



**Program Directory for
IBM DB2 Log Analysis Tool for z/OS**

V03.05.00

Program Number 5655-T56

FMIDs H237350, H25F132

for Use with
z/OS

Document Date: May 2015

GI10-8772-04

Note

Before using this information and the product it supports, be sure to read the general information under 7.0, "Notices" on page 26.

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

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 4 identifies the basic program materials and documentation for DB2 Log Analysis Tool.
- 3.0, “Program Support” on page 7 describes the IBM support available for DB2 Log Analysis 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 Log Analysis Tool.
- 5.0, “Installation Requirements and Considerations” on page 10 identifies the resources and considerations that are required for installing and using DB2 Log Analysis Tool.
- 6.0, “Installation Instructions” on page 18 provides detailed installation instructions for DB2 Log Analysis Tool. It also describes the procedures for activating the functions of DB2 Log Analysis Tool, or refers to appropriate publications.

Before installing DB2 Log Analysis 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 Log Analysis 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 Log Analysis Tool are included on the CBPDO tape.

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

IBM DB2 Log Analysis Tool for z/OS, V03.05.00 (5655-T56) is a powerful tool used to support efforts to maintain high data availability and complete control over data integrity. You can monitor data changes by automatically building reports of changes that are made to database tables. The DB2 Log Analysis Tool performs:

- Reporting:
 - View data changes by dates, users, tables, and other criteria
 - Create summary and detail reports that show:
 - Original state of the data
 - Current state
 - Other valuable information, such as who changed the data
 - From this process, institute tighter controls over the data to ensure that it can no longer be compromised
- Recovery:
 - Generate SQL to UNDO or REDO changes recorded in the log
 - Support for dropped object recoveries:
 - Report on and recover data for dropped objects using both old and new DB2 identifiers
 - After DDL is recreated, restore the data in the regenerated table back to its state before the table was dropped
- Auditing:
 - Monitor/Audit table changes
 - UPDATE/INSERT/DELETE
 - Who is changing data?
 - What is the sequence of the changes?
 - Validating SQL activity without traces: Is my program doing what I expect?
 - Load reports into audit tables for review
- Replication:
 - Replay changes on another system / object: LOAD or REDO SQL
 - Used for data warehousing / internal processes
 - Used for setting up test systems: Use production data for authentic application testing

DB2 Log Analysis Tool, V03.05.00 (5655-T56) includes the following enhancements:

- Performance improvements:
 - DB2 Log Analysis Tool now checks the maximum allowed 64-bit storage value and will switch over to work file mode in case the value is about to be exceeded. This means the job can complete successfully without a restart if the memory limit would otherwise be exceeded. This allows greater usage of 64 bit mode, which is the most efficient method of processing.
 - Exploit SYSIBM.SYSLGRNX to determine if there are ranges of log activity that can be eliminated if no activity is found for any particular object.

- Usability improvements:
 - DB2 Log Analysis Tool quick start panels are designed for quicker and easier job generation. The quick start panels are organized so you can choose what type of DB2 Log Analysis Tool activity is wanted and only see the most important options that are relevant to that activity.
 - Continuous mode restarts enable you to request that DB2 Log Analysis Tool track where it failed in continuous mode. DB2 Log Analysis Tool automatically restores continuous mode files on a restart.
 - You can create profiles after you generate a job and edit or submit it. You do not have to use the profile panel to create a new profile or copy from an existing one.
 - You can edit the SSID within the JCL and run a job on a new subsystem. DB2 Log Analysis Tool will see the change and make appropriate adjustments without causing an error condition.
 - Implicitly hidden columns are fully supported and listed in the SQL statement when required for INSERTs. DB2 Log Analysis Tool identifies a mismatch in the Bootstrap Datasets with a warning message when reading the BSDS for log file names.
 - DB2 Log Analysis Tool can use the data sharing member name for data sharing subsystems or the SSID when reporting on non-data sharing subsystems instead of using just the ID.
 - With the new reports and improvements you can do the following:
 - Review storage activity in 24-, 31-, and 64-bit storage with the Storage Activity Report. - Identify SYSCOPY entries for DB2 objects with the SYSCOPY Report.
 - Resolve issues more quickly by supplying support personnel with the information from the control file in the Control File Report.
 - Identify table versioning issues with information from the TVFILE report.
 - Easier product installation with IBM Tools Customizer for z/OS automatically discovering the values of DB2 mode and level.

1.2 DB2 Log Analysis Tool FMIDs

DB2 Log Analysis Tool consists of the following FMIDs:

H237350
H25F132

2.0 Program Materials

An IBM program is identified by a program number. The program number for DB2 Log Analysis Tool is 5655-T56.

Basic Machine-Readable Materials are materials that are supplied under the base license and are required for the use of the product.

The program announcement material describes the features supported by DB2 Log Analysis 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 18 for more information about how to install the program.

You can find information about the physical media for the basic machine-readable materials for DB2 Log Analysis Tool in the *CBPDO Memo To Users Extension*.

Figure 1 describes the program file content for DB2 Log Analysis Tool. You can refer to the *CBPDO Memo To Users Extension* to see where the files reside on the tape.

Notes:

1. The data set attributes in this table must be used in the JCL of jobs that read the data sets. However, because the data sets are in IEBCOPY unloaded format, their actual attributes might be different.
2. If any RELFILEs are identified as PDSEs, ensure that SMPTLIB data sets are allocated as PDSEs.

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

Name	ORG	RECFM	RECL	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.H237350.F1	PDS	FB	80	8800
IBM.H237350.F2	PDS	FB	80	8800
IBM.H237350.F3	PDS	FB	80	8800
IBM.H237350.F4	PDS	FB	80	8800
IBM.H237350.F5	PDSE	U	0	6144

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

Name	O R G	R E C F M	L R E C L	BLK SIZE
IBM.H237350.F6	PDS	FB	80	8800
IBM.H237350.F7	PDS	FB	80	8800
IBM.H237350.F8	PDS	FB	80	8800
IBM.H237350.F9	PDS	FB	80	8800

Figure 2. Program File Content for FEC Common Code

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

2.2 Optional Machine-Readable Material

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

2.3 Program Publications

The following sections identify the basic publications for DB2 Log Analysis Tool.

Figure 3 identifies the basic unlicensed publications for DB2 Log Analysis Tool. Those that are in softcopy format publications can be obtained from the IBM Publications Center website at: <http://www.ibm.com/shop/publications/order/>

Figure 3. Basic Material: Unlicensed

Publication Title	Form Number	Media Format
IBM DB2 Log Analysis Tool for z/OS License Information	GC19-1301	http://www.ibm.com/software/sla/sladb.nsf
IBM DB2 Log Analysis Tool for z/OS User's Guide	SC27-6559	http://www.ibm.com/support/docview.wss?uid=swg27020942

2.3.1 Optional Program Publications

No optional publications are provided for DB2 Log Analysis Tool.

2.4 Program Source Materials

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

2.5 Publications Useful During Installation

You might want to use the publications listed in Figure 4 during the installation of DB2 Log Analysis Tool.

Figure 4. Publications Useful During Installation

Publication Title	Form Number	Media Format
<i>IBM SMP/E for z/OS User's Guide</i>	SA23-2277	http://www.ibm.com/shop/publications/order/
<i>IBM SMP/E for z/OS Commands</i>	SA23-2275	http://www.ibm.com/shop/publications/order/
<i>IBM SMP/E for z/OS Reference</i>	SA23-2276	http://www.ibm.com/shop/publications/order/
<i>IBM SMP/E for z/OS Messages, Codes, and Diagnosis</i>	GA32-0883	http://www.ibm.com/shop/publications/order/

3.0 Program Support

This section describes the IBM support available for DB2 Log Analysis 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 Log Analysis 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 22 for a sample APPLY command.

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

If the CBPDO for DB2 Log Analysis Tool is older than two weeks by the time you install the product materials, you can obtain the latest PSP Bucket information by going to the following website:

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

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

For program support, access the Software Support Website at <http://www-01.ibm.com/software/support/>.

PSP Buckets are identified by UPGRADEs, which specify product levels; and SUBSETs, which specify the FMIDs for a product level. The UPGRADE and SUBSET values for DB2 Log Analysis Tool are included in Figure 5.

UPGRADE	SUBSET	Description
5655T56	H237350	DB2 Log Analysis Tool
5655F55	H25F132	FEC Common code

3.3 Statement of Support Procedures

Report any problems which you feel might be an error in the product materials to your IBM Support Center. You may be asked to gather and submit additional diagnostics to assist the IBM Support Center in their analysis.

Figure 6 on page 8 identifies the component IDs (COMPID) for DB2 Log Analysis Tool.

<i>Figure 6. Component IDs</i>			
FMID	COMPID	Component Name	RETAIN Release
H237350	5655E6601	DB2 Log Analysis Tool	350
H25F132	5655F5504	FEC Common Code	132

4.0 Program and Service Level Information

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

- FMID H237340

PI06753	PI14352	PI19362	PI26142
PI07551	PI15188	PI19645	PI26238
PI08810	PI15629	PI20119	PI26407
PI09761	PI15645	PI20144	PI26780
PI09806	PI15658	PI22000	PI26873
PI10437	PI16370	PI22939	PI27008
PI11620	PI16566	PI24006	PI28065
PI12097	PI17308	PI24892	PI28209
PI12821	PI17475	PI25147	PI30366
PI13152	PI18361	PI25148	PI31782
PI13244	PI18427	PI25222	PI31791
PI14269	PI18789	PI25223	PM99278

4.2 Service Level Information

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

Frequently check the DB2 Log Analysis Tool PSP Bucket for HIPER and SPECIAL attention PTFs against all FMIDs that you must install. You can also receive the latest HOLDDATA, then add the **FIXCAT(IBM.PRODUCTINSTALL-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 Log Analysis 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 Log Analysis Tool.

5.1.1 Machine Requirements

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

5.1.2 Programming Requirements

Figure 7. Driving System Software Requirements

Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in the shipped product?
Any one of the following:				
5694-A01	z/OS	V01.13.00	N/A	No
5650-ZOS	z/OS	V02.01.00	N/A	No

Note: SMP/E is a requirement for Installation and is an element of z/OS but can also be ordered as a separate product, 5655-G44, minimally V03.06.00.

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

5.2 Target System Requirements

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

DB2 Log Analysis 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.

<i>Figure 8. Target System Mandatory Installation Requisites</i>				
Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in the shipped product?
N/A	FEC Common Code FMID H25F132	01.03.02	UK35560	Yes
Any one of the following:				
5605-DB2	DB2 for z/OS	10.01.00	N/A	No
5697-P31	DB2 for z/OS VUE	10.01.00	N/A	No
5615-DB2	DB2 for z/OS	11.01.00	N/A	No
5697-P43	DB2 for z/OS VUE	11.01.00	N/A	No

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

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

DB2 Log Analysis Tool has no conditional installation requisites.

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

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

<i>Figure 9. Target System Mandatory Operational Requisites</i>	
Program Number	Product Name and Minimum VRM/Service Level
5655-V93	IBM Tools Base for z/OS V01.05.00*
Any one of the following:	
5605-DB2	DB2 for z/OS V10.01.00
5697-P31	DB2 for z/OS VUE V10.01.00
5615-DB2	DB2 for z/OS V11.01.00
5697-P43	DB2 for z/OS VUE V11.01.00

Note: *IBM Tools Base for z/OS (5655-V93) is a mandatory operational requisite for DB2 Log Analysis Tool. IBM Tools Base for z/OS is a no-charge product that must be separately ordered. Tools Base

contains IBM Tools Customizer for z/OS, FMID HTCZ110, which must be installed in order to customize DB2 Log Analysis 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.

DB2 Log Analysis 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 Log Analysis 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 Log Analysis Tool has no negative requisites.

5.2.3 DASD Storage Requirements

DB2 Log Analysis Tool libraries can reside on all supported DASD types.

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

<i>Figure 10. Total DASD Space Required by DB2 Log Analysis Tool</i>		
Library Type	Total Space Required in 3390 Trks	
Target	435 tracks	for DB2 Log Analysis Tool
	61 tracks	for DB2 Change Accumulation Tool
Distribution	435 tracks	for DB2 Log Analysis Tool
	61 tracks	for DB2 Change Accumulation Tool

Notes:

1. For non-RECFM U data sets, IBM recommends using system-determined block sizes for efficient DASD utilization. For RECFM U data sets, IBM recommends using a block size of 32760, which is most efficient from the performance and DASD utilization perspective.
2. Abbreviations used for data set types are shown as follows.

- U** Unique data set, allocated by this product and used by only this product. This table provides all the required information to determine the correct storage for this data set. You do not need to refer to other tables or program directories for the data set size.
- S** Shared data set, allocated by this product and used by this product and other products. To determine the correct storage needed for this data set, add the storage size given in this table to those given in other tables (perhaps in other program directories). If the data set already exists, it must have enough free space to accommodate the storage size given in this table.
- E** Existing shared data set, used by this product and other products. This data set is *not* allocated by this product. To determine the correct storage for this data set, add the storage size given in this table to those given in other tables (perhaps in other program directories). If the data set already exists, it must have enough free space to accommodate the storage size given in this table.

If you currently have a previous release of this product installed in these libraries, the installation of this release will delete the old release and reclaim the space that was used by the old release and any service that had been installed. You can determine whether these libraries have enough space by deleting the old release with a dummy function, compressing the libraries, and comparing the space requirements with the free space in the libraries.

For more information about the names and sizes of the required data sets, see 6.1.8, "Allocate SMP/E Target and Distribution Libraries" on page 22.

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

The following figures describe the target and distribution libraries required to install DB2 Log Analysis Tool. The storage requirements of DB2 Log Analysis 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 11. Storage Requirements for DB2 Log Analysis Tool Target Libraries

Library DDNAME	Member Type	Target Volume	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
SALACLST	CLIST	any	U	PDS	FB	80	4	3
SALADBRM	MACRO	any	U	PDS	FB	80	7	3
SALADENU	DATA5	any	U	PDS	FB	80	6	3
SALALOAD	LMOD	any	U	PDSE	U	0	313	n/a
SALAMENU	MSG	any	U	PDS	FB	80	17	5
SALAPENU	PANEL	any	U	PDS	FB	80	52	50
SALASAMP	SAMPLE	any	U	PDS	FB	80	18	3
SALASLIB	SKL	any	U	PDS	FB	80	24	5

Figure 12. Storage Requirements for FEC Common Code Target Libraries

Library DDNAME	Member Type	Target Volume	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
SFECDBRM	MACRO	any	S	PDS	FB	80	3	5
SFECLOAD	LMOD	any	S	PDS	U	0	26	25
SFECMENU	MSG	any	S	PDS	FB	80	3	5
SFECPENU	PANEL	any	S	PDS	FB	80	26	15
SFECXSAMP	SAMPLE	any	S	PDS	FB	80	3	5

Figure 13 (Page 1 of 2). Storage Requirements for DB2 Log Analysis Tool Distribution Libraries

Library DDNAME	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
AALACLST	U	PDS	FB	80	4	3
AALADBRM	U	PDS	FB	80	7	3
AALADENU	U	PDS	FB	80	6	3
AALALOAD	U	PDSE	U	0	313	n/a
AALAMENU	U	PDS	FB	80	17	5

Figure 13 (Page 2 of 2). Storage Requirements for DB2 Log Analysis Tool Distribution Libraries

Library DDNAME	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
AALAPENU	U	PDS	FB	80	52	50
AALASAMP	U	PDS	FB	80	18	3
AALASLIB	U	PDS	FB	80	24	5

Figure 14. Storage Requirements for FEC Common Code Distribution Libraries

Library DDNAME	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
AFECDBRM	S	PDS	FB	80	3	5
AFECLOAD	S	PDS	U	0	26	25
AFECMENU	S	PDS	FB	80	3	5
AFECPENU	S	PDS	FB	80	26	15
AFECSAMP	S	PDS	FB	80	3	5

5.3 FMIDs Deleted

Installing DB2 Log Analysis 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 Log Analysis Tool into separate SMP/E target and distribution zones.

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

5.4 Special Considerations

FEC Common Code

FMID H25F132 Considerations:

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

PDSE Considerations:

DB2 Log Analysis Tool uses the "partitioned data set extended" or PDSE format for the SALALOAD 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 (are in a GRS complex). 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 SALALOAD data set between z/OS systems unless they are in a sysplex or are connected in a GRS complex. If you need to share the content of the SALALOAD 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 Log Analysis Tool.

Please note the following points:

- If you want to install DB2 Log Analysis 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 Log Analysis Tool

6.1.1 SMP/E Considerations for Installing DB2 Log Analysis Tool

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

6.1.2 SMP/E Options Subentry Values

The recommended values for certain SMP/E CSI subentries are shown in Figure 15. Using values lower than the recommended values can result in failures in the installation. DSSPACE is a subentry in the GLOBAL options entry. PEMAX is a subentry of the GENERAL entry in the GLOBAL options entry. See the SMP/E manuals for instructions on updating the global zone.

Figure 15. SMP/E Options Subentry Values

Subentry	Value	Comment
DSSPACE	(500,500,500)	3390 DASD tracks
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.

6.1.3 SMP/E CALLLIBS Processing

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

- CSSLIB
- SCEELKED
- SISPLOAD

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

6.1.4 Sample Jobs

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

Figure 16. Sample Installation Jobs

Job Name	Job Type	Description	RELFILE
ALAALA	SMP/E	Sample job to allocate and initialize a new SMP/E CSI data set (Optional)	IBM.H237350.F8
ALAALB	SMP/E	Sample job to allocate SMP/E data sets (Optional)	IBM.H237350.F8
ALARECEV	RECEIVE	Sample RECEIVE job for DB2 Log Analysis Tool	IBM.H237350.F8
ALARECV2	RECEIVE	Sample RECEIVE job for FEC Common Code	IBM.H237350.F8
ALAALLOC	ALLOCATE	Sample job to allocate target and distribution libraries for DB2 Log Analysis Tool	IBM.H237350.F8
ALAALOC2	ALLOCATE	Sample job to allocate target and distribution libraries for FEC Common Code	IBM.H237350.F8
ALADDDEF	DDDEF	Sample job to define SMP/E DDDEFs for DB2 Log Analysis Tool	IBM.H237350.F8
ALADDEF2	DDDEF	Sample job to define SMP/E DDDEFs for FEC Common Code	IBM.H237350.F8
ALAAPPLY	APPLY	Sample APPLY job	IBM.H237350.F8
ALAACCEP	ACCEPT	Sample ACCEPT job	IBM.H237350.F8

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.7, “Perform SMP/E RECEIVE” on page 21) then copy the jobs from the RELFILES to a work data set for editing and submission. See Figure 16 to find the appropriate relfile data set.

You can also copy the sample installation jobs from the tape or product files by submitting the following job. Depending on your distribution medium, use either the //TAPEIN or the //FILEIN DD statement and comment out or delete the other statement. Before you submit the job, add a job card and change the lowercase parameters to uppercase values to meet the requirements of your site.

```
//STEP1 EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//*****
//* Make the //TAPEIN DD statement below active if you install*
//* from a CBPDO tape by uncommenting the DD statement below. *
//*****
//*TAPEIN DD DSN=IBM.H237350.F8,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.H237350.F8,UNIT=tunit,
//* VOL=SER=237350,LABEL=(9,SL),
//* DISP=(OLD,KEEP)
//*****
//* Make the //FILEIN DD statement below active for *
//* downloaded DASD files. *
//*****
//*FILEIN DD DSN=IBM.H237350.F8,UNIT=SYSALLDA,DISP=SHR,
//* VOL=SER=filevol
//OUT DD DSNAME=jc1-library-name,
// DISP=(NEW,CATLG,DELETE),
// VOL=SER=dasdvol,UNIT=SYSALLDA,
// SPACE=(TRK,(20,10,5))
//SYSUT3 DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN DD *
COPY INDD=xxxxIN,OUTDD=OUT
/*
```

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

TAPEIN:

tunit is the unit value that matches the product package.

volser is the volume serial that matches the product package.

x is the tape file number that indicates the location of the data set name on the tape.

See the documentation that is provided by CBPDO for the location of IBM.H237350.F8 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 ALAALA to allocate the SMP/E data set for DB2 Log Analysis Tool. Consult the instructions in the sample job for more information.

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

6.1.6 Initialize CSI zones (Optional)

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

Edit and submit sample job ALAALB to initialize SMP/E zones for DB2 Log Analysis Tool. Consult the instructions in the sample job for more information.

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

6.1.7 Perform SMP/E RECEIVE

If you have obtained DB2 Log Analysis Tool as part of a CBPDO, use the RCVPDO job in the CBPDO RIMLIB data set to receive the DB2 Log Analysis Tool FMIDs, service, and HOLDDATA that are included on the CBPDO package. For more information, see the documentation that is included in the CBPDO.

You can also choose to edit and submit sample job ALARECEV to perform the SMP/E RECEIVE for DB2 Log Analysis Tool. Consult the instructions in the sample job for more information.

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

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

If you are installing the FEC Common Code edit and submit sample job ALARECV2 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 ALAALLOC to allocate the SMP/E target and distribution libraries for DB2 Log Analysis 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 the FEC Common Code, edit and submit sample job ALAALOC2 to allocate the SMP/E target and distribution libraries 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.

6.1.9 Create DDDEF Entries

Edit and submit sample job ALADDDEF to create DDDEF entries for the SMP/E target and distribution libraries for DB2 Log Analysis 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 the FEC Common Code, edit and submit sample job ALADDEF2 to create DDDEF entries for the SMP/E target and distribution libraries 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.

6.1.10 Perform SMP/E APPLY

1. Ensure that you have the latest HOLDDATA; then edit and submit sample job ALAAPPLY to perform an SMP/E APPLY CHECK for DB2 Log Analysis Tool. Consult the instructions in the sample job for more information.

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

You should install the FMIDs regardless of the status of unresolved HIPER or FIXCAT APARs. However, do not deploy the software until the unresolved HIPER and FIXCAT APARs have been analyzed to determine their applicability. That is, before deploying the software either ensure fixing PTFs are applied to resolve all HIPER or FIXCAT APARs, or ensure the problems reported by all HIPER or FIXCAT APARs are not applicable to your environment.

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass the PRE, ID, REQ, and IFREQ on the APPLY CHECK. The SMP/E root cause analysis identifies the cause

only of *errors* and not of *warnings* (SMP/E treats bypassed PRE, ID, REQ, and IFREQ conditions as warnings, instead of errors).

Here are sample APPLY commands:

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

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

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

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

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

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

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

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

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

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

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

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

6.1.11 Perform SMP/E ACCEPT

Edit and submit sample job ALAACCEP to perform an SMP/E ACCEPT CHECK for DB2 Log Analysis 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 *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 Log Analysis 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 Log Analysis Tool

6.2.1 Product Customization

The publication *DB2 Log Analysis Tool User's Guide* (SC27-6559) contains the necessary information to customize and use DB2 Log Analysis Tool.

7.0 Notices

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APAR numbers are provided in this document to assist in locating PTFs that may be required. Ongoing problem reporting may result in additional APARs being created. Therefore, the APAR lists in this document may not be complete. To obtain current service recommendations and to identify current product service requirements, always contact the IBM Customer Support Center or use S/390 SoftwareXcel to obtain the current "PSP Bucket".

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Program Directory for IBM DB2 Log Analysis Tool for z/OS, May 2015

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Printed in USA

G110-8772-04

