



**Program Directory for
IBM Security Guardium S-TAP for Db2 on z/OS**

V11.3.0

Program Number 5656-STQ

FMIDs HAIFB30, H25F132

for use with
z/OS

Document Date: May 2021

GI13-5421-00

Note

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

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1.0 Introduction

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

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 3 identifies the basic program materials and documentation for Guardium S-TAP for Db2 on z/OS.
- 3.0, “Program Support” on page 6 describes the IBM support available for Guardium S-TAP for Db2 on z/OS.
- 4.0, “Program and Service Level Information” on page 8 lists the APARs (program level) and PTFs (service level) that have been incorporated into Guardium S-TAP for Db2 on z/OS.
- 5.0, “Installation Requirements and Considerations” on page 9 identifies the resources and considerations that are required for installing and using Guardium S-TAP for Db2 on z/OS.
- 6.0, “Installation Instructions” on page 17 provides detailed installation instructions for Guardium S-TAP for Db2 on z/OS. It also describes the procedures for activating the functions of Guardium S-TAP for Db2 on z/OS, or refers to appropriate publications.

Before installing Guardium S-TAP for Db2 on z/OS, read the *CBPDO Memo To Users* and the *CBPDO Memo To Users Extension* that are supplied with this program in softcopy format and this program directory; after which, keep the documents for your reference. Section 3.2, “Preventive Service Planning” on page 6 tells you how to find any updates to the information and procedures in this program directory.

Guardium S-TAP for Db2 on z/OS is supplied in a Custom-Built Product Delivery Offering (CBPDO, 5751-CS3). The program directory that is provided in softcopy format on the CBPDO is identical to the hardcopy format if one was included with your order. All service and HOLDDATA for Guardium S-TAP for Db2 on z/OS are included on the CBPDO.

Do not use this program directory if you install Guardium S-TAP for Db2 on z/OS with a SystemPac or ServerPac. When you use one of those offerings, use the jobs and documentation supplied with the offering. The offering will point you to specific sections of this program directory as needed.

1.1 Guardium S-TAP for Db2 on z/OS Description

IBM Security Guardium S-TAP for Db2 on z/OS is a z/OS software component of the Guardium Data Protection solution. Version 11.3 of these offerings extend data security on mainframes with the following:

- Dynamic control of policy tracing
- Support filtering on Client IP address as part of SQL Blocking support

- Addition of server port to events to support GDPR requirements
- Long Message for Negative SQL Events
- DDX at start up
- Provide SQLSTATE from SQLCA for all SQL events
- Provide Db2Protocol Version for all SQL events
- Enable CICS 5.4 and CICS 5.5 support
- Addition of TS_OFFSET to allow flexibility in changing timestamps relative to GMT
- Adding informational messages for connection status in MULTI_STREAM and HOT_FAILOVER mode
- Support filtering on CONNECTION_NAME
- Collect SET SCHEMA statement
- IPV6 Addition new parameter support varying DNS config

1.2 Guardium S-TAP for Db2 on z/OS FMIDs

Guardium S-TAP for Db2 on z/OS consists of the following FMIDs:

HAIFB30
H25F132

Note!

FMID H25F132 contains common code and is shared among multiple IBM Db2 tools and is, therefore, made available with multiple Db2 tools. The parent product for H25F132 is Db2 Change Accumulation for z/OS, V01.03.00 (program number 5655-F55).

When installing one of the tools that require the use of the FEC Common Code, it is highly recommended that FEC be brought up to current maintenance level at the time of installation. If not, unpredictable results may occur.

2.0 Program Materials

An IBM program is identified by a program number. The program number for Guardium S-TAP for Db2 on z/OS is 5656-STQ.

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 Guardium S-TAP for Db2 on z/OS. Ask your IBM representative for this information if you have not already received a copy.

2.1 Basic Machine-Readable Material

The distribution medium for this program is physical media or downloadable files. This program is in SMP/E RELFILE format and is installed by using SMP/E. See 6.0, "Installation Instructions" on page 17 for more information about how to install the program.

You can find information about the physical media for the basic machine-readable materials for Guardium S-TAP for Db2 on z/OS in the *CBPDO Memo To Users Extension*.

Figure 1 describes the program file content for Guardium S-TAP for Db2 on z/OS. You can refer to the *CBPDO Memo To Users Extension* to see where the files reside on the image.

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.

<i>Figure 1. Program File Content</i>				
Name	O R G	R E C F M	L R E C L	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.HAIFB30.F1	PDS	FB	80	8800
IBM.HAIFB30.F2	PDS	FB	80	27920
IBM.HAIFB30.F3	PDSE	U	0	32760
IBM.HAIFB30.F4	PDSE	FB	80	32720

Figure 2 describes the program file content for FEC Common Code.

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
IBM.H25F132.F1	PDS	FB	80	8800
IBM.H25F132.F2	PDS	FB	80	8800
IBM.H25F132.F3	PDS	FB	80	8800
IBM.H25F132.F4	PDSE	U	0	6144
IBM.H25F132.F5	PDS	VB	255	27998
IBM.H25F132.F6	PDS	FB	80	8800

2.2 Program Publications

The following sections identify the basic publications for Guardium S-TAP for Db2 on z/OS.

Figure 3 identifies the basic unlicensed publications for Guardium S-TAP for Db2 on z/OS. Those that are in softcopy format publications can be obtained from the IBM Publications Center website at <https://www.ibm.com/shop/publications/order>

Figure 3. Basic Material: Unlicensed Publications

Publication Title	Form Number	Media Format
License Information	GI13-5510	

The IBM Security Guardium S-TAP for Db2 on z/OS User's Guide can be obtained from IBM Documentation website at:

<https://www.ibm.com/docs/en/guardium/11.3?topic=s-tap-zos-users-guides>

2.3 Program Source Materials

No program source materials or viewable program listings are provided for Guardium S-TAP for Db2 on z/OS.

2.4 Publications Useful During Installation

You might want to use the publications listed in Figure 4 on page 5 during the installation of Guardium S-TAP for Db2 on z/OS.

<i>Figure 4. Publications Useful During Installation</i>	
Publication Title	Form Number
<i>IBM SMP/E for z/OS User's Guide</i>	SA23-2277
<i>IBM SMP/E for z/OS Commands</i>	SA23-2275
<i>IBM SMP/E for z/OS Reference</i>	SA23-2276
<i>IBM SMP/E for z/OS Messages, Codes, and Diagnosis</i>	GA32-0883

Note: IBM Publications Center <https://www.ibm.com/shop/publications/order>
IBM Documentation <https://www.ibm.com/docs/en>

3.0 Program Support

This section describes the IBM support available for Guardium S-TAP for Db2 on z/OS.

3.1 Program Services

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

3.2 Preventive Service Planning

Before you install Guardium S-TAP for Db2 on z/OS, make sure that you have reviewed the current Preventive Service Planning (PSP) information. Review the PSP Bucket for General Information, Installation Documentation, and the Cross Product Dependencies sections. For the Recommended Service section, instead of reviewing the PSP Bucket, it is recommended you use the IBM.PRODUCTINSTALL-REQUIRESERVICE fix category in SMP/E to ensure you have all the recommended service installed. Use the **FIXCAT(IBM.PRODUCTINSTALL-REQUIRESERVICE)** operand on the **APPLY CHECK** command. See 6.1.11, "Perform SMP/E APPLY" on page 21 for a sample APPLY command

If you obtained Guardium S-TAP for Db2 on z/OS as part of a CBPDO, HOLDDATA is included.

If the CBPDO for Guardium S-TAP for Db2 on z/OS is older than two weeks by the time you install the product materials, you can obtain the latest PSP Bucket information by going to the following website:

<http://www14.software.ibm.com/webapp/set2/psearch/search?domain=psp>

You can also use S/390 SoftwareXcel or contact the IBM Support Center to obtain the latest PSP Bucket information.

For program support, access the Software Support Website at <http://www.ibm.com/support/>.

PSP Buckets are identified by UPGRADEs, which specify product levels; and SUBSETs, which specify the FMIDs for a product level. The UPGRADE and SUBSET values for Guardium S-TAP for Db2 on z/OS are included in Figure 5.

Figure 5. PSP Upgrade and Subset ID

UPGRADE	SUBSET	Description
5655STQ	HAIFB30	IBM Security Guardium S-TAP for Db2 on z/OS
5655F55	H25F132	FEC Common Code

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 6 on page 7 identifies the component IDs (COMPID) for Guardium S-TAP for Db2 on z/OS.

<i>Figure 6. Component IDs</i>			
FMID	COMPID	Component Name	RETAIN Release
HAIFB30	5655STP00	IBM Security Guardium S-TAP for Db2 on z/OS	B30
H25F132	5655F5504	FEC Common Code	132

4.0 Program and Service Level Information

This section identifies the program and relevant service levels of Guardium S-TAP for Db2 on z/OS. The program level refers to the APAR fixes that have been incorporated into the program. The service level refers to the PTFs that have been incorporated into the program.

4.1 Program Level Information

No APARs have been incorporated into Guardium S-TAP for Db2 on z/OS.

4.2 Service Level Information

No PTFs against this release of Guardium S-TAP for Db2 on z/OS have been incorporated into the product package.

Frequently check the Guardium S-TAP for Db2 on z/OS PSP Bucket for HIPER and SPECIAL attention PTFs against all FMIDs that you must install. You can also receive the latest HOLDDATA, then add the **FIXCAT(IBM.PRODUCTINSTALL-REQUIRESERVICE)** operand on your **APPLY CHECK** command. This will allow you to review the recommended and critical service that should be installed with your FMIDs.

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating Guardium S-TAP for Db2 on z/OS. 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 Guardium S-TAP for Db2 on z/OS.

5.1.1 Machine Requirements

The driving system can run in any hardware environment that supports the required software.

5.1.2 Programming Requirements

Figure 7. 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.

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

5.2 Target System Requirements

This section describes the environment of the target system required to install and use Guardium S-TAP for Db2 on z/OS.

Guardium S-TAP for Db2 on z/OS installs in the DBS (P115) SREL.

5.2.1 Machine Requirements

The target system can run in any hardware environment that supports the required software.

5.2.2 Programming Requirements

5.2.2.1 Installation Requisites

Installation requisites identify products that are required and *must* be present on the system or products that are not required but *should* be present on the system for the successful installation of this product.

Mandatory installation requisites identify products that are required on the system for the successful installation of this product. These products are specified as PREs or REQs.

Figure 8 (Page 1 of 2). 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 with at least PTF UI35108	N/A	No

Figure 8 (Page 2 of 2). Target System Mandatory Installation Requisites

Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in the shipped product?
5639-OLC	Db2 Data Access Common Collector	FMID HCQC110 at current service level	N/A	No

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

Conditional installation requisites identify products that are *not* required for successful installation of this product but can resolve such things as certain warning messages at installation time. These products are specified as IF REQs.

Guardium S-TAP for Db2 on z/OS has no conditional installation requisites.

5.2.2.2 Operational Requisites

Operational requisites are products that are required and *must* be present on the system or products that are not required but *should* be present on the system for this product to operate all or part of its functions.

Mandatory operational requisites identify products that are required for this product to operate its basic functions.

Figure 9. Target System Mandatory Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level
5639-OLC	Db2 Data Access Common Collector for z/OS V01.01.00
Any one of the following	
5615-Db2	Db2 for z/OS V11.01.00
5650-Db2	Db2 for z/OS V12.01.00

Conditional operational requisites identify products that are *not* required for this product to operate its basic functions but are required at run time for this product to operate specific functions. These products are specified as IF REQs.

Guardium S-TAP for Db2 on z/OS has no conditional operational requisites.

5.2.2.3 Toleration/Coexistence Requisites

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

Guardium S-TAP for Db2 on z/OS has no toleration/coexistence requisites.

5.2.2.4 Incompatibility (Negative) Requisites

Negative requisites identify products that must *not* be installed on the same system as this product.

Guardium S-TAP for Db2 on z/OS has no negative requisites.

5.2.3 DASD Storage Requirements

Guardium S-TAP for Db2 on z/OS libraries can reside on all supported DASD types.

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

<i>Figure 10. Total DASD Space Required by Guardium S-TAP for Db2 on z/OS</i>		
Library Type	Total Space Required in 3390 Trks	Description
Target	331 tracks 87 tracks	Guardium S-TAP for Db2 on z/OS FEC Common Code
Distribution	241 tracks 89 tracks	Guardium S-TAP for Db2 on z/OS 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 6.1.9, "Allocate SMP/E Target and Distribution Libraries" on page 21.

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

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

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

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

5. All target libraries listed have the following attributes:

- These data sets can be SMS-managed, but they are not required to be SMS-managed.
- These data sets are not required to reside on the IPL volume.
- The values in the "Member Type" column are not necessarily the actual SMP/E element types that are identified in the SMPMCS.

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

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

The following figures describe the target and distribution libraries and file system paths required to install Guardium S-TAP for Db2 on z/OS. The storage requirements of Guardium S-TAP for Db2 on z/OS must be added to the storage required by other programs that have data in the same library or path.

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

Figure 11. Storage Requirements for Guardium S-TAP for Db2 on z/OS Target Libraries

Library DDNAME	Member Type	Target Volume	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
SADHDBRM	Macro	Any	U	PDS	FB	80	2	10
SADHLOAD	LMOD	Any	U	PDSE	U	0	315	n/a
SADHSAMP	Sample	Any	U	PDS	FB	80	12	50

Figure 12. 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
SFECLOAD	LMOD	any	S	PDS	U	0	45	20
SFEC SAMP	Sample	any	S	PDS	FB	80	2	2
SFEC PENU	Panel	any	S	PDS	FB	80	35	15
SFEC MENU	MSG	any	S	PDS	FB	80	3	5
SFEC DBRM	Macro	any	S	PDS	FB	80	2	5

Figure 13. Storage Requirements for Guardium S-TAP for Db2 on z/OS Distribution Libraries

Library DDNAME	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
AADHDBRM	U	PDS	FB	80	2	10
AADHLOAD	U	PDSE	U	0	225	n/a
AADHSAMP	U	PDS	FB	80	12	5

Figure 14 (Page 1 of 2). 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
AFECLOAD	S	PDS	U	0	45	20

Figure 14 (Page 2 of 2). 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
AFECSAMP	S	PDS	FB	80	4	2
AFECPENU	S	PDS	FB	80	35	15
AFECMENU	S	PDS	FB	80	3	5
AFECDBRM	S	PDS	FB	80	2	5

5.3 FMIDs Deleted

Installing Guardium S-TAP for Db2 on z/OS might result in the deletion of other FMIDs. To see which FMIDs will be deleted, examine the ++VER statement in the SMPMCS of the product.

If you do not want to delete these FMIDs at this time, install Guardium S-TAP for Db2 on z/OS into separate SMP/E target and distribution zones.

Note: These FMIDs are not automatically deleted from the Global Zone. If you want to delete these FMIDs from the Global Zone, use the SMP/E REJECT NOFMID DELETEFMID command. See the SMP/E Commands book for details.

5.4 Special Considerations

To effectively manage a suite of products with common components, you can install products into shared zones of a consolidated software inventory (CSI). Space requirements are reduced by installing products into shared CSI zones avoiding the duplication when different target zones, distribution zones, and data sets are used. Sharing a common set of zones also allows SMP/E to automatically manage IFREQ situations that exist across product components.

If you intend to install multiple products which require the Db2 Data Access Common Collector for z/OS (5639-OLC) use shared CSI zones.

The installation of Security Guardium S-TAP for Db2 on z/OS requires the Db2 Data Access Common Collector for z/OS (5639-OLC) be installed in the CSI. Refer to the Program Directory for Db2 Data Access Common Collector for z/OS (GI10-8973) for installation instructions of its product components.

Consider the following items when using shared CSI zones.

- If you install a product into an existing CSI that contains a previous version of the same product, SMP/E deletes the previous version during the installation process. To maintain multiple product versions concurrently, they must be installed into separate CSI zones.

- If you install into an existing environment, you might need to remove data set references from the installation jobs to avoid errors because the data sets already exist.
- If you are installing into an existing environment that has the data sets already allocated, ensure sufficient space and directory blocks are available to support the requirement listed in the DASD tables. This might require you to reallocate some data sets to avoid x37 abends.

When Security Guardium S-TAP for Db2 on z/OS is used with Db2 Query Monitor for z/OS V3.2 (5655-V42), and later releases or Security Optim Workload Replay for Db2 for z/OS V2.1 (5655-O18), and later releases, they should all be installed in the same CSI target and distribution zones. This ensures the maintenance level of the products and collector components are at a compatible level. If they are installed in different CSI zones, you must check to ensure the maintenance levels of the product and collector component in each zone are at a compatible level.

The PSP bucket will have the most current information and must be reviewed before installation.

6.0 Installation Instructions

This chapter describes the installation method and the step-by-step procedures to install and to activate the functions of Guardium S-TAP for Db2 on z/OS.

Please note the following points:

- If you want to install Guardium S-TAP for Db2 on z/OS into its own SMP/E environment, consult the SMP/E manuals for instructions on creating and initializing the SMPCSI and the SMP/E control data sets.
- You can use the sample jobs that are provided to perform part or all of the installation tasks. The SMP/E jobs assume that all DDDEF entries that are required for SMP/E execution have been defined in appropriate zones.
- You can use the SMP/E dialogs instead of the sample jobs to accomplish the SMP/E installation steps.

6.1 Installing Guardium S-TAP for Db2 on z/OS

6.1.1 SMP/E Considerations for Installing Guardium S-TAP for Db2 on z/OS

Use the SMP/E RECEIVE, APPLY, and ACCEPT commands to install this release of Guardium S-TAP for Db2 on z/OS.

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

6.1.3 SMP/E CALLIBS Processing

Guardium S-TAP for Db2 on z/OS uses the CALLIBS function provided in SMP/E to resolve external references during installation. When Guardium S-TAP for Db2 on z/OS is installed, ensure that DDDEFs exist for the following libraries:

- CSSLIB
- SISPLoad

Note: CALLIBS uses the previous DDDEFs only to resolve the link-edit for Guardium S-TAP for Db2 on z/OS. These data sets are not updated during the installation of Guardium S-TAP for Db2 on z/OS.

6.1.4 Sample Jobs

The following sample installation jobs are provided as part of the product to help you install Guardium S-TAP for Db2 on z/OS:

Figure 16. Sample Installation Jobs

Job Name	Job Type	Description	SMPTLIB Data Set
ADHALA	SMP/E	Sample job to allocate and initialize a new SMP/E CSI data set (Optional)	IBM.HAIFB30.F4
ADHALB	SMP/E	Sample job to allocate SMP/E data sets (Optional)	IBM.HAIFB30.F4
ADHWSMPE	SMP/E	Sample job to delete and reinitialize an existing SMP/E CSI environment (Optional)	IBM.HAIFB30.F4
ADHWRECV	RECEIVE	Sample RECEIVE job	IBM.HAIFB30.F4
ADHRECE1	RECEIVE	Sample RECEIVE job for FEC Common Code	IBM.HAIFB30.F4
ADHWALOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HAIFB30.F4
ADHALLO1	ALLOCATE	Sample job to allocate target and distribution libraries for FEC Common Code	IBM.HAIFB30.F4
ADHWDDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.HAIFB30.F4
ADHDDDE1	DDDEF	Sample job to define SMP/E DDDEFs for FEC Common Code	IBM.HAIFB30.F4
ADHWAPLY	APPLY	Sample APPLY job	IBM.HAIFB30.F4
ADHWACPT	ACCEPT	Sample ACCEPT job	IBM.HAIFB30.F4

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.8, “Perform SMP/E RECEIVE” on page 20) then copy the jobs from the SMPTLIB data sets to a work data set for editing and submission. See Figure 16 to find the appropriate 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=*
//TAPEIN DD DSN=IBM.HAIFB30.F4,UNIT=tunit,
// VOL=SER=volser,LABEL=(x,SL),
// DISP=(OLD,KEEP)
//FILEIN DD DSN=IBM.HAIFB30.F4,UNIT=SYSALLDA,DISP=SHR,
// VOL=SER=filevol
//OUT DD DSNAME=jcl-library-name,
// DISP=(NEW,CATLG,DELETE),
// VOL=SER=dasdvol,UNIT=SYSALLDA,
// SPACE=(TRK,(primary,secondary,dir))
//SYSUT3 DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN DD *
COPY INDD=IN,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.HAIFB30.F4 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 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 ADHALA to allocate the SMP/E data set for Guardium S-TAP for Db2 on z/OS.

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)

Edit and submit sample job ADHALB to initialize SMP/E zones for Guardium S-TAP for Db2 on z/OS. Consult the instructions in the sample job for more information.

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

6.1.7 Delete an existing SMP/E CSI (Optional)

Edit and submit sample job ADHWSMPE to delete an existing SMP/E CSI environment and then initialize new SMP/E zones and data sets for Guardium S-TAP for Db2 on 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.

6.1.8 Perform SMP/E RECEIVE

If you have obtained Guardium S-TAP for Db2 on z/OS as part of a CBPDO, use the RCPDO job in the CBPDO RIMLIB data set to receive the Guardium S-TAP for Db2 on z/OS FMIDs, service, and HOLDDATA that are included on the CBPDO package. For more information, see the documentation that is included in the CBPDO.

Note: FEC Common Code, H25F132, is a mandatory installation and operational requisite for Guardium S-TAP for Db2 on z/OS. If you have already installed FEC Common Code, H25F132, **do not** receive this FMID again. However, do ensure any existing installation of H25F132 is at the most current maintenance level and UI35108 is applied.

You can also choose to edit and submit sample job ADHWRECV to perform the SMP/E RECEIVE for Guardium S-TAP for Db2 on 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.

If you are installing FEC Common Code you can edit and submit sample job ADHRECE1 to perform the SMP/E RECEIVE for FEC Common Code. Consult the instructions in the sample job for more information.

Note: After you receive FEC Common Code you must also receive all current maintenance for FEC Common Code including PTF UI35108. Failure to receive current maintenance can result in errors during the APPLY step for Guardium S-TAP for Db2 on z/OS.

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

6.1.9 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job ADHWALOC to allocate the SMP/E target and distribution libraries for Guardium S-TAP for Db2 on 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.

If you are installing FEC Common Code edit and submit sample job ADHALLO1 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.

6.1.10 Create DDDEF Entries

Edit and submit sample job ADHWDDEF to create DDDEF entries for the SMP/E target and distribution libraries for Guardium S-TAP for Db2 on 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.

If you are installing FEC Common Code edit and submit sample job ADHDDEF1 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.

6.1.11 Perform SMP/E APPLY

Note: Before you perform SMP/E APPLY for Guardium S-TAP for Db2 on z/OS, ensure the maintenance level for any existing installation of FEC Common Code is current and includes PTF UI35108. If you are installing FEC Common Code as part of the installation of Guardium S-TAP for Db2 on z/OS, ensure you have already received all current maintenance including PTF UI35108.

1. Ensure that you have the latest HOLDDATA; then edit and submit sample job ADHWAPLY to perform an SMP/E APPLY CHECK for Guardium S-TAP for Db2 on z/OS. Consult the instructions in the sample job for more information.

The latest HOLDDATA is available through several different portals, including <http://service.software.ibm.com/holdata/390holddata.html>. The latest HOLDDATA may identify HIPER and FIXCAT APARs for the FMIDs you will be installing. An APPLY CHECK will help you determine if any HIPER or FIXCAT APARs are applicable to the FMIDs you are installing. If there are any applicable HIPER or FIXCAT APARs, the APPLY CHECK will also identify fixing PTFs that will resolve the APARs, if a fixing PTF is available.

You should install the FMIDs regardless of the status of unresolved HIPER or FIXCAT APARs. However, do not deploy the software until the unresolved HIPER and FIXCAT APARs have been

analyzed to determine their applicability. That is, before deploying the software either ensure fixing PTFs are applied to resolve all HIPER or FIXCAT APARs, or ensure the problems reported by all HIPER or FIXCAT APARs are not applicable to your environment.

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass the PRE, ID, REQ, and IFREQ on the APPLY CHECK. The SMP/E root cause analysis identifies the cause only of *errors* and not of *warnings* (SMP/E treats bypassed PRE, ID, REQ, and IFREQ conditions as warnings, instead of errors).

Here are sample APPLY commands:

- a. To ensure that all recommended and critical service is installed with the FMIDs, receive the latest HOLDDATA and use the APPLY CHECK command as follows

```
APPLY S(fmid,fmid,...) CHECK
FORFMID(fmid,fmid,...)
SOURCEID(RSU*)
FIXCAT(IBM.ProductInstall-RequiredService)
GROUPEXTEND .
```

Some HIPER APARs might not have fixing PTFs available yet. You should analyze the symptom flags for the unresolved HIPER APARs to determine if the reported problem is applicable to your environment and if you should bypass the specific ERROR HOLDS in order to continue the installation of the FMIDs.

This method requires more initial research, but can provide resolution for all HIPERs that have fixing PTFs available and are not in a PE chain. Unresolved PEs or HIPERs might still exist and require the use of BYPASS.

- b. To install the FMIDs without regard for unresolved HIPER APARs, you can add the BYPASS(HOLDCLASS(HIPER)) operand to the APPLY CHECK command. This will allow you to install FMIDs even though one or more unresolved HIPER APARs exist. After the FMIDs are installed, use the SMP/E REPORT ERRSYSMODS command to identify unresolved HIPER APARs and any fixing PTFs.

```
APPLY S(fmid,fmid,...) CHECK
FORFMID(fmid,fmid,...)
SOURCEID(RSU*)
FIXCAT(IBM.ProductInstall-RequiredService)
GROUPEXTEND
BYPASS(HOLDCLASS(HIPER)) .
..any other parameters documented in the program directory
```

This method is quicker, but requires subsequent review of the Exception SYSMOD report produced by the REPORT ERRSYSMODS command to investigate any unresolved HIPERs. If you have received the latest HOLDDATA, you can also choose to use the REPORT MISSINGFIX command and specify Fix Category IBM.PRODUCTINSTALL-REQUIREDSERVICE to investigate missing recommended service.

If you bypass HOLDS during the installation of the FMIDs because fixing PTFs are not yet available, you can be notified when the fixing PTFs are available by using the APAR Status Tracking (AST) function of ServiceLink or the APAR Tracking function of ResourceLink.

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

Note: The GROUPEXTEND operand indicates that SMP/E applies all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

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

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

6.1.12 Perform SMP/E ACCEPT

Edit and submit sample job ADHWACPT to perform an SMP/E ACCEPT CHECK for Guardium S-TAP for Db2 on z/OS. Consult the instructions in the sample job for more information.

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass the PRE, ID, REQ, and IFREQ on the ACCEPT CHECK. The SMP/E root cause analysis identifies the cause of *errors* but not *warnings* (SMP/E treats bypassed PRE, ID, REQ, and IFREQ conditions as warnings rather than errors).

Before you use SMP/E to load new distribution libraries, it is recommended that you set the ACCJCLIN indicator in the distribution zone. In this way, you can save the entries that are produced from JCLIN in the distribution zone whenever a SYSMOD that contains inline JCLIN is accepted. For more information about the ACCJCLIN indicator, see the description of inline JCLIN in the SMP/E Commands book for details.

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

Note: The GROUPEXTEND operand indicates that SMP/E accepts all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

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

If PTFs that contain replacement modules are accepted, SMP/E ACCEPT processing will link-edit or bind the modules into the distribution libraries. During this processing, the Linkage Editor or Binder might issue messages that indicate unresolved external references, which will result in a return code of 4 during the ACCEPT phase. You can ignore these messages, because the distribution libraries are not executable and the unresolved external references do not affect the executable system libraries.

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

6.1.13 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 Guardium S-TAP for Db2 on z/OS, 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 Product Customization

Guardium S-TAP for Db2 on z/OS is fully operational after the SMP/E installation is completed. You do not have to do further customization to activate this function.

7.0 Notices

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Printed in USA

GI13-5421-00

