



Program Directory for IBM Fault Analyzer for z/OS

16.1.0

Program Number 5755-AB2

FMIDs HADQG10, JADQG1J

for use with
z/OS

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GI13-5685-00

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 Fault Analyzer for z/OS. This publication refers to IBM Fault Analyzer for z/OS as Fault Analyzer.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 3 identifies the basic program materials and documentation for Fault Analyzer.
- 3.0, “Program Support” on page 6 describes the IBM support available for Fault Analyzer.
- 4.0, “Program and Service Level Information” on page 7 lists the APARs (program level) and PTFs (service level) that have been incorporated into Fault Analyzer.
- 5.0, “Installation Requirements and Considerations” on page 8 identifies the resources and considerations that are required for installing and using Fault Analyzer.
- 6.0, “Installation Instructions” on page 18 provides detailed installation instructions for Fault Analyzer. It also describes the procedures for activating the functions of Fault Analyzer, or refers to appropriate publications.

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

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

Do not use this program directory if you install Fault Analyzer with a z/OSMF Portable Software Instance (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 Fault Analyzer Description

Fault Analyzer is a comprehensive abend analysis tool that captures information at the time of an application abend and by so doing speeds up problem resolution time. It provides detailed application analysis of the events leading up to the abend providing source code mapping for those events. It also includes subsystem related information for example from CICS, Db2, IMS and Language Environment.

1.2 Fault Analyzer FMIDs

Fault Analyzer consists of the following FMIDs:

HADQG10
JADQG1J

2.0 Program Materials

An IBM program is identified by a program number. The program number for Fault Analyzer is 5755-AB2.

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 Fault Analyzer. 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 Fault Analyzer in the *CBPDO Memo To Users Extension*.

Figure 1 describes the program file content for Fault Analyzer.

Figure 2 on page 4 describes the program file content for Fault Analyzer (Japanese Feature).

You can refer to the *CBPDO Memo To Users Extension* to see where the files reside on the image.

Notes:

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

Name	O R G	R E C F M	L R E C L	BLK SIZE
SMPMCS	SEQ	FB	80	3120
IBM.HADQG10.F1	PDS	FB	80	27920
IBM.HADQG10.F10	PDS	VB	8196	27998
IBM.HADQG10.F2	PDSE	U	0	6144
IBM.HADQG10.F3	PDS	FB	80	27920

Figure 1 (Page 2 of 2). Program File Content

Name	O R G	R E C F M	L R E C L	BLK SIZE
IBM.HADQG10.F4	PDS	FB	80	27920
IBM.HADQG10.F5	PDS	FB	80	27920
IBM.HADQG10.F6	PDS	FB	80	27920
IBM.HADQG10.F7	PDS	FB	80	27920
IBM.HADQG10.F8	PDS	VB	255	27998
IBM.HADQG10.F9	PDS	VB	1024	27998

Figure 2. Program File Content for Fault Analyzer (Japanese Feature)

Name	O R G	R E C F M	L R E C L	BLK SIZE
SMPMCS	SEQ	FB	80	27920
IBM.JADQG1J.F1	PDS	FB	80	27920
IBM.JADQG1J.F2	PDSE	U	0	6144
IBM.JADQG1J.F3	PDS	FB	80	27920
IBM.JADQG1J.F4	PDS	FB	80	27920
IBM.JADQG1J.F5	PDS	FB	80	27920
IBM.JADQG1J.F6	PDS	FB	80	27920
IBM.JADQG1J.F7	PDS	VB	255	27998
IBM.JADQG1J.F8	PDS	VB	8196	27998

2.2 Program Publications

The following sections identify the basic publications for Fault Analyzer.

Figure 3 identifies the basic unlicensed publications for Fault Analyzer.

<i>Figure 3. Basic Material: Unlicensed Publications</i>	
Publication Title	Direct Link
<i>IBM Fault Analyzer for z/OS License Information.</i>	See note ¹
<i>IBM Fault Analyzer for z/OS User's Guide and Reference</i>	See note ²
Note:	
<ol style="list-style-type: none"> 1. This publications can be obtained from the license information documentation website, https://www.ibm.com/software/sla/slabd.nsf . 2. This publications can be obtained from the Fault Analyzer product documentation website, https://help.blueproddoc.com/faultanalyzer/welcome/index.html . 	

Note: These basic unlicensed publications can be found at **IBM Products documentation** <https://www.ibm.com/docs/en/products> and by direct link listed in the table.

Note: Requisite information can be obtained by creating a report for Fault Analyzer on <https://www.ibm.com/software/reports/compatibility/clarity> .

2.3 Program Source Materials

No program source materials or viewable program listings are provided for Fault Analyzer.

2.4 Publications Useful During Installation

You might want to use the publications listed in Figure 4 during the installation of Fault Analyzer, which can be found at **IBM Products documentation**, <https://www.ibm.com/docs/en/products> .

<i>Figure 4. Publications Useful During Installation</i>
Publication
<i>IBM SMP/E for z/OS User's Guide</i>
<i>IBM SMP/E for z/OS Commands</i>
<i>IBM SMP/E for z/OS Reference</i>
<i>IBM SMP/E for z/OS Messages, Codes, and Diagnosis</i>

3.0 Program Support

This section describes the IBM support available for Fault Analyzer.

3.1 Program Services

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

3.2 Preventive Service Planning

Before you install Fault Analyzer, make sure that you review the PSP bucket information for IBM Z products document <https://www.ibm.com/support/pages/node/7127792> . It contains the latest information concerning the installation of IBM products, including the latest service recommendations and cross-product dependencies. This information was previously available in traditional PSP buckets, which are no longer published for IBM Z products.

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

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 5 identifies the component IDs (COMPID) for Fault Analyzer.

<i>Figure 5. Component IDs</i>			
F MID	COMPID	Component Name	Release
HADQG10	5755AB200	Fault Analyzer	G10
JADQG1J	5755AB200	Fault Analyzer JPN	G1J

4.0 Program and Service Level Information

This section identifies the program and relevant service levels of Fault Analyzer. 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 Fault Analyzer have been incorporated into this release. They are listed by FMID.

- FMID HADQG10

PH52323
PH53394

PH55151
PH58207

PH57736
PH60313

- FMID JADQG1J

PH53397
PH58323

4.2 Service Level Information

No PTFs against this release of Fault Analyzer have been incorporated into the product package.

Frequently check

<https://www.ibm.com/support/pages/node/76527>

for the full list of PTFs available for this product.

Note: Applying a PTF can increase the modification level reported by Fault Analyzer, causing a mismatch between the ordered release (16.1.0) and the reported release (16.1.x).

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating Fault Analyzer. 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 Fault Analyzer.

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 6. Driving System Software Requirements

Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in the shipped product?
5650-ZOS	z/OS	02.05.00 or higher	N/A	No
Note: The minimum z/OS level is either what is listed in the table, or the currently minimum supported OS level, whichever is the most recent.				

Note: SMP/E is a requirement for Installation and is an element of z/OS.

Note: Installation might require migration to new z/OS releases to be service supported. See <https://www.ibm.com/support/lifecycle/>

5.2 Target System Requirements

This section describes the environment of the target system required to install and use Fault Analyzer.

Fault Analyzer installs in the z/OS (Z038) SREL.

5.2.1 Machine Requirements

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

5.2.2 Programming Requirements

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

Mandatory installation requisites identify products that are required on the system for the successful installation of this product.

Figure 7. Target System Mandatory Installation Requisites

Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in the shipped product?
5650-ZOS	z/OS	02.05.00	N/A	No
Note: The minimum z/OS level is either what is listed in the table, or the currently minimum supported OS level, whichever is the most recent.				

Note: Installation might require migration to new releases to obtain support. See <https://www.ibm.com/support/lifecycle/>

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.

Fault Analyzer 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.

Fault Analyzer has no mandatory operational requisites.

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.

Figure 8 (Page 1 of 2). Target System Conditional Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level	Function
Any one of the following:		
5722-DV1	CICS Transaction Server for z/OS Value Unit Edition 6.1 through 6.2	CICS abend analysis
5655-YA1	CICS Transaction Server for z/OS 6.1 through 6.2	CICS abend analysis
5722-DFJ	CICS Transaction Server for z/OS Value Unit Edition 5.4 through 5.6	CICS abend analysis
5655-Y04	CICS Transaction Server for z/OS 5.4 through 5.6	CICS abend analysis
Any one of the following:		
5698-DBV	DB2 Value Unit Edition for z/OS 13.1	DB2 abend analysis

Figure 8 (Page 2 of 2). Target System Conditional Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level	Function
5698-DB2	DB2 for z/OS 13.1	DB2 abend analysis
5697-P43	DB2 Value Unit Edition for z/OS 12.1	DB2 abend analysis
5650-DB2	DB2 for z/OS 12.1	DB2 abend analysis
Any one of the following:		
5655-DS5	IMS Database Value Unit Edition 15.2 through 15.5	IMS abend analysis
5635-A06	IMS 15.2 through 15.5	IMS abend analysis

Note: Installation might require migration to new releases to obtain support. See <https://www.ibm.com/support/lifecycle/>

Figure 9 lists old releases of conditional operational requisite products that are no longer in service.

IBM will undertake to fix any problem with Fault Analyzer that you might encounter when running Fault Analyzer with these unsupported levels. However, IBM must be able to reproduce the problem using a supported level of the same product.

If the problem can be reproduced and fixed, the fix for Fault Analyzer will be developed and tested using the supported levels of the product. If a fix is made available, it is likely to work on the unsupported product level. However, IBM cannot guarantee that the fix will work in this case.

Figure 9 (Page 1 of 2). Out-of-support Conditional Operational Requisites

Program Number	Product Name and VRM/Service Level	Function
CICS TS		
5722-DFJ	CICS TS for z/OS Value Unit Edition, 5.1 through 5.4	CICS abend analysis
5655-Y04	CICS TS for z/OS 5.1 through 5.4	CICS abend analysis
Db2		
5697-P43	Db2 for z/OS Value Unit Edition 11.1	Db2 abend analysis
5615-DB2	Db2 for z/OS 11.1	Db2 abend analysis
5697-P31	Db2 for z/OS Value Unit Edition 10.1	Db2 abend analysis
5605-DB2	Db2 for z/OS 10.1	Db2 abend analysis
IMS		
5655-DS5	IMS Database Value Unit Edition 15.1	IMS abend analysis
5635-A06	IMS 15.1	IMS abend analysis

Figure 9 (Page 2 of 2). Out-of-support Conditional Operational Requisites

Program Number	Product Name and VRM/Service Level	Function
5655-DSE	IMS Database Value Unit Edition 14.1	IMS abend analysis
5635-A05	IMS 14.1	IMS abend analysis
5655-DSM	IMS Database Value Unit Edition 13.1	IMS abend analysis
5635-A04	IMS 13.1	IMS abend analysis

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.

Fault Analyzer 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.

Fault Analyzer has no negative requisites.

5.2.3 DASD Storage Requirements

Fault Analyzer libraries can reside on all supported DASD types.

Figure 10 and Figure 11 list the total space that is required for each type of library.

Figure 10. Total DASD Space Required by Fault Analyzer

Library Type	Total Space Required in 3390 Trks	Description
Target	5620 Tracks	
Distribution	5620 Tracks	

Figure 11. Total DASD Space Required by Fault Analyzer (Japanese Feature)

Library Type	Total Space Required in 3390 Trks
Target	160 Tracks
Distribution	160 Tracks

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 6.1.6, "Allocate SMP/E Target and Distribution Libraries" on page 21.

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 SIDIAUTH **must** be PDSE, but all others may 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:
 - The data set SIDIALPA **must** be in the LPA but none of the others are required to be.
 - The data set SIDIAUTH **must** be in the LNKLST but none of the others are required to be.
 - The data set SIDIAUTH **must** be APF authorized but none of the others are required to be.
 - The data set SIDIAUTH **must** be a PDSE as it contains Program Objects (DLLs).

- Fault Analyzer 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 Fault Analyzer. The storage requirements of Fault Analyzer must be added to the storage required by other programs that have data in the same library.

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

Figure 12. Storage Requirements for Fault Analyzer Target Libraries

Library DDNAME	Member Type	Target Volume	T Y P E	O R G	R E C O R D S	L R E C O R D S	No. of 3390 Trks	No. of DIR Blks
SIDIALPA	LMOD	ANY	U	PDS	U	0	5	5
SIDIAUTH	LMOD	ANY	U	PDSE	U	0	2800	N/A
SIDIDOC1	Data	ANY	U	PDS	VB	255	120	10
SIDIDOC2	Data	ANY	U	PDS	VB	8196	2500	10
SIDIEEXEC	EXEC	ANY	U	PDS	FB	80	10	10
SIDIMAPS	Data	ANY	U	PDS	VB	1024	30	5
SIDIMLIB	MSG	ANY	U	PDS	FB	80	5	5
SIDIPLIB	PNL	ANY	U	PDS	FB	80	70	50
SIDISAM1	SAMP	ANY	U	PDS	FB	80	70	10
SIDISLIB	SKEL	ANY	U	PDS	FB	80	5	5
SIDITLIB	Table	ANY	U	PDS	FB	80	5	5

Figure 13 (Page 1 of 2). Storage Requirements for Fault Analyzer Target Libraries (Japanese Feature)

Library DDNAME	Member Type	Target Volume	T Y P E	O R G	R E C O R D S	L R E C O R D S	No. of 3390 Trks	No. of DIR Blks
SIDIDJPN	Data	ANY	U	PDS	VB	255	70	5
SIDIMJPN	MSG	ANY	U	PDS	FB	80	5	5
SIDIPJPN	PNL	ANY	U	PDS	FB	80	70	50
SIDISJPN	SKEL	ANY	U	PDS	FB	80	5	5

Figure 13 (Page 2 of 2). Storage Requirements for Fault Analyzer Target Libraries (Japanese Feature)

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
SIDITJPN	Table	ANY	U	PDS	FB	80	5	5
SIDIXJPN	SAMP	ANY	U	PDS	FB	80	5	5

Figure 14. Storage Requirements for Fault Analyzer 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
AIDIALPA	U	PDS	U	0	5	5
AIDIAUTH	U	PDSE	U	0	2800	N/A
AIDIDOC1	U	PDS	VB	255	120	10
AIDIDOC2	U	PDS	VB	8196	2500	5
AIDIEEXEC	U	PDS	FB	80	10	10
AIDIMAPS	U	PDS	VB	1024	30	5
AIDIMLIB	U	PDS	FB	80	5	5
AIDIPLIB	U	PDS	FB	80	70	50
AIDISAM1	U	PDS	FB	80	70	10
AIDISLIB	U	PDS	FB	80	5	5
AIDITLIB	U	PDS	FB	80	5	5

Figure 15 (Page 1 of 2). Storage Requirements for Fault Analyzer Distribution Libraries (Japanese Feature)

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
AIDIDJPN	U	PDS	VB	255	70	5
AIDIMJPN	U	PDS	FB	80	5	5
AIDIPJPN	U	PDS	FB	80	70	50
AIDISJPN	U	PDS	FB	80	5	5
AIDITJPN	U	PDS	FB	80	5	5

Figure 15 (Page 2 of 2). Storage Requirements for Fault Analyzer Distribution Libraries (Japanese Feature)

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
AIDIXJPN	U	PDS	FB	80	5	5

5.3 FMIDs Deleted

Installing Fault Analyzer 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 Fault Analyzer 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

5.4.1 PDSE Considerations

Fault Analyzer uses the "partitioned data set extended" or PDSE format for the SIDIAUTH 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 these PDSE data sets 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 SIDIAUTH data set, a separate copy must be created for each z/OS system.

5.4.2 Recommended CICS LE run-time option

It is recommended that you use the LE run-time option `TERMTHDACT(TRACE,CICSDDS)` which will permit dump output for a CICS transaction to be directed to the CICS dump data set instead of the CESE transient data queue. This will help to reduce the number of trace table entries that are written following an abend, and therewith the risk of causing the trace table to wrap with subsequent loss of relevant diagnostic information.

5.4.3 PDSE-managed fault history files

Although you can use PDS-managed rather than PDSE-managed fault history files, it is recommended that PDSE data sets be used. This is because of their automatic space management and their superior directory integrity for shared usage.

5.4.4 Application Delivery Foundation for z/OS Common Components

IBM Application Delivery Foundation for z/OS Common Components (FMID HVWR1A0) is required to be able to use Fault Analyzer.

6.0 Installation Instructions

This chapter describes the installation method and the step-by-step procedures to install and to activate the functions of Fault Analyzer.

Please note the following points:

- If you want to install Fault Analyzer into its own SMP/E environment, consult the SMP/E manuals for instructions on creating and initializing the SMP/CSI 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 Fault Analyzer

6.1.1 SMP/E Considerations for Installing Fault Analyzer

Use the SMP/E RECEIVE, APPLY, and ACCEPT commands to install this release of Fault Analyzer.

6.1.2 SMP/E Options Subentry Values

The recommended values for certain SMP/E CSI subentries are shown in Figure 16. Using values lower than the recommended values can result in failures in the installation. DSSPACE is a subentry in the GLOBAL options entry. PEMAX is a subentry of the GENERAL entry in the GLOBAL options entry. See the SMP/E manuals for instructions on updating the global zone.

Figure 16. SMP/E Options Subentry Values

Subentry	Value	Comment
DSSPACE	(900,300,500)	3390 DASD tracks
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.

6.1.3 Sample Jobs

The following sample installation jobs are provided as part of the product to help you install Fault Analyzer:

Figure 17. Sample Installation Jobs

Job Name	Job Type	Description	SMPTLIB Data Set
IDIALSMP	SMP/E	Sample job to define an SMP/E environment (Optional)	IBM.HADQG10.F1
IDIRECEV	RECEIVE	Sample RECEIVE job	IBM.HADQG10.F1
IDIALLOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HADQG10.F1
IDIDDDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.HADQG10.F1
IDIAPPLY	APPLY	Sample APPLY job	IBM.HADQG10.F1
IDIACCEP	ACCEPT	Sample ACCEPT job	IBM.HADQG10.F1

Figure 18. Sample Installation Jobs for Fault Analyzer (Japanese Feature)

Job Name	Job Type	Description	SMPTLIB Data Set
IDIRECEV	RECEIVE	Sample RECEIVE job	IBM.JADQG1J.F1
IDIALLOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.JADQG1J.F1
IDIDDDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.JADQG1J.F1
IDIAPPLY	APPLY	Sample APPLY job	IBM.JADQG1J.F1
IDIACCEP	ACCEPT	Sample ACCEPT job	IBM.JADQG1J.F1

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.5, “Perform SMP/E RECEIVE” on page 20) then copy the jobs from the SMPTLIB data sets to a work data set for editing and submission. See Figure 17 on page 18 to find the appropriate data set.

You can also copy the sample installation jobs from the product files by submitting the following job. 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=*
//IN DD DSN=IBM.HADQG10.F1,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=IN,OUTDD=OUT
SELECT MEMBER=(IDIALSMP, IDIRECEV, IDIALLOC)
SELECT MEMBER=(IDIDDDEF, IDIAPPLY, IDIACCEP)
/*
```

To copy the sample jobs for the Fault Analyzer Japanese component, use this JCL.

```
//STEP1 EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//IN DD DSN=IBM.JADQG1J.F1,UNIT=SYSALLDA,DISP=SHR,
// VOL=SER=filevol
//OUT DD DSNAME=jcl-library-name,
// DISP=(NEW,CATLG,DELETE),
// VOL=SER=dasdvol,UNIT=SYSALLDA,
// SPACE=(TRK,(20,10,5))
//SYSUT3 DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN DD *
COPY INDD=IN,OUTDD=OUT
/*
```

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

IN:

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. Uncomment the statement if a volume serial must be provided.

6.1.4 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 IDIALSMP to allocate the SMP/E data set for Fault Analyzer. 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.

6.1.5 Perform SMP/E RECEIVE

If you have obtained Fault Analyzer as part of a CBPDO, use the RCVPDO job in the CBPDO RIMLIB data set to receive the Fault Analyzer 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 IDIRECEV to perform the SMP/E RECEIVE for Fault Analyzer. Consult the instructions in the sample job for more information.

If you want to receive the Fault Analyzer Japanese feature, you will also need to edit and submit the IDIRECEV job in the Japanese sample library. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: You will receive a return code of 0 if these jobs run correctly.

6.1.6 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job IDIALLOC to allocate the SMP/E target and distribution libraries for Fault Analyzer. Consult the instructions in the sample job for more information.

If you have received the Fault Analyzer Japanese feature, you will also need to edit and submit the IDIALLOC job in the Japanese sample library. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: You will receive a return code of 0 if these jobs run correctly.

6.1.7 Create DDDEF Entries

Edit and submit sample job IDIDDEF to create DDDEF entries for the SMP/E target and distribution libraries for Fault Analyzer. Consult the instructions in the sample job for more information.

If you have received the Fault Analyzer Japanese feature, you will also need to edit and submit the IDIDDEF job in the Japanese sample library. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: You will receive a return code of 0 if these jobs run correctly.

6.1.8 Perform SMP/E APPLY

1. Ensure that you have the latest HOLDDATA; then edit and submit sample job IDIAPPLY to perform an SMP/E APPLY CHECK for Fault Analyzer. Consult the instructions in the sample job for more information.

If you have received the Fault Analyzer Japanese feature, you will also need to edit and submit the IDIAPPLY job in the Japanese sample library. Consult the instructions in the sample job for more information.

The latest HOLDDATA is available through several different portals, including <https://public.dhe.ibm.com/s390/assigns/> or <https://www.ibm.com/support/pages/enhanced-holddata-zos> for usage instructions. 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-REQUIRESERVICE)
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-REQUIRESERVICE)
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-REQUIRESERVICE 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 these jobs run correctly.

Expected Return Codes and Messages from APPLY: You will receive a return code of 0 if these jobs run correctly.

6.1.9 Post-Apply Tasks

Refer to the *IBM Fault Analyzer for z/OS User's Guide and Reference*, "Fault Analyzer Installation and Administration" section, for information about these tasks. These tasks include the installation of the exits that invoke Fault Analyzer, and unless they are performed, the IVPs will not work.

6.1.10 Verify the Installation of Fault Analyzer

The verification process is part of the Post-Apply Tasks above. Refer to the *IBM Fault Analyzer for z/OS User's Guide and Reference*, "Verifying the customization of Fault Analyzer" section, for information about the IVP's.

6.1.11 Perform SMP/E ACCEPT

Edit and submit sample job IDIACCEP to perform an SMP/E ACCEPT CHECK for Fault Analyzer. Consult the instructions in the sample job for more information.

If you have received the Fault Analyzer Japanese feature, you will also need to edit and submit the IDIACCEP job in the Japanese sample library. 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).

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 these jobs run correctly.

Expected Return Codes and Messages from ACCEPT: You will receive a return code of 0 if these jobs run 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 Fault Analyzer, 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.

6.1.13 Cleaning Up Obsolete Data Sets, Paths, and DDDEFs

The following data sets, which were allocated and used by previous releases of this product, are no longer used in this release. You can delete these obsolete data sets after you delete the previous release from your system.

- AIDIAUT2: obsolete as of Fault Analyzer 15.1 (distribution library)
- AIDILPA1: obsolete as of Fault Analyzer 15.1 (distribution library)
- AIDIMOD1: obsolete as of Fault Analyzer 15.1 (distribution library)
- SIDIAUT2: obsolete as of Fault Analyzer 15.1 (target library)
- SIDILPA1: obsolete as of Fault Analyzer 15.1 (target library)
- SIDIMOD1: obsolete as of Fault Analyzer 15.1 (target library)

The following DDDEF entries, which were created and used by previous releases of this product, are no longer used in this release. You can delete these obsolete DDDEF entries after you delete the previous release from your system.

- AIDIAUT2: obsolete as of Fault Analyzer 15.1 (distribution and target zone)
- AIDILPA1: obsolete as of Fault Analyzer 15.1 (distribution and target zone)
- AIDIMOD1: obsolete as of Fault Analyzer 15.1 (distribution and target zone)
- SIDIAUT2: obsolete as of Fault Analyzer 15.1 (target zone)
- SIDILPA1: obsolete as of Fault Analyzer 15.1 (target zone)
- SIDIMOD1: obsolete as of Fault Analyzer 15.1 (target zone)

6.2 Activating Fault Analyzer

6.2.1 Product Customization

Section *Fault Analyzer installation and administration* in the publication *IBM Fault Analyzer for z/OS User's Guide and Reference* contains the necessary information to customize and use Fault Analyzer.

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 refer to the instructions in the **Service Recommendation Summary and Service Recommendations** and **Cross Product Dependencies** sections of the **PSP bucket information for IBM Z products** at <https://www.ibm.com/support/pages/node/7127792> , to ensure you have all required service.

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Reader's Comments

Program Directory for IBM Fault Analyzer for z/OS, October 2024

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