



**Program Directory for
IBM DB2 Automation Tool for z/OS**

V04.03.00

Program Number 5655-E37

FMIDs H25H430, H25F132, H25HKN0

for Use with
z/OS

Document Date: October 2016

GI10-8911-02

Note

Before using this information and the product it supports, be sure to read the general information under 7.0, "Notices" on page 28.

Contents

1.0 Introduction	1
1.1 DB2 Automation Tool Description	1
1.2 DB2 Automation Tool FMIDs	3
2.0 Program Materials	4
2.1 Basic Machine-Readable Material	4
2.2 Optional Machine-Readable Material	6
2.3 Program Publications	6
2.3.1 Optional Program Publications	6
2.4 Program Source Materials	6
2.5 Publications Useful During Installation	6
3.0 Program Support	8
3.1 Program Services	8
3.2 Preventive Service Planning	8
3.3 Statement of Support Procedures	9
4.0 Program and Service Level Information	10
4.1 Program Level Information	10
4.2 Service Level Information	10
5.0 Installation Requirements and Considerations	11
5.1 Driving System Requirements	11
5.1.1 Machine Requirements	11
5.1.2 Programming Requirements	11
5.2 Target System Requirements	12
5.2.1 Machine Requirements	12
5.2.2 Programming Requirements	12
5.2.2.1 Installation Requisites	12
5.2.2.2 Operational Requisites	13
5.2.2.3 Toleration/Coexistence Requisites	14
5.2.2.4 Incompatibility (Negative) Requisites	14
5.2.3 DASD Storage Requirements	14
5.3 FMIDs Deleted	17
5.4 Special Considerations	17
6.0 Installation Instructions	19
6.1 Installing DB2 Automation Tool	19
6.1.1 SMP/E Considerations for Installing DB2 Automation Tool	19
6.1.2 SMP/E Options Subentry Values	19
6.1.3 SMP/E CALLLIBS Processing	20
6.1.4 Sample Jobs	20

6.1.5 Allocate SMP/E CSI (Optional)	22
6.1.6 Initialize CSI zones (Optional)	22
6.1.7 Perform SMP/E RECEIVE	23
6.1.8 Allocate SMP/E Target and Distribution Libraries	23
6.1.9 Create DDDEF Entries	23
6.1.10 Perform SMP/E APPLY	24
6.1.11 Perform SMP/E ACCEPT	26
6.1.12 Run REPORT CROSSZONE	27
6.2 Activating DB2 Automation Tool	27
7.0 Notices	28
7.1 Trademarks	28
Reader's Comments	29

Figures

1. Program File Content for DB2 Automation Tool	4
2. Program File Content for FEC Common Code	5
3. Program File Content for DB2 Automation Tool Standard Edition Identifier	5
4. Basic Material: Unlicensed	6
5. Publications Useful During Installation	6
6. PSP Upgrade and Subset ID	8
7. Component IDs	9
8. Driving System Software Requirements	12
9. Target System Mandatory Installation Requisites	12
10. Target System Mandatory Operational Requisites	13
11. Total DASD Space Required by DB2 Automation Tool	14
12. Storage Requirements for DB2 Automation Tool Target Libraries	16
13. Storage Requirements for FEC Common Code Target Libraries	16
14. Storage Requirements for DB2 Automation Tool Distribution Libraries	16
15. Storage Requirements for FEC Common Code Distribution Libraries	17
16. SMP/E Options Subentry Values	19
17. Sample Installation Jobs	20

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 Automation Tool for z/OS. This publication refers to IBM DB2 Automation Tool for z/OS as DB2 Automation Tool.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 4 identifies the basic program materials and documentation for DB2 Automation Tool.
- 3.0, “Program Support” on page 8 describes the IBM support available for DB2 Automation Tool.
- 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 Automation Tool.
- 5.0, “Installation Requirements and Considerations” on page 11 identifies the resources and considerations that are required for installing and using DB2 Automation Tool.
- 6.0, “Installation Instructions” on page 19 provides detailed installation instructions for DB2 Automation Tool. It also describes the procedures for activating the functions of DB2 Automation Tool, or refers to appropriate publications.

Before installing DB2 Automation Tool, 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 Automation Tool 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 Automation Tool are included on the CBPDO tape.

Do not use this program directory if you install DB2 Automation Tool 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 Automation Tool Description

IBM DB2 Automation Tool for z/OS, V4.3 (5655-E37) key enhancements:

New integration with complementary products in portfolio:

- Support for managing DB2 Automation Tool utility, object, exception, and job profiles from within Data Server Manager (DSM). From a simple, web-based graphical console, you can manage maintenance tasks, view the overall health of your database assets, detect and prevent problems by performing

corrective actions to avoid downtime. This solution provides DB2 for z/OS utilities automation and management in the DSM interface.

- View and assess the health of accelerated DB2 tables and automate the process of loading or refreshing data to the DB2 Analytics Accelerator. DB2 Automation Tool will check the status of an accelerated DB2 object, detect when it needs to be loaded, and automatically generate the JCL to load only the changed data.

Usability improvements:

- Enhanced functionality to prevent DB2 outages due to out-of-space conditions and to automate corrective action.
- OPTIONS is a new primary command on the Update Exception Profile Display panel. This command can be used to limit which static fields to display to enlarge the scrolling area of the terminal.
- New exception condition TABLESPACESTATS.SPACEUSED_PCT .
- Calculate more accurate space values for the reallocation utility by using real-time statistics (RTS) as an alternative to MVS catalog statistics. RTS values are more accurate than MVS catalog statistics when many rows have been deleted from a table space because MVS catalog statistics do not reflect the freed-up space. Therefore, using RTS values can save space during reallocation.
- Eliminate manual processes when "un-scheduling" a maintenance window. DB2 Automation Tool will automatically un-schedule a maintenance window from the DB2 administration task scheduler whenever a maintenance window is deleted. It also provides the capability to reassign actions to another maintenance window.
- Conditionally issue a TERM UTILITY (terminate utility) command when a DB2 utility ends abnormally, thus ensuring the resources are freed.
- Expanded notifications to keep you informed through email or text about DB2 maintenance tasks. The notification feature includes a framework that enables other tools to plug in and create their own notifications.
- The ability to include the total number or a list of all triggered objects through email or the total number of triggered objects through text. The ability to notify you when a maintenance window begins and ends.

Tools Customizer usability:

- Addition of OWNER parameter to all plan binds.

Deprecated features:

- The data page display and edit functions and the associated data page verification reporting option in utility profiles have been deprecated. These are not recommended methods for accessing DB2 data. Deprecation was announced in DB2 Automation Tool V4.2.
- Several real-time statistics have been deprecated from the Update Exceptions Profile Display . The SYSTABLESPACESTATS.UNCOMPRESSED_DATASIZE and SYSTABLESPACESTATS.COMPRESSION_RATIO exceptions have been removed. In the IBM DB2 V10 and V11 SQL Reference, UNCOMPRESSED_DATASIZE is always set to 0. Since COMPRESSION_RATIO is based on UNCOMPRESSED_DATASIZE, this calculated value is always 0. Therefore, both of these exception conditions are always 0, and no longer have meaning.

1.2 DB2 Automation Tool FMIDs

DB2 Automation Tool consists of the following FMIDs:

H25H430

H25F132

H25HKN0

2.0 Program Materials

An IBM program is identified by a program number. The program number for DB2 Automation Tool is 5655-E37.

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 Automation Tool. 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 19 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 Automation Tool in the *CBPDO Memo To Users Extension*.

The following tables, describe the program file content for DB2 Automation Tool. 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 for DB2 Automation Tool

Name	ORG	RECFM	RECL	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.H25H430.F1	PDS	FB	80	8800
IBM.H25H430.F2	PDS	FB	80	8800
IBM.H25H430.F3	PDS	FB	80	8800
IBM.H25H430.F4	PDS	FB	80	8800
IBM.H25H430.F5	PDS	U	0	6144

Figure 1 (Page 2 of 2). Program File Content for DB2 Automation Tool

Name	O R G	R E C F M	L R E C L	BLK SIZE
IBM.H25H430.F6	PDS	FB	80	8800
IBM.H25H430.F7	PDS	FB	80	8800
IBM.H25H430.F8	PDS	FB	80	8800
IBM.H25H430.F9	PDS	FB	80	8800

Figure 2. Program File Content for FEC Common Code

Name	O R G	R E C F M	L R E C L	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.H25F132.F1	PDS	FB	80	3120
IBM.H25F132.F2	PDS	U	0	6144
IBM.H25F132.F3	PDS	FB	80	27920
IBM.H25F132.F4	PDS	FB	80	27920
IBM.H25F132.F5	PDS	FB	80	27920
IBM.H25F132.F6	PDS	FB	80	27920

Figure 3. Program File Content for DB2 Automation Tool Standard Edition Identifier

Name	O R G	R E C F M	L R E C L	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.H25HKN0.F1	PDS	FB	80	8800
IBM.H25HKN0.F2	PDS	U	0	6144
IBM.H25HKN0.F3	PDS	FB	80	8800

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for DB2 Automation Tool.

2.3 Program Publications

The following sections identify the basic publications for DB2 Automation Tool.

Figure 4 identifies the basic unlicensed publications for DB2 Automation Tool. 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 4. Basic Material: Unlicensed</i>		
Publication Title	Form Number	Media Format
IBM DB2 Automation Tool for z/OS License Information	GC19-3411	http://www.ibm.com/software/sla/sladb.nsf
IBM DB2 Automation Tool for z/OS User's Guide	SC27-8893	http://www.ibm.com/support/docview.wss?uid=swg27020910

2.3.1 Optional Program Publications

No optional publications are provided for DB2 Automation Tool.

2.4 Program Source Materials

No program source materials or viewable program listings are provided for DB2 Automation Tool.

2.5 Publications Useful During Installation

You might want to use the publications listed in Figure 5 during the installation of DB2 Automation Tool.

<i>Figure 5 (Page 1 of 2). Publications Useful During Installation</i>		
Publication Title	Form Number	Media Format
<i>IBM SMP/E for z/OS Messages, Codes, and Diagnosis</i>	GA22-7770	http://www.ibm.com/shop/publications/order/
<i>IBM SMP/E for z/OS Commands</i>	SA22-7771	http://www.ibm.com/shop/publications/order/

Figure 5 (Page 2 of 2). Publications Useful During Installation

Publication Title	Form Number	Media Format
<i>IBM SMP/E for z/OS Reference</i>	SA22-7772	http://www.ibm.com/shop/publications/order/
<i>IBM SMP/E for z/OS User's Guide</i>	SA22-7773	http://www.ibm.com/shop/publications/order/

3.0 Program Support

This section describes the IBM support available for DB2 Automation Tool.

3.1 Program Services

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

3.2 Preventive Service Planning

Before you install DB2 Automation Tool, 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 6.1.10, "Perform SMP/E APPLY" on page 24 for a sample APPLY command.

If you obtained DB2 Automation Tool as part of a CBPDO, HOLDDATA is included.

If the CBPDO for DB2 Automation Tool 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 Automation Tool are included in Figure 6

Figure 6. PSP Upgrade and Subset ID

UPGRADE	SUBSET	Description
5655E37	H25H430	DB2 Automation Tool
5655F55	H25F132	FEC Common Code
5655E37	H25HKN0	DB2 Automation Tool Standard Edition Identifier

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 7 on page 9 identifies the component IDs (COMPID) for DB2 Automation Tool.

<i>Figure 7. Component IDs</i>			
FMID	COMPID	Component Name	RETAIN Release
H25H430	5697G6300	DB2 Automation Tool	430
H25F132	5655F5504	FEC Common Code	132
H25HKN0	5697G6300	DB2 Automation Tool Standard Edition Identifier	KN0

4.0 Program and Service Level Information

This section identifies the program and relevant service levels of DB2 Automation Tool. 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 APAR fixes against previous releases of DB2 Automation Tool have been incorporated into this release. They are listed by FMID.

- FMID H25H420

PI25564	PI37220	PI48030	PI57560
PI27360	PI38084	PI48234	PI57775
PI29592	PI38277	PI48623	PI57987
PI32258	PI39300	PI49096	PI58328
PI32263	PI41501	PI49417	PI58474
PI33470	PI42148	PI50483	PI58901
PI33901	PI42239	PI52250	PI60337
PI34715	PI42534	PI52272	PI61524
PI34736	PI43243	PI54102	PI62873
PI34835	PI43827	PI54905	PI63081
PI34944	PI45100	PI55999	PI66453
PI35198	PI45380	PI56330	PI66799
PI36217	PI46718		

4.2 Service Level Information

No PTFs against this release of DB2 Automation Tool have been incorporated into the product package.

Frequently check the DB2 Automation Tool 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 Automation Tool. 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 Automation Tool.

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 8. 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 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 Automation Tool.

DB2 Automation Tool 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 9. Target System Mandatory Installation Requisites

Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in the shipped product?
N/A	FEC Common Code - FMID H25F132*	N/A	PTF UI20963	Yes**

Note: * FEC is required to be at the current maintenance level, at the time of installation. If not unpredicable results may occur.

Note: ** A subset of the FMIDs from 5655-F55 have been included in this shipment for your convenience. You may already have these FMIDs from the listed Product Number or from another product which ships these FMIDs.

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 Automation Tool 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 10. Target System Mandatory Operational Requisites</i>	
Program Number	Product Name and Minimum VRM/Service Level
5655-V93	IBM Tools Base for z/OS V01.05.00*
Any one of the following:	
5655-V41	DB2 V10.01.00 Utilities Suite If running DB2 V10.01.00
5655-W87	DB2 V11.01.00 Utilities Suite If running DB2 V11.01.00
5770-EU2	DB2 V12.01.00 Utilities Suite If running DB2 V12.01.00
Any one of the following:	
5605-DB2	DB2 for z/OS V10.01.00
5697-P31	DB2 for z/OS Value Unit Edition V10.01.00
5615-DB2	DB2 for z/OS V11.01.00
5697-P43	DB2 for z/OS Value Unit Edition V11.01.00
5650-DB2	DB2 for z/OS V12.01.00
5770-AF3	DB2 for z/OS Value Unit Edition V12.01.00

Note: *FMID HTCZ110, which is delivered either with IBM Tools Base for z/OS V01.05.00 or earlier, or, IBM Tools Customizer for z/OS, is required to customize DB2 Automation Tool. Both IBM Tools Base for z/OS V01.05.00 and IBM Tools Customizer for z/OS are no-charge products that must be separately ordered.

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.

DB2 Automation Tool has no conditional operational requisites.

5.2.2.3 Toleration/Coexistence Requisites: Toleration/coexistence requisites identify products that must be present on sharing systems. These systems can be other systems in a multisystem environment (not necessarily sysplex), a shared DASD environment (such as test and production), or systems that reuse the same DASD environment at different time intervals.

DB2 Automation Tool 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 Automation Tool has no negative requisites.

5.2.3 DASD Storage Requirements

DB2 Automation Tool libraries can reside on all supported DASD types.

Figure 11 lists the total space that is required for each type of library.

<i>Figure 11. Total DASD Space Required by DB2 Automation Tool</i>		
Library Type	Total Space Required in 3390 Trks	
Target	1072	for DB2 Automation Tool
	61	for FEC Common Code
Distribution	1072	for DB2 Automation Tool
	61	for FEC Common Code

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 6.1.8, “Allocate SMP/E Target and Distribution Libraries” on page 23.

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.
- SHAALOAD, and SFECLOAD are required to be APF-authorized.

The following figures describe the target and distribution libraries required to install DB2 Automation Tool. The storage requirements of DB2 Automation Tool 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 12. Storage Requirements for DB2 Automation Tool 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
SHAABASE	SAMP	Any	U	PDS	FB	80	8	5
SHAADBRM	MAC	Any	U	PDS	FB	80	51	10
SHAADENU	MSG	Any	U	PDS	FB	80	51	5
SHAALOAD	MOD	Any	U	PDS	U	0	503	100
SHAAMENU	MSG	Any	U	PDS	FB	80	18	20
SHAAPENU	PNL	Any	U	PDS	FB	80	359	400
SHAASAMP	SAMP	Any	U	PDS	FB	80	51	5
SHAASLIB	SKL	Any	U	PDS	FB	80	31	20

Figure 13. Storage Requirements for FEC Common Code 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
SFECDBRM	MAC	Any	S	PDS	FB	80	3	5
SFECLOAD	LMOD	Any	S	PDS	U	0	26	25
SFECMENU	MSG	Any	S	PDS	FB	80	3	5
SFECPENU	PNL	Any	S	PDS	FB	80	26	15
SFECSAMP	SAMP	Any	S	PDS	FB	80	3	5

Figure 14 (Page 1 of 2). Storage Requirements for DB2 Automation Tool Distribution 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
AHAABASE			U	PDS	FB	80	8	5
AHAADBRM			U	PDS	FB	80	51	10
AHAADENU			U	PDS	FB	80	51	5
AHAALOAD			U	PDS	U	0	503	100
AHAAMENU			U	PDS	FB	80	18	20

Figure 14 (Page 2 of 2). Storage Requirements for DB2 Automation Tool 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
AHAAPENU	U	PDS	FB	80	359	400
AHAASAMP	U	PDS	FB	80	51	5
AHAASLIB	U	PDS	FB	80	31	20

Figure 15. Storage Requirements for FEC Common Code 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
AFECDBRM	S	PDS	FB	80	3	5
AFECLOAD	S	PDS	U	0	26	25
AFECMENU	S	PDS	FB	80	3	5
AFECPENU	S	PDS	FB	80	26	15
AFECSAMP	S	PDS	FB	80	3	5

5.3 FMIDs Deleted

Installing DB2 Automation Tool 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 Automation Tool 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

FEC Common Code

FMID H25F132 Considerations: It is strongly recommended to install all the DB2 tools that share the same common code FMID into the same SMP/E target and distribution zones. Several of the DB2 tools will be delivering common code, shipping the same FMID. You will only be required to install the common code FMID once. If you use different SMP/E target and distribution zones, you will have to install and maintain multiple instances of th same FMID, which will increase your maintenance and DASD requirements.

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 Automation Tool.

Please note the following points:

- If you want to install DB2 Automation Tool 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 Automation Tool

6.1.1 SMP/E Considerations for Installing DB2 Automation Tool

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

6.1.2 SMP/E Options Subentry Values

The recommended values for certain SMP/E CSI subentries are shown in Figure 16. 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	(200,200,500)	3390 DASD tracks
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.

6.1.3 SMP/E CALLLIBS Processing

DB2 Automation Tool uses the CALLLIBS function provided in SMP/E to resolve external references during installation. When DB2 Automation Tool is installed, ensure that DDDEFs exist for the following libraries:

- CSSLIB
- SCEELKED
- SDSNLOAD
- SISPLOAD

Note: CALLLIBS uses the previous DDDEFs only to resolve the link-edit for DB2 Automation Tool. These data sets are not updated during the installation of DB2 Automation Tool.

6.1.4 Sample Jobs

The following sample installation jobs are provided as part of the product to help you install DB2 Automation Tool:

<i>Figure 17 (Page 1 of 2). Sample Installation Jobs</i>			
Job Name	Job Type	Description	RELFILE
HAAALA	SMP/E	Sample job to allocate and initialize a new SMP/E CSI data set (Optional)	IBM.H25H430.F2
HAAALB	SMP/E	Sample job to allocate SMP/E data sets (Optional)	IBM.H25H430.F2
HAARECV	RECEIVE	Sample RECEIVE job for DB2 Automation Tool	IBM.H25H430.F2
HAAREC1	RECEIVE	Sample RECEIVE job for FEC Common Code	IBM.H25H430.F2
HAAREC2	RECEIVE	Sample RECEIVE job for DB2 Automation Tool Standard Edition Identifier	IBM.H25HKN0.F3
HAAALLOC	ALLOCATE	Sample job to allocate target and distribution libraries for DB2 Automation Tool	IBM.H25H430.F2
HAAALLO1	ALLOCATE	Sample job to allocate target and distribution libraries for FEC Common Code	IBM.H25H430.F2
HAADDDEF	DDDEF	Sample job to define SMP/E DDDEFs for DB2 Automation Tool	IBM.H25H430.F2
HAADDDE1	DDDEF	Sample job to define SMP/E DDDEFs for FEC Common Code	IBM.H25H430.F2
HAAAPPLY	APPLY	Sample APPLY job for H25H430 and H25F132, DB2 Automation Tool and FEC Common Code	IBM.H25H430.F2
HAAAPPL2	APPLY	Sample APPLY job for H25HKN0, DB2 Automation Tool Standard Edition Identifier	IBM.H25HKN0.F3

Figure 17 (Page 2 of 2). Sample Installation Jobs

Job Name	Job Type	Description	RELFILE
HAAACCEP	ACCEPT	Sample ACCEPT job for H25H430 and H25F132, DB2 Automation Tool and FEC Common Code	IBM.H25H430.F2
HAAACCE2	ACCEPT	Sample ACCEPT job for H25HKN0, DB2 Automation Tool Standard Edition Identifier	IBM.H25HKN0.F3

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.7, “Perform SMP/E RECEIVE” on page 23) then copy the jobs from the RELFILES to a work data set for editing and submission. See Figure 17 on page 20 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.H25H430.F2,UNIT=tunit,
/* VOL=SER=volser,LABEL=(x,SL),
/* DISP=(OLD,KEEP)
/*TAPEIN2 DD DSN=IBM.H25HKN0.F3,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.H25H430.F2,UNIT=tunit,
/* VOL=SER=25H430,LABEL=(3,SL),
/* DISP=(OLD,KEEP)
/*TAPEIN2 DD DSN=IBM.H25HKN0.F3,UNIT=tunit,
/* VOL=SER=25HKN0,LABEL=(4,SL),
/* DISP=(OLD,KEEP)
//*****
/* Make the //FILEIN DD statement below active for *
/* downloaded DASD files. *
//*****
/*FILEIN DD DSN=IBM.H25H430.F2,UNIT=SYSALLDA,DISP=SHR,
/* VOL=SER=filevol
```

```

//*FILEIN2 DD DSN=IBM.H25HKN0.F3,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
        COPY INDD=yyyyIN,OUTDD=OUT
/*

```

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

TAPEIN/TAPEIN2:

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.H25H430.F2 and IBM.H25HKN0.F3 on the tape.

FILEIN/FINEIN2:

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.

yyyyIN is either TAPEIN2 or FILEIN2 depending on your input DD statement.

6.1.5 Allocate SMP/E CSI (Optional)

If you are using an existing CSI, do not execute this job.

If you are allocating a new SMP/E data set for this install, edit and submit sample job HAAALA to allocate the SMP/E data set for DB2 Automation Tool. 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 Initialize CSI zones (Optional)

If you are using an existing CSI, do not execute this job.

Edit and submit sample job HAAALB to initialize SMP/E zones for DB2 Automation Tool. 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 RECEIVE

If you have obtained DB2 Automation Tool as part of a CBPDO, use the RCVPDO job in the CBPDO RIMLIB data set to receive the DB2 Automation Tool 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 HAARECV to perform the SMP/E RECEIVE for DB2 Automation Tool. 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.

Note: FEC Common Code, H25F132, is a mandatory installation and operational requisite for DB2 Automation Tool. If you have already installed FEC Common code, H25F132, DO NOT receive this FMID again.

You can also choose to edit and submit sample job HAAREC1 to perform the SMP/E RECEIVE for FEC Common Code. 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 HAAREC2 to perform the SMP/E RECEIVE for DB2 Automation Tool Standard Edition Identifier. 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 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job HAAALLOC to allocate the SMP/E target and distribution libraries for DB2 Automation Tool. 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.

Edit and submit sample job HAAALLO1 to allocate the SMP/E target and distribution libraries for FEC Common Code. Consult the instructions in the sample job for more information.

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

6.1.9 Create DDDEF Entries

Edit and submit sample job HAADDDEF to create DDDEF entries for the SMP/E target and distribution libraries for DB2 Automation Tool. 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.

Edit and submit sample job HAADDDE1 to create DDDEF entries for the SMP/E target and distribution libraries for FEC Common Code. 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.

6.1.10 Perform SMP/E APPLY

1. Ensure that you have the latest HOLDDATA; then edit and submit sample job HAAAPPLY to perform an SMP/E APPLY CHECK for DB2 Automation Tool. 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/holddata/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 the 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 or 4 if this job runs correctly.

Expected Return Codes and Messages from APPLY: You will receive a return code of 0 or 4 if this job runs correctly.

You may receive the following message codes which do not affect the product installation; GIM23903W, GIM23904W, GIM61903W, IEW2470E, IEW2648E.

Edit and submit sample job HAAAPL2 to perform the APPLY CHECK for DB2 Automation Tool Standard Edition Identifier. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages from APPLY CHECK: You will receive a return code of 0 if this job runs correctly.

3. After you take actions that are indicated by the APPLY CHECK, remove the CHECK operand and run the job again to perform the APPLY.

Expected Return Codes and Messages from APPLY: You will receive a return code of 0 if this job runs correctly.

6.1.11 Perform SMP/E ACCEPT

Edit and submit sample job HAAACCEP to perform an SMP/E ACCEPT CHECK for DB2 Automation Tool. 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 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 or 4 if this job runs correctly.

You may receive GIM61903W messages, which do not affect the product installation and will result in a return code 4.

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.

After you take actions that are indicated by the ACCEPT CHECK, remove the CHECK operand and run the job again to perform the ACCEPT.

Expected Return Codes and Messages from ACCEPT: You will receive a return code of 0 or 4 if this job runs correctly.

You may receive GIM61903W messages, which do not affect the product installation and will result in a return code 4.

Edit and submit sample job HAAACCE2 to perform an SMP/E ACCEPT CHECK for DB2 Automation Tool Standard Edition Identifier. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages from ACCEPT CHECK: You will receive a return code of 0 if this job runs correctly.

After you take actions that are indicated by the ACCEPT CHECK, remove the CHECK operand and run the job again to perform the ACCEPT.

Expected Return Codes and Messages from ACCEPT: You will receive a return code of 0 if this job runs correctly.

6.1.12 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 Automation Tool, 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 DB2 Automation Tool

The publication *DB2 Automation Tool User's Guide* (SC27-8893) contains the necessary information to customize and use DB2 Automation Tool.

7.0 Notices

This information was developed for products and services offered in the U.S.A. IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

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".

IBM may have patents or pending patent applications covering subject matter in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to the

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, New York 10504-1785
USA

For license inquiries regarding double-byte (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

Intellectual Property Licensing
Legal and Intellectual Property Law
IBM Japan, Ltd.
19-21, Nihonbashi-Hakozakicho, Chuo-ku
Tokyo 103-8510, Japan

7.1 Trademarks

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at www.ibm.com/legal/copytrade.shtml.

Reader's Comments

Program Directory for IBM DB2 Automation Tool for z/OS, October 2016

We appreciate your input on this publication. Feel free to comment on the clarity, accuracy, and completeness of the information or give us any other feedback that you might have.

Use one of the following methods to send us your comments:

1. Send an email to comments@us.ibm.com
2. Use the form on the Web at:

www.ibm.com/software/data/rcf

When you send information to IBM, you grant IBM a nonexclusive right to use or distribute the information in any way it believes appropriate without incurring any obligation to you.

IBM or any other organizations will only use the personal information that you supply to contact you about the issues that you submit.

Thank you for your participation.



Printed in USA

G110-8911-02

