



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

V03.00.00

Program Number 5655-AC6

for Use with  
z/OS

Document Date: September 2016

GI13-4538-00

**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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# Contents

<b>1.0 Introduction</b>	1
1.1 Application Delivery Foundation Description	2
1.2 Application Delivery Foundation FMIDs	2
<b>2.0 Program Materials</b>	4
2.1 Basic Machine-Readable Material	4
2.2 Optional Machine-Readable Material	5
2.3 Program Publications	5
2.3.1 Optional Program Publications	6
2.4 Program Source Materials	6
2.5 Publications Useful During Installation	6
<b>3.0 Program Support</b>	7
3.1 Program Services	7
3.2 Preventive Service Planning	7
3.3 Statement of Support Procedures	8
<b>4.0 Program and Service Level Information</b>	9
4.1 Program Level Information	9
4.2 Service Level Information	9
<b>5.0 Installation Requirements and Considerations</b>	10
5.1 Driving System Requirements	10
5.1.1 Machine Requirements	10
5.1.2 Programming Requirements	10
5.2 Target System Requirements	11
5.2.1 Machine Requirements	11
5.2.2 Programming Requirements	11
5.2.2.1 Installation Requisites	11
5.2.2.2 Operational Requisites	12
5.2.2.3 Toleration/Coexistence Requisites	13
5.2.2.4 Incompatibility (Negative) Requisites	13
5.2.3 DASD Storage Requirements	14
5.3 FMIDs Deleted	16
5.4 Special Considerations	16
5.4.1 Subcapacity Reporting Tool Registration	16
5.4.2 Special Considerations for the Individual Products	17
<b>6.0 Installation Instructions</b>	19
6.1 Installing Application Delivery Foundation	19
6.1.1 SMP/E Considerations for Installing Application Delivery Foundation	19
6.1.2 SMP/E Options Subentry Values	20

6.1.3	Sample Jobs	20
6.1.4	Allocate SMP/E CSI (Optional)	22
6.1.5	Initialize CSI zones (Optional)	22
6.1.6	Perform SMP/E RECEIVE	22
6.1.7	Allocate SMP/E Target and Distribution Libraries	22
6.1.8	Create DDDEF Entries	22
6.1.9	Perform SMP/E APPLY	23
6.1.10	Perform SMP/E ACCEPT	24
6.1.11	Run REPORT CROSSZONE	25
6.2	Activating Application Delivery Foundation	25
<b>7.0</b>	<b>Notices</b>	<b>26</b>
7.1	Trademarks	26
	<b>Reader's Comments</b>	<b>27</b>

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## Figures

1.	Program File Content for HCDDT30Z - Application Delivery Foundation ID	4
2.	Basic Material: Unlicensed	5
3.	Publications Useful During Installation	6
4.	PSP Upgrade and Subset ID	8
5.	Component IDs	8
6.	Driving System Software Requirements	11
7.	Total DASD Space Required by HCDDT30Z - Application Delivery Foundation ID	14
8.	Storage Requirements for HCDDT30Z - Application Delivery Foundation ID Target Libraries	15
9.	Storage Requirements for HCDDT30Z - Application Delivery Foundation ID Distribution Libraries	16
10.	SMP/E Options Subentry Values	20
11.	Sample Installation Jobs for HCDDT30Z - Application Delivery Foundation ID	20

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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 Developer for z Systems Enterprise Edition as Developer for z Systems EE, IBM Developer for z Systems as Developer for z Systems, IBM Developer for z Systems Host Utilities as Developer for z Systems Host Utilities, IBM z/OS Debugger as z/OS Debugger, IBM COBOL and CICS Command Level Conversion Aid for OS/390 & MVS & VM as CCCA for OS/390 & MVS & VM, IBM COBOL and CICS Command Level Conversion Aid for OS/390 & MVS & VM Japanese National Language Feature as CCCA for OS/390 & MVS & VM Japanese NLF, IBM Explorer for z/OS as z/OS Explorer, 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, and IBM Application Performance Analyzer for z/OS as Application Performance Analyzer.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 4 identifies the basic program materials and documentation for Application Delivery Foundation.
- 3.0, “Program Support” on page 7 describes the IBM support available for Application Delivery Foundation.
- 4.0, “Program and Service Level Information” on page 9 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 10 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 7 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.

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## 1.1 Application Delivery Foundation Description

Application Delivery Foundation for z Systems V3.0 includes the following development tools:

- IBM Developer for z Systems Enterprise Edition V14.0
- IBM Explorer for z/OS V3.0.1
- IBM Fault Analyzer for z/OS V13.1 (existing product)
- IBM File Manager for z/OS V13.1 (existing product)
- IBM Application Performance Analyzer for z/OS V14.0

These products can be obtained as a solution bundle or individually:

- IBM Developer for z Systems Enterprise Edition V14.0 includes IBM Developer for z Systems V14.0 (formerly known as IBM Rational Developer for z Systems) combined with IBM z/OS Debugger V14.0 (formerly known as IBM Debug Tool for z/OS), both with enhancements. This product provides a comprehensive development and debugging solution for z/OS application developers.
- IBM Explorer for z/OS V3.0.1 is the strategic integration platform for IBM Eclipse-based offering for z/OS application developers and system programmers.
- IBM Fault Analyzer for z/OS V13.1 improves developer productivity and decreases deployment costs by helping to analyze and correct application failures quickly.
- IBM File Manager for z/OS V13.1 allows you to manipulate production, test, and development data in a variety of data stores, including DB2, IMS, CICS, MQ, data sets, and HFS files.
- IBM Application Performance Analyzer for z/OS V14.0 identifies z/OS application performance and response time problems, and assists in reducing resource consumption. The new version that enhances the core infrastructure of the product to support new workload on z/OS, as well as traditional workload.

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## 1.2 Application Delivery Foundation FMIDs

Application Delivery Foundation consists of the following FMIDs:

- Developer for z Systems EE:
  - Developer for z Systems  
HHOPE00
  - Developer for z Systems Host Utilities  
HAKGE00
  - z/OS Debugger  
HADRE00  
JADRE0J  
JADRE0K
  - CCCA for OS/390 & MVS & VM  
H09F210

J09F210

- z/OS Explorer:
  - HALG300
- Fault Analyzer:
  - HADQD10
  - JADQD1J
  - JADQD1K
- File Manager:
  - HADLD10
  - JADLD11
  - JADLD12
  - JADLD13
  - JADLD14
  - JADLD15
  - JADLD16
  - JADLD17
  - JADLD1A
  - JADLD1B
  - JADLD1C
  - JADLD1D
- PDTCC:
  - HVWR170
  - JVWR171
  - JVWR172
- Application Performance Analyzer:
  - HAD0E00
  - JAD0E0J
  - JAD0E0K
- Application Delivery Foundation Identifier:
  - HCDT30Z

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## 2.0 Program Materials

An IBM program is identified by a program number. The program number for Application Delivery Foundation is 5655-AC6.

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.

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### 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.

*Figure 1. Program File Content for HCDT30Z - Application Delivery Foundation ID*

<b>Name</b>	<b>O R G</b>	<b>R E C F M</b>	<b>L R E C L</b>	<b>BLK SIZE</b>
SMPMCS	SEQ	FB	80	6400
IBM.HCDT30Z.F1	PDS	FB	80	8800
IBM.HCDT30Z.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 number GI11-8298 for Developer for z Systems



- Publication number GI13-2864 for Developer for z Systems Host Utilities
- Publication number GI13-4540 for z/OS Debugger
- Publication number GI10-5080 for CCCA for OS/390 & MVS & VM
- Publication number GI10-6976 for CCCA for OS/390 & MVS & VM Japanese NLF
- Publication number GI13-4314 for z/OS Explorer
- Publication number GI10-8967 for Fault Analyzer
- Publication number GI10-8968 for File Manager
- Publication number GI10-8969 for PDTCC
- Publication number GI13-4303 for Application Performance Analyzer

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## 2.2 Optional Machine-Readable Material

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

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## 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>	
<b>Publication Title</b>	<b>Form Number</b>
IBM Application Delivery Foundation for z Systems Agreements and License Information	GI13-4539
IBM Developer for z Systems Program Directory	GI11-8298
IBM Developer for z Systems Host Utilities Program Directory	GI13-2864
IBM z/OS Debugger Program Directory	GI13-4540
IBM COBOL and CICS Command Level Conversion Aid for OS/390 & MVS & VM Program Directory	GI10-5080
IBM COBOL and CICS Command Level Conversion Aid for OS/390 & MVS & VM Japanese National Language Feature Program Directory	GI10-6976
IBM Explorer for z/OS Program Directory	GI13-4314
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 Application Performance Analyzer for z/OS Program Directory	GI13-4303

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 number GI11-8298 for Developer for z Systems
- Publication number GI13-2864 for Developer for z Systems Host Utilities
- Publication number GI13-4540 for z/OS Debugger
- Publication number GI10-5080 for CCCA for OS/390 & MVS & VM
- Publication number GI10-6976 for CCCA for OS/390 & MVS & VM Japanese NLF
- Publication number GI13-4314 for z/OS Explorer
- Publication number GI10-8967 for Fault Analyzer
- Publication number GI10-8968 for File Manager
- Publication number GI10-8969 for PDTCC
- Publication number GI13-4303 for Application Performance Analyzer

### 2.3.1 Optional Program Publications

No optional publications are provided for Application Delivery Foundation.

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## 2.4 Program Source Materials

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

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## 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>		
<b>Publication Title</b>	<b>Form Number</b>	<b>Media Format</b>
<i>IBM SMP/E for z/OS Messages, Codes, and Diagnosis</i>	GA22-7770	<a href="http://www.ibm.com/shop/publications/order/">http://www.ibm.com/shop/publications/order/</a>
<i>IBM SMP/E for z/OS Commands</i>	SA22-7771	<a href="http://www.ibm.com/shop/publications/order/">http://www.ibm.com/shop/publications/order/</a>
<i>IBM SMP/E for z/OS Reference</i>	SA22-7772	<a href="http://www.ibm.com/shop/publications/order/">http://www.ibm.com/shop/publications/order/</a>
<i>IBM SMP/E for z/OS User's Guide</i>	SA22-7773	<a href="http://www.ibm.com/shop/publications/order/">http://www.ibm.com/shop/publications/order/</a>

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## 3.0 Program Support

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

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### 3.1 Program Services

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

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### 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 number GI11-8298 for Developer for z Systems
- Publication number GI13-2864 for Developer for z Systems Host Utilities
- Publication number GI13-4540 for z/OS Debugger
- Publication number GI10-5080 for CCCA for OS/390 & MVS & VM
- Publication number GI10-6976 for CCCA for OS/390 & MVS & VM Japanese NLF
- Publication number GI13-4314 for z/OS Explorer
- Publication number GI10-8967 for Fault Analyzer
- Publication number GI10-8968 for File Manager
- Publication number GI10-8969 for PDTCC
- Publication number GI13-4303 for Application Performance Analyzer

Additionally before you install Application Delivery Foundation 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 23 for a sample APPLY command.

If you obtained Application Delivery Foundation 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 Identifier are included in Figure 4 on page 8

<i>Figure 4. PSP Upgrade and Subset ID</i>		
<b>UPGRADE</b>	<b>SUBSET</b>	<b>Description</b>
5655AC6	HCDDT30Z	Application Delivery Foundation 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 number GI11-8298 for Developer for z Systems
- Publication number GI13-2864 for Developer for z Systems Host Utilities
- Publication number GI13-4540 for z/OS Debugger
- Publication number GI10-5080 for CCCA for OS/390 & MVS & VM
- Publication number GI10-6976 for CCCA for OS/390 & MVS & VM Japanese NLF
- Publication number GI13-4314 for z/OS Explorer
- Publication number GI10-8967 for Fault Analyzer
- Publication number GI10-8968 for File Manager
- Publication number GI10-8969 for PDTCC
- Publication number GI13-4303 for Application Performance Analyzer

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

<i>Figure 5. Component IDs</i>			
<b>FMID</b>	<b>COMPID</b>	<b>Component Name</b>	<b>RETAIN Release</b>
HCDDT30Z	5655AC600	Application Delivery Foundation ID	30Z

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## 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.

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### 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 number GI11-8298 for Developer for z Systems
- Publication number GI13-2864 for Developer for z Systems Host Utilities
- Publication number GI13-4540 for z/OS Debugger
- Publication number GI10-5080 for CCCA for OS/390 & MVS & VM
- Publication number GI10-6976 for CCCA for OS/390 & MVS & VM Japanese NLF
- Publication number GI13-4314 for z/OS Explorer
- Publication number GI10-8967 for Fault Analyzer
- Publication number GI10-8968 for File Manager
- Publication number GI10-8969 for PDTCC
- Publication number GI13-4303 for Application Performance Analyzer

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### 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 number GI11-8298 for Developer for z Systems
- Publication number GI13-2864 for Developer for z Systems Host Utilities
- Publication number GI13-4540 for z/OS Debugger
- Publication number GI10-5080 for CCCA for OS/390 & MVS & VM
- Publication number GI10-6976 for CCCA for OS/390 & MVS & VM Japanese NLF
- Publication number GI13-4314 for z/OS Explorer
- Publication number GI10-8967 for Fault Analyzer
- Publication number GI10-8968 for File Manager
- Publication number GI10-8969 for PDTCC
- Publication number GI13-4303 for Application Performance Analyzer

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## 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.

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### 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 <b>one</b> of the following:				
5694-A01	z/OS	V01.13.00	N/A	No
5650-ZOS	z/OS	V02.01.00 or higher	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](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.

Application Delivery Foundation ID (FMID HCDDT30Z) has no mandatory installation requisites.

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 ID (FMID HCDDT30Z) has no conditional installation requisites.

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

- Publication number GI11-8298 for Developer for z Systems
- Publication number GI13-2864 for Developer for z Systems Host Utilities
- Publication number GI13-4540 for z/OS Debugger
- Publication number GI10-5080 for CCCA for OS/390 & MVS & VM
- Publication number GI10-6976 for CCCA for OS/390 & MVS & VM Japanese NLF
- Publication number GI13-4314 for z/OS Explorer
- Publication number GI10-8967 for Fault Analyzer
- Publication number GI10-8968 for File Manager
- Publication number GI10-8969 for PDTCC
- Publication number GI13-4303 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.

Application Delivery Foundation ID (FMID HCDDT30Z) 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.

Application Delivery Foundation ID (FMID HCDDT30Z) has no conditional operational requisites.

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

- Publication number GI11-8298 for Developer for z Systems
- Publication number GI13-2864 for Developer for z Systems Host Utilities
- Publication number GI13-4540 for z/OS Debugger
- Publication number GI10-5080 for CCCA for OS/390 & MVS & VM
- Publication number GI10-6976 for CCCA for OS/390 & MVS & VM Japanese NLF
- Publication number GI13-4314 for z/OS Explorer
- Publication number GI10-8967 for Fault Analyzer
- Publication number GI10-8968 for File Manager
- Publication number GI10-8969 for PDTCC
- Publication number GI13-4303 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 ID (FMID HCDT30Z) has no toleration/coexistence requisites.

To view the toleration/coexistence requisites of the additional products that constitute Application Delivery Foundation, refer to the following Program Directories that are supplied with the product.

- Publication number GI11-8298 for Developer for z Systems
- Publication number GI13-2864 for Developer for z Systems Host Utilities
- Publication number GI13-4540 for z/OS Debugger
- Publication number GI10-5080 for CCCA for OS/390 & MVS & VM
- Publication number GI10-6976 for CCCA for OS/390 & MVS & VM Japanese NLF
- Publication number GI13-4314 for z/OS Explorer
- Publication number GI10-8967 for Fault Analyzer
- Publication number GI10-8968 for File Manager
- Publication number GI10-8969 for PDTCC
- Publication number GI13-4303 for Application Performance Analyzer

**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 ID (FMID HCDT30Z) has no negative requisites.

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

- Publication number GI11-8298 for Developer for z Systems
- Publication number GI13-2864 for Developer for z Systems Host Utilities
- Publication number GI13-4540 for z/OS Debugger
- Publication number GI10-5080 for CCCA for OS/390 & MVS & VM
- Publication number GI10-6976 for CCCA for OS/390 & MVS & VM Japanese NLF
- Publication number GI13-4314 for z/OS Explorer
- Publication number GI10-8967 for Fault Analyzer
- Publication number GI10-8968 for File Manager
- Publication number GI10-8969 for PDTCC
- Publication number GI13-4303 for Application Performance Analyzer

## 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 number GI11-8298 for Developer for z Systems
- Publication number GI13-2864 for Developer for z Systems Host Utilities
- Publication number GI13-4540 for z/OS Debugger
- Publication number GI10-5080 for CCCA for OS/390 & MVS & VM
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- Publication number GI13-4314 for z/OS Explorer
- Publication number GI10-8967 for Fault Analyzer
- Publication number GI10-8968 for File Manager
- Publication number GI10-8969 for PDTCC
- Publication number GI13-4303 for Application Performance Analyzer

Additionally Figure 7 lists the total space that is required for each type of library for Application Delivery Foundation Identifier.

<i>Figure 7. Total DASD Space Required by HCDDT30Z - Application Delivery Foundation ID</i>	
<b>Library Type</b>	<b>Total Space Required in 3390 Trks</b>
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 8. Storage Requirements for HCDT30Z - Application Delivery Foundation ID Target Libraries*

Library DDNAME	Member Type	Target Volume	T Y P E	O R G	R E C M	L R E C L	No. of 3390 Trks	No. of DIR Blks
SISMLD5	PROGRAM	ANY	U	PDS	U	0	4	3
SISMINS5	SAMP	ANY	U	PDS	FB	80	4	3

Figure 9. Storage Requirements for HCDD30Z - Application Delivery Foundation ID 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
AISML05	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 5655-AC6.

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

```
PRODUCT OWNER('IBM CORP')
NAME('IBM APP DLIV FND')
ID(5655-AC6)
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('IDz-RSED')**                      Developer for z Systems Host

<b>FEATURENAME('IDz-CC')</b>	Developer for z Systems Utilities, code coverage component
<b>FEATURENAME('IDz-CR')</b>	Developer for z Systems Utilities, code review component
<b>FEATURENAME('IDz-DEBUGGER')</b>	Developer for z Systems z/OS Debugger
<b>FEATURENAME('FILE-MANAGER')</b>	File Manager
<b>FEATURENAME('FAULT-ANALYZER')</b>	Fault Analyzer
<b>FEATURENAME('APA')</b>	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:
  - No further action is required.
2. For z/OS Explorer:
  - No further action is required.
3. For Fault Analyzer:
  - APAR PI65394 must be installed.
  - Refer to the section "Registering Fault Analyzer in the IFAPRDxx parmlib member" in the Fault Analyzer User's Guide and Reference.
4. For File Manager:
  - APAR PI65043 must be installed.
  - A sample registration parmlib entry FMNWIFAG (included in the PTF for APAR PI65043), is provided in your hlq.SFMNSAM1 data set.
5. For PDTCC:
  - No further action is required.
6. For Application Performance Analyzer:
  - No further action is required.

## 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 number GI11-8298 for Developer for z Systems
- Publication number GI13-2864 for Developer for z Systems Host Utilities
- Publication number GI13-4540 for z/OS Debugger
- Publication number GI10-5080 for CCCA for OS/390 & MVS & VM

- Publication number GI10-6976 for CCCA for OS/390 & MVS & VM Japanese NLF
- Publication number GI13-4314 for z/OS Explorer
- Publication number GI10-8967 for Fault Analyzer
- Publication number GI10-8968 for File Manager
- Publication number GI10-8969 for PDTCC
- Publication number GI13-4303 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 number GI11-8298 for Developer for z Systems
- Publication number GI13-2864 for Developer for z Systems Host Utilities
- Publication number GI13-4540 for z/OS Debugger
- Publication number GI10-5080 for CCCA for OS/390 & MVS & VM
- Publication number GI10-6976 for CCCA for OS/390 & MVS & VM Japanese NLF
- Publication number GI13-4314 for z/OS Explorer
- Publication number GI10-8967 for Fault Analyzer
- Publication number GI10-8968 for File Manager
- Publication number GI10-8969 for PDTCC
- Publication number GI13-4303 for Application Performance Analyzer

Additionally you should perform the following steps to install the Application Delivery Foundation Identifier (FMID HCDDT30Z).

## 6.1.2 SMP/E Options Subentry Values

The recommended values for certain SMP/E CSI subentries are shown in Figure 10 on page 20. 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 10. SMP/E Options Subentry Values</i>		
<b>Subentry</b>	<b>Value</b>	<b>Comment</b>
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 11. Sample Installation Jobs for HCDDT30Z - Application Delivery Foundation ID</i>			
<b>Job Name</b>	<b>Job Type</b>	<b>Description</b>	<b>RELFILE</b>
ISMJAA5	SMP/E	Sample job to allocate and initialize a new SMP/E CSI data set <b>(Optional)</b>	IBM.HCDDT30Z.F1
ISMJAB5	SMP/E	Sample job to allocate SMP/E data sets <b>(Optional)</b>	IBM.HCDDT30Z.F1
ISMJRE5	RECEIVE	Sample RECEIVE job	IBM.HCDDT30Z.F1
ISMJAL5	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HCDDT30Z.F1
ISMJDD5	DDDEF	Sample job to define SMP/E DDDEFs	IBM.HCDDT30Z.F1
ISMJAP5	APPLY	Sample APPLY job	IBM.HCDDT30Z.F1
ISMJAC5	ACCEPT	Sample ACCEPT job	IBM.HCDDT30Z.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 11 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.HCDT30Z.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.HCDT30Z.F1,UNIT=tunit,
/* VOL=SER=CDT30Z,LABEL=(2,SL),
/* DISP=(OLD,KEEP)
//*****
/* Make the //FILEIN DD statement below active for *
/* downloaded DASD files. *
//*****
/*FILEIN DD DSN=IBM.HCDT30Z.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.HCDT30Z.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 RCVPDO 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/holdata/390holddata.html>. The latest HOLDDATA may identify HIPER and FIXCAT APARs for the FMIDs you will be installing. An APPLY CHECK will help you determine if any HIPER or FIXCAT APARs are applicable to the FMIDs you are installing. If there are any applicable HIPER or FIXCAT APARs, the APPLY CHECK will also identify fixing PTFs that will resolve the APARs, if a fixing PTF is available.

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

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass the PRE, ID, REQ, and IFREQ on the APPLY CHECK. The SMP/E root cause analysis identifies the cause only of *errors* and not of *warnings* (SMP/E treats bypassed PRE, ID, REQ, and IFREQ conditions as warnings, instead of errors).

Here are sample APPLY commands:

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

```
APPLY S(fmid,fmid,...) CHECK
FORFMID(fmid,fmid,...)
SOURCEID(RSU*)
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.

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## 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 number GI11-8298 for Developer for z Systems
- Publication number GI13-2864 for Developer for z Systems Host Utilities
- Publication number GI13-4540 for z/OS Debugger
- Publication number GI10-5080 for CCCA for OS/390 & MVS & VM
- Publication number GI10-6976 for CCCA for OS/390 & MVS & VM Japanese NLF
- Publication number GI13-4314 for z/OS Explorer
- Publication number GI10-8967 for Fault Analyzer
- Publication number GI10-8968 for File Manager
- Publication number GI10-8969 for PDTCC
- Publication number GI13-4303 for Application Performance Analyzer

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## Reader's Comments

### Program Directory for IBM Application Delivery Foundation for z Systems, September 2016

We appreciate your input on this publication. Feel free to comment on the clarity, accuracy, and completeness of the information or give us any other feedback that you might have.

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