



Program Directory for IBM Application Discovery Connect for Mainframe

V6.1.2

Program Number 5737-B1610

FMID HALT612

for Use with
z/OS V02.03.00 or later

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GI13-4562-09

Note

Before using this information and the product it supports, be sure to read the general information under 7.0, "Notices" on page 25

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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 Discovery Connect for Mainframe.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 3 identifies the basic program materials and documentation for IBM Application Discovery Connect for Mainframe.
- 3.0, “Program Support” on page 5 describes the IBM support available for IBM Application Discovery Connect for Mainframe.
- 4.0, “Program and Service Level Information” on page 7 lists the APARs (program level) and PTFs (service level) that have been incorporated into IBM Application Discovery Connect for Mainframe.
- 5.0, “Installation Requirements and Considerations” on page 8 identifies the resources and considerations that are required for installing and using IBM Application Discovery Connect for Mainframe.
- 6.0, “Installation Instructions” on page 15 provides detailed installation instructions for IBM Application Discovery Connect for Mainframe. It also describes the procedures for activating the functions of IBM Application Discovery Connect for Mainframe, or refers to appropriate publications.

1.1 IBM Application Discovery Connect for Mainframe Description

IBM Application Discovery Connect for Mainframe consists of a single component, which is a started task running on a z/OS system. This component is sometimes referred to as the AD Mainframe Agent. This documentation is specific to the AD Mainframe Agent component and does not deal with the other components of the IBM Application Discovery product. Please refer to the appropriate documentation for information about those components.

The AD Mainframe Agent processes requests sent to it by the IBM Application Discovery Build Client. The requests typically involve the collection of application source code or application configuration information from transaction or database subsystems such as CICS, IMS, DB2 and MQ. This information is collected and returned to the Build Client for analysis.

1.2 IBM Application Discovery Connect for Mainframe FMIDs

IBM Application Discovery Connect for Mainframe consists of the following FMIDs:

HALT612

1.3 IBM Application Discovery Connect for Mainframe High Level Prefix

IBM Application Discovery Connect for Mainframe components (for example load modules) in earlier versions typically began with the 3 letter prefix "EZL". Starting with release 5.0.3, they begin with the 3 letter prefix "IAY".

2.0 Program Materials

An IBM program is identified by a program number. The program number for IBM Application Discovery Connect for Mainframe is 5737-B1610.

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 IBM Application Discovery Connect for Mainframe. 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 downloadable files. This program is in SMP/E RELFILE format and is installed by using SMP/E. See 6.0, “Installation Instructions” on page 15 for more information about how to install the program.

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for IBM Application Discovery Connect for Mainframe.

2.3 Program Publications

For additional IBM Application Discovery publications, please visit the IBM Knowledge Centre at <https://www.ibm.com/support/knowledgecenter/en> and search for IBM Application Discovery for IBM Z V6.1.2.

2.3.1 Optional Program Publications

No optional publications are provided for IBM Application Discovery Connect for Mainframe.

2.4 Program Source Materials

No program source materials or viewable program listings are provided for IBM Application Discovery Connect for Mainframe.

2.5 Publications Useful During Installation

You might want to use the publications listed in Figure 2 during the installation of IBM Application Discovery Connect for Mainframe.

<i>Figure 2. Publications Useful During Installation</i>		
Publication Title	Form Number	Media Format
<i>IBM SMP/E for z/OS User's Guide</i>	SA23-2277-50	https://www.ibm.com/docs/en/zos/2.5.0?topic=zos-smpe
<i>IBM SMP/E for z/OS Commands</i>	SA23-2275-50	https://www.ibm.com/docs/en/zos/2.5.0?topic=zos-smpe
<i>IBM SMP/E for z/OS Reference</i>	SA22-2276-50	https://www.ibm.com/docs/en/zos/2.5.0?topic=zos-smpe
<i>IBM SMP/E for z/OS Messages, Codes, and Diagnosis</i>	GA32-0883-50	https://www.ibm.com/docs/en/zos/2.5.0?topic=zos-smpe

3.0 Program Support

This section describes the IBM support available for IBM Application Discovery Connect for Mainframe. The service number for IBM Application Discovery Connect for Mainframe is 0509424.

3.1 Program Services

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

3.2 Preventive Service Planning

Before you install IBM Application Discovery Connect for Mainframe, 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 6.1.12, “Perform SMP/E APPLY” on page 20 for a sample APPLY command

If you obtained IBM Application Discovery Connect for Mainframe as part of a CBPDO, HOLDDATA is included.

If the CBPDO for IBM Application Discovery Connect for Mainframe is older than two weeks by the time you install the product materials, you can obtain the latest PSP Bucket information by going to the following website:

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

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

PSP Buckets are identified by UPGRADEs, which specify product levels; and SUBSETs, which specify the FMIDs for a product level. The UPGRADE and SUBSET values for IBM Application Discovery Connect for Mainframe are included in Figure 3.

Figure 3. PSP Upgrade and Subset ID		
UPGRADE	SUBSET	Description
IBMAD612	HALT612	IBM Application Discovery Connect for Mainframe

3.3 Statement of Support Procedures

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

Figure 4 on page 6 identifies the component IDs (COMPID) for IBM Application Discovery Connect for Mainframe.

Figure 4. Component IDs			
FMID	COMPID	Component Name	RETAIN Release
HALT612	5737B1610	IBM Application Discovery Connect for Mainframe	612

4.0 Program and Service Level Information

This section identifies the program and relevant service levels of IBM Application Discovery Connect for Mainframe. 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

All fixes from outstanding APARs on previous releases have been incorporated into this version of IBM Application Discovery Connect for Mainframe.

4.2 Service Level Information

All fixes originating in PTFs from previous releases have been included in this release of IBM Application Discovery Connect for Mainframe have been incorporated into the product package.

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating IBM Application Discovery Connect for Mainframe. 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 IBM Application Discovery Connect for Mainframe.

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 5. 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:				
5650-ZOS	z/OS	V02.03.00	N/A	No
5650-ZOS	z/OS	V02.04.00	N/A	No
5650-ZOS	z/OS	V02.05.00	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 V03.05.00.

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 IBM Application Discovery Connect for Mainframe.

IBM Application Discovery Connect for Mainframe 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. These products are specified as PREs or REQs.

IBM Application Discovery Connect for Mainframe 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. These products are specified as IF REQs.

IBM Application Discovery Connect for Mainframe has no conditional installation requisites.

5.2.2.2 Operational Requisites

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

Mandatory operational requisites identify products that are required for this product to operate its basic functions. These products are specified as PREs or REQs.

IBM Application Discovery Connect for Mainframe 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. These products are specified as IF REQs.

IBM Application Discovery Connect for Mainframe has no conditional operational requisites.

5.2.2.3 Toleration/Coexistence Requisites

Toleration/coexistence requisites identify products that must be present on sharing systems. These systems can be other systems in a multisystem environment (not necessarily sysplex), a shared DASD environment (such as test and production), or systems that reuse the same DASD environment at different time intervals.

IBM Application Discovery Connect for Mainframe 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.

IBM Application Discovery Connect for Mainframe has no negative requisites.

5.2.3 DASD Storage Requirements

IBM Application Discovery Connect for Mainframe libraries can reside on all supported DASD types. TABLE

Figure 6 lists the total space that is required for each type of library.

Figure 6. Total DASD Space Required by IBM Application Discovery Connect for Mainframe		
Library Type	Total Space Required in 3390 Trks	File System Description
Target	120 Tracks	
Distribution	120 Tracks	
Non-SMP/E Temporary	80 Tracks	

Notes:

1. For non-RECFM U data sets, IBM recommends using system-determined block sizes for efficient DASD utilization. For RECFM U data sets, IBM recommends using a block size of 32760, which is most efficient from the performance and DASD utilization perspective.
2. Abbreviations used for data set types are shown as follows.
 - U** Unique data set, allocated by this product and used by only this product. This table provides all the required information to determine the correct storage for this data set. You do not need to refer to other tables or program directories for the data set size.
 - S** Shared data set, allocated by this product and used by this product and other products. To determine the correct storage needed for this data set, add the storage size given in this table to those given in other tables (perhaps in other program directories). If the data set already exists, it must have enough free space to accommodate the storage size given in this table.
 - E** Existing shared data set, used by this product and other products. This data set is *not* allocated by this product. To determine the correct storage for this data set, add the storage size given in this table to those given in other tables (perhaps in other program directories). If the data set already exists, it must have enough free space to accommodate the storage size given in this table.

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

deleting the old release with a dummy function, compressing the libraries, and comparing the space requirements with the free space in the libraries.

For more information about the names and sizes of the required data sets, see 6.1.10, "Allocate SMP/E Target and Distribution Libraries" on page 20.

3. Abbreviations used for the file system path type are as follows.

- N** New path, created by this product.
- X** Path created by this product, but might already exist from a previous release.
- P** Previously existing path, created by another product.

4. 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, with some exceptions. If the value in the "ORG" column specifies "PDS", the data set must be a PDS. If the value in "DIR Blks" column specifies "N/A", the data set must be a PDSE.

5. 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.

6. 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 LNKST.
- These data sets are not required to be APF-authorized, with some exceptions. If the value in the "Member Type" column specifies "APF" or "LPA", the data set must be APF-authorized.

The following figures describe the target and distribution libraries and file system paths required to install IBM Application Discovery Connect for Mainframe. The storage requirements of IBM Application Discovery Connect for Mainframe must be added to the storage required by other programs that have data in the same library or path.

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 7. Storage Requirements for IBM Application Discovery Connect for Mainframe 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
SIAYAUTH	APF Load Modules	ANY	U	PDS/E	U	0	60	10
SIAYDBRM	DB2 DBRM Modules	ANY	U	PDS/E	FB	80	5	5
SIAYSAMP	SMP/E Sample Jobs	ANY	U	PDS/E	FB	80	12	20
SIAYEXEC	Compiled REXX	ANY	U	PDS/E	FB	80	25	15

Figure 8. Storage Requirements for IBM Application Discovery Connect for Mainframe Distribution Libraries

DDNAME	Description	RECFM	LRECL	Trks	Blks	
AIAYAUTH	APF Load Modules	PDS/E	U	0	60	10
AIAYDBRM	DB2 DBRM Modules	PDS/E	FB	80	5	5
AIAYSAMP	SMP/E Sample Jobs	PDS/E	FB	80	12	20
AIAYEXEC	REXX	PDS/E	FB	80	25	15

The following figures list data sets that are not used by IBM Application Discovery Connect for Mainframe, but are required as input for SMP/E.

Figure 9. Storage Requirements for IBM Application Discovery Connect for Mainframe Non-SMP/E Data Sets

Data Set Name	Y P E	O R G	R C F M	L T E R No. No. E C L	of 3390 Trks	of DIR Blks
hlq.IBM.HALT612.F1	U	PDS/E	U	0	48	n/a
hlq.IBM.HALT612.F1.BIN	U	SEQ	FB	80	49	n/a
hlq.IBM.HALT612.F2	U	PDS/E	FB	80	2	n/a
hlq.IBM.HALT612.F2.BIN	U	SEQ	FB	80	2	n/a
hlq.IBM.HALT612.F3	U	PDS/E	FB	80	7	n/a
hlq.IBM.HALT612.F3.BIN	U	SEQ	FB	80	5	n/a
hlq.IBM.HALT612.F4	U	PDS/E	FB	80	15	n/a
hlq.IBM.HALT612.F4.BIN	U	SEQ	FB	80	5	n/a
hlq.IBM.HALT612.SMPMCS	U	SEQ	FB	80	1	n/a
Note: These are temporary data sets, which can be removed after the SMP/E install.						

5.3 FMIDs Deleted

Installing IBM Application Discovery Connect for Mainframe might result in the deletion of other FMIDs. To see which FMIDs will be deleted, examine the ++VER statement in the SMPMCS of the product.

If you do not want to delete these FMIDs at this time, install IBM Application Discovery Connect for Mainframe 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 DELETFMID command. See the SMP/E Commands book for details.

5.4 Special Considerations

IBM Application Discovery Connect for Mainframe has no special considerations for the target system.

6.0 Installation Instructions

This chapter describes the installation method and the step-by-step procedures to install and to activate the functions of IBM Application Discovery Connect for Mainframe.

Please note the following points:

- If you want to install IBM Application Discovery Connect for Mainframe 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 IBM Application Discovery Connect for Mainframe

6.1.1 SMP/E Considerations for Installing IBM Application Discovery Connect for Mainframe

Use the SMP/E RECEIVE, APPLY, and ACCEPT commands to install this release of IBM Application Discovery Connect for Mainframe.

6.1.2 SMP/E Options Subentry Values

The recommended values for certain SMP/E CSI subentries are shown in Figure 10. Using values lower than the recommended values can result in failures in the installation. DSSPACE is a subentry in the GLOBAL options entry. PEMAX is a subentry of the GENERAL entry in the GLOBAL options entry. See the SMP/E manuals for instructions on updating the global zone.

Figure 10. SMP/E Options Subentry Values		
Subentry	Value	Comment
DSSPACE	(50,10,5)	Space allocation
PEMAX		

6.1.3 Overview of the installation steps

Overview of steps required to install IBM Application Discovery Connect for Mainframe.

1. Allocate sequential data sets to hold SMPMCS and compressed RELFILES
2. Upload the SMPMCS and compressed RELFILES to the host
3. Expand the compressed RELFILES by using the TSO RECEIVE command
4. Create SMP/E environment (optional)
5. Perform SMP/E RECEIVE
6. Allocate SMP/E target and distribution libraries
7. Create DDDEF entries
8. Perform SMP/E APPLY
9. Perform SMP/E ACCEPT

6.1.4 Allocate sequential data sets to hold SMPMCS and compressed RELFILES

The SMP/E input data sets to install IBM Application Discovery Connect for Mainframe are provided as binary files in a zip file and must be uploaded to z/OS.

To ensure that the data sets are allocated correctly, it is advised to allocate empty data sets before uploading the data. You can use the following sample JCL to allocate the data sets. The sample JCL needs the following updates:

1. Add a JOB card and modify the allocation parameters to meet your site requirements.
2. **hlq** specifies the high level qualifier you choose to use for the data sets.
3. (Optional) Replace vvvvvv with the volume serial you choose to use for the data sets.

```
//ALLOC  PROC  LLQ=,
//          TRKS=
//ALLOC  EXEC  PGM=IEFBR14
//DATASET DD DSN=IBM.HALT612.&LLQ,
//  DISP=(NEW,CATLG),
//  RECFM=FB,LRECL=80,
//  DSORG=PS,BLKSIZE=0,
//  UNIT=SYSALLDA,
//  VOL=SER=VVVVVV,
//  SPACE=(TRK,(&TRKS,5))
//EALLOC PEND
//*
//RELFILE1 EXEC ALLOC,LLQ=F1.BIN,TRKS=50
//RELFILE2 EXEC ALLOC,LLQ=F2.BIN,TRKS=2
//RELFILE3 EXEC ALLOC,LLQ=F3.BIN,TRKS=5
//RELFILE4 EXEC ALLOC,LLQ=F4.BIN,TRKS=15
//SMPMCS EXEC ALLOC,LLQ=SMPMCS,TRKS=1
```

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

6.1.5 Upload the SMPMCS and compressed RELFILES to the host

Upload the unzipped files in binary format to the pre-allocated z/OS datasets.

In the following sample dialog, we use FTP from a Microsoft Windows command line to do the transfer. Commands or other information entered by the user are in bold, and the following values are assumed:

Figure 11. User Entered Values	
User enters:	Values
mvsaddr	TCP/IP address or hostname of the z/OS system
tsouid	Your TSO user ID
tsopw	Your TSO password

Note that in the final FTP PUT command that uploads the IBM.HALT612.SMPMCS.BIN file, the z/OS target dataset name does NOT end in .BIN. This is a sequential file containing the SMP/E MCS statements, and will not be unloaded into a PDSE, as is required for all of the other .BIN files that are uploaded to z/OS. The .BIN prefix indicates that further processing is required, and so is only preserved on the IBM.HALT612.F*.BIN files. The IBM.HALT612.F*.BIN files will later be unloaded into a PDSE and the .BIN prefix removed, but the SMPMCS file is ready for use immediately after the FTP PUT. The sample SMP/E jobs assume that this dataset name will end in .SMPMCS, not .BIN. The FTP send byte counts displayed below may not match those displayed when you perform the installation at your site.

This will occur if changes were made to the product files after the date that this document is published.

```
C:\>ftp mvsaddr
Connected to mvsaddr.
220-FTPD1 IBM FTP CS %version% at mvsaddr, %time% on %date%.
220 Connection will close if idle for more than 5 minutes. User
(mvsaddr:(none)): IBMUSER
331 Send password please. Password: tsopw
230 tsouid is logged on. Working directory is "IBMUSER.".
ftp> binary
200 Representation type is Image
ftp> prompt Interactive mode
Off.
ftp> mput IBM.HALT612.F*
200 Port request OK.
125 Storing data set IBMUSER. IBM. HALT612. F1. BIN
250 Transfer completed successfully. ftp: 3285120 bytes
sent in 0.02 sec. (11293.945 Kb/s) 200 Port request OK.
125 Storing data set IBMUSER. IBM. HALT612. F2. BIN
250 Transfer completed successfully.
ftp: 38800 bytes sent in 0.33 sec. (8667.350 Kb/s)
200 Port request OK.
125 Storing data set IBMUSER. IBM. HALT612. F3. BIN
250 Transfer completed successfully. ftp: 252560 bytes
sent in 11.91 sec. (8088.401 Kb/s)
200 Port request OK.
```

```

125 Storing data set IBMUSER. IBM. HALT612. F4. BIN
250 Transfer completed successfully. ftp: 824080 bytes sent
in 11.91 sec. (8088.401 Kb/s)
ftp> put IBM. HALT612. SMPMCS. BIN IBM. HALT612. SMPMCS
200 Port request OK.
125 Storing data set IBMUSER. IBM. HALT612. SMPMCS
250 Transfer completed successfully. ftp: 14000 bytes
sent in 0.01 sec. (4151.042 Kb/s)
ftp> quit
221 Quit command received. Goodbye.

```

6.1.6 Expand the compressed RELFILES by using the TSO RECEIVE command.

The uploaded RELFILES are in TSO TRANSMIT format and must be expanded with the TSO RECEIVE command to become usable. **hlq** Specifies the high level qualifier you used for the data sets you allocated in the previous step.

```

RECEIVE INDA('hlq. IBM. HALT612. F1. BIN')
RECEIVE INDA('hlq. IBM. HALT612. F2. BIN')
RECEIVE INDA('hlq. IBM. HALT612. F3. BIN')
RECEIVE INDA('hlq. IBM. HALT612. F4. BIN')

```

When prompted on the TSO RECEIVE commands, use the appropriate DSNAME from the list below:

```

DS('hlq. IBM. HALT612. F1')
DS('hlq. IBM. HALT612. F2')
DS('hlq. IBM. HALT612. F3')
DS('hlq. IBM. HALT612. F4')

```

As an alternative to interactive commands, the following sample JCL can be used to perform the TSO RECEIVE via batch:

```
//RECEIVE EXEC PGM=IKJEFT01
//SYSPRINT DD SYSOUT=*
//SYSTSPRT DD SYSOUT=*
//SYSTEM DD DUMMY
//SYSTSIN DD *
  PROFILE WTPMSG MSGID
  RECEIVE INDA(' hlq. IBM. HALT612. F1. BIN' )
  DA (' hlq. IBM. HALT612. F1' )
  RECEIVE INDA(' hlq. IBM. HALT612. F2. BIN' )
  DA (' hlq. IBM. HALT612. F2' )
  RECEIVE INDA(' hlq. IBM. HALT612. F3. BIN' )
  DA (' hlq. IBM. HALT612. F3' )
  RECEIVE INDA(' hlq. IBM. HALT612. F4. BIN' )
  DA (' hlq. IBM. HALT612. F4' )

/*
//
```

6.1.7 Sample Jobs

The following sample installation jobs are provided as part of the product to help you install IBM Application Discovery Connect for Mainframe. It is recommended that you make a working copy of REL file hlq.IBM.HALT612.F3 to contain the 6 SMP/E jobs that you will customize in the following steps to build the SMP/E environment for HALT612:

Figure 12. Sample Installation Jobs			
Job Name	Job Type	Description	RELFILE
IAY1SMPE	SMP/E	Sample job to create an SMP/E environment (optional)	hlq.IBM.HALT612.F3
IAY2RCVE	RECEIVE	Sample SMP/E RECEIVE job	hlq.IBM.HALT612.F3
IAY3ALOC	ALLOCATE	Sample job to allocate target and distribution libraries	hlq.IBM.HALT612.F3
IAY4DDEF	DDDEF	Sample job to define SMP/E DDDEFs	hlq.IBM.HALT612.F3
IAY5APLY	APPLY	Sample SMP/E APPLY job	hlq.IBM.HALT612.F3
IAY6ACPT	ACCEPT	Sample SMP/E ACCEPT job	hlq.IBM.HALT612.F3

6.1.8 Create SMP/E environment (optional)

If you are using an existing CSI, do not run the sample job IAY1SMPE.

If you choose to create a new SMP/E environment for this install, a sample job is provided or you may choose to use your own JCL. If you choose to use the sample job provided, edit and submit IAY1SMPE. 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 RECEIVE

Edit and submit sample job IAY2RCVE to perform the SMP/E RECEIVE for IBM Application Discovery Connect for Mainframe. Consult the instructions in the sample job for more information.

Note that when running the SMP/E RECEIVE job, IAY2RCVE, it will search for the REL files associated with the MCS file on the SMPPTFIN DD. Set the RPREFIX on the RECEIVE command to the high level qualifier of the dataset names under which you expanded the compressed RELFILE datasets previously. For example, if the REL file name is IBMUSER.IBM.HALT612.F1, set RPREFIX(IBMUSER). If you did not use a high level qualifier, RPREFIX can be omitted.

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

6.1.10 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job IAY3ALOC to allocate the SMP/E target and distribution libraries for IBM Application Discovery Connect for Mainframe. Consult the instructions in the sample job for more information. In particular, set the high level qualifier (HLQ) parameter that will be used for the product library dataset names by modifying each instance of HLQ=IAY in steps ALLOCT and ALLOCD at the bottom of the sample job. Or you may choose to use IAY as the high level qualifier.

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

6.1.11 Create DDDEF Entries

Edit and submit sample job IAY4DDEF to create DDDEF entries for the SMP/E target and distribution libraries for IBM Application Discovery Connect for Mainframe. Consult the instructions in the sample job for more information. In particular, ensure that the name specified in the DATASET() parameter in each ADD DDDEF stanza matches the dataset names defined in the previous job, IAY3ALOC.

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

6.1.12 Perform SMP/E APPLY

1. Ensure that you have the latest HOLDDATA; then edit and submit sample job IAY5APLY to perform an SMP/E APPLY CHECK for IBM Application Discovery Connect for Mainframe. 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)) .
.. any other parameters documented in the program directory
```

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

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

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

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

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

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

6.1.13 Perform SMP/E ACCEPT

Edit and submit sample job IAY6ACPT to perform an SMP/E ACCEPT CHECK for IBM Application Discovery Connect for Mainframe. Consult the instructions in the sample job for more information.

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

Before you use SMP/E to load new distribution libraries, it is recommended that you set the ACCJCLIN indicator in the distribution zone. In this way, you can save the entries that are produced from JCLIN in the distribution zone whenever a SYSMOD that contains inline JCLIN is accepted. For more information about the ACCJCLIN indicator, see the description of inline JCLIN in the SMP/E Commands book for details.

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

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

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

If PTFs that contain replacement modules are accepted, SMP/E ACCEPT processing will link-edit or bind the modules into the distribution libraries. During this processing, the Linkage Editor or Binder might issue messages that indicate unresolved external references, which will result in a return code of 4 during the ACCEPT phase. You can ignore these messages, because the distribution libraries are not executable and the unresolved external references do not affect the executable system libraries.

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

6.1.14 Cleaning Up Obsolete Data Sets, Paths, and DDDEFs

The data sets listed in Figure 9 on page 13 are temporary data sets. You can delete these obsolete data sets after you complete the SMP/E install.

6.2 Product Customization

Please refer to the *Configuring IBM AD Connect for Mainframe* section in the IBM AD User Guide for v6.1.2, available at <https://www.ibm.com/support/pages/ibm-application-discovery-and-delivery-intelligence-ibm-z-library>

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