Program Directory for
IBM DB2 Change Accumulation Tool

V03.01.00
Program Number 5697-P45
FMIDs H25F310, H25F132
for Use with
z/OS

Document Date: September, 2012

GI10-8931-00
Note

Before using this information and the product it supports, be sure to read the general information under 7.0, "Notices" on page 27.
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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 DB2 Change Accumulation Tool. This publication refers to IBM DB2 Change Accumulation Tool as DB2 Change Accumulation Tool.

The Program Directory contains the following sections:

• 2.0, “Program Materials” on page 4 identifies the basic and optional program materials and documentation for DB2 Change Accumulation Tool.

• 3.0, “Program Support” on page 7 describes the IBM support available for DB2 Change Accumulation Tool.

• 4.0, “Program and Service Level Information” on page 9 lists the APARs (program level) and PTFs (service level) that have been incorporated into DB2 Change Accumulation Tool.

• 5.0, “Installation Requirements and Considerations” on page 11 identifies the resources and considerations that are required for installing and using DB2 Change Accumulation Tool.

• 6.0, “Installation Instructions” on page 19 provides detailed installation instructions for DB2 Change Accumulation Tool. It also describes the procedures for activating the functions of DB2 Change Accumulation Tool, or refers to appropriate publications.

Before installing DB2 Change Accumulation 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 7 tells you how to find any updates to the information and procedures in this Program Directory.

DB2 Change Accumulation 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 Change Accumulation Tool are included on the CBPDO tape.

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

IBM DB2 Change Accumulation Tool for z/OS, V03.01.00 (5697-P45) enhancements:

- Improves the customization process:
  - Enables a new customization method for easier configuration. This method invokes the Tools Customizer for z/OS to customize DB2 Change Accumulation Tool with the same look and feel as other DB2 tools.
- Improves performance:
  - Can restore critical data up to 30 to 50 percent faster for DB2 Change Accumulation Tool processes requiring a sort. In some cases, the elapsed time improvement comes at the cost of increased CPU.
  - Leverages DB2 Sort to improve elapsed time.
  - Offers additional elapsed time improvements due to additional parallel processing in the log write process of DB2 Change Accumulation Tool. The log write process is used when applying log records to create more current image copies and when using the WRITE-TO-VSAM option to recover tablespaces and indexespaces.
  - Creates image copies more efficiently for LOB table objects.
- Introduces Index Processing:
  - Avoids production object contention on indexes by creating more current image copies by applying log records to a previous image copy. This capability was previously only available on tablespaces. These index image copies can be created to a point in time or to the current time and optionally consistent.
  - Further improves recovery time by creating mini logs for indexes in addition to tablespaces.
  - Significantly reduces elapsed time avoiding a subsequent index rebuild following a tablespace update.
- Improves Application Intelligence:
  - Optionally offers a point of consistency for groups of objects.
  - Designed to easily and automatically create a consistent image copy from a fuzzy image copy.
- Improves Usability:
  - Leverages fast replication image copies as a starting point for processing, in addition to legacy image copies.
  - Streamlines object ID (OBID) translation process that eliminates the need to enter object IDs.
  - Provides user the flexibility of choosing whether to reuse the existing VSAM datasets or delete and define them before performing the recovery.
  - Reduces potential space outages by enabling you to specify larger primary and secondary quantities for sortwork data sets.
– Eliminates manual process to manage the contents of the Log table and the corresponding data sets, with user validation to confirm the action before it is executed.

– Includes ISPF panels and messages that are consistent with other IBM database tools for ease of use.

### 1.2 DB2 Change Accumulation Tool FMIDs

DB2 Change Accumulation Tool consists of the following FMIDs:

- H25F310
- 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 - FEC Common Code, V01.03.02 (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 and a feature number. The program number for DB2 Change Accumulation Tool is 5697-P45 and its feature number is 5802.

Basic Machine-Readable Materials are materials that are supplied under the base license and feature numbers, and are required for the use of the product. Optional Machine-Readable Materials are orderable under separate feature numbers, and are not required for the product to function.

The program announcement material describes the features supported by DB2 Change Accumulation 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 Change Accumulation Tool in the CBPDO Memo To Users Extension.

<table>
<thead>
<tr>
<th>Name</th>
<th>ORG</th>
<th>REC</th>
<th>LRE</th>
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</table>
2.2 Optional Machine-Readable Material

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

2.3 Program Publications

The following sections identify the basic and optional publications for DB2 Change Accumulation Tool.

2.3.1 Basic Program Publications

Figure 3 identifies the basic unlicensed program publications for DB2 Change Accumulation Tool. One copy of each of these publications is included when you order the basic materials for DB2 Change Accumulation Tool. Additional copies can be obtained from the IBM Publications Website at URL: http://www.ibm.com/shop/publications/order/

Contact your IBM representative for further assistance.

<table>
<thead>
<tr>
<th>Name</th>
<th>ORG</th>
<th>REC</th>
<th>LRE</th>
<th>BLK SIZE</th>
</tr>
</thead>
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<tr>
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<td>6400</td>
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<tr>
<td>IBM.H25F132.F5</td>
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<td>FB</td>
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<td>27920</td>
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<td>IBM.H25F132.F6</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>27920</td>
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</table>

Figure 4 identifies the basic unlicensed or licensed publications that are not available in hardcopy format, but are available through the internet or other media for DB2 Change Accumulation Tool.

<table>
<thead>
<tr>
<th>Publication Title</th>
<th>Form Number</th>
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<tr>
<td>IBM DB2 Change Accumulation Tool License Information</td>
<td>GC19-3775</td>
</tr>
</tbody>
</table>
Publications are available in PDF and BookManager formats on CD-ROM and on DVD on the next release of software product libraries:

- *z/OS and Software Products DVD Collection, SK3T-4271*  
  *requires a DVD drive in DVD-9 (single-sided, dual-layer) format

### 2.3.2 Optional Program Publications

No optional publications are provided for DB2 Change Accumulation Tool.

### 2.4 Program Source Materials

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

### 2.5 Publications Useful During Installation

You might want to use the publications listed in Figure 5 during the installation of DB2 Change Accumulation Tool. To order copies, contact your IBM representative or visit the IBM Publications Center at: [http://www.ibm.com/shop/publications/order/](http://www.ibm.com/shop/publications/order/)

<table>
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<tr>
<th>Publication Title</th>
<th>Form Number</th>
<th>How Available</th>
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<th>Publication Title</th>
<th>Form Number</th>
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<tbody>
<tr>
<td>IBM SMP/E for z/OS User's Guide</td>
<td>SA22-7773</td>
</tr>
<tr>
<td>IBM SMP/E for z/OS Commands</td>
<td>SA22-7771</td>
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<tr>
<td>IBM SMP/E for z/OS Reference</td>
<td>SA22-7772</td>
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<tr>
<td>IBM SMP/E for z/OS Messages, Codes, and Diagnosis</td>
<td>GA22-7770</td>
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</table>
3.0 Program Support

This section describes the IBM support available for DB2 Change Accumulation 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 Change Accumulation 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 23 for a sample APPLY command.

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

If the CBPDO for DB2 Change Accumulation 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:


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 Change Accumulation Tool are included in Figure 6

<table>
<thead>
<tr>
<th>UPGRADE</th>
<th>SUBSET</th>
<th>Description</th>
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<tr>
<td>5697P45</td>
<td>H25F310</td>
<td>DB2 Change Accumulation Tool</td>
</tr>
<tr>
<td>5697P45</td>
<td>H25F132</td>
<td>FEC Common Code</td>
</tr>
</tbody>
</table>

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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 8 identifies the component IDs (COMPID) for DB2 Change Accumulation Tool.

<table>
<thead>
<tr>
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<th>COMPID</th>
<th>Component Name</th>
<th>RETAIN Release</th>
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<tr>
<td>H25F310</td>
<td>5655F5500</td>
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<td>H25F132</td>
<td>5655F5504</td>
<td>FEC Common Code</td>
<td>132</td>
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</table>
4.0 Program and Service Level Information

This section identifies the program and relevant service levels of DB2 Change Accumulation 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 Change Accumulation Tool have been incorporated into this release. They are listed by FMID.

- FMID H25F210

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4.2 Service Level Information

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

Frequently check the DB2 Change Accumulation 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 \texttt{FIXCAT(IBM.PRODUCTINSTALL-REQUIREDSERVICE)} operand on your APPLY CHECK command. This will allow you to review the recommended and critical service that should be installed with your FMIDs.
5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating DB2 Change Accumulation 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 Change Accumulation 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
5.2 Target System Requirements

This section describes the environment of the target system required to install and use DB2 Change Accumulation Tool.

DB2 Change Accumulation 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. These products are specified as PREs or REQs.

<table>
<thead>
<tr>
<th>Program Number</th>
<th>Product Name</th>
<th>Minimum VRM</th>
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<td>No</td>
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<td>z/OSe</td>
<td>V01.11.00</td>
<td>N/A</td>
<td>No</td>
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<td>IBM SMP/E for z/OS</td>
<td>V03.05.00</td>
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<td>No</td>
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</table>

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.
**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.

DB2 Change Accumulation 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. These products are specified as PREs or REQs.

**Note:** IBM Tools Base for z/OS, (5655-V93) is a mandatory operational requisite for IBM DB2 Change Accumulation Tool. IBM Tools Base is a no-charge product that must be separately ordered. IBM Tools Base contains IBM Tools Customizer for z/OS, FMID HTCZ110, which must be installed in order to
customize the IBM DB2 Change Accumulation Tool. Refer to the IBM Tools Base for z/OS, Program Directory (GI10-8819) for installation instructions.

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.

DB2 Change Accumulation 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 Change Accumulation 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 Change Accumulation Tool has no negative requisites.

5.2.3 **DASD Storage Requirements**

DB2 Change Accumulation Tool libraries can reside on all supported DASD types.

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

<table>
<thead>
<tr>
<th>Library Type</th>
<th>Total Space Required in 3390 Trks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target</td>
<td>963 Tracks</td>
</tr>
<tr>
<td>Distribution</td>
<td>963 Tracks</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Library Type</th>
<th>Total Space Required in 3390 Trks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target</td>
<td>68 Tracks</td>
</tr>
<tr>
<td>Distribution</td>
<td>68 Tracks</td>
</tr>
</tbody>
</table>

**Notes:**

14 DB2 Change Accumulation Tool Program Directory
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.
   - These data sets are not required to be APF-authorized.
   - DB2 Change Accumulation Tool requires that the SMPLTS data set must be a PDSE. If your existing SMPLTS is a PDS, you will need to allocate a new PDSE and copy your existing SMPLTS into it and then change the SMPLTS DDDEF entry to indicate the new PDSE data set.
The following figures describe the target and distribution libraries required to install DB2 Change Accumulation Tool. The storage requirements of DB2 Change Accumulation 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 13. Storage Requirements for DB2 Change Accumulation Tool Target Libraries

<table>
<thead>
<tr>
<th>Library DDNAME</th>
<th>Member Type</th>
<th>Target Volume</th>
<th>REPO</th>
<th>REC</th>
<th>LRE</th>
<th>No. of 3390 Trks</th>
<th>No. of DIR Blks</th>
</tr>
</thead>
<tbody>
<tr>
<td>SGGCBASE</td>
<td>MAC</td>
<td>any</td>
<td>U</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>8</td>
</tr>
<tr>
<td>SGGCDBRM</td>
<td>MAC</td>
<td>any</td>
<td>U</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>46</td>
</tr>
<tr>
<td>SGGCDENU</td>
<td>DATA5</td>
<td>any</td>
<td>U</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>31</td>
</tr>
<tr>
<td>SGGCLOAD</td>
<td>MOD</td>
<td>any</td>
<td>U</td>
<td>PDSE</td>
<td>U</td>
<td>0</td>
<td>501</td>
</tr>
<tr>
<td>SGGCMENU</td>
<td>MSGENU</td>
<td>any</td>
<td>U</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>11</td>
</tr>
<tr>
<td>SGGCPENU</td>
<td>PNLENU</td>
<td>any</td>
<td>U</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>307</td>
</tr>
<tr>
<td>SGGCSAMP</td>
<td>SAMP</td>
<td>any</td>
<td>U</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>23</td>
</tr>
<tr>
<td>SGGCSLIB</td>
<td>SKL</td>
<td>any</td>
<td>U</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>36</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Library DDNAME</th>
<th>Member Type</th>
<th>Target Volume</th>
<th>REPO</th>
<th>REC</th>
<th>LRE</th>
<th>No. of 3390 Trks</th>
<th>No. of DIR Blks</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFECDBRM</td>
<td>MACRO</td>
<td>any</td>
<td>S</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>3</td>
</tr>
<tr>
<td>SFECLOAD</td>
<td>LMOD</td>
<td>any</td>
<td>S</td>
<td>PDS</td>
<td>U</td>
<td>0</td>
<td>33</td>
</tr>
<tr>
<td>SFECMENU</td>
<td>MSG</td>
<td>any</td>
<td>S</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>3</td>
</tr>
<tr>
<td>SFECPENU</td>
<td>PANEL</td>
<td>any</td>
<td>S</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>26</td>
</tr>
<tr>
<td>SFECSAMPLE</td>
<td>SAMPLE</td>
<td>any</td>
<td>S</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>3</td>
</tr>
</tbody>
</table>

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5.3 FMIDs Deleted

Installing DB2 Change Accumulation 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 Change Accumulation 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:

1. 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 the same FMID, which will increase your maintenance and DASD requirements.

Note: DB2 Change Accumulation Tool uses the "partitioned data set extended" or PDSE format for our SGGCLOAD target library. There are some operational differences between PDS and PDSE data sets. The PDS format may be shared by more than one z/OS system and no special precautions are necessary. However the PDSE format may only be shared by z/OS systems which are part of a sysplex or which are connected using Global Resource Serialization or GRS ring. If z/OS systems share use of a PDSE data set outside of a sysplex or GRS environment, you may experience severe problems when the data set is updated. This is due to the fact that PDSE directory information is cached in storage, and when the data set is updated from one system the other system(s) have no knowledge of the update, and their cached directory information will be incorrect.

You must take care not to share the SGGCLOAD data set between z/OS systems unless they are in a sysplex or are connected by a GRS ring. If you need to share the content of the SGGCLOAD data set, a separate copy must be created for each z/OS system.
6.0 Installation Instructions

This chapter describes the installation method and the step-by-step procedures to install and to activate the functions of DB2 Change Accumulation Tool.

Please note the following points:

- If you want to install DB2 Change Accumulation 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 Change Accumulation Tool

6.1.1 SMP/E Considerations for Installing DB2 Change Accumulation Tool

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

6.1.2 SMP/E Options Subentry Values

The recommended values for certain SMP/E CSI subentries are shown in Figure 17. 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

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

- CSSLIB
- SDSNLOAD
- SISPLOAD

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

6.1.4 Sample Jobs

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

<table>
<thead>
<tr>
<th>Job Name</th>
<th>Job Type</th>
<th>Description</th>
<th>RELFILE</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGCALA</td>
<td>SMP/E</td>
<td>Sample job to allocate and initialize a new SMP/E CSI data set <em>(Optional)</em></td>
<td>IBM.H25F310.F2</td>
</tr>
<tr>
<td>GGCALB</td>
<td>SMP/E</td>
<td>Sample job to allocate SMP/E data sets <em>(Optional)</em></td>
<td>IBM.H25F310.F2</td>
</tr>
<tr>
<td>GGCREC1</td>
<td>RECEIVE</td>
<td>Sample RECEIVE job for DB2 Change Accumulation Tool</td>
<td>IBM.H25F310.F2</td>
</tr>
<tr>
<td>GGCREC2</td>
<td>RECEIVE</td>
<td>Sample RECEIVE job for FEC Common Code</td>
<td>IBM.H25F310.F2</td>
</tr>
<tr>
<td>GGCALOC1</td>
<td>ALLOCATE</td>
<td>Sample job to allocate target and distribution libraries for DB2 Change Accumulation Tool</td>
<td>IBM.H25F310.F2</td>
</tr>
<tr>
<td>GGCALOC2</td>
<td>ALLOCATE</td>
<td>Sample job to allocate target and distribution libraries for FEC Common Code</td>
<td>IBM.H25F310.F2</td>
</tr>
<tr>
<td>GGCDDDEF1</td>
<td>DDDEF</td>
<td>Sample job to define SMP/E DDDEFs for DB2 Change Accumulation Tool</td>
<td>IBM.H25F310.F2</td>
</tr>
<tr>
<td>GGCDDDEF2</td>
<td>DDDEF</td>
<td>Sample job to define SMP/E DDDEFs for FEC Common Code</td>
<td>IBM.H25F310.F2</td>
</tr>
<tr>
<td>GGCAPPLY</td>
<td>APPLY</td>
<td>Sample APPLY job</td>
<td>IBM.H25F310.F2</td>
</tr>
<tr>
<td>GGCACCEP</td>
<td>ACCEPT</td>
<td>Sample ACCEPT job</td>
<td>IBM.H25F310.F2</td>
</tr>
</tbody>
</table>

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.7, “Perform SMP/E RECEIVE” on page 22) then copy the jobs from the RELFILES to a work data set for editing and submission. See Figure 18 to find the appropriate refile 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.H25F310.F2,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.H25F310.F2,UNIT=tunit,  
// VOL=SER=25F310,LABEL=(3,SL),  
// DISP=(OLD,KEEP)  

// Make the //FILEIN DD statement below active for  
// downloaded DASD files.  

//FILEIN DD DSN=IBM.H25F310.F2,UNIT=SYSALLDA,DISP=SHR,  
// VOL=SER=filevol  

//OUT DD DSNAME=jcl-library-name,  
// DISP=(NEW,CATLG,DELETE),  
// VOL=SER=dasdvol,UNIT=SYSALLDA,  
// SPACE=(CYL,(20,10,5))  

//SYSUT3 DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))  
//SYSIN DD *  
COPY INDD=xxxxIN,OUTDD=OUT  
SELECT MEMBER=(GGCALA,GGCALB,GGCREC1,GGCALOC1)  
SELECT MEMBER=(GGCDDEF1,GGCAPPLY)  
SELECT MEMBER=(GGCACCEP)  
SELECT MEMBER=(GGCREC2,GGCALOC2,GGCDDEF2)  
/*

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.H25F310.F2 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 GGCALA to allocate the SMP/E data set for DB2 Change Accumulation 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)

Edit and submit sample job GGCALB to initialize SMP/E zones for DB2 Change Accumulation 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

Note: FEC Common Code, H25F132, is a mandatory installation and operational requisite for DB2 Change Accumulation Tool. If you have already installed FEC Common Code, H25F132, do not receive this FMID again.

If you have obtained DB2 Change Accumulation Tool as part of a CBPDO, use the RCVPDO job in the CBPDO RIMLIB data set to receive the DB2 Change Accumulation 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 edit and submit the sample job GGCREC1 to perform the SMP/E RECEIVE for DB2 Change Accumulation 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.

If needed, you can edit and submit the sample job GGCREC2 to perform the SMP/E RECEIVE for the 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.
6.1.8 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job GGCALOC1 to allocate the SMP/E target and distribution libraries for DB2 Change Accumulation 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.

If you are installing FEC Common Code, edit and submit sample job GGCALOC2 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 GGCDDEF1 to create DDDEF entries for the SMP/E target and distribution libraries for DB2 Change Accumulation 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.

If you are installing FEC Common Code, edit and submit sample job GGCDDEF2 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 GGCAPPLY to perform an SMP/E APPLY CHECK for DB2 Change Accumulation 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/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/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)) .

   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.

   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.

6.1.11 Perform SMP/E ACCEPT

Edit and submit sample job GGCACCEP to perform an SMP/E ACCEPT CHECK for DB2 Change Accumulation 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 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.
6.1.12 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 Change Accumulation 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 Change Accumulation Tool

The publication IBM DB2 Change Accumulation Tool User's Guide, SC19-3776 contains the necessary information to customize and use DB2 Change Accumulation Tool.
7.0 Notices

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Program Directory for IBM DB2 Change Accumulation Tool, September, 2012

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For each of the topics below please indicate your satisfaction level by circling your choice from the rating scale. If a statement does not apply, please circle N.

<table>
<thead>
<tr>
<th>Rating Scale</th>
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<td>very satisfied</td>
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Satisfaction

Ease of product installation
Contents of Program Directory
Installation Verification Programs
Time to install the product
Readability and organization of Program Directory tasks
Necessity of all installation tasks
Accuracy of the definition of the installation tasks
Technical level of the installation tasks
Ease of getting the system into production after installation

How did you order this product?

___ CBPDO
___ CustomPac
___ ServerPac
___ Independent
___ Other

Is this the first time your organization has installed this product?

___ Yes
___ No
Were the people who did the installation experienced with the installation of z/OS products?

___ Yes
___ No

If yes, how many years? ___

If you have any comments to make about your ratings above, or any other aspect of the product installation, please list them below:

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