Program Directory for
IBM Security Guardium S-TAP for DB2 on z/OS

V10.1.3
Program Number 5655-STQ

FMIDs HAIFA13, H25F132

for Use with
z/OS

Document Date: June 2017
Before using this information and the product it supports, be sure to read the general information under 7.0, “Notices” on page 30.
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.

The Program Directory contains the following sections:

- **2.0, “Program Materials” on page 4** identifies the basic program materials and documentation for Guardium S-TAP for DB2.
- **3.0, “Program Support” on page 7** describes the IBM support available for Guardium S-TAP for DB2.
- **4.0, “Program and Service Level Information” on page 9** lists the APARs (program level) and PTFs (service level) that have been incorporated into Guardium S-TAP for DB2.
- **5.0, “Installation Requirements and Considerations” on page 13** identifies the resources and considerations that are required for installing and using Guardium S-TAP for DB2.
- **6.0, “Installation Instructions” on page 22** provides detailed installation instructions for Guardium S-TAP for DB2. It also describes the procedures for activating the functions of Guardium S-TAP for DB2, or refers to appropriate publications.

Before installing Guardium S-TAP for DB2, 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 7 tells you how to find any updates to the information and procedures in this program directory.

Guardium S-TAP for DB2 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 Guardium S-TAP for DB2 are included on the CBPDO tape.

Do not use this program directory if you install Guardium S-TAP for DB2 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 Description

IBM Security Guardium S-TAP for DB2 on z/OS is a software component of the Security Guardium solution that is designed to enable you to capture and deliver database SQL and related activity to a Guardium appliance for processing.

IBM Security Guardium S-TAP for DB2 on z/OS can be employed independently in the mainframe
environment, or integrated with other Security Guardium database security and monitoring components across the enterprise to help enable a more secure centralized audit repository and management point.

IBM Security Guardium S-TAP for DB2 on z/OS V10.1.3 offers the following features and benefits:

- **Improved performance:**
  - Reduce overhead and time to filter on objects data collection, enhance memory management on large number of objects to filter.
  - Optimized security policy pushdown from the appliance to reduce filtering overhead

- **New data security option:**
  - Block unauthorized user activities and issue a SQL code to fail an activity that violates a security policy

- **Enhanced auditing and filtering:**
  - Audit CICS Unit of Work across sub-systems: DB2 for z/OS, IMS, and VSAM datasets
  - Optionally limit personal data collection and only over encrypted network to meet governmental regulations
  - Collect BIND/REBIND package and plan commands, enable versioning of packages
  - Add report statement type attribute to differentiate Dynamic or Static SQL
  - Better correlation of SQL statement verbs: change from 'Table Read' to Select and from 'Table Write' to UPDATE/DELETE/INSERT
  - Enable collection of commit/rollback events to track actual transaction commits

- **Enhanced usability and supportability:**
  - Send to the collector count of number of SQL events streamed from to the appliance for better diagnose of the states between the S-TAP and the collector
  - Initiate request from the collector to the S-TAP to send diagnostic information
  - Trigger from z/OS console, Guardium collector sends "must "gather" diagnostic information to z/OS
  - Add simulation mode to simulate activity levels on the mainframe but do not sending data collection to the appliance, to test deployment and help size appliance requirements

### 1.2 Guardium S-TAP for DB2 FMIDs

Guardium S-TAP for DB2 consists of the following FMIDs:

<table>
<thead>
<tr>
<th>FMID</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAIFA13</td>
</tr>
<tr>
<td>H25F132</td>
</tr>
</tbody>
</table>
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 is 5655-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. 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 22 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 in the CBPDO Memo To Users Extension.

Figure 1 describes the program file content for Guardium S-TAP for DB2. 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.

<table>
<thead>
<tr>
<th>Name</th>
<th>ORG</th>
<th>REC</th>
<th>LRE</th>
<th>BLK SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMPMCS</td>
<td>SEQ</td>
<td>FB</td>
<td>80</td>
<td>6400</td>
</tr>
<tr>
<td>IBM.HAIFA13.F1</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>8800</td>
</tr>
<tr>
<td>IBM.HAIFA13.F2</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>8800</td>
</tr>
<tr>
<td>IBM.HAIFA13.F3</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>8800</td>
</tr>
<tr>
<td>IBM.HAIFA13.F4</td>
<td>PDSE</td>
<td>U</td>
<td>0</td>
<td>6144</td>
</tr>
<tr>
<td>IBM.HAIFA13.F5</td>
<td>PDSE</td>
<td>FB</td>
<td>80</td>
<td>8800</td>
</tr>
</tbody>
</table>
Figure 2 on page 5 describes the program file content for FEC Common Code.

<table>
<thead>
<tr>
<th>Name</th>
<th>OREG</th>
<th>RECFL</th>
<th>BLK</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM.H25F132.F1</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
</tr>
<tr>
<td>IBM.H25F132.F2</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
</tr>
<tr>
<td>IBM.H25F132.F3</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
</tr>
<tr>
<td>IBM.H25F132.F4</td>
<td>PDSE</td>
<td>U</td>
<td>0</td>
</tr>
<tr>
<td>IBM.H25F132.F5</td>
<td>PDS</td>
<td>VB</td>
<td>255</td>
</tr>
<tr>
<td>IBM.H25F132.F6</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
</tr>
</tbody>
</table>

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for Guardium S-TAP for DB2.

2.3 Program Publications

The following sections identify the basic publications for Guardium S-TAP for DB2.

Figure 3 identifies the basic unlicensed publications for Guardium S-TAP for DB2. Those that are in softcopy format publications can be obtained from the IBM Publications Center website at http://www.ibm.com/shop/publications/order/.

<table>
<thead>
<tr>
<th>Publication Title</th>
<th>Form Number</th>
<th>Media Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>License Information</td>
<td>GI13-3555</td>
<td></td>
</tr>
</tbody>
</table>

The IBM Security Guardium S-TAP for DB2 on z/OS User's Guide can be obtained from the IBM Knowledge Center website at:

No optional publications are provided for Guardium S-TAP for DB2.
2.4 Program Source Materials

No program source materials or viewable program listings are provided for Guardium S-TAP for DB2.

2.5 Publications Useful During Installation

You might want to use the publications listed in Figure 4 during the installation of Guardium S-TAP for DB2.

<table>
<thead>
<tr>
<th>Publication Title</th>
<th>Form Number</th>
<th>Media Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM SMP/E for z/OS Messages, Codes, and Diagnosis</td>
<td>GA32-0883</td>
<td><a href="http://www.ibm.com/shop/publications/order/">http://www.ibm.com/shop/publications/order/</a></td>
</tr>
</tbody>
</table>
3.0 Program Support

This section describes the IBM support available for Guardium S-TAP for DB2.

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, 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 
\textbf{FIXCAT(IBM.ProductInstall-RequiredService)} operand on the \textbf{APPLY CHECK} command. See 6.1.11, “Perform SMP/E APPLY” on page 26 for a sample APPLY command

If you obtained Guardium S-TAP for DB2 as part of a CBPDO, HOLDDATA is included.

If the CBPDO for Guardium S-TAP for DB2 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:


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 Guardium S-TAP for DB2 are included in Figure 5.

<table>
<thead>
<tr>
<th>UPGRADE</th>
<th>SUBSET</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5655STQ</td>
<td>HAIFA13</td>
<td>IBM Security Guardium S-TAP for DB2 on z/OS</td>
</tr>
<tr>
<td>5655F55</td>
<td>H25F132</td>
<td>FEC Common Code</td>
</tr>
</tbody>
</table>
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 8 identifies the component IDs (COMPID) for Guardium S-TAP for DB2.

<table>
<thead>
<tr>
<th>FMID</th>
<th>COMPID</th>
<th>Component Name</th>
<th>RETAIN Release</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAIFA13</td>
<td>5655STP00</td>
<td>IBM Security Guardium S-TAP for DB2 on z/OS</td>
<td>A13</td>
</tr>
<tr>
<td>H25F132</td>
<td>5655F5504</td>
<td>FEC Common Code</td>
<td>132</td>
</tr>
</tbody>
</table>
4.0 Program and Service Level Information

This section identifies the program and relevant service levels of Guardium S-TAP for DB2. 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 Guardium S-TAP for DB2 have been incorporated into this release. They are listed by FMID.

- FMID H35A110

  PK30215  PK35724  PK35748  PK41496  PK44959
  PK31162  PK36872  PK37835  PK41781  PK44990
  PK34792  PK34319  PK38139  PK41784  PK36262
  PK34333

- FMID H35A210

  PK57792  PK68434  PK72324  PK80038  PK87165
  PK58099  PK69364  PK73496  PK80737  PK87215
  PK60632  PK69554  PK73504  PK81292  PK88385
  PK61403  PK69640  PK73658  PK81407  PK88619
  PK62164  PK69644  PK74280  PK81854  PK88621
  PK62752  PK69645  PK74304  PK81858  PK88621
  PK63430  PK70054  PK74314  PK81955  PK89212
  PK64099  PK70267  PK74381  PK82242  PK89761
  PK64319  PK70270  PK74470  PK82335  PK89892
  PK64653  PK70287  PK74481  PK82541  PK90894
  PK65883  PK70348  PK74715  PK82776  PK90896
  PK65961  PK70453  PK74722  PK82786  PK91105
  PK66095  PK70791  PK75351  PK83053  PK91109
  PK66179  PK71422  PK75814  PK83490  PK91406
  PK66518  PK71874  PK75827  PK83584  PK91565
  PK66879  PK71975  PK75920  PK83780  PK91627
  PK66951  PK72249  PK76688  PK84266  PK92441
  PK67009  PK72396  PK77147  PK84387  PK92768
  PK67029  PK72454  PK77439  PK84513  PK93105
  PK67344  PK72570  PK77585  PK85654  PK93548
  PK67976  PK72574  PK77859  PK85971  PK94042
  PK68133  PK73122  PK78252  PK86432  PK94674
  PK68206  PK73134  PK78931  PK86499  PK94908
  PK68375  PK73233  PK79522  PK86514  PK95513
PM79023  PM81284  PM84671  PM88142  PM91525  
PM79259  PM81385  PM84931  PM88342  PM92007  
PM79761  PM82366  PM85117  PM88498  PM92347  
PM80165  PM82751  PM85324  PM89042  PM92349  
PM81199  PM82951  PM85362  PM89642  PM92696  
PM81275  PM84282  PM86846  PM89728  PM93414  
PM81283  PM84667  PM87027  PM90409  PM94390

- **FMID HAIF910**

  PM98891  PI09953  PI17380  PI23169  PI30845  
  PM98906  PI11406  PI17443  PI23384  PI31667  
  PM99250  PI11712  PI17744  PI23500  PI31670  
  PM99284  PI11812  PI17950  PI23507  PI31879  
  PI05079  PI12154  PI18179  PI23942  PI31947  
  PI06008  PI13093  PI18600  PI24793  PI32521  
  PI06481  PI13995  PI18935  PI25139  PI32523  
  PI06745  PI14341  PI19241  PI25351  PI33630  
  PI06825  PI14825  PI19562  PI25659  PI36739  
  PI07843  PI15018  PI19812  PI26008  PI37810  
  PI08006  PI15167  PI19817  PI27609  PI37813  
  PI08422  PI15171  PI20010  PI27703  PI37814  
  PI08588  PI15260  PI20068  PI27705  PI39783  
  PI08704  PI16390  PI21319  PI28063  PI40031  
  PI08776  PI16397  PI21360  PI28302  PI40322  
  PI08939  PI16790  PI21970  PI28345  PI40799  
  PI09210  PI17125  PI22085  PI28347  PI41975  
  PI09595  PI17318  PI22326  PI29627  PI42702  
  PI09712  PI17358  PI22918

- **FMID HAIFA00**

  PI40548  PI48369  PI56844  PI61583  PI68333  
  PI47173  PI49377  PI58286  PI62012  PI69062  
  PI47196  PI50152  PI58287  PI62740  PI70137  
  PI47594  PI50996  PI58938  PI66731  PI70715  
  PI47934  PI52547  PI59525  PI67023  PI71584  
  PI47935  PI53676  PI59998  PI67308  PI72467  
  PI47937  PI54133  PI60286  PI68075  PI72846  
  PI47938  PI54134  PI61536  PI68175  PI73878  
  PI48185  PI55060
4.2 Service Level Information

No PTFs against this release of Guardium S-TAP for DB2 have been incorporated into the product package.

Frequently check the Guardium S-TAP for DB2 PSP Bucket for HIPER and SPECIAL attention PTFs against all FMIDs that you must install. You can also receive the latest HOLDDATA, then add the `FIXCAT(IBM.PRODUCTINSTALL-REQUIREDSERVICE)` operand on your APPLY CHECK command. This will allow you to review the recommended and critical service that should be installed with your FMIDs.
5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating Guardium S-TAP for DB2. 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.

5.1.1 Machine Requirements

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

5.1.2 Programming Requirements
5.2 Target System Requirements

This section describes the environment of the target system required to install and use Guardium S-TAP for DB2.

Guardium S-TAP for DB2 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.
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 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. These products are specified as PREs or REQs.

#### Figure 9 (Page 1 of 2). Target System Mandatory Operational Requisites

<table>
<thead>
<tr>
<th>Program Number</th>
<th>Product Name and Minimum VRM/Service Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>5639-OLC</td>
<td>DB2 Data Access Common Collector for z/OS V01.01.00</td>
</tr>
<tr>
<td>Any one of the following</td>
<td></td>
</tr>
<tr>
<td>5605-DB2</td>
<td>DB2 for z/OS V10.01.00</td>
</tr>
<tr>
<td>5615-DB2</td>
<td>DB2 for z/OS V11.01.00</td>
</tr>
<tr>
<td>xxxx-DB2</td>
<td>DB2 for z/OS V12.01.00</td>
</tr>
<tr>
<td>Any one of the following</td>
<td></td>
</tr>
<tr>
<td>5697-P12</td>
<td>DB2 VUE for z/OS V09.01.00</td>
</tr>
</tbody>
</table>
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 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 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 has no negative requisites.

### 5.2.3 DASD Storage Requirements

Guardium S-TAP for DB2 libraries can reside on all supported DASD types.

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

<table>
<thead>
<tr>
<th>Library Type</th>
<th>Total Space Required in 3390 Trks</th>
<th>File System Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target</td>
<td>7096 tracks for Guardium S-TAP for DB2 96 tracks for FEC Common Code</td>
<td></td>
</tr>
<tr>
<td>Distribution</td>
<td>7096 tracks for Guardium S-TAP for DB2 97 tracks for FEC Common Code</td>
<td></td>
</tr>
</tbody>
</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 26.

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

<table>
<thead>
<tr>
<th>File System Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>N New path, created by this product.</td>
</tr>
<tr>
<td>X Path created by this product, but might already exist from a previous release.</td>
</tr>
</tbody>
</table>
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.

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

The following figures describe the target and distribution libraries and file system paths required to install Guardium S-TAP for DB2. The storage requirements of Guardium S-TAP for DB2 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 Target Libraries**

<table>
<thead>
<tr>
<th>Library DDNAME</th>
<th>Member Type</th>
<th>Target Volume</th>
<th>T Y</th>
<th>O R</th>
<th>L E</th>
<th>No. of Trks</th>
<th>No. of Blks</th>
</tr>
</thead>
<tbody>
<tr>
<td>SADHBASE</td>
<td>Sample</td>
<td>Any</td>
<td>U</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>6</td>
</tr>
<tr>
<td>SADHDBRM</td>
<td>Macro</td>
<td>Any</td>
<td>U</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>10</td>
</tr>
<tr>
<td>SADHLOAD</td>
<td>LMOD</td>
<td>Any</td>
<td>U</td>
<td>PDSE</td>
<td>U</td>
<td>0</td>
<td>3790</td>
</tr>
<tr>
<td>SADHSAMP</td>
<td>Sample</td>
<td>Any</td>
<td>U</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>25</td>
</tr>
</tbody>
</table>
### Figure 12. Storage Requirements for FEC Common Code Target Libraries

<table>
<thead>
<tr>
<th>Library DDNAME</th>
<th>Member Type</th>
<th>Target Volume</th>
<th>Type</th>
<th>Order</th>
<th>Processor</th>
<th>Library</th>
<th>3390 Trks</th>
<th>No. of DIR Blks</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFECLOAD</td>
<td>LMOD</td>
<td>any</td>
<td>S</td>
<td>PDS</td>
<td>T</td>
<td>Y</td>
<td>0</td>
<td>42</td>
</tr>
<tr>
<td>SFECLOAD</td>
<td>Sample</td>
<td>any</td>
<td>S</td>
<td>PDS</td>
<td>E</td>
<td>Y</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>SFECLOAD</td>
<td>Panel</td>
<td>any</td>
<td>S</td>
<td>PDS</td>
<td>O</td>
<td>P</td>
<td>80</td>
<td>6</td>
</tr>
<tr>
<td>SFECLOAD</td>
<td>MSG</td>
<td>any</td>
<td>S</td>
<td>PDS</td>
<td>E</td>
<td>O</td>
<td>80</td>
<td>20</td>
</tr>
</tbody>
</table>

### Figure 13. Storage Requirements for Guardium S-TAP for DB2 Distribution Libraries

<table>
<thead>
<tr>
<th>Library DDNAME</th>
<th>Type</th>
<th>Order</th>
<th>Processor</th>
<th>Library</th>
<th>3390 Trks</th>
<th>No. of DIR Blks</th>
</tr>
</thead>
<tbody>
<tr>
<td>AADHBASE</td>
<td>U</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>AADHDBRM</td>
<td>U</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>AADHLOAD</td>
<td>U</td>
<td>PDSE</td>
<td>U</td>
<td>0</td>
<td>3790</td>
<td>n/a</td>
</tr>
<tr>
<td>AADHSAMP</td>
<td>U</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>25</td>
<td>50</td>
</tr>
</tbody>
</table>

### Figure 14. Storage Requirements for FEC Common Code Distribution Libraries

<table>
<thead>
<tr>
<th>Library DDNAME</th>
<th>Type</th>
<th>Order</th>
<th>Processor</th>
<th>Library</th>
<th>3390 Trks</th>
<th>No. of DIR Blks</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFECLOAD</td>
<td>S</td>
<td>PDS</td>
<td>U</td>
<td>0</td>
<td>41</td>
<td>20</td>
</tr>
<tr>
<td>AFECLOAD</td>
<td>S</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>AFECLOAD</td>
<td>S</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>38</td>
<td>15</td>
</tr>
<tr>
<td>AFECLOAD</td>
<td>S</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>AFECLOAD</td>
<td>S</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>
5.3 FMIDs Deleted

Installing Guardium S-TAP for DB2 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 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.

Please note the following points:

- If you want to install Guardium S-TAP for DB2 into its own SMP/E environment, consult the SMP/E manuals for instructions on creating and initializing the SMPCS1 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

6.1.1 SMP/E Considerations for Installing Guardium S-TAP for DB2

Use the SMP/E RECEIVE, APPLY, and ACCEPT commands to install this release of Guardium S-TAP for DB2.

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.

<table>
<thead>
<tr>
<th>Subentry</th>
<th>Value</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSSPACE</td>
<td>(200,200,500)</td>
<td>3390 DASD tracks</td>
</tr>
<tr>
<td>PEMAX</td>
<td>SMP/E Default</td>
<td>IBM recommends using the SMP/E default for PEMAX.</td>
</tr>
</tbody>
</table>
6.1.3 SMP/E CALLLIBS Processing

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

- CSSLIB
- SISPLOAD

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

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:

<table>
<thead>
<tr>
<th>Job Name</th>
<th>Job Type</th>
<th>Description</th>
<th>RELFILE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADHALA</td>
<td>SMP/E</td>
<td>Sample job to allocate and initialize a new SMP/E CSI data set (Optional)</td>
<td>IBM.HAIFA13.F3</td>
</tr>
<tr>
<td>ADHALB</td>
<td>SMP/E</td>
<td>Sample job to allocate SMP/E data sets (Optional)</td>
<td>IBM.HAIFA13.F3</td>
</tr>
<tr>
<td>ADHWSMPE</td>
<td>SMP/E</td>
<td>Sample job to delete and reinitialize an existing SMP/E CSI environment (Optional)</td>
<td>IBM.HAIFA13.F3</td>
</tr>
<tr>
<td>ADHWRECV</td>
<td>RECEIVE</td>
<td>Sample RECEIVE job</td>
<td>IBM.HAIFA13.F3</td>
</tr>
<tr>
<td>ADHRECE1</td>
<td>RECEIVE</td>
<td>Sample RECEIVE job for FEC Common Code</td>
<td>IBM.HAIFA13.F3</td>
</tr>
<tr>
<td>ADHWALOC</td>
<td>ALLOCATE</td>
<td>Sample job to allocate target and distribution libraries</td>
<td>IBM.HAIFA13.F3</td>
</tr>
<tr>
<td>ADHALLO1</td>
<td>ALLOCATE</td>
<td>Sample job to allocate target and distribution libraries for FEC Common Code</td>
<td>IBM.HAIFA13.F3</td>
</tr>
<tr>
<td>ADHWDEF</td>
<td>DDDEF</td>
<td>Sample job to define SMP/E DDDEFs</td>
<td>IBM.HAIFA13.F3</td>
</tr>
<tr>
<td>ADHDDDE1</td>
<td>DDDEF</td>
<td>Sample job to define SMP/E DDDEFs for FEC Common Code</td>
<td>IBM.HAIFA13.F3</td>
</tr>
<tr>
<td>ADHWAPLY</td>
<td>APPLY</td>
<td>Sample APPLY job</td>
<td>IBM.HAIFA13.F3</td>
</tr>
<tr>
<td>ADHWACPT</td>
<td>ACCEPT</td>
<td>Sample ACCEPT job</td>
<td>IBM.HAIFA13.F3</td>
</tr>
</tbody>
</table>

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.8, “Perform SMP/E RECEIVE” on page 25) then copy the jobs from the RELFILES to a work data set for editing and submission. See Figure 16 to find the appropriate relfile data set.
You can also copy the sample installation jobs from the tape or product files by submitting the following job. Depending on your distribution medium, use either the //TAPEIN or the //FILEIN DD statement and comment out or delete the other statement. Before you submit the job, add a job card and change the lowercase parameters to uppercase values to meet the requirements of your site.

```
//STEP1 EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//TAPEIN DD DSN=IBM.HAIFA13.F3,UNIT=tunit,
// VOL=SER=volser,LABEL=(x,SL),
// DISP=(OLD,KEEP)
//FILEIN DD DSN=IBM.HAIFA13.F3,UNIT=SYSALLDA,DISP=SHR,
// VOL=SER=filevol
//OUT DD DSN=IBM.HAIFA13.F3,UNIT=SYSALLDA,DISP=SHR,
// VOL=SER=dasdvol,UNIT=SYSALLDA,
// SPACE=(TRK,(primary,secondary,dir))
//SYSUT3 DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN DD *
COPY INDD=xxxxIN,OUTDD=OUT
/*
```

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

TAPEIN:
- `tunit` is the unit value that matches the product package.
- `volser` is the volume serial that matches the product package.
- `x` is the tape file number that indicates the location of the data set name on the tape.

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.

**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. 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. 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 as part of a CBPDO, use the RCVPDO job in the CBPDO RIMLIB data set to receive the Guardium S-TAP for DB2 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. 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. 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 UK05748. Failure to receive current maintenance can result in errors during the APPLY step for Guardium S-TAP for DB2.

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 a distribution libraries for Guardium S-TAP for DB2. 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 ADHWDDDEF to create DDDEF entries for the SMP/E target and distribution libraries for Guardium S-TAP for DB2. 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 ADHDDDEF1 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, ensure the maintenance level for any existing installation of FEC Common Code is current and includes PTF UK05748. If you are installing FEC Common Code as part of the installation of Guardium S-TAP for DB2, ensure you have already received all current maintenance including PTF UK05748.

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. 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 SYMSMOD 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/c5197)
   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/c5197)
   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 SYMSMOD 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. 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, 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 Guardium S-TAP for DB2

6.3 Product Customization

Guardium S-TAP for DB2 is fully operational after the SMP/E installation is completed. You do not have to do further customization to activate this function.
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