



**Program Directory for
IBM Db2 Management Solution Pack for z/OS**

04.01.00

Program Number 5698-MS4

FMID HALN410

for Use with
z/OS

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GI13-5587-00

Note

Before using this information and the product it supports, be sure to read the general information under 7.0, "Notices" on page 27.

Contents

1.0 Introduction	1
1.1 Db2 Management Solution Pack Description	1
1.2 Db2 Management Solution Pack FMIDs	3
2.0 Program Materials	5
2.1 Basic Machine-Readable Material	5
2.2 Program Source Materials	7
2.3 Publications Useful During Installation	7
3.0 Program Support	8
3.1 Program Services	8
3.2 Preventive Service Planning	8
3.3 Statement of Support Procedures	9
4.0 Program and Service Level Information	10
4.1 Program Level Information	10
4.2 Service Level Information	10
5.0 Installation Requirements and Considerations	12
5.1 Driving System Requirements	12
5.1.1 Machine Requirements	12
5.1.2 Programming Requirements	12
5.2 Target System Requirements	13
5.2.1 Machine Requirements	14
5.2.2 Programming Requirements	14
5.2.2.1 Installation Requisites	14
5.2.2.2 Operational Requisites	15
5.2.2.3 Toleration/Coexistence Requisites	16
5.2.2.4 Incompatibility (Negative) Requisites	16
5.2.3 DASD Storage Requirements	16
5.3 FMIDs Deleted	18
5.4 Special Considerations	19
6.0 Installation Instructions	20
6.1 Installing Db2 Management Solution Pack	20
6.1.1 SMP/E Considerations for Installing Db2 Management Solution Pack	20
6.1.2 SMP/E Options Subentry Values	20
6.1.3 Sample Jobs	21
6.1.4 Perform SMP/E RECEIVE	22
6.1.5 Allocate SMP/E Target and Distribution Libraries	22
6.1.6 Create DDDEF Entries	22
6.1.7 Perform SMP/E APPLY	22

6.1.8 Perform SMP/E ACCEPT	24
6.1.9 Run REPORT CROSSZONE	25
6.1.10 Dynamic Enablement - Update PARMLIB	25
6.2 Activating Db2 Management Solution Pack	25
6.3 Product Customization	25
7.0 Notices	27
7.1 Trademarks	27
Reader's Comments	28

Figures

1. Program File Content	5
2. Basic Material: Unlicensed Publications	6
3. Publications Useful During Installation	7
4. PSP Upgrade and Subset ID	8
5. Component IDs	9
6. Driving System Software Requirements	13
7. Target System Mandatory Operational Requisites	15
8. Total DASD Space Required by Db2 Management Solution Pack	16
9. Storage Requirements for Db2 Management Solution Pack Target Libraries	18
10. Storage Requirements for Db2 Management Solution Pack Distribution Libraries	18
11. SMP/E Options Subentry Values	20
12. Sample Installation Jobs	21

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 Management Solution Pack for z/OS. This publication refers to IBM Db2 Management Solution Pack for z/OS as Db2 Management Solution Pack.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 5 identifies the basic program materials and documentation for Db2 Management Solution Pack.
- 3.0, “Program Support” on page 8 describes the IBM support available for Db2 Management Solution Pack.
- 4.0, “Program and Service Level Information” on page 10 lists the APARs (program level) and PTFs (service level) that have been incorporated into Db2 Management Solution Pack.
- 5.0, “Installation Requirements and Considerations” on page 12 identifies the resources and considerations that are required for installing and using Db2 Management Solution Pack.
- 6.0, “Installation Instructions” on page 20 provides detailed installation instructions for Db2 Management Solution Pack. It also describes the procedures for activating the functions of Db2 Management Solution Pack, or refers to appropriate publications.

Before installing Db2 Management Solution Pack, 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 8 tells you how to find any updates to the information and procedures in this program directory.

Db2 Management Solution Pack 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 Management Solution Pack are included on the CBPDO.

Do not use this program directory if you install Db2 Management Solution Pack 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.

1.1 Db2 Management Solution Pack Description

Db2 Management Solution Pack for z/OS offers the most comprehensive set of Db2 tools to implement best practices for administering and optimizing the Db2 for z/OS environment. Features and functions of Db2 Management Solution Pack help satisfy the administration, performance, utilities, and automation tasks for your most critical Db2 for z/OS environments and applications.

In addition to providing authorization to run all currently supported versions of Db2 Utilities Suite for z/OS, Db2 Management Solution Pack 4.1 combines capabilities from the following programs:

- IBM Db2 Accessories Suite (SQL Tuning Services) V4.2 (5697-Q05)
- IBM Db2 Admin Foundation for z/OS 1.2 (5698-ADF)
- IBM Db2 Administration Tool for z/OS 13.1 (5698-AT3)
- IBM Db2 Cloning Tools for z/OS 3.2 (5655-N15)
- IBM Db2 Objection Comparison Tool for z/OS 13.1 (requires 5698-AT3)
- IBM Db2 Recovery Expert for z/OS 3.2 (5655-W78)
- IBM Db2 Table Editor for z/OS 4.5
- IBM Db2 Utilities Suite for z/OS 13.1 (5698-DUT)

Db2 Management Solution Pack for z/OS 4.1 licensed clients are entitled to enable supported Db2 Utilities Suite, version 12 or 13. The solution pack does not provide the Db2 Utilities Suite for z/OS FMIDs. Instead, Db2 Management Solution Pack licensed clients are **required** to follow the procedures documented in the Dynamic Enablement section in this Program Directory to activate Db2 Utilities Suite for z/OS.

- IBM Db2 Automation Expert for z/OS 1.1 (5698-DAE)

Db2 Automation Expert for z/OS is a new program that replaces Db2 Automation Tool for z/OS. It provides the ability to automate processing of Db2 maintenance utilities for timely optimization and the observability to real-time statistics over time, enabling Db2 customers to easily keep Db2 data protected and optimized for access, and recoverable within their stated timeframe objectives.

Key capabilities of Db2 Automation Expert for z/OS include:

- Advanced and/or support for exception profiles
 - Full integration of autonomic scheduling functions
 - Reorganization avoidance
 - Enhanced best practices profiles
 - ODP stream to provide statistical data to external dashboard
 - Ansible support for external automation (REST API)
- Db2 High Performance Unload for z/OS 5.2 (5655-HP5), delivers the following enhancements to populate the utility history collection tables, available as of IBM Db2 13, and to more easily produce output data within the same format as other unload utilities:
 - Historicizing for easier utility monitoring
 - Easier conversion of other unload tools jobs
 - More information displayed for easier tuning or troubleshooting
 - Finer control of internal processing
 - IBM Db2 Sort for z/OS 2.1 (5655-AA9)

- IBM Db2 Query Workload Tuner for z/OS 6.1 (5698-QW6)
- IBM Db2 Query Monitor for z/OS 3.4 (5655-V42)

Key enhancements in this new release of Db2 Query Monitor for z/OS 3.4 include:

- Performance and cost enhancements with zIIP offload support
- Improved anomaly detection
- Various usability enhancements, including IBM OMEGAMON Data Provider (ODP) metrics for the custom application performance dashboard
- IBM Db2 SQL Performance Analyzer for z/OS 5.1 (5697-W51)
- IBM OMEGAMON for Db2 Performance Expert 5.5 (5655-W37)
- IBM Z OMEGAMON Data Provider

Product information including systems requirements, tech notes, training, and more are available in IBM Documentation.

An IBM program is identified by a program number.

1.2 Db2 Management Solution Pack FMIDs

Db2 Management Solution Pack consists of the following FMIDs:

- IBM Db2 Management Solution Pack for z/OS:
HALN410
- IBM Db2 Acc Suite (SQL Tuning Services):
H2AT210
- IBM Db2 Admin Foundation for z/OS:
HAFX120
- IBM Db2 Administration Tool for z/OS:
H0IHD10
J0IHD10
- IBM Db2 Automation Expert for z/OS:
H33A110
- IBM Db2 Cloning Tool for z/OS:
HCKZ320
- IBM Db2 High Performance Unload for z/OS:
HINZ520
- IBM Db2 Object Comparison Tool for z/OS:
H25GD10
- IBM Db2 Query Monitor for z/OS:
H238340
H25F132
- IBM Db2 Query Workload Tuner for z/OS:

- H2AQ610
- IBM Db2 Recovery Expert for z/OS:
 - H30R320
 - H30RKN0
- IBM Db2 Sort for z/OS:
 - HCNK210
- IBM Db2 SQL Performance Analyzer for z/OS:
 - H1D0510
- IBM Db2 Table Editor for z/OS:
 - H25K150
- OMEGAMON for Db2 Performance Expert and Data Provider:
 - HKDB550
 - HKOB750
 - HKOA110
 - HIZD310

2.0 Program Materials

An IBM program is identified by a program number. The program number for Db2 Management Solution Pack is 5698-MS4.

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 Management Solution Pack. 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 20 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 Management Solution Pack in the *CBPDO Memo To Users Extension*.

Figure 1. Program File Content

Name	ORG	REC	LEN	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.HALN410.F1	PDS	FB	80	8800
IBM.HALN410.F2	PDS	FB	80	8800

To view the Program File Content of the products that constitute Db2 Management Solution Pack, refer to the following Program Directories that are supplied with the product.

- Publication number GI13-5929 for IBM Db2 Acc Suite (SQL Tuning Services)
- Publication number GI13-5930 for IBM Db2 Admin Foundation for z/OS
- Publication number GI13-5526 for IBM Db2 Administration Tool
- Publication number GI13-5576 for IBM Db2 Automation Expert for z/OS
- Publication number GI10-8910 for IBM Db2 Cloning Tool
- Publication number GI13-4688 for IBM Db2 High Performance Unload
- Publication number GI13-4643 for IBM Db2 Object Comparison Tool
- Publication number GI10-8976 for IBM Db2 Query Monitor
- Publication number GI13-5551 for IBM Db2 Query Workload Tuner
- Publication number GI10-8927 for IBM Db2 Recovery Expert

- Publication number GI10-9004 for IBM Db2 Sort for z/OS
- Publication number GI13-4609 for IBM Db2 SQL Performance Analyzer
- Publication number GI10-8401 for IBM Db2 Table Editor
- Publication number GI13-5555 for OMEGAMON for Db2 Performance Expert and Data Provider

Figure 2 identifies the basic unlicensed publications for Db2 Management Solution Pack. Those that are in softcopy format can be obtained from the IBM Publications Center website at <https://www.ibm.com/resources/publications>

<i>Figure 2. Basic Material: Unlicensed Publications</i>		
Publication Title	Form Number	Media Format
IBM Db2 Acc Suite (SQL Tuning Services) Program Directory	GI13-5929	
IBM Db2 Admin Foundation for z/OS Program Directory	GI13-5930	
IBM Db2 Administration Tool for z/OS Program Directory	GI13-5526	
IBM Db2 Automation Expert for z/OS Program Directory	GI13-5576	
IBM Db2 Cloning Tool for z/OS Program Directory	GI10-8910	
IBM Db2 High Performance Unload for z/OS Program Directory	GI13-4688	
IBM Db2 Object Comparison Tool for z/OS Program Directory	GI13-4643	
IBM Db2 Query Monitor for z/OS Program Directory	GI10-8976	
IBM Db2 Query Workload Tuner for z/OS Program Directory	GI13-5551	
IBM Db2 Recovery Expert for z/OS Program Directory	GI10-8927	
IBM Db2 Sort for z/OS Program Directory	GI10-9004	
IBM Db2 SQL Performance Analyzer for z/OS Program Directory	GI13-4609	
IBM Db2 Table Editor for z/OS Program Directory	GI10-8401	
IBM OMEGAMON for Db2 Performance Expert and Data Provider for z/OS Program Directory	GI13-5555	
IBM Db2 Management Solution Pack for z/OS License Information	LC28-3296	

To view the unlicensed publications of the products that constitute Db2 Management Solution Pack, refer to the following Program Directories that are supplied with the product.

- Publication number GI13-5929 for IBM Db2 Acc Suite (SQL Tuning Services)
- Publication number GI13-5930 for IBM Db2 Admin Foundation for z/OS
- Publication number GI13-5526 for IBM Db2 Administration Tool
- Publication number GI13-5576 for IBM Db2 Automation Expert for z/OS

- Publication number GI10-8910 for IBM Db2 Cloning Tool
- Publication number GI13-4688 for IBM Db2 High Performance Unload
- Publication number GI13-4643 for IBM Db2 Object Comparison Tool
- Publication number GI10-8976 for IBM Db2 Query Monitor
- Publication number GI13-5551 for IBM Db2 Query Workload Tuner
- Publication number GI10-8927 for IBM Db2 Recovery Expert
- Publication number GI10-9004 for IBM Db2 Sort for z/OS
- Publication number GI13-4609 for IBM Db2 SQL Performance Analyzer
- Publication number GI10-8401 for IBM Db2 Table Editor
- Publication number GI13-5555 for OMEGAMON for Db2 Performance Expert and Data Provider

2.2 Program Source Materials

No program source materials or viewable program listings are provided for Db2 Management Solution Pack.

2.3 Publications Useful During Installation

You might want to use the publications listed in Figure 3 during the installation of Db2 Management Solution Pack.

<i>Figure 3. Publications Useful During Installation</i>	
Publication Title	Form Number
<i>IBM SMP/E for z/OS User's Guide</i>	SA23-2277
<i>IBM SMP/E for z/OS Commands</i>	SA23-2275
<i>IBM SMP/E for z/OS Reference</i>	SA23-2276
<i>IBM SMP/E for z/OS Messages, Codes, and Diagnosis</i>	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 Management Solution Pack.

3.1 Program Services

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

3.2 Preventive Service Planning

Before you install Db2 Management Solution Pack, 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-REQUIRESERVICE fix category in SMP/E to ensure you have all the recommended service installed. Use the **FIXCAT(IBM.PRODUCTINSTALL-REQUIRESERVICE)** operand on the **APPLY CHECK** command. See 6.1.7, “Perform SMP/E APPLY” on page 22 for a sample APPLY command

If you obtained Db2 Management Solution Pack as part of a CBPDO, HOLDDATA is included.

If the CBPDO for Db2 Management Solution Pack is older than two weeks by the time you install the product materials, you can obtain the latest PSP Bucket information by searching on the following website:

<https://www.ibm.com/support/pages/ibmsearch>

You can also 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 Management Solution Pack are included in Figure 4.

Figure 4. PSP Upgrade and Subset ID

UPGRADE	SUBSET	Description
5698MS4	HALN410	Db2 Management Solution Pack

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 9 identifies the component IDs (COMPID) for Db2 Management Solution Pack.

<i>Figure 5. Component IDs</i>			
FMID	COMPID	Component Name	RETAIN Release
HALN410	5655MSP00	Db2 Management Solution Pack	410

4.0 Program and Service Level Information

This section identifies the program and relevant service levels of Db2 Management Solution Pack. 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

To view the list of APAR fixes against the previous releases of the products that constitute Db2 Management Solution Pack, refer to the following Program Directories that are supplied with the product.

- Publication number GI13-5929 for IBM Db2 Acc Suite (SQL Tuning Services)
- Publication number GI13-5930 for IBM Db2 Admin Foundation for z/OS
- Publication number GI13-5526 for IBM Db2 Administration Tool
- Publication number GI13-5576 for IBM Db2 Automation Expert for z/OS
- Publication number GI10-8910 for IBM Db2 Cloning Tool
- Publication number GI13-4688 for IBM Db2 High Performance Unload
- Publication number GI13-4643 for IBM Db2 Object Comparison Tool
- Publication number GI10-8976 for IBM Db2 Query Monitor
- Publication number GI13-5551 for IBM Db2 Query Workload Tuner
- Publication number GI10-8927 for IBM Db2 Recovery Expert
- Publication number GI10-9004 for IBM Db2 Sort for z/OS
- Publication number GI13-4609 for IBM Db2 SQL Performance Analyzer
- Publication number GI10-8401 for IBM Db2 Table Editor
- Publication number GI13-5555 for OMEGAMON for Db2 Performance Expert and Data Provider

No APARs have been incorporated into Db2 Management Solution Pack (HALN410).

4.2 Service Level Information

To view the list of PTFs against the previous releases of the products that constitute Db2 Management Solution Pack, refer to the following Program Directories that are supplied with the product.

- Publication number GI13-5929 for IBM Db2 Acc Suite (SQL Tuning Services)
- Publication number GI13-5930 for IBM Db2 Admin Foundation for z/OS
- Publication number GI13-5526 for IBM Db2 Administration Tool
- Publication number GI13-5576 for IBM Db2 Automation Expert for z/OS
- Publication number GI10-8910 for IBM Db2 Cloning Tool
- Publication number GI13-4688 for IBM Db2 High Performance Unload
- Publication number GI13-4643 for IBM Db2 Object Comparison Tool
- Publication number GI10-8976 for IBM Db2 Query Monitor
- Publication number GI13-5551 for IBM Db2 Query Workload Tuner
- Publication number GI10-8927 for IBM Db2 Recovery Expert

- Publication number GI10-9004 for IBM Db2 Sort for z/OS
- Publication number GI13-4609 for IBM Db2 SQL Performance Analyzer
- Publication number GI10-8401 for IBM Db2 Table Editor
- Publication number GI13-5555 for OMEGAMON for Db2 Performance Expert and Data Provider

No PTFs against Db2 Management Solution Pack (HALN410) have been incorporated into the product package.

Frequently check the Db2 Management Solution Pack 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-REQUIRESERVICE)** 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 Management Solution Pack. 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 Management Solution Pack.

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/>

IBM Db2 Query Monitor, OMEGAMON for Db2 Performance Expert and Data Provider, IBM Db2 Admin Foundation for z/OS and IBM Db2 Automation Expert for z/OS invoke UNIX shell scripts during installation.

For further information on invoking UNIX shell scripts for this product, refer to the following Program Directory that is supplied with the product.

- Publication number GI10-8976 for IBM Db2 Query Monitor
- Publication number GI13-5555 for OMEGAMON for Db2 Performance Expert and Data Provider
- Publication number GI13-5930 for IBM Db2 Admin Foundation for z/OS
- Publication number GI13-5576 for IBM Db2 Automation Expert for z/OS

5.2 Target System Requirements

This section describes the environment of the target system required to install and use Db2 Management Solution Pack.

Db2 Management Solution Pack installs in the DBS (P115) SREL.

OMEGAMON for Db2 Performance Expert and Data Provider installs in the z/OS (Z038) SREL.

To view the SRELs of the products that constitute Db2 Management Solution Pack, refer to the following Program Directories that are supplied with the product.

- Publication number GI13-5929 for IBM Db2 Acc Suite (SQL Tuning Services)
- Publication number GI13-5930 for IBM Db2 Admin Foundation for z/OS
- Publication number GI13-5526 for IBM Db2 Administration Tool
- Publication number GI13-5576 for IBM Db2 Automation Expert for z/OS
- Publication number GI10-8910 for IBM Db2 Cloning Tool
- Publication number GI13-4688 for IBM Db2 High Performance Unload
- Publication number GI13-4643 for IBM Db2 Object Comparison Tool
- Publication number GI10-8976 for IBM Db2 Query Monitor

- Publication number GI13-5551 for IBM Db2 Query Workload Tuner
- Publication number GI10-8927 for IBM Db2 Recovery Expert
- Publication number GI10-9004 for IBM Db2 Sort for z/OS
- Publication number GI13-4609 for IBM Db2 SQL Performance Analyzer
- Publication number GI10-8401 for IBM Db2 Table Editor
- Publication number GI13-5555 for OMEGAMON for Db2 Performance Expert and Data Provider

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 Management Solution Pack 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 Management Solution Pack has no conditional installation requisites.

To review the Installation Requisites of the products that constitute Db2 Management Solution Pack, refer to the following Program Directories that are supplied with the product.

- Publication number GI13-5929 for IBM Db2 Acc Suite (SQL Tuning Services)
- Publication number GI13-5930 for IBM Db2 Admin Foundation for z/OS
- Publication number GI13-5526 for IBM Db2 Administration Tool
- Publication number GI13-5576 for IBM Db2 Automation Expert for z/OS
- Publication number GI10-8910 for IBM Db2 Cloning Tool
- Publication number GI13-4688 for IBM Db2 High Performance Unload
- Publication number GI13-4643 for IBM Db2 Object Comparison Tool
- Publication number GI10-8976 for IBM Db2 Query Monitor
- Publication number GI13-5551 for IBM Db2 Query Workload Tuner
- Publication number GI10-8927 for IBM Db2 Recovery Expert
- Publication number GI10-9004 for IBM Db2 Sort for z/OS
- Publication number GI13-4609 for IBM Db2 SQL Performance Analyzer
- Publication number GI10-8401 for IBM Db2 Table Editor
- Publication number GI13-5555 for OMEGAMON for Db2 Performance Expert and Data Provider

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.

<i>Figure 7. Target System Mandatory Operational Requisites</i>	
Program Number	Product Name and Minimum VRM/Service Level
5655-TC1	IBM Tools Customizer for z/OS V01.01.00, PTF UI94476
Any one of the following:	
5650-DB2	Db2 for z/OS V12.01.00
5770-AF3	Db2 for z/OS Value Unit Edition V12.01.00
5698-DB2	Db2 for z/OS V13.01.00
5698-DBV	Db2 for z/OS Value Unit Edition V13.01.00

Note: IBM Tools Customizer for z/OS (FMID HTCZ110), is required to customize Db2 Management Solution Pack. IBM Tools Customizer for z/OS is a no-charge product that must be separately ordered.

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 Management Solution Pack has no conditional operational requisites.

To review the Operational Requisites of the products that constitute Db2 Management Solution Pack, refer to the following Program Directories that are supplied with the product.

- Publication number GI13-5929 for IBM Db2 Acc Suite (SQL Tuning Services)
- Publication number GI13-5930 for IBM Db2 Admin Foundation for z/OS
- Publication number GI13-5526 for IBM Db2 Administration Tool
- Publication number GI13-5576 for IBM Db2 Automation Expert for z/OS
- Publication number GI10-8910 for IBM Db2 Cloning Tool
- Publication number GI13-4688 for IBM Db2 High Performance Unload
- Publication number GI13-4643 for IBM Db2 Object Comparison Tool
- Publication number GI10-8976 for IBM Db2 Query Monitor
- Publication number GI13-5551 for IBM Db2 Query Workload Tuner
- Publication number GI10-8927 for IBM Db2 Recovery Expert
- Publication number GI10-9004 for IBM Db2 Sort for z/OS

- Publication number GI13-4609 for IBM Db2 SQL Performance Analyzer
- Publication number GI10-8401 for IBM Db2 Table Editor
- Publication number GI13-5555 for OMEGAMON for Db2 Performance Expert and Data Provider

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 Management Solution Pack 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 Management Solution Pack has no negative requisites.

5.2.3 DASD Storage Requirements

Db2 Management Solution Pack libraries can reside on all supported DASD types.

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

<i>Figure 8. Total DASD Space Required by Db2 Management Solution Pack</i>		
Library Type	Total Space Required in 3390 Trks	Description
Target	30	
Distribution	30	

To review the individual DASD Storage Requirements of each of the products that constitute Db2 Management Solution Pack, refer to the Program Directories that are supplied with the product.

- Publication number GI13-5929 for IBM Db2 Acc Suite (SQL Tuning Services)
- Publication number GI13-5930 for IBM Db2 Admin Foundation for z/OS
- Publication number GI13-5526 for IBM Db2 Administration Tool
- Publication number GI13-5576 for IBM Db2 Automation Expert for z/OS
- Publication number GI10-8910 for IBM Db2 Cloning Tool
- Publication number GI13-4688 for IBM Db2 High Performance Unload
- Publication number GI13-4643 for IBM Db2 Object Comparison Tool
- Publication number GI10-8976 for IBM Db2 Query Monitor
- Publication number GI13-5551 for IBM Db2 Query Workload Tuner
- Publication number GI10-8927 for IBM Db2 Recovery Expert

- Publication number GI10-9004 for IBM Db2 Sort for z/OS
- Publication number GI13-4609 for IBM Db2 SQL Performance Analyzer
- Publication number GI10-8401 for IBM Db2 Table Editor
- Publication number GI13-5555 for OMEGAMON for Db2 Performance Expert and Data Provider

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 6.1.5, "Allocate SMP/E Target and Distribution Libraries" on page 22.

3. 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.
4. 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.
5. All target libraries that are listed and contain load modules have the following attributes:

- These data sets can not be in the LPA, with some exceptions. If the data set should be placed in the LPA, see the Special Considerations section below.
- These data sets can be in the LNKST. If so, see the Special Considerations section below.
- These data sets are not required to be APF-authorized, with some exceptions. If the data set must be APF-authorized, see the Special Considerations section below.

The following figures describe the target and distribution libraries and file system paths required to install Db2 Management Solution Pack. The storage requirements of Db2 Management Solution Pack must be added to the storage required by other programs that have data in the same library or path.

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.

Figure 9. Storage Requirements for Db2 Management Solution Pack Target Libraries

Library DDNAME	Member Type	Target Volume	T Y P E	O R G	R E C O R D S	L R E C O R D S	No. of 3390 Trks	No. of DIR Blks
SAXNBASE	SAMP	any	U	PDS	FB	80	15	2
SAXNDENU	MSG	any	U	PDS	FB	80	15	2

Figure 10. Storage Requirements for Db2 Management Solution Pack Distribution Libraries

Library DDNAME	T Y P E	O R G	R E C O R D S	L R E C O R D S	No. of 3390 Trks	No. of DIR Blks
AAXNBASE	U	PDS	FB	80	15	2
AAXNDENU	U	PDS	FB	80	15	2

5.3 FMIDs Deleted

Installing Db2 Management Solution Pack 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 Management Solution Pack 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

Db2 Management Solution Pack has no special considerations for the target 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 Management Solution Pack.

Please note the following points:

- If you want to install Db2 Management Solution Pack 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 Management Solution Pack

6.1.1 SMP/E Considerations for Installing Db2 Management Solution Pack

Use the SMP/E RECEIVE, APPLY, and ACCEPT commands to install this release of Db2 Management Solution Pack.

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	3390 DASD tracks	
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.

6.1.3 Sample Jobs

The following sample installation jobs are provided as part of the product to help you install Db2 Management Solution Pack:

Figure 12. Sample Installation Jobs

Job Name	Job Type	Description	SMPTLIB Data Set
AXNALA	SMP/E	Sample job to allocate and initialize a new SMP/E CSI data set (Optional)	IBM.HALN410.F1
AXNALB	SMP/E	Sample job to allocate SMP/E data sets (Optional)	IBM.HALN410.F1
AXNRECV	RECEIVE	Sample RECEIVE job	IBM.HALN410.F1
AXNALLOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HALN410.F1
AXNDDDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.HALN410.F1
AXNAPPLY	APPLY	Sample APPLY job	IBM.HALN410.F1
AXNACCEP	ACCEPT	Sample ACCEPT job	IBM.HALN410.F1

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.4, “Perform SMP/E RECEIVE” on page 22) 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=HALN410.F1,UNIT=SYSALLDA,DISP=SHR,
// VOL=SER=filevol
//OUT DD DSNAME=jcl-library-name,
// DISP=(NEW,CATLG,DELETE),
// VOL=SER=dasdvol,UNIT=SYSALLDA,
// SPACE=(TRK,(primary,secondary,dir))
//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.

6.1.4 Perform SMP/E RECEIVE

If you have obtained Db2 Management Solution Pack as part of a CBPDO, use the RCVPDO job in the CBPDO RIMLIB data set to receive the Db2 Management Solution Pack 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 AXNRECEV to perform the SMP/E RECEIVE for Db2 Management Solution Pack. 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.

6.1.5 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job AXNALLOC to allocate the SMP/E target and distribution libraries for Db2 Management Solution Pack. 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 Create DDDEF Entries

Edit and submit sample job AXNDDDEF to create DDDEF entries for the SMP/E target and distribution libraries for Db2 Management Solution Pack. 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 APPLY

1. Ensure that you have the latest HOLDDATA; then edit and submit sample job AXNAPPLY to perform an SMP/E APPLY CHECK for Db2 Management Solution Pack. 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 will receive a return code of 0 if this job runs correctly.

6.1.8 Perform SMP/E ACCEPT

Edit and submit sample job AXNACCEP to perform an SMP/E ACCEPT CHECK for Db2 Management Solution Pack. 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.

6.1.9 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 Management Solution Pack, 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.

To enable Db2 Utilities Suite for z/OS

6.1.10 Dynamic Enablement - Update PARMLIB

To enable Db2 Utilities Suite for z/OS 12 to run with Db2 12 for z/OS or Db2 Utilities Suite for z/OS 13 to run with Db2 13 for z/OS, licensed Db2 Management Solution Pack clients are entitled to use the following IFAPRDxx PARMLIB member:

```
PRODUCT OWNER('IBM CORP')
NAME('Db2 UTIL SUITE')
STATE(ENABLED)
```

Once the enablement records have been added to the SYS1.PARMLIB(IFAPRDxx) member, re-IPL or perform a SET PROD=(xx) command where xx identifies the last two characters of the IFAPRDxx member in which the change was made. Use the z/OS console command D PROD,STATE to obtain the current product enablement status.

6.2 Activating Db2 Management Solution Pack

6.3 Product Customization

Db2 Management Solution Pack is fully operational after the SMP/E installation is completed. You do not have to do further customization to activate this function.

To activate the individual products that constitute Db2 Management Solution Pack, refer to the their Program Directories, which are supplied with the product, and follow the instructions in the corresponding section(s).

- Publication number GI13-5929 for IBM Db2 Acc Suite (SQL Tuning Services)
- Publication number GI13-5930 for IBM Db2 Admin Foundation for z/OS
- Publication number GI13-5526 for IBM Db2 Administration Tool

- Publication number GI13-5576 for IBM Db2 Automation Expert for z/OS
- Publication number GI10-8910 for IBM Db2 Cloning Tool
- Publication number GI13-4688 for IBM Db2 High Performance Unload
- Publication number GI13-4643 for IBM Db2 Object Comparison Tool
- Publication number GI10-8976 for IBM Db2 Query Monitor
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- Publication number GI10-8927 for IBM Db2 Recovery Expert
- Publication number GI10-9004 for IBM Db2 Sort for z/OS
- Publication number GI13-4609 for IBM Db2 SQL Performance Analyzer
- Publication number GI10-8401 for IBM Db2 Table Editor
- Publication number GI13-5555 for OMEGAMON for Db2 Performance Expert and Data Provider

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