IBM

Program Directory for

IBM Db2 Accessories Suite for z/OS

for Db2 12 for z/OS

V04.02.00

Program Number 5697-Q05

FMIDs H2AF410, H2AG410, H2AS410

for Use with
z/OS

Service Updated 01 October 2020

Document Date: June, 2021

> **Note**
>
> Before using this information and the product it supports, be sure to read the general information under 7.0, "Notices" on page 25.

Contents

Figures

1.0 Introduction

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

The Program Directory contains the following sections:

- 2.0, "Program Materials" on page 4 identifies the basic program materials and documentation for Db2 Accessories Suite.

- 3.0, "Program Support" on page 8 describes the IBM support available for Db2 Accessories Suite.

- 4.0, "Program and Service Level Information" on page 10 lists the APARs (program level) and PTFs (service level) that have been incorporated into Db2 Accessories Suite.

- 5.0, "Installation Requirements and Considerations" on page 11 identifies the resources and considerations that are required for installing and using Db2 Accessories Suite.

- 6.0, "Installation Instructions" on page 18 provides detailed installation instructions for Db2 Accessories Suite. It also describes the procedures for activating the functions of Db2 Accessories Suite, or refers to appropriate publications.

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

Db2 Accessories 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 Accessories Suite are included on the CBPDO tape.

Do not use this program directory if you install Db2 Accessories 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 Accessories Suite Description

Db2 Accessories Suite V04.02.00 consists of several independent components designed to enhance your use of the Db2 for z/OS data server. In this release of the suite, four components deliver innovative new capabilities for your Db2 for z/OS environment, including the support for spatial data, and the Internationalization support for IBM Text Search for Db2 for z/OS.

1. Spatial Support for Db2 for z/OS (hereafter referred to as 'Spatial Support') provides a set of spatial data types that you can use to model real-world entities, such as the locations of customers, the boundaries of parks, and the path of cable lines. You can manipulate spatial data by using spatial functions, which you can invoke from within an SQL statement. Also, you can create indexes on spatial data, which can be used by Db2 to optimize spatial query performance.

2. The Internationalization Components for Unicode for DB/2 for z/OS (hereafter referred to as 'ICU for Db2 for z/OS' or 'ICU'), is a set of C/C++ and Java libraries for Unicode support and software internalization. ICU is an open source project sponsored by IBM and provides full-fledged Unicode services on a wide variety of platforms and is called by selected features of Db2 for z/OS and the Accessories Suite, such as Spatial Support, that requires these Unicode and internationalization functions.

3. The text search feature for Db2 for z/OS provides the availability of the text search server on several operating systems, including Windows 64-bit and Linux 64-bit, delivering a complete System z solution for your text search needs. The text search feature for Db2 for z/OS enables users to issue SQL statements to satisfy familiar text search queries on data that is stored in a Db2 for z/OS database. This text search functionality is powered by the new text search server IBM Text Search for Db2 for z/OS.

4. The JSON capabilities for Db2 for z/OS is a driver-based solution that embraces the flexibility of the JSON data representation within the context of an RDBMS that includes well-known enterprise features and quality of service. With this offering, applications can manage JSON documents in Db2 for z/OS using a new application programming interface (API) which is designed after the MongoDB data model and query language. This API leverages available Db2 for z/OS capabilities to store, modify, and retrieve JSON documents. This allows existing Db2 administration skills, resources, and processes to be utilized for managing this new type of data in Db2 for z/OS.

1.2 Db2 Accessories Suite FMIDs

Db2 Accessories Suite consists of the following FMIDs:

H2AF410 (ICU)
H2AG410 (Spatial Support)
H2AS410 (JSON Capabilities for Db2 for z/OS)

> **NOTE**
>
> To obtain the SQL Tuning Services capability please order the Db2 Accessories Suite for z/OS, "Database Services Expansion Pack" feature from Shopz and proceed to install SQL Tuning Services FMID H2AT110 using the Database Services Expansion Pack Program Directory (GI13-5929).

2.0 Program Materials

An IBM program is identified by a program number. The program number for Db2 Accessories Suite is 5697-Q05.

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 Accessories 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 18 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 Accessories Suite in the *CBPDO Memo To Users Extension*.

Figure 1 describes the program file content for Db2 Accessories 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 for ICU				
Name	**ORG**	**RECFM**	**LRECL**	**BLK SIZE**
SMPMCS	SEQ	FB	80	6400
IBM.H2AF410.F1	PDSE	U	0	6144

Figure 2. Program File Content for Spatial Support					
Name	**O R G**	**R E C F M**	**L R E C L**	**BLK SIZE**
SMPMCS	SEQ	FB	80	6400
IBM.H2AG410.F1	PDS	FB	80	8800
IBM.H2AG410.F2	PDSE	U	0	6144
IBM.H2AG410.F3	PDS	FM	80	8800
IBM.H2AG410.F4	PDS	VB	8188	27998

Figure 3. Program File Content for JSON Capabilities for Db2 for z/OS					
Name	**O R G**	**R E C F M**	**L R E C L**	**BLK SIZE**
SMPMCS	SEQ	FB	80	6400
IBM.H2AS410.F1	PDSE	U	0	6144

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for Db2 Accessories Suite.

2.3 Program Publications

The following sections identify the basic publications for Db2 Accessories Suite.

Figure 4 identifies the basic unlicensed publications for Db2 Accessories 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/servlet/pbi.wss

Figure 4. Basic Material: Unlicensed and Licensed Materials		
Publication Title	**Form Number**	**Media Format**
IBM Db2 Accessories Suite for z/OS License Information	GC27-8813	http://www.ibm.com/software/sla/sladb.nsf
Text Search for Db2 for z/OS		http://www.ibm.com/software/data/db2/zos/downloads/oftss.html

Note: If using Text Search for Db2 for z/OS it is recommended that you use the above URL to install and obtain the latest version of Text Search (1.5.1 plus latest fixpack), rather than install from the provided Text Search DVD.

2.3.1 Optional Program Publications

Figure 5 identifies the optional unlicensed program publications for Db2 Accessories Suite. One copy of each of these publications is included when you order the optional materials for Db2 Accessories Suite. Additional copies can be obtained from the IBM Publications website at URL: http://www.ibm.com/shop/publications/order/

For further assistance contact your IBM representative.

Figure 5. Optional Material: Unlicensed Publications		
Publication Title	**Form Number**	**Media Format**
IBM Spatial Support for Db2 V12 for z/OS User Guide and Reference	GC19-4096	See Note 1
IBM Text Search for Db2 for z/OS Installation, Administration and Reference	GC19-4070	See Note 2
IBM Globalization - ICU	N/A	Internet
IBM Spatial Offerings	N/A	Internet

Note: 1 https://www.ibm.com/support/knowledgecenter/SSEPEK_12.0.0/pdf/dasz_04_spatlbook.pdf?view=kc

Note: 2 https://www.ibm.com/support/knowledgecenter/SSEPEK_12.0.0/pdf/dasz_04_srchzbook.pdf?view=kc

2.4 Program Source Materials

No program source materials or viewable program listings are provided for Db2 Accessories Suite.

2.5 Publications Useful During Installation

You might want to use the publications listed in Figure 6 during the installation of Db2 Accessories Suite.

Figure 6 (Page 1 of 2). Publications Useful During Installation		
Publication Title	**Form Number**	**Media Format**
IBM SMP/E for z/OS User's Guide	SA23-2277	http://www.ibm.com/shop/publications/order/
IBM SMP/E for z/OS Commands	SA23-2275	http://www.ibm.com/shop/publications/order/

Figure 6 (Page 2 of 2). Publications Useful During Installation		
Publication Title	**Form Number**	**Media Format**
IBM SMP/E for z/OS Reference	SA23-2276	http://www.ibm.com/shop/publications/order/
IBM SMP/E for z/OS Messages, Codes, and Diagnosis	GA32-0883	http://www.ibm.com/shop/publications/order/

3.0 Program Support

This section describes the IBM support available for Db2 Accessories 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 Accessories 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 6.1.8, "Perform SMP/E APPLY" on page 21 for a sample APPLY command.

If you obtained Db2 Accessories Suite as part of a CBPDO, HOLDDATA is included.

If the CBPDO for Db2 Accessories 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 Accessories Suite are included in Figure 7.

UPGRADE	SUBSET	Description
5697Q05	H2AF410	ICU
	H2AG410/2040	Spatial Support
	H2AS410/2040	JSON Capabilities for Db2 for z/OS

Figure 7. PSP Upgrade and Subset ID

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 8 on page 9 identifies the component IDs (COMPID) for Db2 Accessories Suite.

Figure 8. Component IDs			
FMID	**COMPID**	**Component Name**	**RETAIN Release**
H2AF410	5655R1403	ICU	410
H2AG410	5655R1402	Spatial Support	410
H2AS410	JSON00001	JSON Capabilities for Db2 for z/OS	410
N/A	IM0004COS	Text Search for Db2 for z/OS	150

4.0 Program and Service Level Information

This section identifies the program and relevant service levels of Db2 Accessories 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

The following PTF fixes against Db2 Accessories Suite have been incorporated into the product base, listed by FMID.

- FMID H2AG410

    - PH27753/UI71462
    - PH26691/UI71450
    - PH10206/UI63633

- FMID H2AS410

    - PI73887/UI46426

4.2 Service Level Information

PTFs containing APAR fixes against this release of Db2 Accessories Suite have been incorporated into this product package. For a list of included PTFs, examine the ++VER statement in the product's SMPMCS.

Frequently check the Db2 Accessories 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-REQUIREDSERVICE)** operand on your APPLY CHECK command. This will allow you to review the recommended and critical service that should be installed with your FMIDs.

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating Db2 Accessories 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 Accessories 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 9. 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 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 Accessories Suite.

Db2 Accessories 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.

The IBM Text Search component of the IBM Db2 Accessories Suite V12 feature, has the following hardware prerequisites:

- Linux or Windows running in 64-bit addressing mode
- For Red Hat Enterprise Linux , SUSE Enterprise Linux , Linux on System z or Windows
    - 2 dual-core 2.66 GHz processors
    - 4 GB RAM
    - Enough disk space to hold 4 times the original text size multiplied by the number of text search indexes. Each text column in a Db2 table has a corresponding text search index on the IBM Text Search for Db2 for z/OS. For example, if a text search server supports 5 indexes, each with 1 million rows of 1 KB text size, the required disk space needed is approximately 20 GB. This hardware is used exclusively by the IBM Text Search for Db2 for z/OS.
- JSON capability for Db2 for z/OS hardware requires: System z or equivalent processors running in a 64-bit mode with z/OS V2.03, or later.

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.

Db2 Accessories Suite has no mandatory 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 10. Target System Mandatory Operational Requisites	
Program Number	**Product Name and Minimum VRM/Service Level**
5650-ZOS	z/OS V02.03.00
Any **one** of the following:	
5650-DB2	Db2 for z/OS V12.01.00
5770-AF3	Db2 for z/OS Value Unit Edition V12.01.00

Note: Additional Mandatory Operational Requisite for the IBM Text Search for Db2 for z/OS (for Linux, Windows, and Linux on Systemz) requires any of the following:

- 64-bit Red Hat Enterprise Linux 5 (with the latest updates)
- 64-bit SUSE Linux Enterprise 10
- 64-bit SUSE zLinux SLES10x
- 64-bit Red Hat zLinux, Version 5 (with the latest update)
- 64-bit Windows

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 11. Target System Conditional Operational Requisites		
Program Number	**Product Name and Minimum VRM/Service Level**	**Function**
5697-Q05	ICU V04.01.00	APAR PI68310 must be installed
N/A	Text Search for Db2 for z/OS	APAR PI68310 must be installed

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 Accessories 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 Accessories Suite has no negative requisites.

5.2.3 DASD Storage Requirements

Db2 Accessories Suite libraries can reside on all supported DASD types.

Figure 12 lists the total space that is required for each type of library.

Figure 12. Total DASD Space Required by Db2 Accessories Suite	
Library Type	**Total Space Required in 3390 Trks**
Target	13510 tracks
Distribution	12957 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 21.

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 LNKLST.
- These data sets are not required to be APF-authorized.

The following figures describe the target and distribution libraries required to install Db2 Accessories Suite. The storage requirements of Db2 Accessories 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 13 (Page 1 of 2). Storage Requirements for Db2 Accessories 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
SDSNBASE	Sample	Any	E	PDS	FB	80	13	4
SDSNDBRM	Macro	Any	E	PDS	FB	80	151	40
SDSNLOAD	LMOD	Any	E	PDSE	U	0	8024	N/A

Figure 13 (Page 2 of 2). Storage Requirements for Db2 Accessories 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
SDSNNOTC	Data	Any	U	PDS	VB	8188	16	5
SDSNSAMP	Sample	Any	E	PDS	FB	80	5005	220

Figure 14. Storage Requirements for Db2 Accessories 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
ADSNBASE	E	PDS	FB	80	10	4
ADSNLOAD	E	PDSE	U	0	7726	N/A
ADSNMACS	E	PDS	FB	80	5205	220
ADSNNOTC	U	PDS	VB	8188	16	5

5.3 FMIDs Deleted

Installing Db2 Accessories 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 Accessories 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

Internationalization Components for Unicode (ICU) Considerations:

In relation to the ICU component of Db2 Accessories Suite please note:

- ICU is required only if you are interested in using the Text Search component
- ICU is not required if you are only interested in using the Spatial Support component
- If you DO NOT wish to install ICU please comment out the H2AF410 FMID from the install jobs

> **Note**
>
> If you choose to install ICU please note that the ADSNLOAD and SDSNLOAD datasets installed during the Db2 install may need to be resized to allow for the additional content.

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 Accessories Suite.

Please note the following points:

- If you want to install Db2 Accessories 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 Accessories Suite

6.1.1 SMP/E Considerations for Installing Db2 Accessories Suite

Use the SMP/E RECEIVE, APPLY, and ACCEPT commands to install this release of Db2 Accessories Suite.

6.1.2 SMP/E Options Subentry Values

The recommended values for certain SMP/E CSI subentries are shown in Figure 15. 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 15. SMP/E Options Subentry Values		
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 SMP/E CALLLIBS Processing

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

- CSSLIB
- SCEEBND2
- SCEELKED
- SCEELIB

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

6.1.4 Sample Jobs

The following sample installation jobs are provided as part of the product to help you install Db2 Accessories Suite:

Job Name	Job Type	Description	RELFILE
Figure 16. Sample Installation Jobs			
DSN5RCV1	RECEIVE	Sample RECEIVE job for ICU	IBM.H2AG410.F1
DSN5RCV3	RECEIVE	Sample RECEIVE job for Spatial Support	IBM.H2AG410.F1
DSN5RCV4	RECEIVE	Sample RECEIVE job for JSON Capabilities for Db2 for z/OS	IBM.H2AG410.F1
DSN5ALOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.H2AG410.F1
DSN5DDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.H2AG410.F1
DSN5APLY	APPLY	Sample APPLY job for Db2 Accessories Suite	IBM.H2AG410.F1
DSN5ACEP	ACCEPT	Sample ACCEPT job for Db2 Accessories Suite	IBM.H2AG410.F1

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.5, "Perform SMP/E RECEIVE" on page 21) then copy the jobs from the RELFILES to a work data set for editing and submission. See Figure 16 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.H2AG410.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.H2AF410.F1,UNIT=tunit,
//*         VOL=SER=2AG410,LABEL=(3,SL),
//*         DISP=(OLD,KEEP)
//*************************************************************
//* Make the //FILEIN DD statement below active for          *
//* downloaded DASD files.                                   *
//*************************************************************
//*FILEIN   DD DSN=IBM.H2AG410.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.H2AG410.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.

6.1.5 Perform SMP/E RECEIVE

If you have obtained Db2 Accessories Suite as part of a CBPDO, use the RCVPDO job in the CBPDO RIMLIB data set to receive the Db2 Accessories 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 DSN5RCV1 to perform the SMP/E RECEIVE for ICU. 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.

You can also choose to edit and submit sample job DSN5RCV3 to perform the SMP/E RECEIVE for Spatial Support. 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.

You can also choose to edit and submit sample job DSN5RCV4 to perform the SMP/E RECEIVE for JSON Capabilities 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.

6.1.6 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job DSN5ALOC to allocate the SMP/E target and distribution libraries for Db2 Accessories 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 Create DDDEF Entries

Edit and submit sample job DSN5DDEF to create DDDEF entries for the SMP/E target and distribution libraries for Db2 Accessories 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.

6.1.8 Perform SMP/E APPLY

1. Ensure that you have the latest HOLDDATA; then edit and submit sample job DSN5APLY to perform an SMP/E APPLY CHECK for Db2 Accessories 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.

6.1.9 Perform SMP/E ACCEPT

Edit and submit sample job DSN5ACEP to perform an SMP/E ACCEPT CHECK for Db2 Accessories 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.

6.1.10 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 Db2 Accessories 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.

6.1.11 Cleaning Up Obsolete Data Sets, Paths, and DDDEFs

The following data sets, which were allocated and used by previous releases of this product, are no longer used in this release. You can delete these obsolete data sets after you delete the previous release from your system.

- usr/lpp/osc/IBM

6.2 Activating Db2 Accessories Suite

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

Spatial Support can be enabled by customizing and executing the following jobs located in target library SDSNSAMP:

- DSNTIJCL
- DSN5SENB
- DSN5SBND

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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7.1 Other Notices

The NOTICES.TXT file can be found in member DSN5NOT3 in target library SDSNNOTC.

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