



**Program Directory for
IBM Application Delivery Foundation
for z Systems**

V01.02.00

Program Number 5697-CDT

for Use with
z/OS

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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 Application Delivery Foundation for z Systems. This publication refers to IBM Application Delivery Foundation for z Systems as Application Delivery Foundation, IBM Rational Developer for z Systems as Developer for z Systems, IBM Fault Analyzer for z/OS as Fault Analyzer, IBM File Manager for z/OS as File Manager, IBM Problem Determination Tools Common Component as PDTCC, IBM Debug Tool for z/OS as Debug Tool, IBM Application Performance Analyzer for z/OS as Application Performance Analyzer, and IBM Tivoli Asset Discovery for z/OS as TADz.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 5 identifies the basic program materials and documentation for Application Delivery Foundation.
- 3.0, “Program Support” on page 8 describes the IBM support available for Application Delivery Foundation.
- 4.0, “Program and Service Level Information” on page 10 lists the APARs (program level) and PTFs (service level) that have been incorporated into Application Delivery Foundation.
- 5.0, “Installation Requirements and Considerations” on page 11 identifies the resources and considerations that are required for installing and using Application Delivery Foundation.
- 6.0, “Installation Instructions” on page 19 provides detailed installation instructions for Application Delivery Foundation. It also describes the procedures for activating the functions of Application Delivery Foundation, or refers to appropriate publications.

Before installing Application Delivery Foundation, 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 8 tells you how to find any updates to the information and procedures in this program directory.

Application Delivery Foundation 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 Application Delivery Foundation are included on the CBPDO tape.

Do not use this program directory if you install Application Delivery Foundation 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 Application Delivery Foundation Description

With IBM Application Delivery Foundation for z Systems, V1.2, you can obtain the core set of tools to help you accelerate the delivery of z/OS applications. Whether you are developing a new z/OS application, enhancing problem analysis of existing z/OS applications, or performing that analysis, it provides comprehensive tools to accomplish your tasks efficiently while incorporating the latest Agile development practices.

In addition to the key capabilities of products included in Application Delivery Foundation for z Systems, V1.2, additional capabilities are introduced as part of this release:

- **Application failure analytics:** Fault Analyzer for z/OS is enhanced to provide a flexible trending analysis feature to investigate patterns of failures happening in your z/OS applications. This feature enables you to quickly find answers for questions like most frequently failing programs, most frequently occurring abends, jobs with the most frequent failures, and much more. Based on the insights provided by this tool, you can plan for quality improvement projects effectively.
- **Remote system support:** File Manager for z/OS is enhanced to provide access to remote systems while working with data. With this capability, users are able to edit and copy data to/from another system. It is also possible to specify a local resource and a remote resource while using the capability. For example, you can specify a local file while using a copybook/template in another system. The full power of File Manager editor and copy function are available. For example, a user can specify data scrambling options to protect sensitive information while performing the copy operation.
- **Problem analysis of Java workload:** Fault Analyzer for z/OS is enhanced to provide additional problem analysis capability for Java workload running on z/OS. This includes support for batch, WebSphere LibertyProfile, CICS and IMS. Problems occurring in Java Virtual Machines running in 64-bit mode is now possible, take advantage of Snap(...) API to explicitly request analysis of currently running Java applications, and methods for capturing of additional exceptions and errors are provided.
- **Exploitation of the new Enterprise COBOL compiler:** Application Performance Analyzer for z/OS, Debug Tool for z/OS, Fault Analyzer for z/OS and File Manager for z/OS are enhanced to support the new Enterprise COBOL compiler.

The following products are included in Application Delivery Foundation for z Systems:

Application Performance Analyzer V13.1

Application Performance Analyzer for z/OS V13.1 measures and reports how applications use available resources. This easy-to-use tool helps you identify system constraints and improve application performance.

Debug Tool for z/OS V13.1

Debug Tool for z/OS, V13.1 is the IBM interactive, source-level debugging tool for compiled applications. It is a program testing and analysis aid that helps you examine, monitor, and control the execution of application programs written in not only COBOL, but also PL/I, C, C++, or Assembler on a z/OS system. It

provides debugging capability for applications running in a variety of environments, such as batch, TSO, CICS, IMS, DB2, DB2 Stored Procedures, and UNIX System Services.

Fault Analyzer for z/OS V13.1

Fault Analyzer for z/OS V13.1 assists in analyzing and fixing application and system failures. It offers information required to help determine the cause of failure and provides assistance in how to resolve the problem.

File Manager for z/OS V13.1

File Manager for z/OS V13.1 offers comprehensive, user-friendly tools for working with z/OS data sets, or DB2, or IMS data. You can also access CICS resources under control of a CICS transaction. Create, browse, copy, edit, print, and format or reformat data files in the most popular z/OS file formats. File Manager can manipulate data using COBOL and PL/I record layouts interactively or in batch mode.

Rational Developer for z Systems V9.5.1

Rational Developer for z Systems V9.5.1 is an Integrated Development Environment (IDE) designed to help raise developer productivity, attract and retain talent, and reduce initial training costs as many new hires may already be familiar with the Eclipse workbench environment on which Rational Developer for z Systems is based. When skillfully used for the tasks of creating and maintaining applications, Rational Developer for z Systems helps enable the drive to DevOps development by enhancing speed, agility, and quality outcomes. Rational Developer for z Systems helps position businesses to design and construct traditional mainframe applications, web applications, and integrated service-oriented architecture (SOA) based composites quickly and efficiently. It helps companies enhance existing applications and create new ones in a more productive manner, with a focus not only on COBOL, but also support for PL/I, C, C++, High-Level Assembler, JCL, REXX, and Java programming. With the recently added zUnit test capability to test COBOL applications at a module level, you can now perform unit testing to support the DevOps principal of continuous integration builds.

1.2 Application Delivery Foundation FMIDs

Application Delivery Foundation consists of the following FMIDs:

- Developer for z Systems:

- HHOP951
 - HAKG951
 - HALG300

- Fault Analyzer:

- HADQD10
 - JADQD1J
 - JADQD1K

- File Manager:

HADLD10
JADLD11
JADLD12
JADLD13
JADLD14
JADLD15
JADLD16
JADLD17
JADLD1A
JADLD1B
JADLD1C
JADLD1D

- PDTCC:

HVWR170
JVWR171
JVWR172

- Debug Tool:

HADRD10
JADRD1J
JADRD1K

- Application Performance Analyzer:

HAD0D10
JAD0D1J
JAD0D1K

- Application Delivery Foundation TADz Identifier:

HCDT12Z

2.0 Program Materials

An IBM program is identified by a program number. The program number for Application Delivery Foundation is 5697-CDT.

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 Application Delivery Foundation. 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 Application Delivery Foundation in the *CBPDO Memo To Users Extension*.

Figure 1 describes the program file content for Application Delivery Foundation. 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.

TADz Identifier

<i>Figure 1. Program File Content for HCDT12Z - Application Delivery Foundation</i>				
Name	O R G	R E C F M	L R E C L	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.HCDT12Z.F1	PDS	FB	80	8800
IBM.HCDT12Z.F2	PDS	U	0	6144

Additionally to view the Program File Content of the other products that constitute Application Delivery Foundation, refer to the following Program Directories that are supplied with the product.

- Publication numbers GI11-8298 and GI13-2864 for Developer for z Systems
- Publication number GI10-8967 for Fault Analyzer
- Publication number GI10-8968 for File Manager
- Publication number GI10-8969 for PDTCC
- Publication number GI13-3004 for Debug Tool
- Publication number GI13-3002 for Application Performance Analyzer

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for Application Delivery Foundation.

2.3 Program Publications

The following sections identify the basic publications for Application Delivery Foundation.

Figure 2 identifies the basic unlicensed publications for Application Delivery Foundation. Those that are in softcopy format publications can be obtained from the IBM Publications Center website at: <http://www.ibm.com/shop/publications/order/>

<i>Figure 2. Basic Material: Unlicensed</i>	
Publication Title	Form Number
IBM Application Delivery Foundation for z Systems Agreements and License Information	LC27-8587
IBM Rational Developer for z Systems Program Directory	GI11-8298 and GI13-2864
IBM Fault Analyzer for z/OS Program Directory	GI10-8967
IBM File Manager for z/OS Program Directory	GI10-8968
IBM Problem Determination Tools Common Component Program Directory	GI10-8969
IBM Debug Tool for z/OS Program Directory	GI13-3004
IBM Application Performance Analyzer for z/OS Program Directory	GI13-3002

To view the unlicensed publications content of the products that constitute Application Delivery Foundation, refer to the following Program Directories that are supplied with the product.

- Publication numbers GI11-8298 and GI13-2864 for Developer for z Systems
- Publication number GI10-8967 for Fault Analyzer
- Publication number GI10-8968 for File Manager
- Publication number GI10-8969 for PDTCC
- Publication number GI13-3004 for Debug Tool
- Publication number GI13-3002 for Application Performance Analyzer

2.3.1 Optional Program Publications

No optional publications are provided for Application Delivery Foundation.

2.4 Program Source Materials

No program source materials or viewable program listings are provided for Application Delivery Foundation.

2.5 Publications Useful During Installation

You might want to use the publications listed in Figure 3 during the installation of Application Delivery Foundation.

<i>Figure 3. Publications Useful During Installation</i>		
Publication Title	Form Number	Media Format
<i>IBM SMP/E for z/OS Messages, Codes, and Diagnosis</i>	GA22-7770	http://www.ibm.com/shop/publications/order/
<i>IBM SMP/E for z/OS Commands</i>	SA22-7771	http://www.ibm.com/shop/publications/order/
<i>IBM SMP/E for z/OS Reference</i>	SA22-7772	http://www.ibm.com/shop/publications/order/
<i>IBM SMP/E for z/OS User's Guide</i>	SA22-7773	http://www.ibm.com/shop/publications/order/

3.0 Program Support

This section describes the IBM support available for Application Delivery Foundation.

3.1 Program Services

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

3.2 Preventive Service Planning

To view the Preventive Service Planning (PSP) for the products that constitute Application Delivery Foundation, refer to the following Program Directories that are supplied with the product.

- Publication numbers GI11-8298 and GI13-2864 for Developer for z Systems
- Publication number GI10-8967 for Fault Analyzer
- Publication number GI10-8968 for File Manager
- Publication number GI10-8969 for PDTCC
- Publication number GI13-3004 for Debug Tool
- Publication number GI13-3002 for Application Performance Analyzer

Additionally before you install Application Delivery Foundation TADz Identifier, 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 6.1.9, “Perform SMP/E APPLY” on page 22 for a sample APPLY command.

If you obtained Application Delivery Foundation TADZ Identifier as part of a CBPDO, HOLDDATA is included.

If the CBPDO for Application Delivery Foundation 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 Application Delivery Foundation TADz Identifier are included in Figure 4 on page 9

<i>Figure 4. PSP Upgrade and Subset ID</i>		
UPGRADE	SUBSET	Description
5697CDT	HCDT12Z	Application Delivery Foundation TADz ID

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.

To identify the component IDs (COMPID) for the products that constitute Application Delivery Foundation, refer to the following Program Directories that are supplied with the product.

- Publication numbers GI11-8298 and GI13-2864 for Developer for z Systems
- Publication number GI10-8967 for Fault Analyzer
- Publication number GI10-8968 for File Manager
- Publication number GI10-8969 for PDTCC
- Publication number GI13-3004 for Debug Tool
- Publication number GI13-3002 for Application Performance Analyzer

Additionally Figure 5 identifies the component IDs (COMPID) for Application Delivery Foundation TADz Identifier.

<i>Figure 5. Component IDs</i>			
FMID	COMPID	Component Name	RETAIN Release
HCDT12Z	5697CDT00	Application Delivery Foundation TADz ID	12Z

4.0 Program and Service Level Information

This section identifies the program and relevant service levels of Application Delivery Foundation. 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

To view the list of APAR fixes against the previous releases of the products that constitute Application Delivery Foundation, refer to the following Program Directories that are supplied with the product.

- Publication numbers GI11-8298 and GI13-2864 for Developer for z Systems
- Publication number GI10-8967 for Fault Analyzer
- Publication number GI10-8968 for File Manager
- Publication number GI10-8969 for PDTCC
- Publication number GI13-3004 for Debug Tool
- Publication number GI13-3002 for Application Performance Analyzer

4.2 Service Level Information

To view the Service Level Information of the products that constitute Application Delivery Foundation, refer to the following Program Directories that are supplied with the product.

- Publication numbers GI11-8298 and GI13-2864 for Developer for z Systems
- Publication number GI10-8967 for Fault Analyzer
- Publication number GI10-8968 for File Manager
- Publication number GI10-8969 for PDTCC
- Publication number GI13-3004 for Debug Tool
- Publication number GI13-3002 for Application Performance Analyzer

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating Application Delivery Foundation. 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 Application Delivery Foundation.

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?
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 Application Delivery Foundation.

Application Delivery Foundation 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.

<i>Figure 7. Target System Mandatory Installation Requisites</i>				
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	01.13.00	N/A	No
5650-ZOS	z/OS	02.01.00 or higher	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.

Application Delivery Foundation TADz ID (FMID HCDDT12Z) has no conditional installation requisites.

To view the Conditional Installation Requisites of the additional products that constitute Application Delivery Foundation, refer to the following Program Directories that are supplied with the product.

- Publication numbers GI11-8298 and GI13-2864 for Developer for z Systems
- Publication number GI10-8967 for Fault Analyzer
- Publication number GI10-8968 for File Manager
- Publication number GI10-8969 for PDTCC
- Publication number GI13-3004 for Debug Tool
- Publication number GI13-3002 for Application Performance Analyzer

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 8. Target System Mandatory Operational Requisites</i>	
Program Number	Product Name and Minimum VRM/Service Level
Any one of the following:	
5694-A01	z/OS V01.13.00
5650-ZOS	z/OS V02.01.00 or higher

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.

Application Delivery Foundation TADz ID (FMID HCDDT12Z) has no conditional operational requisites.

To view the Conditional Operational Requisites of the additional products that constitute Application Delivery Foundation, refer to the following Program Directories that are supplied with the product.

- Publication numbers GI11-8298 and GI13-2864 for Developer for z Systems
- Publication number GI10-8967 for Fault Analyzer
- Publication number GI10-8968 for File Manager
- Publication number GI10-8969 for PDTCC
- Publication number GI13-3004 for Debug Tool
- Publication number GI13-3002 for Application Performance Analyzer

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.

Application Delivery Foundation 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.

Application Delivery Foundation has no negative requisites.

5.2.3 DASD Storage Requirements

Application Delivery Foundation libraries can reside on all supported DASD types.

To review the individual DASD Storage Requirements of each of the products that constitute Application Delivery Foundation, refer to the following Program Directories that are supplied with the product.

- Publication numbers GI11-8298 and GI13-2864 for Developer for z Systems
- Publication number GI10-8967 for Fault Analyzer
- Publication number GI10-8968 for File Manager
- Publication number GI10-8969 for PDTCC
- Publication number GI13-3004 for Debug Tool
- Publication number GI13-3002 for Application Performance Analyzer

Additionally Figure 9 lists the total space that is required for each type of library for COBOL Suite TADz Identifier.

Figure 9. Total DASD Space Required by HCDDT12z - Application Delivery Foundation TADz Identifier

Library Type	Total Space Required in 3390 Trks	File System Description
Target	8	
Distribution	8	

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 6.1.7, “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 Application Delivery Foundation. The storage requirements of Application Delivery Foundation 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 10. Storage Requirements for HCDT12Z - Application Delivery Foundation TADz Identifier 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
SISMLOD5	PROGRAM	ANY	U	PDS	U	0	4	3
SISMIN5	SAMP	ANY	U	PDS	FB	80	4	3

Figure 11. Storage Requirements for HCDT12Z - Application Delivery Foundation TADz Identifier 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
AISMIN5	U	PDS	FB	80	4	3
AISMLOD5	U	PDS	U	0	4	3

5.3 FMIDs Deleted

Installing any of the products that constitute Application Delivery Foundation, may 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 Application Delivery Foundation 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 Subcapacity Reporting Tool Registration

Products purchased as part of the Application Delivery Foundation, are required to be registered to run under the Application Delivery Foundation program ID 5697-CDT.

Parmlib member IFAPRDxx needs to be updated to include a PRODUCT entry as follows:

```
PRODUCT OWNER('IBM CORP')
NAME('IBM APP DLIV FND')
ID(5697-CDT)
VERSION(*) RELEASE(*) MOD(*)
FEATURENAME(*)
STATE(ENABLED)
```

If you wish to register each product included in this suite individually then you must use the following feature names.

FEATURENAME('RDZ-RSED')	Developer for z Systems FMID HHOP951
FEATURENAME('RDZ-CC')	Developer for z Systems FMID HAKG951, code coverage component
FEATURENAME('RDZ-CR')	Developer for z Systems FMID HAKG951, code review component
FEATURENAME('FILE-MANAGER')	File Manager
FEATURENAME('FAULT-ANALYZER')	Fault Analyzer
FEATURENAME('DEBUG-TOOL')	Debug Tool
FEATURENAME('APA')	Application Performance Analyzer.

After you have updated IFAPRDxx, issue the SET PROD=xx operator command.

For further instructions on registering the individual products, follow the instructions below:

1. For Developer for z Systems:
 - PTFs UI35032 (FMID HHOP951) and UI35033, UI35034, UI35035, and UI35036 (FMID HAKG951) must be installed.
2. For Fault Analyzer:
 - APAR PI54261 must be installed.

- Refer to the section "Registering Fault Analyzer in the IFAPRDxx parmlib member" in the Fault Analyzer User's Guide and Reference.
3. For File Manager:
 - APAR PI55303 must be installed.
 - A sample registration parmlib entry FMNWIFAC (included in the PTF for APAR PI55303), is provided in your hlq.SFMNSAM1 data set.
 4. For PDTCC:
 - No further action is required.
 5. For Debug Tool:
 - APAR PI53722 must be installed.
 - A sample registration parmlib entry EQAWIFAA (included in the PTF for APAR PI53722), is provided in your hlq.SEQASAMP data set.
 6. For Application Performance Analyzer:
 - APAR PI54391 must be installed.

5.4.2 Special Considerations for the Individual Products

To view the individual Special Considerations of the products that constitute Application Delivery Foundation, refer to the following Program Directories that are supplied with the product.

- Publication numbers GI11-8298 and GI13-2864 for Developer for z Systems
- Publication number GI10-8967 for Fault Analyzer
- Publication number GI10-8968 for File Manager
- Publication number GI10-8969 for PDTCC
- Publication number GI13-3004 for Debug Tool
- Publication number GI13-3002 for Application Performance Analyzer

The load library SISML0D5 contains the Tivoli Asset Discovery for z/OS (TADZ) identification module for Application Delivery Foundation. For TADz to recognize that the products included in this suite are licensed as part of Application Delivery Foundation you must ensure that the identification module is available on any target system to which this suite is installed.

6.0 Installation Instructions

This chapter describes the installation method and the step-by-step procedures to install and to activate the functions of Application Delivery Foundation.

Please note the following points:

- If you want to install Application Delivery Foundation 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 Application Delivery Foundation

6.1.1 SMP/E Considerations for Installing Application Delivery Foundation

Use the SMP/E RECEIVE, APPLY, and ACCEPT commands to install this release of Application Delivery Foundation.

To view the individual SMP/E installation instructions of each of the products that constitute Application Delivery Foundation, refer to the following Program Directories that are supplied with the product.

- Publication numbers GI11-8298 and GI13-2864 for Developer for z Systems
- Publication number GI10-8967 for Fault Analyzer
- Publication number GI10-8968 for File Manager
- Publication number GI10-8969 for PDTCC
- Publication number GI13-3004 for Debug Tool
- Publication number GI13-3002 for Application Performance Analyzer

Additionally you should perform the following steps to install the Application Delivery Foundation TADz Identifier (FMID HCDT12Z).

6.1.2 SMP/E Options Subentry Values

The recommended values for certain SMP/E CSI subentries are shown in Figure 12. 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.

<i>Figure 12. SMP/E Options Subentry Values</i>		
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 Sample Jobs

The following sample installation jobs are provided as part of the product to help you install Application Delivery Foundation:

<i>Figure 13. Sample Installation Jobs for HCDDT12Z - Application Delivery Foundation TADz ID</i>			
Job Name	Job Type	Description	RELFILE
ISMJAA5	SMP/E	Sample job to allocate and initialize a new SMP/E CSI data set (Optional)	IBM.HCDDT12Z.F1
ISMJAB5	SMP/E	Sample job to allocate SMP/E data sets (Optional)	IBM.HCDDT12Z.F1
ISMJRE5	RECEIVE	Sample RECEIVE job	IBM.HCDDT12Z.F1
ISMJAL5	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HCDDT12Z.F1
ISMJDD5	DDDEF	Sample job to define SMP/E DDDEFS	IBM.HCDDT12Z.F1
ISMJAP5	APPLY	Sample APPLY job	IBM.HCDDT12Z.F1
ISMJAC5	ACCEPT	Sample ACCEPT job	IBM.HCDDT12Z.F1

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.6, “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 13 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.HCDDT12Z.F1,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.HCDT12Z.F1,UNIT=tunit,
/* VOL=SER=CDT12Z,LABEL=(2,SL),
/* DISP=(OLD,KEEP)
/******
/* Make the //FILEIN DD statement below active for *
/* downloaded DASD files. *
/******
/**FILEIN DD DSN=IBM.HCDT12Z.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=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.HCDT12Z.F1 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.

6.1.4 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 ISMJAA5 to allocate the SMP/E data set for Application Delivery Foundation. 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 Initialize CSI zones (Optional)

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

Edit and submit sample job ISMJAB5 to initialize SMP/E zones for Application Delivery Foundation. 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 Perform SMP/E RECEIVE

If you have obtained Application Delivery Foundation as part of a CBPDO, use the RCPDO job in the CBPDO RIMLIB data set to receive the Application Delivery Foundation 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 ISMJRE5 to perform the SMP/E RECEIVE for Application Delivery Foundation. 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 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job ISMJAL5 to allocate the SMP/E target and distribution libraries for Application Delivery Foundation. 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 Create DDDEF Entries

Edit and submit sample job ISMJDD5 to create DDDEF entries for the SMP/E target and distribution libraries for Application Delivery Foundation. 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 Perform SMP/E APPLY

1. Ensure that you have the latest HOLDDATA; then edit and submit sample job ISMJAP5 to perform an SMP/E APPLY CHECK for Application Delivery Foundation. 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 the quicker, but requires subsequent review of the Exception SYSMOD report produced by the REPORT ERRSYSMODS command to investigate any unresolved HIPERs. If you have received the latest HOLDDATA, you can also choose to use the REPORT MISSINGFIX

command and specify Fix Category IBM.ProductInstall-RequiredService to investigate missing recommended service.

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

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

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

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

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

6.1.10 Perform SMP/E ACCEPT

Edit and submit sample job ISMJAC5 to perform an SMP/E ACCEPT CHECK for Application Delivery Foundation. 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.

6.1.11 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 Application Delivery Foundation, 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 Application Delivery Foundation

To activate the individual products that constitute Application Delivery Foundation, refer to their Program Directories which are supplied with the product, and follow the instructions in the corresponding section(s).

- Publication numbers GI11-8298 and GI13-2864 for Developer for z Systems
- Publication number GI10-8967 for Fault Analyzer
- Publication number GI10-8968 for File Manager
- Publication number GI10-8969 for PDTCC
- Publication number GI13-3004 for Debug Tool
- Publication number GI13-3002 for Application Performance Analyzer

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Reader's Comments

Program Directory for IBM Application Delivery Foundation for z Systems, March 2016

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