The Utility history collection feature stores information about the Db2 HPU jobs into Db2 Utilities History Catalog Table. This feature can be enabled, for a Db2 sub-system in Db2 version 13 and

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higher, by setting the "Enable the history collection of Db2 HPU activity (VUU100/ENBHIST) with the appropriate value.

– Information about the memory available when a Db2 HPU step starts is displayed by the INZ312I message. This is meant to make the troubleshooting of memory issues easier and to determine the root cause of the lack of memory that might result from system settings or implementation changes by which a Db2 HPU step may be impacted.

– More information about the zIIP processor usage is provided by the INZU313I and INZU314I messages. This helps users understand and check the exploitation of zIIP processors by Db2 HPU.

- Compatibility with other unload tools

  – The Db2 HPU native syntax offers built-in formats as well as other formatting options and settings capabilities that cover most of the formatting features available with the IBM Db2 UNLOAD, Broadcom Fast Unload and BMC UNLOAD PLUS utilities. This makes the conversion of legacy unload jobs using Db2 HPU native syntax much easier. All the unload jobs in Db2 UNLOAD, Fast Unload, and UNLOAD PLUS syntax supported by the Db2 HPU syntax compatibility feature, available in prior Db2 HPU versions, can be converted into unload jobs using the Db2 HPU native syntax that produce the same output.

- Input and Output usability enhancements

  – XML data can be unloaded into a spanned format data set - requested by the SPANNED YES option - with a logical unload processed in SQL mode that does not involve any other XML or LOB data.

- Concurrency and consistency

  – You can require that Db2 HPU aborts the unload if the requested QUIESCE YES feature cannot be honored using the QUIESCE utility. Set the Quiesce process (VUU028/ULQSCEBH) parmlib parameter to HONOR to enable this behavior of the QUIESCE YES feature.

  – The CURRENT LOCK TIME OUT Db2 special register can be set for unloads run in SQL mode against a Db2 subsystem at Db2 V13.1 with function level V13R1M500 or later. The value of this special register can be specified at the unload command (step) level by the SQL_LOCK_TIMEOUT option or at the parmlib level by the Value to assign to CURRENT LOCK TIMEOUT in SQL mode (VUU102/SQLLKTO) parmlib parameter.

- Tuning and control of internal processes

  – Db2 HPU offers a better control and accuracy of the estimate of the amount of data to be unloaded by an unload performed in native mode. This helps optimize the sizing of the resources allocated for the sort processes as well as the sizing of the output data set allocated through TEMPLATEs thus avoiding memory or storage outages and subsequent failures of sort processing. The use of RTS data for estimation can be requested or disabled at the Db2 HPU step level with the USE_RTS_FOR_ESTIMATION option that overrides the setting of the VUX036/RTSESTIM parmlib parameter. This allows to choose the best estimation algorithm for the conditions that exist during Db2 HPU processing. The accuracy of the estimate when RTS data is used can also be improved by requesting RTS be externalized before the estimation, so that current values are used. This can be requested either at the product level by setting the

VUU036/RTSESTIM to YES,EXTERNALIZE or at the Db2 HPU step level by specifying YES,EXTERNALIZE for RTS_EXTERNALIZE option.

1.1 Db2 High Performance Unload FMIDs

Db2 High Performance Unload consists of the following FMID:

HINZ520

2.0 Program Materials

An IBM program is identified by a program number. The program number for Db2 High Performance Unload is 5655-HP5.

Basic Machine-Readable Materials are materials that are supplied under the base license and are required for the use of the product.

The program announcement material describes the features supported by Db2 High Performance Unload. Ask your IBM representative for this information if you have not already received a copy.

2.1 Basic Machine-Readable Material

The distribution medium for this program is physical media or downloadable files. This program is in SMP/E RELFILE format and is installed by using SMP/E. See 6.0, "Installation Instructions" on page 16 for more information about how to install the program.

You can find information about the physical media for the basic machine-readable materials for Db2 High Performance Unload in the *CBPDO Memo To Users Extension*.

Figure 1. Program File Content				
Name	**O R G**	**R E C F M**	**L R E C L**	**BLK SIZE**
SMPMCS	SEQ	FB	80	6400
IBM.HINZ520.F1	PDS	FB	80	8800
IBM.HINZ520.F2	PDS	U	0	6144
IBM.HINZ520.F3	PDSE	U	0	6144
IBM.HINZ520.F4	PDSE	U	0	6144
IBM.HINZ520.F5	PDS	FB	80	8800
IBM.HINZ520.F6	PDS	FB	80	8800
IBM.HINZ520.F7	PDS	FB	80	8800
IBM.HINZ520.F8	PDS	FB	80	8800
IBM.HINZ520.F9	PDS	FB	80	8800
IBM.HINZ520.F10	PDS	FB	80	8800
IBM.HINZ520.F11	PDS	FB	80	8800
IBM.HINZ520.F12	PDS	FB	80	8800

2.2 Program Publications

The following sections identify the basic publications for Db2 High Performance Unload.

Figure 2 on page 5 identifies the basic unlicensed publications for Db2 High Performance Unload. Those that are in softcopy format can be obtained from the IBM Publications Center website at https://www.ibm.com/resources/publications

Figure 2. Basic Material: Unlicensed Publications		
Publication Title	**Form Number**	**Media Format**
IBM Db2 High Performance Unload for z/OS License Information	GC27-9130	https://www-03.ibm.com/software/sla/sladb.nsf
Db2 High Performance Unload User's Guide	SC28-3292	https://www.ibm.com/resources/publications/OutputPubsDetails?PubID=SC28329200

No optional publications are provided for Db2 High Performance Unload.

2.3 Program Source Materials

No program source materials or viewable program listings are provided for Db2 High Performance Unload.

2.4 Publications Useful During Installation

You might want to use the publications listed in Figure 3 during the installation of Db2 High Performance Unload.

Figure 3. Publications Useful During Installation	
Publication Title	**Form Number**
IBM SMP/E for z/OS User's Guide	SA23-2277
IBM SMP/E for z/OS Commands	SA23-2275
IBM SMP/E for z/OS Reference	SA23-2276
IBM SMP/E for z/OS Messages, Codes, and Diagnosis	GA32-0883

Note: These publications can be found in IBM Documentation. Use a web browser with internet access to refer to: https://www.ibm.com/docs/en/zos/2.5.0?topic=zos-smpe

3.0 Program Support

This section describes the IBM support available for Db2 High Performance Unload.

3.1 Program Services

Contact your IBM representative for specific information about available program services.

3.2 Preventive Service Planning

Before you install Db2 High Performance Unload, make sure that you have reviewed the current Preventive Service Planning (PSP) information. Review the PSP Bucket for General Information, Installation Documentation, and the Cross Product Dependencies sections. For the Recommended Service section, instead of reviewing the PSP Bucket, it is recommended you use the IBM.PRODUCTINSTALL-REQUIREDSERVICE fix category in SMP/E to ensure you have all the recommended service installed. Use the **FIXCAT(IBM.PRODUCTINSTALL-REQUIREDSERVICE)** operand on the **APPLY CHECK**command. See 6.1.10, "Perform SMP/E APPLY" on page 19 for a sample APPLY command

If you obtained Db2 High Performance Unload as part of a CBPDO, HOLDDATA is included.

If the CBPDO for Db2 High Performance Unload is older than two weeks by the time you install the product materials, you can obtain the latest PSP Bucket information by going to the following website:

https://esupport.ibm.com/customercare/psearch/search?domain=psp

You can also use S/390 SoftwareXcel or contact the IBM Support Center to obtain the latest PSP Bucket information.

For program support, access the Software Support Website at https://www.ibm.com/mysupport/.

PSP Buckets are identified by UPGRADEs, which specify product levels; and SUBSETs, which specify the FMIDs for a product level. The UPGRADE and SUBSET values for Db2 High Performance Unload are included in Figure 4.

Figure 4. PSP Upgrade and Subset ID		
UPGRADE	**SUBSET**	**Description**
5655HP5	HINZ520	IBM Db2 High Performance Unload for z/OS

3.3 Statement of Support Procedures

Report any problems which you feel might be an error in the product materials to your IBM Support Center. You may be asked to gather and submit additional diagnostics to assist the IBM Support Center in their analysis.

Figure 5 on page 7 identifies the component IDs (COMPID) for Db2 High Performance Unload.

Figure 5. Component IDs				
FMID	**COMPID**	**Component Name**		**RETAIN Release**
HINZ520	5697F4400	IBM Db2 High Performance Unload for z/OS		520

4.0 Program and Service Level Information

This section identifies the program and relevant service levels of Db2 High Performance Unload. The program level refers to the APAR fixes that have been incorporated into the program. The service level refers to the PTFs that have been incorporated into the program.

4.1 Program Level Information

The following APAR fixes against previous releases of Db2 High Performance Unload have been incorporated into this release. They are listed by FMID.

- FMID HINZ510

  All APARs up to and including APAR from PTF UI92575 (fixes PH55224, PH55222, PH54711 and PH53950) and APAR PH57218.

4.2 Service Level Information

No PTFs against this release of Db2 High Performance Unload have been incorporated into the product package.

Frequently check the Db2 High Performance Unload PSP Bucket for HIPER and SPECIAL attention PTFs against all FMIDs that you must install. You can also receive the latest HOLDDATA, then add the **FIXCAT(IBM.PRODUCTINSTALL-REQUIREDSERVICE)** operand on your **APPLY CHECK** command. This will allow you to review the recommended and critical service that should be installed with your FMIDs.

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating Db2 High Performance Unload. The following terminology is used:

- *Driving system*: the system on which SMP/E is executed to install the program.

  The program might have specific operating system or product level requirements for using processes, such as binder or assembly utilities during the installation.

- *Target system*: the system on which the program is configured and run.

  The program might have specific product level requirements, such as needing access to the library of another product for link-edits. These requirements, either mandatory or optional, might directly affect the element during the installation or in its basic or enhanced operation.

In many cases, you can use a system as both a driving system and a target system. However, you can make a separate IPL-able clone of the running system to use as a target system. The clone must include copies of all system libraries that SMP/E updates, copies of the SMP/E CSI data sets that describe the system libraries, and your PARMLIB and PROCLIB.

Use separate driving and target systems in the following situations:

- When you install a new level of a product that is already installed, the new level of the product will replace the old one. By installing the new level onto a separate target system, you can test the new level and keep the old one in production at the same time.

- When you install a product that shares libraries or load modules with other products, the installation can disrupt the other products. By installing the product onto a separate target system, you can assess these impacts without disrupting your production system.

5.1 Driving System Requirements

This section describes the environment of the driving system required to install Db2 High Performance Unload.

5.1.1 Machine Requirements

The driving system can run in any hardware environment that supports the required software.

5.1.2 Programming Requirements

Figure 6. Driving System Software Requirements				
Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in the shipped product?
5650-ZOS	z/OS	02.04.00	N/A	No

Note: SMP/E is a requirement for Installation and is an element of z/OS.

Note: Installation might require migration to new z/OS releases to be service supported. See https://www.ibm.com/support/lifecycle/

5.2 Target System Requirements

This section describes the environment of the target system required to install and use Db2 High Performance Unload.

Db2 High Performance Unload installs in the DBS (P115) SREL.

5.2.1 Machine Requirements

The target system can run in any hardware environment that supports the required software.

5.2.2 Programming Requirements

5.2.2.1 Installation Requisites

Installation requisites identify products that are required and *must* be present on the system or products that are not required but *should* be present on the system for the successful installation of this product.

Mandatory installation requisites identify products that are required on the system for the successful installation of this product. These products are specified as PREs or REQs.

Db2 High Performance Unload has no mandatory installation requisites.

Conditional installation requisites identify products that are *not* required for successful installation of this product but can resolve such things as certain warning messages at installation time. These products are specified as IF REQs.

Db2 High Performance Unload has no conditional installation requisites.

5.2.2.2 Operational Requisites

Operational requisites are products that are required and *must* be present on the system or products that are not required but *should* be present on the system for this product to operate all or part of its functions.

Mandatory operational requisites identify products that are required for this product to operate its basic functions.

Figure 7. Target System Mandatory Operational Requisites	
Program Number	**Product Name and Minimum VRM/Service Level**
5655-TC1	IBM Tools Customizer for z/OS V01.01.00 plus APAR PH42701 (see NOTE below)
Any **one** of the following:	
5650-DB2	Db2 for z/OS V12.01.00
5697-P43	Db2 Value Unit Edition for z/OS V12.01.00
5698-DB2	Db2 for z/OS V13.01.00
5698-DBV	Db2 Value Unit Edition for z/OS V13.01.00

Note: IBM Tools Customizer for z/OS, (5655-TC1), FMID HTCZ110, is a no-charge product that must be separately ordered and installed to customize Db2 High Performance Unload. IBM Tools Customizer for z/OS was formerly a component of Tools Base,

Note: Installation might require migration to new releases to obtain support. See https://www.ibm.com/support/lifecycle/

Conditional operational requisites identify products that are *not* required for this product to operate its basic functions but are required at run time for this product to operate specific functions. These products are specified as IF REQs.

Db2 High Performance Unload has the following operational requisite:

The use of the DB2SORT block level interface (available since APAR PH35218) requires that the maintenance related to PI60788 and PI65906 are applied.

5.2.2.3 Toleration/Coexistence Requisites

Toleration/coexistence requisites identify products that must be present on sharing systems. These systems can be other systems in a multisystem environment (not necessarily sysplex), a shared DASD environment (such as test and production), or systems that reuse the same DASD environment at different time intervals.

Db2 High Performance Unload has no toleration/coexistence requisites.

5.2.2.4 Incompatibility (Negative) Requisites

Negative requisites identify products that must *not* be installed on the same system as this product.

Db2 High Performance Unload has no negative requisites.

5.2.3 DASD Storage Requirements

Db2 High Performance Unload libraries can reside on all supported DASD types.

Figure 8 lists the total space that is required for each type of library.

Figure 8. Total DASD Space Required by Db2 High Performance Unload		
Library Type	**Total Space Required in 3390 Trks**	**Description**
Target	822 tracks	
Distribution	822 tracks	

Notes:

1. For non-RECFM U data sets, IBM recommends using system-determined block sizes for efficient DASD utilization. For RECFM U data sets, IBM recommends using a block size of 32760, which is most efficient from the performance and DASD utilization perspective.

2. Abbreviations used for data set types are shown as follows.

   U Unique data set, allocated by this product and used by only this product. This table provides all the required information to determine the correct storage for this data set. You do not need to refer to other tables or program directories for the data set size.

   S Shared data set, allocated by this product and used by this product and other products. To determine the correct storage needed for this data set, add the storage size given in this table to those given in other tables (perhaps in other program directories). If the data set already exists, it must have enough free space to accommodate the storage size given in this table.

   E Existing shared data set, used by this product and other products. This data set is *not* allocated by this product. To determine the correct storage for this data set, add the storage size given in this table to those given in other tables (perhaps in other program directories). If the data set already exists, it must have enough free space to accommodate the storage size given in this table.

If you currently have a previous release of this product installed in these libraries, the installation of this release will delete the old release and reclaim the space that was used by the old release and any service that had been installed. You can determine whether these libraries have enough space by deleting the old release with a dummy function, compressing the libraries, and comparing the space requirements with the free space in the libraries.

For more information about the names and sizes of the required data sets, see 6.1.8, "Allocate SMP/E Target and Distribution Libraries" on page 19.

3. Abbreviations used for the file system path type are as follows.

N   New path, created by this product.
X   Path created by this product, but might already exist from a previous release.
P   Previously existing path, created by another product.

4. All target and distribution libraries listed have the following attributes:

- The default name of the data set can be changed.
- The default block size of the data set can be changed.
- The data set can be merged with another data set that has equivalent characteristics.
- The data set can be either a PDS or a PDSE, with some exceptions. If the value in the "ORG" column specifies "PDS", the data set must be a PDS. If the value in "DIR Blks" column specifies "N/A", the data set must be a PDSE.

5. All target libraries listed have the following attributes:

- These data sets can be SMS-managed, but they are not required to be SMS-managed.
- These data sets are not required to reside on the IPL volume.
- The values in the "Member Type" column are not necessarily the actual SMP/E element types that are identified in the SMPMCS.

6. All target libraries that are listed and contain load modules have the following attributes:

- These data sets can be in the LPA, but they are not required to be in the LPA.
- These data sets can be in the LNKLST. If so, see the Special Considerations section below.
- These data sets are not required to be APF-authorized, except the SINZLINK library that requires APF-authorized before using Db2 High Performance Unload in batch mode.

7. Db2 High Performance Unload requires that the SMPLTS data set must be a PDSE. If your existing SMPLTS is a PDS, you will need to allocate a new PDSE and copy your existing SMPLTS into it and then change the SMPLTS DDDEF entry to indicate the new PDSE data set.

The following figures describe the target and distribution libraries required to install Db2 High Performance Unload. The storage requirements of Db2 High Performance Unload must be added to the storage required by other programs that have data in the same library.

Note: Use the data in these tables to determine which libraries can be merged into common data sets. In addition, since some ALIAS names may not be unique, ensure that no naming conflicts will be introduced before merging libraries.

Library DDNAME	Member Type	Target Volume	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks

Figure 9. Storage Requirements for Db2 High Performance Unload Target Libraries

Library DDNAME	Member Type	Target Volume	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
SINZCLST	CLIST	Any	U	PDS	FB	80	8	5
SINZDBRM	DATA	Any	U	PDS	FB	80	10	5
SINZDENU	DATA	Any	U	PDS	FB	80	18	5
SINZLINK	MOD	Any	U	PDSE	U	0	525	n/a
SINZLLIB	MOD	Any	U	PDSE	U	0	150	n/a
SINZLOAD	MOD	Any	U	PDS	U	0	13	5
SINZMLIB	MSG	Any	U	PDS	FB	80	9	5
SINZPANL	PNL	Any	U	PDS	FB	80	50	20
SINZSAMP	SAMP	Any	U	PDS	FB	80	17	5
SINZSLIB	SKL	Any	U	PDS	FB	80	13	5
SINZTLIB	TBL	Any	U	PDS	FB	80	9	5

Figure 10. Storage Requirements for Db2 High Performance Unload Distribution Libraries

Library DDNAME	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
AINZCLST	U	PDS	FB	80	8	5
AINZDBRM	U	PDS	FB	80	10	5
AINZDENU	U	PDS	FB	80	18	5
AINZLINK	U	PDSE	U	0	525	n/a
AINZLLIB	U	PDSE	U	0	150	n/a
AINZLOAD	U	PDS	U	0	13	5
AINZMLIB	U	PDS	FB	80	9	5
AINZPANL	U	PDS	FB	80	50	20
AINZSAMP	U	PDS	FB	80	17	5
AINZSLIB	U	PDS	FB	80	13	5
AINZTLIB	U	PDS	FB	80	9	5

5.3 FMIDs Deleted

Installing Db2 High Performance Unload might result in the deletion of other FMIDs. To see which FMIDs will be deleted, examine the ++VER statement in the SMPMCS of the product.

If you do not want to delete these FMIDs at this time, install Db2 High Performance Unload into separate SMP/E target and distribution zones.

Note: These FMIDs are not automatically deleted from the Global Zone. If you want to delete these FMIDs from the Global Zone, use the SMP/E REJECT NOFMID DELETEFMID command. See the SMP/E Commands book for details.

5.4 Special Considerations

PDSE Considerations:

Db2 High Performance Unload uses the "partitioned data set extended" or PDSE format for the SINZLINK, and SINZLLIB target libraries.

There are some operational differences between PDS and PDSE data sets. The PDS format may be shared by more than one z/OS system and no special precautions are necessary. However the PDSE format may only be shared by z/OS systems which are part of a sysplex or which are connected using Global Resource Serialization (are in a GRS complex). If z/OS systems share use of a PDSE data set outside of a sysplex or GRS environment, you may experience severe problems when the data set is updated. This is due to the fact that PDSE directory information is cached in storage, and when the data set is updated from one system the other system(s) have no knowledge of the update, and their cached directory information will be incorrect.

You must take care not to share the SINZLINK, and SINZLLIB data sets between z/OS systems unless they are in a sysplex or are connected in a GRS complex. If you need to share the content of the SINZLINK, and SINZLLIB data sets, a separate copy must be created for each z/OS system.

6.0 Installation Instructions

This chapter describes the installation method and the step-by-step procedures to install and to activate the functions of Db2 High Performance Unload.

Please note the following points:

- If you want to install Db2 High Performance Unload into its own SMP/E environment, consult the SMP/E manuals for instructions on creating and initializing the SMPCSI and the SMP/E control data sets.

- You can use the sample jobs that are provided to perform part or all of the installation tasks. The SMP/E jobs assume that all DDDEF entries that are required for SMP/E execution have been defined in appropriate zones.

- You can use the SMP/E dialogs instead of the sample jobs to accomplish the SMP/E installation steps.

6.1 Installing Db2 High Performance Unload

6.1.1 SMP/E Considerations for Installing Db2 High Performance Unload

Use the SMP/E RECEIVE, APPLY, and ACCEPT commands to install this release of Db2 High Performance Unload.

6.1.2 SMP/E Options Subentry Values

The recommended values for certain SMP/E CSI subentries are shown in Figure 11. Using values lower than the recommended values can result in failures in the installation. DSSPACE is a subentry in the GLOBAL options entry. PEMAX is a subentry of the GENERAL entry in the GLOBAL options entry. See the SMP/E manuals for instructions on updating the global zone.

Figure 11. SMP/E Options Subentry Values		
Subentry	**Value**	**Comment**
DSSPACE	(200,200,500)	3390 DASD tracks
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.

6.1.3 SMP/E CALLLIBS Processing

Db2 High Performance Unload uses the CALLLIBS function provided in SMP/E to resolve external references during installation. When Db2 High Performance Unload is installed, ensure that DDDEFs exist for the following libraries:

- CSSLIB
- SCEEBND2
- SCEELIB
- SCEELKED
- SCCNOBJ
- SCCR6BND
- SISPLOAD

Note: CALLLIBS uses the previous DDDEFs only to resolve the link-edit for Db2 High Performance Unload. These data sets are not updated during the installation of Db2 High Performance Unload.

6.1.4 Sample Jobs

The following sample installation jobs are provided as part of the product to help you install Db2 High Performance Unload:

Job Name	Job Type	Description	SMPTLIB Data Set
INZALA	SMP/E	Sample job to allocate and initialize a new SMP/E CSI data set **(Optional)**	IBM.HINZ520.F5
INZALB	SMP/E	Sample job to allocate SMP/E data sets **(Optional)**	IBM.HINZ520.F5
INZRECEV	RECEIVE	Sample RECEIVE job	IBM.HINZ520.F5
INZALLOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HINZ520.F5
INZDDDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.HINZ520.F5
INZAPPLY	APPLY	Sample APPLY job	IBM.HINZ520.F5
INZACCEP	ACCEPT	Sample ACCEPT job	IBM.HINZ520.F5

Figure 12. Sample Installation Jobs

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.7, "Perform SMP/E RECEIVE" on page 18) then copy the jobs from the SMPTLIB data sets to a work data set for editing and submission. See Figure 12 to find the appropriate data set.

You can also copy the sample installation jobs from the product files by submitting the following job. Before you submit the job, add a job card and change the lowercase parameters to uppercase values to meet the requirements of your site.

```
//STEP1    EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//IN       DD DSN=IBM.HINZ520.F5,UNIT=SYSALLDA,DISP=SHR,
//         VOL=SER=filevol
//OUT      DD DSNAME=jcl-library-name,
//         DISP=(NEW,CATLG,DELETE),
//         VOL=SER=dasdvol,UNIT=SYSALLDA,
//         SPACE=(TRK,(10,5,5))
//SYSUT3   DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN    DD *
    COPY INDD=IN,OUTDD=OUT
/*
```

See the following information to update the statements in the previous sample:

IN:
>   **filevol** is the volume serial of the DASD device where the downloaded files reside.

OUT:
>   **jcl-library-name** is the name of the output data set where the sample jobs are stored.
>   **dasdvol** is the volume serial of the DASD device where the output data set resides.

6.1.5 Allocate SMP/E CSI (Optional)

If you are using an existing CSI, do not execute this job.

If you are allocating a new SMP/E data set for this install, edit and submit sample job INZALA to allocate the SMP/E data set for Db2 High Performance Unload. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: You will receive a return code of 0 if this job runs correctly.

6.1.6 Initialize CSI zones (Optional)

If you are using an existing CSI, do not execute this job.

Edit and submit sample job INZALB to initialize SMP/E zones for Db2 High Performance Unload. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: You will receive a return code of 0 if this job runs correctly.

6.1.7 Perform SMP/E RECEIVE

If you have obtained Db2 High Performance Unload as part of a CBPDO, use the RCVPDO job in the CBPDO RIMLIB data set to receive the Db2 High Performance Unload FMIDs, service, and HOLDDATA that are included on the CBPDO package. For more information, see the documentation that is included in the CBPDO.

You can also choose to edit and submit sample job INZRECEV to perform the SMP/E RECEIVE for Db2 High Performance Unload. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: You will receive a return code of 0 if this job runs correctly.

6.1.8 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job INZALLOC to allocate the SMP/E target and distribution libraries for Db2 High Performance Unload. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: You will receive a return code of 0 if this job runs correctly.

6.1.9 Create DDDEF Entries

Edit and submit sample job INZDDDEF to create DDDEF entries for the SMP/E target and distribution libraries for Db2 High Performance Unload. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: You will receive a return code of 0 if this job runs correctly.

6.1.10 Perform SMP/E APPLY

1. Ensure that you have the latest HOLDDATA; then edit and submit sample job INZAPPLY to perform an SMP/E APPLY CHECK for Db2 High Performance Unload. Consult the instructions in the sample job for more information.

   The latest HOLDDATA is available through several different portals, including http://service.software.ibm.com/holdata/390holddata.html. The latest HOLDDATA may identify HIPER and FIXCAT APARs for the FMIDs you will be installing. An APPLY CHECK will help you determine if any HIPER or FIXCAT APARs are applicable to the FMIDs you are installing. If there are any applicable HIPER or FIXCAT APARs, the APPLY CHECK will also identify fixing PTFs that will resolve the APARs, if a fixing PTF is available.

   You should install the FMIDs regardless of the status of unresolved HIPER or FIXCAT APARs. However, do not deploy the software until the unresolved HIPER and FIXCAT APARs have been analyzed to determine their applicability. That is, before deploying the software either ensure fixing PTFs are applied to resolve all HIPER or FIXCAT APARs, or ensure the problems reported by all HIPER or FIXCAT APARs are not applicable to your environment.

   To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass the PRE, ID, REQ, and IFREQ on the APPLY CHECK. The SMP/E root cause analysis identifies the cause only of *errors* and not of *warnings* (SMP/E treats bypassed PRE, ID, REQ, and IFREQ conditions as warnings, instead of errors).

   Here are sample APPLY commands:

   a. To ensure that all recommended and critical service is installed with the FMIDs, receive the latest HOLDDATA and use the APPLY CHECK command as follows

```
APPLY S(fmid,fmid,...) CHECK
FORFMID(fmid,fmid,...)
SOURCEID(RSU*)
FIXCAT(IBM.ProductInstall-RequiredService)
GROUPEXTEND .
```

Some HIPER APARs might not have fixing PTFs available yet. You should analyze the symptom flags for the unresolved HIPER APARs to determine if the reported problem is applicable to your environment and if you should bypass the specific ERROR HOLDs in order to continue the installation of the FMIDs.

This method requires more initial research, but can provide resolution for all HIPERs that have fixing PTFs available and are not in a PE chain. Unresolved PEs or HIPERs might still exist and require the use of BYPASS.

b. To install the FMIDs without regard for unresolved HIPER APARs, you can add the BYPASS(HOLDCLASS(HIPER)) operand to the APPLY CHECK command. This will allow you to install FMIDs even though one or more unresolved HIPER APARs exist. After the FMIDs are installed, use the SMP/E REPORT ERRSYSMODS command to identify unresolved HIPER APARs and any fixing PTFs.

```
APPLY S(fmid,fmid,...) CHECK
FORFMID(fmid,fmid,...)
SOURCEID(RSU*)
FIXCAT(IBM.ProductInstall-RequiredService)
GROUPEXTEND
BYPASS(HOLDCLASS(HIPER)) .
  ..any other parameters documented in the program directory
```

This method is quicker, but requires subsequent review of the Exception SYSMOD report produced by the REPORT ERRSYSMODS command to investigate any unresolved HIPERs. If you have received the latest HOLDDATA, you can also choose to use the REPORT MISSINGFIX command and specify Fix Category IBM.PRODUCTINSTALL-REQUIREDSERVICE to investigate missing recommended service.

If you bypass HOLDs during the installation of the FMIDs because fixing PTFs are not yet available, you can be notified when the fixing PTFs are available by using the APAR Status Tracking (AST) function of ServiceLink or the APAR Tracking function of ResourceLink.

2. After you take actions that are indicated by the APPLY CHECK, remove the CHECK operand and run the job again to perform the APPLY.

Note: The GROUPEXTEND operand indicates that SMP/E applies all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

Expected Return Codes and Messages from APPLY CHECK: You will receive a return code of 0 if this job runs correctly.

Expected Return Codes and Messages from APPLY: You may receive a return code of 4 if this job runs correctly. The following message can be ignored: IEW2646W.

6.1.11 Perform SMP/E ACCEPT

Edit and submit sample job INZACCEP to perform an SMP/E ACCEPT CHECK for Db2 High Performance Unload. Consult the instructions in the sample job for more information.

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass the PRE, ID, REQ, and IFREQ on the ACCEPT CHECK. The SMP/E root cause analysis identifies the cause of *errors* but not *warnings* (SMP/E treats bypassed PRE, ID, REQ, and IFREQ conditions as warnings rather than errors).

Before you use SMP/E to load new distribution libraries, it is recommended that you set the ACCJCLIN indicator in the distribution zone. In this way, you can save the entries that are produced from JCLIN in the distribution zone whenever a SYSMOD that contains inline JCLIN is accepted. For more information about the ACCJCLIN indicator, see the description of inline JCLIN in the SMP/E Commands book for details.

After you take actions that are indicated by the ACCEPT CHECK, remove the CHECK operand and run the job again to perform the ACCEPT.

Note: The GROUPEXTEND operand indicates that SMP/E accepts all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

Expected Return Codes and Messages from ACCEPT CHECK: You will receive a return code of 0 if this job runs correctly.

If PTFs that contain replacement modules are accepted, SMP/E ACCEPT processing will link-edit or bind the modules into the distribution libraries. During this processing, the Linkage Editor or Binder might issue messages that indicate unresolved external references, which will result in a return code of 4 during the ACCEPT phase. You can ignore these messages, because the distribution libraries are not executable and the unresolved external references do not affect the executable system libraries.

Expected Return Codes and Messages from ACCEPT: You will receive a return code of 0 if this job runs correctly.

6.1.12 Run REPORT CROSSZONE

The SMP/E REPORT CROSSZONE command identifies requisites for products that are installed in separate zones. This command also creates APPLY and ACCEPT commands in the SMPPUNCH data set. You can use the APPLY and ACCEPT commands to install those cross-zone requisites that the SMP/E REPORT CROSSZONE command identifies.

After you install Db2 High Performance Unload, it is recommended that you run REPORT CROSSZONE against the new or updated target and distribution zones. REPORT CROSSZONE requires a global zone with ZONEINDEX entries that describe all the target and distribution libraries to be reported on.

For more information about REPORT CROSSZONE, see the SMP/E manuals.

6.2 Product Customization

The publication *Db2 High Performance Unload User's Guide* (SC28-3292) contains the necessary information to customize and use Db2 High Performance Unload.

7.0 Notices

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