



**Program Directory for
IBM DB2 Utilities Suite for z/OS**

V12.01.00

Program Number 5770-AF4

FMID HDBCC1K

for Use with
z/OS

FMID HDBCC1K Service Updated 26 August 2016

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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 22.

Contents

1.0 Introduction	1
1.1 DB2 Utilities Suite Description	2
1.2 DB2 Utilities Suite FMID	3
2.0 Program Materials	4
2.1 Basic Machine-Readable Material	4
2.2 Optional Machine-Readable Material	4
2.3 Program Publications	5
2.3.1 Optional Program Publications	5
2.4 Program Source Materials	5
2.5 Publications Useful During Installation	5
3.0 Program Support	6
3.1 Program Services	6
3.2 Preventive Service Planning	6
3.3 Statement of Support Procedures	7
4.0 Program and Service Level Information	8
4.1 Program Level Information	8
4.2 Service Level Information	8
5.0 Installation Requirements and Considerations	9
5.1 Driving System Requirements	9
5.1.1 Machine Requirements	9
5.1.2 Programming Requirements	9
5.2 Target System Requirements	10
5.2.1 Machine Requirements	10
5.2.2 Programming Requirements	10
5.2.2.1 Installation Requisites	10
5.2.2.2 Operational Requisites	11
5.2.2.3 Toleration/Coexistence Requisites	12
5.2.2.4 Incompatibility (Negative) Requisites	12
5.2.3 DASD Storage Requirements	12
5.3 FMIDs Deleted	14
5.4 Special Considerations	14
6.0 Installation Instructions	15
6.1 Installing DB2 Utilities Suite	15
6.1.1 SMP/E Considerations for Installing DB2 Utilities Suite	15
6.1.2 SMP/E Options Subentry Values	15
6.1.3 Sample Jobs	16
6.1.4 Perform SMP/E RECEIVE	17

6.1.5 Allocate SMP/E Target and Distribution Libraries	17
6.1.6 Create DDDEF Entries	18
6.1.7 Perform SMP/E APPLY	18
6.1.8 Perform SMP/E ACCEPT	19
6.1.9 Run REPORT CROSSZONE	20
6.2 Enable/Register DB2 Utilities Suite for z/OS	20
7.0 Notices	22
7.1 Trademarks	22
Reader's Comments	23

Figures

1. Program File Content	4
2. Basic Material: Unlicensed	5
3. Publications Useful During Installation	5
4. PSP Upgrade and Subset ID	6
5. Component IDs	7
6. Driving System Software Requirements	10
7. Target System Mandatory Installation Requisites	10
8. Target System Mandatory Operational Requisites	11
9. Target System Conditional Operational Requisites	12
10. Total DASD Space Required by DB2 Utilities Suite	12
11. Storage Requirements for DB2 Utilities Suite Target Libraries	14
12. Storage Requirements for DB2 Utilities Suite Distribution Libraries	14
13. SMP/E Options Subentry Values	15
14. Sample Installation Jobs	16

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 Utilities Suite for z/OS. This publication refers to IBM DB2 Utilities Suite for z/OS as DB2 Utilities Suite.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 4 identifies the basic program materials and documentation for DB2 Utilities Suite.
- 3.0, “Program Support” on page 6 describes the IBM support available for DB2 Utilities Suite.
- 4.0, “Program and Service Level Information” on page 8 lists the APARs (program level) and PTFs (service level) that have been incorporated into DB2 Utilities Suite.
- 5.0, “Installation Requirements and Considerations” on page 9 identifies the resources and considerations that are required for installing and using DB2 Utilities Suite.
- 6.0, “Installation Instructions” on page 15 provides detailed installation instructions for DB2 Utilities Suite. It also describes the procedures for activating the functions of DB2 Utilities Suite, or refers to appropriate publications.

Before installing DB2 Utilities Suite, 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; then keep them for future reference. Section 3.2, “Preventive Service Planning” on page 6 tells you how to find any updates to the information and procedures in this program directory.

DB2 Utilities Suite 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 DB2 Utilities Suite are included on the CBPDO tape.

Do not use this program directory if you install DB2 Utilities Suite 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 DB2 Utilities Suite Description

DB2 Utilities Suite for z/OS, V12.1 (5770-AF4) is at the core of managing DB2 for z/OS. The utilities help you to minimize downtime associated with routine DB2 data maintenance while ensuring the highest degree of data integrity. Several key elements can be found in each and every release of the DB2 utilities:

- Supporting core function in DB2 for z/OS. The utilities are critically important to clients from early testing of new versions of DB2, day one support of DB2 for z/OS, and ongoing DB2 maintenance that requires the utilities to respond quickly and accurately.
- Reducing system resources. Each release of the DB2 utilities delivers significant savings in CPU usage and other system costs, as well as reductions in elapsed time.
- Providing global and nonstop availability. This requires more than support for online utility processing. It also requires a need to support performance and administrative tasks that require no application outage.
- Removing constraints and limitations. As the size and complexity of your databases grow, so does the need to simplify database management and remove scalability constraints to support the growth of your business.
- Simplifying data management. As new features are added into the engine, the utilities help to remove the complexity and details, while maintaining availability and protecting data integrity.

IBM DB2 Utilities Suite for z/OS, V12.1 (5770-AF4) includes the following benefits:

- Supports all major new functions and structural changes in the IBM DB2 12 for z/OS product
- Delivers improved application and data availability
- Offers better performance and reduced resource consumption, including additional zIIP exploitation
- Delivers simplified data management and improved usability

IBM DB2 Utilities Suite for z/OS, V12.01.00, contains the following enhancements:

- REORG utility enhancements
 - Full support for new online schema capability in DB2 12
 - Improved FlashCopy exploitation
 - Better PBG partition-level management and handling of LOB data in PBG tables
 - Increased exploitation of zIIP processors to reduce CPU cost
 - Improved serviceability for drain processing
 - Improved catalog REORG management
- LOAD and UNLOAD utility enhancements
 - Better performance for LOAD PART REPLACE of empty PBR partitions
 - LOAD SHRLEVEL CHANGE PARALLEL support for PBG table spaces
 - Up to 90% additional offload to zIIP processors
 - Avoid the need for data recovery in the event of LOAD RESUME failure
 - Improved identity column and sequence support
 - Reduced data sharing overhead during UNLOAD utility processing
 - Ability to ignore records during discard processing

- COPY utility enhancements
 - Improved FlashCopy PPRC management
 - COPY CHANGELIMIT usability improvements
 - Improved DFSMS ACS routine handling for FlashCopy
 - Improved management of FlashCopy image copies through ability to enforce FlashCopy
- RECOVER utility enhancements
 - Lifted point-in-time recovery restrictions associated with PBG table spaces
 - RECOVER utility performance improved up to 35%
 - Ability to skip unnecessary data recovery
 - Automatic retry of GRECP and LPL recovery
- RESTORE SYSTEM utility enhancements
 - Multiple copypool support for system level backups
 - Improved serviceability & usability with DFSMSHsm messages included in utility job output
- RUNSTATS utility enhancements
 - Profile support for inline statistics
 - Ability to control dynamic statement cache invalidation in RUNSTATS
 - Improved statistics profile management with direct input from DB2 Optimizer and DDL processing statistics
 - Reduce data sharing overhead
 - Performance improvements in COLGROUP and LISTDEF processing
- Overall utility enhancements
 - New DSNUTILV stored procedure supporting statements beyond 32K
 - Improved utility concurrency
 - Improved utility sort performance

Note

Enabling DB2 Utilities Suite for z/OS, V12.01.00, requires a PARMLIB update via Product Registration Services. Please refer to section 6.2, “Enable/Register DB2 Utilities Suite for z/OS” on page 20 in this program directory for more information.

1.2 DB2 Utilities Suite FMID

DB2 Utilities Suite consists of the following FMID:

HDBCC1K

2.0 Program Materials

An IBM program is identified by a program number. The program number for DB2 Utilities Suite is 5770-AF4.

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 Utilities Suite. 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 15 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 Utilities Suite in the *CBPDO Memo To Users Extension*.

Figure 1 describes the program file content for DB2 Utilities Suite. 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. Program File Content

Name	O R G	R E C F M	L R E C L	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.HDBCC1K.F1	PDS	FB	80	8800

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for DB2 Utilities Suite.

2.3 Program Publications

The following sections identify the basic publications for DB2 Utilities Suite.

Figure 2 on page 5 identifies the basic unlicensed publications for DB2 Utilities Suite. Those that are in softcopy format publications can be obtained from the IBM Publications Center website at: <http://www.ibm.com/shop/publications/order/>

<i>Figure 2. Basic Material: Unlicensed</i>		
Publication Title	Form Number	Media Format
IBM DB2 Utilities Suite for z/OS License Information	GC27-8812	http://www.ibm.com/software/sla/sladb.nsf
IBM DB2 Utilities Suite for z/OS Program Directory	GIS0-0036	http://www.ibm.com/support/docview.wss?uid=swg27020942

2.3.1 Optional Program Publications

No optional publications are provided for DB2 Utilities Suite.

2.4 Program Source Materials

No program source materials or viewable program listings are provided for DB2 Utilities Suite.

2.5 Publications Useful During Installation

You might want to use the publications listed in Figure 3 during the installation of DB2 Utilities Suite.

<i>Figure 3. Publications Useful During Installation</i>		
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 DB2 Utilities Suite.

3.1 Program Services

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

3.2 Preventive Service Planning

Before you install DB2 Utilities Suite, make sure that you have reviewed the current Preventive Service Planning (PSP) information. Review the PSP Bucket for General Information, Installation Documentation, and the Cross Product Dependencies sections. For the Recommended Service section, instead of reviewing the PSP Bucket, it is recommended you use the IBM.ProductInstall-RequiredService fix category in SMP/E to ensure you have all the recommended service installed. Use the **FIXCAT(IBM.ProductInstall-RequiredService)** operand on the **APPLY CHECK** command. See 6.1.7, “Perform SMP/E APPLY” on page 18 for a sample APPLY command.

If you obtained DB2 Utilities Suite as part of a CBPDO, HOLDDATA is included.

If the CBPDO for DB2 Utilities Suite 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-01.ibm.com/software/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 DB2 Utilities Suite are included in Figure 4.

UPGRADE	SUBSET	Description
5770AF4	HDBCC1K/1635	DB2 Utilities Suite

3.3 Statement of Support Procedures

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

Figure 5 on page 7 identifies the component IDs (COMPID) for DB2 Utilities Suite.

<i>Figure 5. Component IDs</i>			
FMID	COMPID	Component Name	RETAIN Release
HDBCC1K	5740XYR00	DB2 Utilities Suite	C1K

4.0 Program and Service Level Information

This section identifies the program and relevant service levels of DB2 Utilities Suite. 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 DB2 Utilities Suite.

4.2 Service Level Information

No PTFs against this release of DB2 Utilities Suite have been incorporated into the product package.

Frequently check the DB2 Utilities Suite 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 Utilities Suite. 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 Utilities Suite.

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	V02.01.00	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 http://www-03.ibm.com/systems/z/os/zos/support/zos_eos_dates.html.

5.2 Target System Requirements

This section describes the environment of the target system required to install and use DB2 Utilities Suite.

DB2 Utilities Suite 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.

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	V02.01.00	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.

DB2 Utilities Suite 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.

<i>Figure 8. Target System Mandatory Operational Requisites</i>		
Program Number	Product Name and Minimum VRM/Service Level	Function
5650-ZOS	z/OS V02.01.00	Product Registration Services
5650-DB2	DB2 for z/OS V12.01.00	DB2 12 base functions
5770-AF4	DB2 Utilities Suite for z/OS, APAR PI59103	Enable DB2 Utilities Suite functions

Note

Enabling DB2 Utilities Suite for z/OS, V12.01.00, requires a PARMLIB update via Product Registration Services. Please refer to section 6.2, “Enable/Register DB2 Utilities Suite for z/OS” on page 20 in this program directory for more information.

The following DB2 12 Utilities use DFSORT or DB2 Sort for z/OS to perform their SORT and MERGE functions:

- LOAD
- REORG TABLESPACE and REORG INDEX
- REBUILD INDEX
- RUNSTATS
- CHECK DATA, CHECK INDEX, and CHECK LOB

DB2 Version 12 Utilities can use DFSORT regardless of whether or not you have purchased a full license for DFSORT on your system. For additional information, see APARs I114047, I114213 and I113495.

Note: DB2 Version 12 Utilities can use the IBM DB2 Sort for z/OS (5655-W42) product as an alternative to DFSORT for utility SORT and MERGE functions. Exploitation of DB2 Sort for z/OS requires purchase of a DB2 Sort license. Refer to DB2 Sort documentation for further details regarding this product. An overview of DB2 Sort can be found at:

www.ibm.com/software/data/db2imstools/db2tools/db2-sort/

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.

Figure 9. Target System Conditional Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level	Function
5650-ZOS	z/OS V02.01.00 with APAR PI47000	Support of DFSORT block level interface
5650-ZOS	z/OS V02.01.00, DFSMSHsm, DFSMSdss and FlashCopy V02.00.00	Volume-based utilities and copy and recovery utilities
5650-ZOS	z/OS V02.02.00, DFSMSdss (required), FlashCopy V02.00.00 (required)	The following utilities that run with SHRLEVEL CHANGE: - CHECK INDEX - CHECK DATA - CHECK LOB

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 Utilities Suite 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 Utilities Suite has no negative requisites.

5.2.3 DASD Storage Requirements

DB2 Utilities Suite libraries can reside on all supported DASD types.

Figure 10 lists the total space that is required for each type of library.

Figure 10. Total DASD Space Required by DB2 Utilities Suite

Library Type	Total Space Required in 3390 Trks
Target	20
Distribution	20

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.

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.
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 be in the LPA, but they are not required to be in the LPA.
 - These data sets can be in the LNKLIST.
 - These data sets are not required to be APF-authorized.

The following figures describe the target and distribution libraries required to install DB2 Utilities Suite. The storage requirements of DB2 Utilities Suite must be added to the storage required by other programs that have data in the same library.

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

Figure 11. Storage Requirements for DB2 Utilities Suite 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
SDSNBASU	SAMP	Any	U	PDS	FB	80	10	4

Figure 12. Storage Requirements for DB2 Utilities Suite 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
ADSNBASU	U	PDS	FB	80	10	4

5.3 FMIDs Deleted

Installing DB2 Utilities Suite 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 Utilities Suite 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 Utilities Suite 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 Utilities Suite.

Please note the following points:

- If you want to install DB2 Utilities Suite 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 Utilities Suite

6.1.1 SMP/E Considerations for Installing DB2 Utilities Suite

Use the SMP/E RECEIVE, APPLY, and ACCEPT commands to install this release of DB2 Utilities Suite.

6.1.2 SMP/E Options Subentry Values

The recommended values for certain SMP/E CSI subentries are shown in Figure 13. 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	(500,500,500)	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 Utilities Suite:

<i>Figure 14. Sample Installation Jobs</i>			
Job Name	Job Type	Description	RELFILE
DSNRECVK	RECEIVE	Sample RECEIVE job	IBM.HDBCC1K.F1
DSNALOCK	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HDBCC1K.F1
DSNDDEFK	DDDEF	Sample job to define SMP/E DDDEFS	IBM.HDBCC1K.F1
DSNAPPLK	APPLY	Sample APPLY job	IBM.HDBCC1K.F1
DSNACCPK	ACCEPT	Sample ACCEPT job	IBM.HDBCC1K.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 17) then copy the jobs from the RELFILES to a work data set for editing and submission. See Figure 14 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 //TAPEIN DD statement below active if you install*
/* from a CBPDO tape by uncommenting the DD statement below. *
//*****
/*TAPEIN DD DSN=IBM.HDBCC1K.F1,UNIT=tunit,
/* VOL=SER=volser,LABEL=(x,SL),
/* DISP=(OLD,KEEP)
//*****
/* Make the //TAPEIN DD statement below active if you install*
/* from a product tape received outside the CBPDO process *
/* (using the optional SMP/E RECEIVE job) by uncommenting *
/* the DD statement below. *
//*****
/*TAPEIN DD DSN=IBM.HDBCC1K.F1,UNIT=tunit,
/* VOL=SER=DBCC1K,LABEL=(2,SL),
/* DISP=(OLD,KEEP)
//*****
/* Make the //FILEIN DD statement below active for *
/* downloaded DASD files. *
//*****
```

```

//*FILEIN DD DSN=IBM.HDBCC1K.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,(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:

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.HDBCC1K.F1 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 Perform SMP/E RECEIVE

If you have obtained DB2 Utilities Suite as part of a CBPDO, use the RCVPDO job in the CBPDO RIMLIB data set to receive the DB2 Utilities Suite 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 DSNRECVK to perform the SMP/E RECEIVE for DB2 Utilities Suite. 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 DSNALOCK to allocate the SMP/E target and distribution libraries for DB2 Utilities Suite. 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 DSNDDFEK to create DDDEF entries for the SMP/E target and distribution libraries for DB2 Utilities Suite. 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 DSNAPPLK to perform an SMP/E APPLY CHECK for DB2 Utilities Suite. 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),HOLDFIXCAT) .
..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 `DSNACCPK` to perform an `SMP/E ACCEPT CHECK` for DB2 Utilities Suite. 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 Utilities Suite, 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 Enable/Register DB2 Utilities Suite for z/OS

You must enable DB2 Utilities Suite before running any applications or functions in DB2 Utilities Suite.

To enable DB2 Utilities Suite the following entry must be made to SYS1.PARMLIB(IFAPRDxx):

```
PRODUCT OWNER('IBM CORP')
NAME('DB2 UTIL SUITE')
ID('5770-AF4')
FEATURENAME('V12R01')
STATE(ENABLED)
```

Sample registration parmlib entry DSNUPREG, which contains the above statements, is provided in your hlq.SDSNBASU data set.

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.

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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