



**Program Directory for
IBM Infosphere Optim for DB2 for z/OS**

V11.7.0

Program Number 5655-QCA 5655-QCB 5655-QCC 5655-QCD 5655-QCE 5697-P47

FMID HAEYB70

for Use with
z/OS V2.2.0, or later

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Note

Before using this information and the product it supports, be sure to read the general information under 7.0, "Notices" on page 24.

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Contents

1.0 Introduction	1
1.1 Optim for DB2 for z/OS Description	1
1.2 Optim for DB2 for z/OS FMIDs	3
2.0 Program Materials	4
2.1 Basic Machine-Readable Material	4
2.2 Optional Machine-Readable Material	5
2.3 Program Publications	5
2.3.1 Basic Program Publications	5
2.3.2 Optional Program Publications	6
2.4 Program Source Materials	6
2.5 Publications Useful During Installation	6
3.0 Program Support	7
3.1 Program Services	7
3.2 Preventive Service Planning	7
3.3 Statement of Support Procedures	8
4.0 Program and Service Level Information	9
4.1 Program Level Information	9
4.2 Service Level Information	9
5.0 Installation Requirements and Considerations	10
5.1 Driving System Requirements	10
5.1.1 Machine Requirements	10
5.1.2 Programming Requirements	10
5.2 Target System Requirements	11
5.2.1 Machine Requirements	11
5.2.2 Programming Requirements	11
5.2.2.1 Installation Requisites	11
5.2.2.2 Operational Requisites	12
5.2.2.3 Toleration/Coexistence Requisites	12
5.2.2.4 Incompatibility (Negative) Requisites	13
5.2.3 DASD Storage Requirements	13
5.3 FMIDs Deleted	15
5.4 Special Considerations	16
6.0 Installation Instructions	17
6.1 Installing Optim for DB2 for z/OS	17
6.1.1 SMP/E Considerations for Installing Optim for DB2 for z/OS	17
6.1.2 SMP/E Options Subentry Values	17
6.1.3 Sample Jobs	17

6.1.4	Set up ISPF Editor Macro (Optional)	19
6.1.5	Allocate and Initialize the SMP/E Data Sets (Optional)	19
6.1.6	Allocate SMP/E Target and Distribution Libraries	20
6.1.7	Allocate File System Paths	20
6.1.8	Create DDDEF Entries	20
6.1.9	Perform SMP/E RECEIVE	20
6.1.10	Perform SMP/E APPLY	20
6.1.11	Perform SMP/E ACCEPT	22
6.2	Activating Optim for DB2 for z/OS	23
7.0	Notices	24
7.1	Trademarks	24
	Reader's Comments	25

Figures

1.	Program File Content	4
2.	Basic Material: Licensed Publications	5
3.	Publications Useful During Installation	6
4.	PSP Upgrade and Subset ID	7
5.	Component IDs	8
6.	Driving System Software Requirements	11
7.	Target System Mandatory Installation Requisites	11
8.	Target System Mandatory Operational Requisites	12
9.	Total DASD Space Required by Optim for DB2 for z/OS	13
10.	Storage Requirements for Optim for DB2 for z/OS Target Libraries	14
11.	Storage Requirements for Optim for DB2 for z/OS Distribution Libraries	15
12.	SMP/E Options Subentry Values	17
13.	Sample Installation Jobs	18

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 Infosphere Optim for DB2 for z/OS. This publication refers to IBM Infosphere Optim for DB2 for z/OS as Optim for DB2 for z/OS.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 4 identifies the basic program materials and documentation for Optim for DB2 for z/OS.
- 3.0, “Program Support” on page 7 describes the IBM support available for Optim for DB2 for z/OS.
- 4.0, “Program and Service Level Information” on page 9 lists the APARs (program level) and PTFs (service level) that have been incorporated into Optim for DB2 for z/OS.
- 5.0, “Installation Requirements and Considerations” on page 10 identifies the resources and considerations that are required for installing and using Optim for DB2 for z/OS.
- 6.0, “Installation Instructions” on page 17 provides detailed installation instructions for Optim for DB2 for z/OS. It also describes the procedures for activating the functions of Optim for DB2 for z/OS, or refers to appropriate publications.

Before installing Optim for DB2 for z/OS, 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 7 tells you how to find any updates to the information and procedures in this program directory.

Optim for DB2 for z/OS is supplied in a Custom-Built Product Delivery Offering (CBPDO, 5751-CS3). The program directory that is provided in softcopy format on the CBPDO tape is identical to the hardcopy format if one was included with your order. All service and HOLDDATA for Optim for DB2 for z/OS are included on the CBPDO tape.

Do not use this program directory if you install Optim for DB2 for z/OS with a SystemPac or 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 Optim for DB2 for z/OS Description

Using IBM InfoSphere Optim for DB2 for z/OS, you can assess, classify, subset, archive, store, and access enterprise application data across databases and platforms.

With the archiving or data growth features of Optim, you can segregate historic data from current activity and safely remove it to secure offline storage, access the archived data easily, and restore archived data to its business context when necessary.

The Optim test data management capacity lets you create and populate appropriately sized development and test environments, automatically or manually edit the data in these environments to match your test cases, and compare test results with your original data.

Data masking features help you to prevent misuse of information by masking, obfuscating, and privatizing personal information that is propagated outside your production environment.

What's New in v11.7?

IBM InfoSphere Optim for DB2 for z/OS v11.7 includes the following features and functions:

- NATIVE CCSID support enables correct handling of data that cannot be translated into the plan CCSID.
- Detection of data truncation in ACCESS Edit and Browse.
- Support for DB2 Temporal and Archive tables.
- Optim Lua support of ODPP LOOKUP, HASH_LOOKUP and RAND_LOOKUP providers.
- Maximum size of SQL statements increased to 2 megabytes.
- Original table column order is retained for Convert and Load processing.
- Optim Lua now supports Optim Lookup functions.
- Elimination of the use of license keys.
- Remove limits on the length of the PARM string on Optim invocation.
- ODPP Trace file can be suppressed or written to z/OS data set.
- Improved parsing of free form SQL.
- Removed dependency on load module DSNHDECP.
- Certified support for z/OS release 2.3.
- Lua version upgraded from 5.1.4 to 5.3.4.

Previous releases of IBM InfoSphere Optim for DB2 included:

- Column Map processing is enhanced to support Lua scripts for privatization and transformation of data. This provides a flexible and simplified solution for building custom transformation functions.
- Optim is enhanced to support the privatization and transformation of elements within variable-length arrays defined in VSAM Files, Sequential Files, and IMS databases.
- Copybook processing of Legacy Tables (VSAM files, Sequential files, and IMS databases) is enhanced to provide toleration support of COBOL Version 5.1.
- The Optim Installation Interface is enhanced to provide better message reporting, allowing for quicker and easier identification of any issues encountered.

The following new enhancements have also been delivered in v7.2 via maintenance (PTFs).

- Column Map processing is enhanced to call the Optim Data Privacy (ODP) masking providers. The Optim Data Privacy providers are a common code base of masking functions that introduce new and enhanced functionality than previously available in Optim for z/OS. The following ODP masking providers can be specified in an Optim for z/OS Column Map:
 - Credit Card (CCN) - Mask credit card numbers.
 - National IDs (NID) - Mask National IDs, enforcing country NID standards. National IDs of the following countries can be masked: US, UK, Canada, Italy, France, and Spain.
 - Email (EML) - Mask Email addresses.
 - Affinity (Column Transformation) (AFF) - Mask value, and maintain picture clause (i.e. number and character data is masked, but retains the same data format).
 - Date (AGE) - Add and subtract from an input date.
- The native Optim for z/OS LOOKUP Data Privacy functions are enhanced to support options that uppercase, trim, and preserve data.
- The Compare facility is enhanced to support new parameters that override the default Creator IDs of the source tables, allowing an existing Compare definition to be applied to multiple databases and environments.
- Test Data Management functions are enhanced to support IMS dynamic allocation of database data sets, eliminating an often time-consuming and error prone task of manual data set specification.
- Extract and Archive processing now records and reports the number of bytes processed per table and stores this information in the Extract and Archive file.
- Optim Access now provides Browse and Edit support of DB2 columns defined as the decimal floating-point (DECFLOAT) data type.
- Enhancements to Test Data Management functions enable you to allocate and process Extract files that reside on tape. This support includes:
 - Creation of Extract files on tape.
 - Allocation and processing of Extract files that reside on tape for Insert, Delete, Load, Create and Convert operations.
 - Registration of Extract files in the Optim Directory.
 - Management of Extract files through the List and Import functions, along with the ability to implement functional security for the List and Import functions.

1.2 Optim for DB2 for z/OS FMIDs

Optim for DB2 for z/OS consists of the following FMIDs:

HAEYB70

2.0 Program Materials

An IBM program is identified by a program number. The program numbers for Optim for DB2 for z/OS are 5655-QCA, 5655-QCB, 5655-QCC, 5655-QCD, 5655-QCE, 5697-P47, 5655-O19, 5655-O25, 5655-O26, 5655-ARD, 5655-ARE, 5655-O30, 5655-O31, 5655-O27, 5655-O29, and 5655-O24.

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 Optim for DB2 for z/OS. 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 17 for more information about how to install the program.

You can find information about the physical media for the basic machine-readable materials for Optim for DB2 for z/OS in the *CBPDO Memo To Users Extension*.

Figure 1 describes the program file content for Optim for DB2 for z/OS. You can refer to the *CBPDO Memo To Users Extension* to see where the files reside on the tape.

Notes:

1. The data set attributes in this table must be used in the JCL of jobs that read the data sets. However, because the data sets are in IEBCOPY unloaded format, their actual attributes might be different.
2. If any RELFILEs are identified as PDSEs, ensure that SMPTLIB data sets are allocated as PDSEs.

Figure 1 (Page 1 of 2). Program File Content

Name	ORG	RECFM	RECL	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.HAEYB70.F1	PDSE	U	0	6144
IBM.HAEYB70.F2	PDSE	FB	80	8800
IBM.HAEYB70.F3	PDSE	FB	80	8800
IBM.HAEYB70.F4	PDSE	FB	80	8800
IBM.HAEYB70.F5	PDSE	FB	80	8800

<i>Figure 1 (Page 2 of 2). Program File Content</i>				
Name	O R G	R E C F M	L R E C L	BLK SIZE
IBM.HAEYB70.F6	PDSE	FB	80	8800
IBM.HAEYB70.F7	PDSE	FB	80	8800
IBM.HAEYB70.F8	PDSE	FB	80	8800

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for Optim for DB2 for z/OS.

2.3 Program Publications

The following sections identify the basic publications for Optim for DB2 for z/OS.

2.3.1 Basic Program Publications

The Release Notes for Optim for DB2 for z/OS v11.7 can be found at:

http://www.ibm.com/support/knowledgecenter/SSC6CA_11.7.0/com.ibm.nex.optimz.dg.doc/topics/Release_Notes117.html

Figure 2 identifies the basic licensed program publications for Optim for DB2 for z/OS. The IBM InfoSphere Optim Solution publications can be accessed by an entitled Optim Solution Customer in ISO (CD/DVD) format on the ShopzSeries web site as a part of the Optim Solution download.

The CD-ROM form number for the IBM Infosphere Optim z/OS Product Documentation and Open Data Manager V11.7 CD is LCD7-6802.

<i>Figure 2 (Page 1 of 2). Basic Material: Licensed Publications</i>
Publication Title
IBM Infosphere Optim for z/OS Customization Guide
IBM Infosphere Optim for z/OS Batch Utilities Guide
IBM Infosphere Optim for z/OS Common Elements Manual
IBM Infosphere Optim for z/OS Command Reference Manual
IBM Infosphere Optim for z/OS Compare Introduction
IBM Infosphere Optim for z/OS Compare User Manual

Figure 2 (Page 2 of 2). Basic Material: Licensed Publications

Publication Title
IBM InfoSphere Optim for z/OS Compare for IMS/VSAM/Sequential File Data
IBM Infosphere Optim for z/OS Move Introduction
IBM Infosphere Optim for z/OS Move User Manual
IBM Infosphere Optim for z/OS Access Introduction
IBM Infosphere Optim for z/OS Access User Manual
IBM Infosphere Optim for z/OS Archive User Manual

No basic unlicensed publications are provided for Optim for DB2 for z/OS.

2.3.2 Optional Program Publications

No optional publications are provided for Optim for DB2 for z/OS.

2.4 Program Source Materials

No program source materials or viewable program listings are provided for Optim for DB2 for z/OS.

2.5 Publications Useful During Installation

You might want to use the publications listed in Figure 3 during the installation of Optim for DB2 for z/OS.

Figure 3. Publications Useful During Installation

Publication Title	Form Number	Media Format
<i>IBM SMP/E for z/OS User's Guide</i>	SA23-2277	http://www.ibm.com/shop/publications/order/
<i>IBM SMP/E for z/OS Commands</i>	SA23-2275	http://www.ibm.com/shop/publications/order/
<i>IBM SMP/E for z/OS Reference</i>	SA23-2276	http://www.ibm.com/shop/publications/order/
<i>IBM SMP/E for z/OS Messages, Codes, and Diagnosis</i>	GA32-0883	http://www.ibm.com/shop/publications/order/

3.0 Program Support

This section describes the IBM support available for Optim for DB2 for z/OS.

3.1 Program Services

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

3.2 Preventive Service Planning

Before you install Optim for DB2 for z/OS, 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 6.1.10, "Perform SMP/E APPLY" on page 20 for a sample APPLY command

If you obtained Optim for DB2 for z/OS as part of a CBPDO, HOLDDATA is included.

If the CBPDO for Optim for DB2 for z/OS 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:

<http://www14.software.ibm.com/webapp/set2/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 <http://www.ibm.com/support/>.

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 Optim for DB2 for z/OS are included in Figure 4.

<i>Figure 4 (Page 1 of 2). PSP Upgrade and Subset ID</i>		
UPGRADE	SUBSET	Description
5655QCA	HAEYB70	Optim for DB2 for z/OS
5655QCB		
5655QCC		
5655QCD		
5655QCE		
5655QCE		

Figure 4 (Page 2 of 2). PSP Upgrade and Subset ID

UPGRADE	SUBSET	Description
5697P47 5655O19 5655O25 5655O26 5655ARD	HAEYB70	Optim for DB2 for z/OS
5655ARE 5655O30 5655O31 5655O27 5655O29	HAEYB70	Optim for DB2 for z/OS
5655O24	HAEYB70	Optim for DB2 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 identifies the component IDs (COMPID) for Optim for DB2 for z/OS.

Figure 5. Component IDs

FMID	COMPID	Component Name	RETAIN Release
HAEYB70	5655QCA00	Optim for DB2 for z/OS	B70

4.0 Program and Service Level Information

This section identifies the program and relevant service levels of Optim for DB2 for z/OS. 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

All Optim for DB2 for z/OS APARs have been included in this release up to and including PI97113.

4.2 Service Level Information

No PTFs against this release of Optim for DB2 for z/OS have been incorporated into the product package.

Frequently check the Optim for DB2 for z/OS 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 Optim for DB2 for z/OS.

For information about hardware and software compatibility, see the detailed system requirements document at:

<http://www.ibm.com/support/docview.wss?uid=swg27041653> 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 Optim for DB2 for z/OS.

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	V02.02.00	N/A	No

Note: SMP/E is a requirement for Installation and is an element of z/OS but can also be ordered as a separate product, 5655-G44, minimally V03.06.00.

Note: Installation might require migration to new z/OS releases to be service supported. See https://www-01.ibm.com/software/support/lifecycle/index_z.html.

5.2 Target System Requirements

This section describes the environment of the target system required to install and use Optim for DB2 for z/OS.

Optim for DB2 for z/OS 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.

Figure 7. Target System Mandatory Installation Requisites

Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in the shipped product?
5650-ZOS	z/OS	V02.02.00 or later	N/A	No

Note: Installation might require migration to new z/OS releases to be service supported. See http://www-03.ibm.com/systems/z/os/zos/support/zos_eos_dates.html.

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.

Optim for DB2 for z/OS 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 8. Target System Mandatory Operational Requisites	
Program Number	Product Name and Minimum VRM/Service Level
Any one of the following:	
5615-DB2	IBM DB2 UDB for z/OS V11.1.0
5650-DB2	IBM DB2 UDB for z/OS V12.1.0
5697-P43	IBM DB2 VUE for z/OS V11.1.0
5770-AF2	IBM DB2 VUE for z/OS V12.1.0

Note: Customers who use DFSORT with Optim will need to have DFSORT APARs PM80651, PM77027, and PM67061 installed on their target system.

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.

Optim for DB2 for z/OS has no conditional operational requisites.

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.

Optim for DB2 for z/OS 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.

Optim for DB2 for z/OS has no negative requisites.

5.2.3 DASD Storage Requirements

Optim for DB2 for z/OS libraries can reside on all supported DASD types.

Figure 9 lists the total space that is required for each type of library.

<i>Figure 9. Total DASD Space Required by Optim for DB2 for z/OS</i>		
Library Type	Total Space Required in 3390 Trks	Description
Target	6876 Tracks	
Distribution	6876 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 6.1.6, "Allocate SMP/E Target and Distribution Libraries" on page 20.

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 value in the "Member Type" column specifies "LPA", it is advised to place the data set in the LPA.
- These data sets can be in the LNKST.
- These data sets are not required to be APF-authorized, with some exceptions. If the value in the "Member Type" column specifies "APF", the data set must be APF-authorized.

The following figures describe the target and distribution libraries and file system paths required to install Optim for DB2 for z/OS. The storage requirements of Optim for DB2 for z/OS 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 10 (Page 1 of 2). Storage Requirements for Optim for DB2 for z/OS Target Libraries

Library DDNAME	Member Type	Target Volume	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
SFOPCLST	CLIST	ANY	U	PDSE	FB	80	50	N/A
SFOPINST	Install	ANY	U	PDSE	FB	80	4200	N/A
SFOPLLIB	LMOD	ANY	U	PDSE	U	0	1700	N/A
SFOPMENU	Message	ANY	U	PDSE	FB	80	18	N/A
SFOPPENU	Panel	ANY	U	PDSE	FB	80	400	N/A
SFOPSAMP	Sample	ANY	U	PDSE	FB	80	35	N/A

Figure 10 (Page 2 of 2). Storage Requirements for Optim for DB2 for z/OS Target Libraries

Library DDNAME	Member Type	Target Volume	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
SFOPSENU	Skeleton	ANY	U	PDSE	FB	80	18	N/A
SFOPTENU	Table	ANY	U	PDSE	FB	80	5	N/A

Figure 11. Storage Requirements for Optim for DB2 for z/OS Distribution Libraries

Library DDNAME	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
AFOPCLST	U	PDSE	FB	80	50	N/A
AFOPINST	U	PDSE	FB	80	4200	N/A
AFOPLLIB	U	PDSE	U	0	1700	N/A
AFOPMENU	U	PDSE	FB	80	17	N/A
AFOPPENU	U	PDSE	FB	80	400	N/A
AFOPSAMP	U	PDSE	FB	80	35	N/A
AFOPSENU	U	PDSE	FB	80	18	N/A
AFOPTENU	U	PDSE	FB	80	5	N/A

5.3 FMIDs Deleted

Installing Optim for DB2 for z/OS 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 Optim for DB2 for z/OS 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

Optim for DB2 for z/OS has the following special considerations for the target system:

1. Upgraded site options modules

All existing site options modules must be upgraded and copied through the Installation Interface for use with Optim 11.7.

Use option 7, Copy and Upgrade Site Options from Previous Release, of the Upgrade Path to upgrade your default site options module. Use option 6, Create/Modify/Upgrade Site Defaults Modules, from the install main menu to upgrade any other customized site options modules for use with Optim 11.7Upgraded site options modules.

2. Prefix length limitation

The DSN prefix for your Optim installation must not exceed a length of 19 bytes.

3. TSO Region size for ODP

A TSO region size that is a minimum of 220 MB is required to use the new enhancement that allows Column Map processing to call the Optim Data Privacy (ODP) masking providers. Installation of Optim Data Privacy Solution (Program Number 5655-O19) is required to use these enhancements.

4. Compatibility with earlier versions

Refer to the Customization Guide, Overview section for details on installing or upgrading.

6.0 Installation Instructions

This chapter describes the installation method and the step-by-step procedures to install and to activate the functions of Optim for DB2 for z/OS.

Please note the following points:

- If you want to install Optim for DB2 for z/OS 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 Optim for DB2 for z/OS

6.1.1 SMP/E Considerations for Installing Optim for DB2 for z/OS

Use the SMP/E RECEIVE, APPLY, and ACCEPT commands to install this release of Optim for DB2 for z/OS.

6.1.2 SMP/E Options Subentry Values

The recommended values for certain SMP/E CSI subentries are shown in Figure 12. 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.

Subentry	Value	Comment
DSSPACE	300,250,250	Space allocation for SMPTLIB
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 Optim for DB2 for z/OS:

Figure 13. Sample Installation Jobs

Job Name	Job Type	Description	RELFILE
FOPHEDIT	MACRO	ISPF Editor macro to aid users in making changes to the sample jobs (optional)	IBM.HAEYB70.F3
FOPHSMPE	SMP/E	Sample job to define and prime a new SMP/E CSI (optional)	IBM.HAEYB70.F3
FOPHRECV	RECEIVE	Sample RECEIVE job for the base FMID	IBM.HAEYB70.F3
FOPHALOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HAEYB70.F3
FOPHDDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.HAEYB70.F3
FOPHAPLY	APPLY	Sample APPLY job	IBM.HAEYB70.F3
FOPHACPT	ACCEPT	Sample ACCEPT job	IBM.HAEYB70.F3

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.9, “Perform SMP/E RECEIVE” on page 20) then copy the jobs from the RELFILES to a work data set for editing and submission. See Figure 13 on page 17 to find the appropriate relfile data set.

You can also copy the sample installation jobs from the tape or product files by submitting the following job. Depending on your distribution medium, use either the //TAPEIN or the //FILEIN DD statement and comment out or delete the other statement. Before you submit the job, add a job card and change the lowercase parameters to uppercase values to meet the requirements of your site.

```
//COPYJOBS JOB <job parameters>
//COPY      EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//TAPEIN    DD DSN=IBM.HAEYB70.F3,UNIT=tunit,
//          VOL=SER=volser,LABEL=(x,SL),
//          DISP=(OLD,KEEP)
//FILEIN    DD DSN=IBM.HAEYB70.F3,UNIT=SYSALLDA,DISP=SHR,
//          VOL=SER=filevol
//OUT       DD DSN=jc1-library-name,
//          DISP=(NEW,CATLG,DELETE),
//          VOL=SER=dasdvol,UNIT=SYSALLDA,
//          SPACE=(TRK,(5,1,2))
//SYSUT3    DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN     DD *
            COPY INDD=xxxxIN,OUTDD=OUT
            SELECT MEMBER=(FOPHEDIT,FOPHSMPE,FOPHALOC,FOPHDDEF)
            SELECT MEMBER=(FOPHRECV,FOPHAPLY,FOPHACPT)
/*
```

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

TAPEIN:

tunit is the unit value that matches the product package.

volser is the volume serial that matches the product package.

x is the tape file number that indicates the location of the data set name on the tape.

See the documentation that is provided by CBPDO for the location of IBM.fmid.Fy on the tape.

FILEIN:

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.

SYSIN:

xxxxIN is either TAPEIN or FILEIN depending on your input DD statement.

6.1.4 Set up ISPF Editor Macro (Optional)

To aid you in making changes to the SMP/E installation jobs (FOPHSMPE, FOPHRECV, FOPHALOC, FOPHDDEF, FOPHAPLY, and FOPHACPT), an ISPF editor macro called FOPHEDIT is copied to your output data set **jcl-library-name** above. (See Figure 13 on page 17)

This macro lets you substitute proper values for all of the required variables in those jobs instead of having you make the changes repeatedly by hand.

Edit macro FOPHEDIT and provide the proper values. Consult the instructions in the macro for more information.

After making the changes, either copy FOPHEDIT to any data set in your TSO logon procedure SYSEXEC concatenation, or issue the commands below to make FOPHEDIT immediately accessible to your current ISPF session:

From ISPF option 6, issue:

```
ALLOCATE FI(SYSUEXEC) DA('jcl-library-name') SHR REU
ALTLIB ACTIVATE USER(EXEC)
```

Then edit your installation jobs from this ISPF session.

Consult the instructions in the macro on how to invoke it.

6.1.5 Allocate and Initialize the SMP/E Data Sets (Optional)

You can install Optim for DB2 for z/OS in the same SMP/E zone as z/OS V1.8.0 (or later) or in a different zone.

- If you install into existing SMP/E data sets, ensure that you have enough space.
- If you plan to install into an existing zone, the cluster should have already been allocated and primed. You can go on to the next step to perform an SMP/E RECEIVE.
- To install into a new zone, edit and submit sample job FOPHSMPE to define and prime a new SMP/E CSI cluster. Consult the instructions in the sample job for more information.

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

6.1.6 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job `???`ALLOC to allocate the SMP/E target and distribution libraries for Optim for DB2 for z/OS. 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 Allocate File System Paths

6.1.8 Create DDDEF Entries

Edit and submit sample job FOPHDDEF to create DDDEF entries for the SMP/E target and distribution libraries for Optim for DB2 for z/OS. 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 Perform SMP/E RECEIVE

If you have obtained Optim for DB2 for z/OS as part of a CBPDO, use the RCVPDO job in the CBPDO RIMLIB data set to receive the Optim for DB2 for z/OS 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 FOPHRECV to perform the SMP/E RECEIVE for Optim for DB2 for z/OS. Consult the instructions in the sample job for more information.

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

6.1.10 Perform SMP/E APPLY

1. Ensure that you have the latest HOLDDATA; then edit and submit sample job FOPHAPPLY to perform an SMP/E APPLY CHECK for Optim for DB2 for z/OS. 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.

6.1.11 Perform SMP/E ACCEPT

Edit and submit sample job FOPHACPT to perform an SMP/E ACCEPT CHECK for Optim for DB2 for z/OS. 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.

6.2 Activating Optim for DB2 for z/OS

After completing the SMP/E installation instructions, you must configure Optim before use as documented in the Infosphere Optim for z/OS Customization Guide. Some of the configuration tasks are listed below.

- Update the QUAL1 and QUAL2 definitions in the FOPCUST member in the SFOPCLST library to the first and second level qualifiers of the Optim target libraries, respectively.
- Update the DEFPLAN definition in FOPCUST to the desired Optim plan name (or accept the default value of FOP1170).
- Optionally, uncomment the ALTLIB command in the FOPINSTL member in the SFOPCLST library and update the data set name to your SFOPCLST library name.
- Invoke the Optim installation interface by executing the FOPINSTL CLIST (in the SFOPCLST library), such as: `EX 'FOP.VBR7M0.SFOPCLST(FOPINSTL)'`
- When installing Optim for the first time in the target DB2 subsystem, select option 1, Full Install, and complete all steps.
- When upgrading to Optim 11.7 from a previous Optim release in the target DB2 subsystem, select option 2, Upgrade to New Release, and complete all steps.

Refer to the Infosphere Optim for z/OS Customization Guide for more details.

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