



**Program Directory for
IMS High Availability Large Database Toolkit**

V01.01.00

Program Number 5655-DSP and 5698-DUL

FMID HIHC110

for Use with
z/OS

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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 23.

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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 IMS High Availability Large Database Toolkit. This publication refers to IMS High Availability Large Database Toolkit as IMS HALDB Toolkit. In addition, this publication refers to IBM IMS Database Solution Pack for z/OS as IMS DB Solution Pack and IMS Database Utility Solution for z/OS as IMS DB Util Sol.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 3 identifies the basic program materials and documentation for IMS HALDB Toolkit.
- 3.0, “Program Support” on page 6 describes the IBM support available for IMS HALDB Toolkit.
- 4.0, “Program and Service Level Information” on page 8 lists the APARs (program level) and PTFs (service level) that have been incorporated into IMS HALDB Toolkit.
- 5.0, “Installation Requirements and Considerations” on page 9 identifies the resources and considerations that are required for installing and using IMS HALDB Toolkit.
- 6.0, “Installation Instructions” on page 16 provides detailed installation instructions for IMS HALDB Toolkit. It also describes the procedures for activating the functions of IMS HALDB Toolkit, or refers to appropriate publications.

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

IMS HALDB Toolkit 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 IMS HALDB Toolkit are included on the CBPDO tape.

Do not use this program directory if you install IMS HALDB Toolkit 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 IMS HALDB Toolkit Description

IMS High Availability Large Database Toolkit:

- Helps convert existing IMS Full Function databases into IMS HALDB databases
- Allows IMS database administrators (DBA) to simulate changes to partition settings to ensure they are correct before implementation
- Supports partition consolidation and partition splitting to accommodate growth or shrinkage in an IMS application

To view additional description information for the other components that are available with this installation package, refer to one of the following Program Directories that is supplied with the product.

- Publication number GI10-8942 for IMS DB Solution Pack
- Publication number GI13-4194 for IMS DB Util Sol

1.2 IMS HALDB Toolkit FMID

IMS HALDB Toolkit consists of the following FMID:

HIHC110

To view additional FMID information for the other components that are available with the installation package, refer to one of the following Program Directories that is supplied with the product.

- Publication number GI10-8942 for IMS DB Solution Pack
- Publication number GI13-4194 for IMS DB Util Sol

2.0 Program Materials

An IBM program is identified by a program number. IMS HALDB Toolkit is a component of program numbers 5655-DSP and 5698-DUL.

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 IMS HALDB Toolkit. Ask your IBM representative for this information if you have not already received a copy.

2.1 Basic Machine-Readable Material

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

You can find information about the physical media for the basic machine-readable materials for IMS HALDB Toolkit in the *CBPDO Memo To Users Extension*.

The following figures describe the program file content for IMS HALDB Toolkit. 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 IMS HALDB Toolkit

Name	O R G	R E C F M	L R E C L	BLK SIZE
SMPMCS	SEQ	FB	80	8800
IBM.HIHC110.F1	PDS	FB	80	8800
IBM.HIHC110.F2	PDS	FB	80	8800
IBM.HIHC110.F3	PDS	U	0	6144
IBM.HIHC110.F4	PDS	FB	80	8800
IBM.HIHC110.F5	PDS	FB	80	8800

Figure 1 (Page 2 of 2). Program File Content IMS HALDB Toolkit

Name	O R G	R E C F M	L R E C L	BLK SIZE
IBM.HIHC110.F6	PDS	FB	80	8800
IBM.HIHC110.F7	PDS	FB	80	8800
IBM.HIHC110.F8	PDS	FB	80	8800

To view additional program file content for the other components that are available with this installation package, refer to one of the following Program Directories that is supplied with the product.

- Publication number GI10-8942 for IMS DB Solution Pack
- Publication number GI13-4194 for IMS DB Util Sol

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for IMS HALDB Toolkit.

2.3 Program Publications

The following sections identify the basic publications for IMS HALDB Toolkit.

Figure 2 identifies the basic unlicensed publications for IMS HALDB Toolkit. Those that are in softcopy format publications can be obtained from the IBM Publications Center website at <http://www.ibm.com/shop/publications/order/>.

Figure 2 (Page 1 of 2). Basic Material: Unlicensed Publications

Publication Title	Form Number	Media Format
IMS High Availability Large Database Toolkit User's Guide (delivered by IMS DB Solution Pack)	SC27-9038	http://www.ibm.com/support/docview.wss?uid=swg27020942
IMS Database Solution Pack for z/OS Overview and Customization	SC27-9037	http://www.ibm.com/support/docview.wss?uid=swg27020942
IMS High Availability Large Database Toolkit User's Guide (delivered by IMS DB Util Sol)	SC27-8779	http://www.ibm.com/support/docview.wss?uid=swg27020942

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

Publication Title	Form Number	Media Format
IMS Database Utility Solution for z/OS Overview and Customization	SC27-8778	http://www.ibm.com/support/docview.wss?uid=swg27020942

To view additional publication information for the other components that are available with this installation package, refer to one of the following Program Directories that is supplied with the product.

- Publication number GI10-8942 for IMS DB Solution Pack
- Publication number GI13-4194 for IMS DB Util Sol

2.3.1 Optional Program Publications

No optional publications are provided for IMS HALDB Toolkit.

2.4 Program Source Materials

No program source materials or viewable program listings are provided for IMS HALDB Toolkit.

2.5 Publications Useful During Installation

You might want to use the publications listed in Figure 3 during the installation of IMS HALDB Toolkit.

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 IMS HALDB Toolkit.

3.1 Program Services

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

3.2 Preventive Service Planning

Before you install IMS HALDB Toolkit, 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 6.1.8, "Perform SMP/E APPLY" on page 19 for a sample APPLY command

If you obtained IMS HALDB Toolkit as part of a CBPDO, HOLDDATA is included.

If the CBPDO for IMS HALDB Toolkit 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 IMS HALDB Toolkit are included in Figure 4.

Figure 4. PSP Upgrade and Subset ID

UPGRADE	SUBSET	Description
5655DBU	HIHC110	IMS HALDB Toolkit

To view individual PSP Upgrade and Subset ID information of the other components that are available with this installation package, refer to one of the following Program Directories that is supplied with the product.

- Publication number GI10-8942 for IMS DB Solution Pack
- Publication number GI13-4194 for IMS DB Util Sol

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 IMS HALDB Toolkit.

<i>Figure 5. Component IDs</i>			
FMID	COMPID	Component Name	RETAIN Release
HIHC110	5655DBU01	IMS HALDB Toolkit	110

To view additional COMPID information for the other components that are available with this installation package, refer to one of the following Program Directories that is supplied with the product.

- Publication number GI10-8942 for IMS DB Solution Pack
- Publication number GI13-4194 for IMS DB Util Sol

4.0 Program and Service Level Information

This section identifies the program and relevant service levels of IMS HALDB Toolkit. 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

No APARs have been incorporated into IMS HALDB Toolkit.

4.2 Service Level Information

No PTFs against this release of IMS HALDB Toolkit have been incorporated into the product package.

Frequently check the IMS HALDB Toolkit 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 IMS HALDB Toolkit. 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 IMS HALDB Toolkit.

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	V02.03.00 or higher	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 IMS HALDB Toolkit.

IMS HALDB Toolkit 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.

IMS HALDB Toolkit has no mandatory installation requisites.

To view additional mandatory installation requisites for other components that are available with this installation package, refer to one of the following Program Directories that is supplied with the product.

- Publication number GI10-8942 for IMS DB Solution Pack
- Publication number GI13-4194 for IMS DB Util Sol

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.

IMS HALDB Toolkit has no conditional installation requisites.

To view additional conditional installation requisites for other components that are available with this installation package, refer to one of the following Program Directories that is supplied with the product.

- Publication number GI10-8942 for IMS DB Solution Pack
- Publication number GI13-4194 for IMS DB Util Sol

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
Any one of the following:	
5635-A05	IBM IMS, V14.01.00
5655-DSE	IBM IMS Database Value Unit Edition, V14.01.00
5635-A06	IBM IMS, V15.01.00
5655-DS5	IBM IMS Database Value Unit Edition, V15.01.00

To view any additional mandatory operational requisites for other components that are available with this installation package, refer to one of the following Program Directories that is supplied with the product.

- Publication number GI10-8942 for IMS DB Solution Pack
- Publication number GI13-4194 for IMS DB Util Sol

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.

<i>Figure 8 (Page 1 of 2). Target System Conditional Operational Requisites</i>		
Program Number	Product Name and Minimum VRM/Service Level	Function
5655-DSP	IMS Online Reorganization Facility for z/OS V2.2 or later	To perform online reorganization of HALDB's. IMS Online Reorganization Facility is available in IMS Database Solution Pack for z/OS.

Figure 8 (Page 2 of 2). Target System Conditional Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level	Function
5655-V93	IBM Tools Base for z/OS V1.6 or later	To use IMS HALDB Toolkit in an environment with IMS Managed ACB's

To view additional conditional operational requisites for other components that are available with this installation package, refer to one of the following Program Directories that is supplied with the product.

- Publication number GI10-8942 for IMS DB Solution Pack
- Publication number GI13-4194 for IMS DB Util Sol

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.

IMS HALDB Toolkit 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.

IMS HALDB Toolkit has no negative requisites.

5.2.3 DASD Storage Requirements

IMS HALDB Toolkit libraries can reside on all supported DASD types.

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

Figure 9. Total DASD Space Required by IMS HALDB Toolkit

Library Type	Total Space Required in 3390 Trks	File System Description
Target	605	
Distribution	605	

To view the DASD storage requirements for the other components that are available with this installation package, refer to one of the following Program Directories that is supplied with the product.

- Publication number GI10-8942 for IMS DB Solution Pack

- Publication number GI13-4194 for IMS DB Util Sol

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 19.

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

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

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

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

5. All target libraries listed have the following attributes:

- These data sets can be SMS-managed, but they are not required to be SMS-managed.
- These data sets are not required to reside on the IPL volume.

- The values in the "Member Type" column are not necessarily the actual SMP/E element types that are identified in the SMPMCS.

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

- These data sets can 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 LNKLIST.
- 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.

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

The following figures describe the target and distribution libraries and file system paths required to install IMS HALDB Toolkit. The storage requirements of IMS HALDB Toolkit 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. Storage Requirements for IMS HALDB Toolkit 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
SIHCBASE	SAMP	Any	U	PDS	FB	80	5	5
SIHCLOAD	APF	Any	U	PDS	U	0	450	100
SIHCMACS	MAC	Any	U	PDS	FB	80	15	15
SIHCMESG	MESSAGE	Any	U	PDS	FB	80	15	15
SIHCPANL	PANEL	Any	U	PDS	FB	80	75	80
SIHCSAMP	SAMPLE	Any	U	PDS	FB	80	15	15
SIHCSKEL	SKL	Any	U	PDS	FB	80	30	20

Figure 11 (Page 1 of 2). Storage Requirements for IMS HALDB Toolkit 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
AIHCBASE	U	PDS	FB	80	5	5

Figure 11 (Page 2 of 2). Storage Requirements for IMS HALDB Toolkit 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
AIHCLOAD	U	PDS	U	0	450	100
AIHCMACS	U	PDS	FB	80	15	15
AIHCMESG	U	PDS	FB	80	15	15
AIHCPANL	U	PDS	FB	80	75	80
AIHCSAMP	U	PDS	FB	80	15	15
AIHCSKEL	U	PDS	FB	80	30	30

To view the individual data set allocations for the other components that are available with this installation package, refer to one of the following Program Directories that is supplied with the product.

- Publication number GI10-8942 for IMS DB Solution Pack
- Publication number GI13-4194 for IMS DB Util Sol

5.3 FMIDs Deleted

Installing IMS HALDB Toolkit 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 IMS HALDB Toolkit 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

IMS HALDB Toolkit has no special considerations for the target system.

To review Special Considerations of the other components that are available with this installation package, refer to one of the following Program Directories that is supplied with the product.

- Publication number GI10-8942 for IMS DB Solution Pack
- Publication number GI13-4194 for IMS DB Util Sol

6.0 Installation Instructions

This chapter describes the installation method and the step-by-step procedures to install and to activate the functions of IMS HALDB Toolkit.

Please note the following points:

- If you want to install IMS HALDB Toolkit 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 Products for IMS HALDB Toolkit

6.1.1 SMP/E Considerations for Installing IMS HALDB Toolkit

Use the SMP/E RECEIVE, APPLY, and ACCEPT commands to install this release of IMS HALDB Toolkit.

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.

Figure 12. SMP/E Options Subentry Values

Subentry	Value	Comment
DSSPACE	(7500,500,200)	3390 DASD tracks
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.

6.1.3 SMP/E CALLLIBS Processing

IMS HALDB Toolkit does not have CALLLIB data sets specific for the FMID. To view the individual CALLLIB data sets for the other components that are available with this installation package, refer to one of the following Program Directories that is supplied with the product.

- Publication number GI10-8942 for IMS DB Solution Pack
- Publication number GI13-4194 for IMS DB Util Sol

Note: CALLLIBS uses the previous DDDEFs only to resolve the link-edit for IMS HALDB Toolkit. These data sets are not updated during the installation of IMS HALDB Toolkit.

6.1.4 Sample Jobs

Sample installation jobs are provided as part of the product to help you install the IMS HALDB Toolkit.

Many JCL Job Samples are supplied with the overall installation package. To view all of the installation JCL Jobs that are available with this installation package, refer to one of the following Program Directories that is supplied with the product.

- Publication number GI10-8942 for IMS DB Solution Pack
- Publication number GI13-4194 for IMS DB Util Sol

The JCL Jobs described (below) are specific to installing HIHC110

<i>Figure 13. Sample Installation Jobs</i>			
Job Name	Job Type	Description	RELFILE
IHCALLOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HIHC110.F2
IHCDDDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.HIHC110.F2
IHCRECEV	RECEIVE	Sample RECEIVE job	IBM.HIHC110.F2
IHCAPPLY	APPLY	Sample APPLY job	IBM.HIHC110.F2
IHCACCEP	ACCEPT	Sample ACCEPT job	IBM.HIHC110.F2

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.5, “Perform SMP/E RECEIVE” on page 18) then copy the jobs from the RELFILES to a work data set for editing and submission. See Figure 13 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.

```
//STEP1 EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//*****
//* Make the //FILEIN DD statement below active for *
//* downloaded DASD files. *
//*****
//*FILEIN DD DSN=IBM.HIHC110.F2,UNIT=SYSALLDA,DISP=SHR,
//* VOL=SER=filevol
//OUT DD DSNAME=jcl-library-name,
// DISP=(NEW,CATLG,DELETE),
// VOL=SER=dasdvol,UNIT=SYSALLDA,
```

```
//          SPACE=(TRK,(20,10,5))
//SYSUT3   DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN    DD *
          COPY INDD=xxxxIN,OUTDD=OUT
/*
```

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

compact.

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.

6.1.5 Perform SMP/E RECEIVE

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

To view the SMP/E RECEIVE requirements for the other components available with this installation package, refer to one of the following Program Directories that is supplied with the product.

- Publication number GI10-8942 for IMS DB Solution Pack
- Publication number GI13-4194 for IMS DB Util Sol

You can also choose to edit and submit the JCL Job IHCRECEV to perform the SMP/E RECEIVE for IMS HALDB Toolkit.

To view information for the SMP/E RECEIVE for other components supplied with this installation package, refer to one of the following Program Directories that is supplied with this product,

- Publication number GI10-8942 for IMS DB Solution Pack
- Publication number GI13-4194 for IMS DB Util Sol

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 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job IHCALLOC to allocate the SMP/E target and distribution libraries for the IMS HALDB Toolkit. 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.

If you choose, there is other JCL Jobs to perform the data set allocation. View addition information for this install by referring to the Program Directories that are supplied with the other components,

- Publication number GI10-8942 for IMS DB Solution Pack
- Publication number GI13-4194 for IMS DB Util Sol

6.1.7 Create DDDEF Entries

Edit and submit sample job IHCDDDEF to create DDDEF entries for the SMP/E target and distribution libraries for the IMS HALDB Toolkit. 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.

If you choose, there is other JCL Jobs to perform the DDDEF creation. View addition information for this install by referring to the Program Directory that is supplied with the other components,

- Publication number GI10-8942 for IMS DB Solution Pack
- Publication number GI13-4194 for IMS DB Util Sol

6.1.8 Perform SMP/E APPLY

1. Ensure that you have the latest HOLDDATA; then edit and submit sample job IHCAPPLY to perform an SMP/E APPLY CHECK for the IMS HALDB Toolkit. Consult the instructions in the sample job for more information.

If you choose, there is supplied JCL jobs to perform the the APPLY for the other required components. View addition information for this install by referring to the Program Directories that are supplied with the other components,

- Publication number GI10-8942 for IMS DB Solution Pack
- Publication number GI13-4194 for IMS DB Util Sol

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.

6.1.9 Perform SMP/E ACCEPT

Edit and submit sample job IHCACCEP to perform an SMP/E ACCEPT CHECK for the IMS HALDB Toolkit. Consult the instructions in the sample job for more information.

If you choose, there is supplied JCL jobs to perform the ACCEPT for the other required components. View addition information for this install by referring to the Program Directories that are supplied with the other components,

- Publication number GI10-8942 for IMS DB Solution Pack
- Publication number GI13-4194 for IMS DB Util Sol

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 only *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.

6.1.10 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 IMS HALDB Toolkit, it is recommended that you run REPORT CROSSZONE against the new or updated target and distribution zones. REPORT CROSSZONE requires a global zone with ZONEINDEX entries that describe all the target and distribution libraries to be reported on.

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

6.2 Activating IMS HALDB Toolkit

6.2.1 Product Customization

For customization and use of IMS HALDB Toolkit refer to:

- IMS High Availability Large Database Toolkit User's Guide (delivered by IMS DB Solution Pack), SC27-9038
- IMS Database Solution Pack for z/OS Overview and Customization (delivered by IMS DB Solution Pack), SC27-9037
- IMS High Availability Large Database Toolkit User's Guide (delivered by IMS DB Util Sol), SC27-8779
- IMS Database Utility Solution for z/OS Overview and Customization (delivered by IMS DB Util Sol), SC27-8778

To view the individual customization step for the other components installed with this package, refer to one of the following Program Directories that is supplied with the product.

- Publication number GI10-8942 for IMS DB Solution Pack
- Publication number GI13-4194 for IMS DB Util Sol

7.0 Notices

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APAR numbers are provided in this document to assist in locating PTFs that may be required. Ongoing problem reporting may result in additional APARs being created. Therefore, the APAR lists in this document may not be complete. To obtain current service recommendations and to identify current product service requirements, always contact the IBM Customer Support Center or use S/390 SoftwareXcel to obtain the current "PSP Bucket".

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Program Directory for IMS High Availability Large Database Toolkit, July 2020

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