Program Directory for
IBM z/OS Connect Enterprise Edition
Continuous Delivery

3.0.0

Program Number 5655-CE3

FMIDs HZC3000 JZC3002

for use with
z/OS

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GI13-4414-05

Note

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

Contents

Figures

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 z/OS Connect Enterprise Edition. This publication refers to IBM z/OS Connect Enterprise Edition as z/OS Connect EE.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 3 identifies the basic program materials and documentation for z/OS Connect EE.
- 3.0, “Program Support” on page 5 describes the IBM support available for z/OS Connect EE.
- 4.0, “Program and Service Level Information” on page 7 lists the APARs (program level) and PTFs (service level) that have been incorporated into z/OS Connect EE.
- 5.0, “Installation Requirements and Considerations” on page 9 identifies the resources and considerations that are required for installing and using z/OS Connect EE.
- 6.0, “Installation Instructions” on page 16 provides detailed installation instructions for z/OS Connect EE. It also describes the procedures for activating the functions of z/OS Connect EE, or refers to appropriate publications.

Before installing z/OS Connect EE, read the *CBPDO Memo To Users* and the *CBPDO Memo To Users Extension* that are supplied with this program in softcopy format and this program directory; after which, keep the documents for your reference. Section 3.2, “Preventive Service Planning” on page 5 tells you how to find any updates to the information and procedures in this program directory.

z/OS Connect EE 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 z/OS Connect EE are included on the CBPDO tape.

Do not use this program directory if you install z/OS Connect EE with a SystemPac or ServerPac. When you use one of those offerings, use the jobs and documentation supplied with the offering. The offering will point you to specific sections of this program directory as needed.

1.1 z/OS Connect EE Description

Cloud and mobile applications reshape the way enterprises and systems interact. RESTful APIs that are described by OpenAPI Specification and use JSON message formats are the predominant standards for new application development. z/OS Connect EE provides a framework that enables z/OS-based programs and data to participate fully in the API economy for mobile and cloud applications.

z/OS Connect EE provides access to IBM z/OS subsystems, such as IBM CICS Transaction Server, IBM IMS, IBM MQ, IBM Db2, and other z/OS applications by use of RESTful APIs with JSON formatted messages. The framework provides concurrent access, through a common interface, to multiple z/OS subsystems.

z/OS Connect EE also provides the capability that allows z/OS-based programs to access any RESTful endpoint, inside or outside z/OS, through RESTful APIs with JSON formatted messages. The framework supports applications on CICS, IMS, and other z/OS applications to call RESTful APIs through z/OS Connect EE.

z/OS Connect EE can help to deliver benefits for an enterprise in the following ways:

- Mobile and cloud application developers, inside or outside the enterprise, can incorporate z/OS data and transactions into their applications without the need to understand z/OS subsystems. The z/OS resources appear as any other RESTful API.
- z/OS application programmers can take advantage of published RESTful APIs to incorporate service and data into their business applications.

z/OS Connect EE is a Continuous Delivery (CD) offering.

For details of the latest enhancements refer to the *z/OS Connect EE change history* topic documented in the IBM z/OS Connect EE documentation. Use a web browser with internet access to refer to the IBM Documentation at: **https://www.ibm.com/docs/en/zosconnect/3.0**

1.2 z/OS Connect EE FMIDs

z/OS Connect EE consists of the following FMIDs:

HZC3000
JZC3002

2.0 Program Materials

An IBM program is identified by a program number. The program number for z/OS Connect EE is 5655-CE3.

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 z/OS Connect EE. Ask your IBM representative for this information if you have not already received a copy.

2.1 Basic Machine-Readable Material

The distribution medium for this program is physical media or downloadable files. This program is in SMP/E RELFILE format and is installed by using SMP/E. See 6.0, “Installation Instructions” on page 16 for more information about how to install the program.

You can find information about the physical media for the basic machine-readable materials for z/OS Connect EE in the *CBPDO Memo To Users Extension*.

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for z/OS Connect EE.

2.3 Program Publications

The following sections identify the basic publications for z/OS Connect EE.

The IBM z/OS Connect EE 3.0 License Information documents are available from the IBM License Repository website. To access the license use a web browser with internet access to navigate to: **http://www.ibm.com/software/sla/sladb.nsf/search/** and search for **GC34-7474**.

The IBM z/OS Connect EE documentation is available online and can be accessed by using a web browser with internet access at: **https://www.ibm.com/docs/en/zosconnect/3.0**

2.3.1 Optional Program Publications

No optional publications are provided for z/OS Connect EE.

2.4 Program Source Materials

No program source materials or viewable program listings are provided for z/OS Connect EE.

2.5 Publications Useful During Installation

You might want to use the publications listed in Figure 1 during the installation of z/OS Connect EE.

The listed publications can be obtained from the IBM Documentation. Use a web browser with internet access to refer to: https://www.ibm.com/docs/en/zos/2.5.0?topic=zos-smpe

Figure 1. Publications Useful During Installation

Publication Title	Form Number
IBM SMP/E for z/OS User's Guide	SA23-2277
IBM SMP/E for z/OS Commands	SA23-2275
IBM SMP/E for z/OS Reference	SA23-2276
IBM SMP/E for z/OS Messages, Codes, and Diagnosis	GA32-0883

3.0 Program Support

This section describes the IBM support available for z/OS Connect EE.

3.1 Program Services

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

3.2 Preventive Service Planning

Before you install z/OS Connect EE, make sure that you have reviewed the current Preventive Service Planning (PSP) information. Review the PSP Bucket for General Information, Installation Documentation, and the Cross Product Dependencies sections. For the Recommended Service section, instead of reviewing the PSP Bucket, it is recommended you use the IBM.PRODUCTINSTALL-REQUIREDSERVICE fix category in SMP/E to ensure you have all the recommended service installed. Use the **FIXCAT(IBM.PRODUCTINSTALL-REQUIREDSERVICE)** operand on the **APPLY CHECK** command. See 6.1.10, “Perform SMP/E APPLY” on page 22 for a sample APPLY command.

If you obtained z/OS Connect EE as part of a CBPDO, HOLDDATA is included.

If the CBPDO for z/OS Connect EE 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.ibm.com/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 z/OS Connect EE are included in Figure 2.

Figure 2. PSP Upgrade and Subset ID

UPGRADE	SUBSET	Description
ZOSCON30	HZC3000	IBM z/OS Connect EE core product (CD)
ZOSCON30	JZC3002	IBM z/OS Connect EE CICS feature (CD)

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 3 on page 6 identifies the component IDs (COMPID) for z/OS Connect EE.

Figure 3. Component IDs

FMID	COMPID	Component Name	RETAIN Release
HZC3000	5655CE300	IBM z/OS Connect EE core product (CD)	000
JZC3002	5655CE300	IBM z/OS Connect EE CICS feature (CD)	002

4.0 Program and Service Level Information

This section identifies the program and relevant service levels of z/OS Connect EE.

4.1 Program Level Information

The following APAR fixes against previous releases of z/OS Connect EE have been incorporated into this release.

PI54453	PI64587	PI66869	PI70855	PI76192	PI80147
PI56615	PI65248	PI67374	PI71820	PI77277	PI82792
PI58732	PI65323	PI67789	PI72646	PI77278	PI86221
PI62820	PI65725	PI69668	PI72673	PI79078	PI90337
PI63420	PI66724	PI70432	PI73978	PI79272	

4.2 Service Level Information

The following APAR fixes against this release of z/OS Connect EE have been incorporated into this product package:

PI82985	PI89182	PI94358	PH00006	PH04314	PH07327
PI83949	PI90096	PI94737	PH00368	PH04447	PH07350
PI83974	PI90297	PI95501	PH00403	PH04600	PH07430
PI84077	PI90630	PI95793	PH00662	PH04711	PH08140
PI84080	PI91663	PI96618	PH00704	PH04997	PH08237
PI84108	PI92014	PI96947	PH01052	PH05135	PH08248
PI84109	PI92216	PI97210	PH02414	PH05307	PH08317
PI85054	PI92254	PI97244	PH02634	PH05461	PH08772
PI85476	PI92264	PI97371	PH02652	PH05647	PH08861
PI85913	PI92644	PI97411	PH03342	PH05806	PH08996
PI86336	PI92773	PI97413	PH03346	PH05927	PH09124
PI86347	PI93032	PI98038	PH03360	PH06013	PH09188
PI86420	PI93123	PI98232	PH03400	PH06095	PH09240
PI86985	PI93350	PI98283	PH03436	PH06538	PH09275
PI87854	PI93830	PI98716	PH03485	PH06570	PH09920
PI88147	PI94081	PI99540	PH04052	PH06766	PH09950
PI88611	PI94357	PI99563	PH04287	PH07028	PH10225

PH10952	PH10611	PH21965	PH26697	PH33240	PH38028
PH11043	PH15192	PH22287	PH26836	PH33401	PH38064
PH11166	PH15594	PH22476	PH27162	PH33807	PH38810
PH11409	PH15842	PH22959	PH27287	PH34379	PH39122
PH11435	PH15844	PH23181	PH28518	PH34636	PH39833
PH11690	PH16570	PH23267	PH29265	PH35089	PH40416
PH11931	PH16590	PH23299	PH29630	PH35528	PH40632
PH12148	PH16753	PH24143	PH29643	PH35756	PH40964
PH12685	PH16762	PH24239	PH29808	PH36068	PH41351
PH13344	PH17588	PH24563	PH30073	PH36095	PH41453
PH13803	PH17905	PH24608	PH30278	PH36138	PH41977
PH14220	PH18222	PH24677	PH30400	PH36337	PH42080
PH14597	PH18365	PH24929	PH30597	PH36601	PH42084
PH14616	PH18448	PH25101	PH30899	PH36635	PH42641
PH15332	PH18497	PH25185	PH31224	PH36717	PH43216
PH15486	PH19001	PH25345	PH31252	PH36763	PH43377
PH15511	PH19390	PH25369	PH31935	PH37006	PH43628
PH15899	PH19949	PH25451	PH32226	PH37100	PH43657
PH16284	PH19977	PH25575	PH32251	PH37214	PH43757
PH16810	PH20674	PH25870	PH32311	PH37216	PH44125
PH02075	PH21070	PH26053	PH32637	PH37268	PH45219
PH04288	PH21577	PH26128	PH32736	PH37301	PH45602
PH10042	PH21761	PH26129	PH32853	PH37316	PH45674
PH10398	PH21819	PH26260	PH32855	PH37755	PH46085
PH10474	PH21858	PH26291	PH33129	PH38025	

Frequently check the z/OS Connect EE PSP Bucket for HIPER and SPECIAL attention PTFs against all FMIDs that you must install. You can also receive the latest HOLDDATA, then add the **FIXCAT(IBM.PRODUCTINSTALL-REQUIREDSERVICE)** operand on your **APPLY CHECK** command. This will allow you to review the recommended and critical service that should be installed with your FMIDs.

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating z/OS Connect EE. 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 z/OS Connect EE.

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 4. Driving System Software Requirements

Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in the shipped product?
5650-ZOS	z/OS	2.3.0	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 3.6.0.

Note: Installation might require migration to new z/OS releases to be service supported. See https://www.ibm.com/support/pages/lifecycle/search?q=5650-ZOS.

5.2 Target System Requirements

This section describes the environment of the target system required to install and use z/OS Connect EE.

z/OS Connect EE 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.

Figure 5. Target System Mandatory Installation Requisites

Program Number	Product Name	Minimum VRM	Minimum Service Level to satisfy these APARs	Included in the shipped product?
5650-ZOS	z/OS	2.3.0 or later	N/A	No

Conditional installation requisites identify products that are required for the successful installation of optional features.

Figure 6. Target System Conditional Installation Requisites

Program Number	Product Name	Minimum VRM	Function for which this is a requisite	Included in the shipped product?
5655-Y04	IBM CICS Transaction Server for z/OS	5.4 or higher	JZC3002 z/OS Connect EE CICS Feature	No

Note: Installation might require migration to new z/OS releases to be service supported. See https://www.ibm.com/support/pages/lifecycle/search?q=5655-Y04.

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.

Figure 7. Target System Mandatory Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level
5655-DGH	IBM 64-bit SDK for z/OS, Java Technology Edition 8.0 APAR PH15760 is recommended.

Conditional operational requisites identify products that are *not* required for this product to operate its basic functions but are required at run time for this product to operate specific functions.

Figure 8. Target System Conditional Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level	Function
5655-Y04	IBM CICS Transaction Server for z/OS 5.4 or higher	JZC3002 z/OS Connect EE CICS Feature

Note: For communication between IMS applications and z/OS applications using the API requester feature of z/OS Connect EE it is recommended that you apply the z/OS Client Web Enablement Toolkit fix for APAR **OA57228**.

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.

z/OS Connect EE 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.

z/OS Connect EE uses the same libraries as z/OS Connect EE Unlimited and z/OS Connect EE open beta. If you want to run these products concurrently, you must install them in separate SMP/E zones.

5.2.3 DASD Storage Requirements

z/OS Connect EE libraries can reside on all supported DASD types.

Figure 9 lists the total space that is required for each type of library.

Figure 9. Total DASD Space Required by z/OS Connect EE

Library Type	Total Space Required in 3390 Trks	Description
Target	150 tracks	
Distribution	4665 tracks	
zFS	9000 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 6.1.5, “Allocate SMP/E Target and Distribution Libraries” on page 19.

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.

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

The following figures describe the target and distribution libraries and file system paths required to install z/OS Connect EE. The storage requirements of z/OS Connect EE 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 10. Storage Requirements for z/OS Connect EE Target Libraries

Library DDNAME	Member Type	Target Volume	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
SBAQCOB	SAMP	ANY	U	PDS	FB	80	15	2
SBAQINST	SAMP	ANY	U	PDSE	FB	80	15	2
SBAQLIB	LMOD	ANY	U	PDSE	U	0	15	2
SBAQPLI	SAMP	ANY	U	PDS	FB	80	15	2
SBAQSAMP	SAMP	ANY	U	PDSE	FB	80	30	2
SBAQLIB1	LMOD	ANY	U	PDSE	U	0	15	2

Figure 11. z/OS Connect EE File System Paths

DDNAME	TYPE	Path Name
SBAQZFS	N	/usr/lpp/IBM/zosconnect/v3r0/IBM
SBAQWLP	N	/usr/lpp/IBM/zosconnect/v3r0/wlp/IBM

Figure 12. Storage Requirements for z/OS Connect EE Distribution Libraries

Library DDNAME	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
ABAQCOB	U	PDSE	FB	80	15	2
ABAQINST	U	PDSE	FB	80	15	2
ABAQMOD	U	PDSE	U	0	15	2
ABAQPLI	U	PDSE	FB	80	15	2
ABAQSAMP	U	PDSE	FB	80	30	2
ABAQSCR	U	PDSE	VB	32000	15	1
ABAQZFS	U	PDSE	V	32000	8250	40
ABAQLIB1	U	PDSE	U	0	15	2

5.3 FMIDs Deleted

Installing z/OS Connect EE 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 z/OS Connect EE 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 SMP/E Considerations

Installing z/OS Connect EE into a new set of SMP/E zones, including SMPCSI, target, distribution, and zFS data sets allows independent maintenance of z/OS Connect EE, z/OS and other subsystems. This Program Directory provides sample jobs and instructions to create such an SMP/E environment.

6.0 Installation Instructions

This chapter describes the installation method and the step-by-step procedures to install and to activate the functions of z/OS Connect EE.

Please note the following points:

- If you want to install z/OS Connect EE 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 z/OS Connect EE

6.1.1 SMP/E Considerations for Installing z/OS Connect EE

Use SMP/E to install this release of z/OS Connect EE.

All installation steps must be run from a user ID that is defined to UNIX Systems Services, and has the following attributes:

- UID(0) or READ access or higher to the BPX.SUPERUSER facility class.
- READ access or higher to the BPX.FILEATTR.PROGCTL and BPX.FILEATTR.APF and BPX.FILEATTR.SHARELIB facility classes.

6.1.2 SMP/E Options Subentry Values

The recommended values for certain SMP/E CSI subentries are shown in Figure 13. 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 13. SMP/E Options Subentry Values

Subentry	Value	Comment
DSSPACE	(6000,375,100)	The space used if SMP/E allocates the RELFILE data sets.
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 z/OS Connect EE:

Figure 14. Sample Installation Jobs

Job Name	Job Type	Description	RELFILE
BAQSMPSU	SETUP	Sample job to set up a new SMP/E environment	IBM.HZC3000.F2
BAQALLOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HZC3000.F2
BAQIZFS0	CREATE	Sample job to create mount point (first installation only)	IBM.HZC3000.F2
BAQBPXP0	MOUNT	Sample job to set up zfs mount points for top-level directory	IBM.HZC3000.F2
BAQIZFS1	CREATE	Sample job to create mount point (subsequent installations)	IBM.HZC3000.F2
BAQBPXP1	MOUNT	Sample job to set up zfs mount points for child directories	IBM.HZC3000.F2
BAQISMKD	MKDIR	Sample job to invoke the supplied BAQMKDIR EXEC to allocate file system paths	IBM.HZC3000.F2
BAQMKDIR	MKDIR	EXEC to create the necessary directories	IBM.HZC3000.F2
BAQDDDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.HZC3000.F2
BAQRECV	RECEIVE	Sample RECEIVE job	IBM.HZC3000.F2
BAQRECVE	RECEIVE	Sample RECEIVE job for electronic/disk input	IBM.HZC3000.F2
BAQAPPLY	APPLY	Sample APPLY job	IBM.HZC3000.F2
BAQACCPT	ACCEPT	Sample ACCEPT job	IBM.HZC3000.F2

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.9, “Perform SMP/E RECEIVE” on page 21) then copy the jobs from the RELFILES to a work data set for editing and submission. See Figure 14 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=*
//TAPEIN   DD DSN=IBM.HZC3000.F2,UNIT=tunit,
//         VOL=SER=volser,LABEL=(x,SL),
//         DISP=(OLD,KEEP)
//FILEIN   DD DSN=IBM.HZC3000.F2,UNIT=SYSALLDA,DISP=SHR,
//         VOL=SER=filevol
//OUT      DD DSNAME=jcl-library-name,
//         DISP=(NEW,CATLG,DELETE),
//         VOL=SER=dasdvol,UNIT=SYSALLDA,
//         SPACE=(TRK,(5,5,5))
//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.HZC3000.F2 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.

Customize each of the sample jobs listed in Figure 14 on page 17. Each sample job contains comments with specific instructions for customization.

6.1.4 Prepare the installation environment

6.1.4.1 Create new SMP/E zones

Customize the sample job **BAQSMPSU** to set up the SMP/E global, target and distribution zones.

If you are installing into a new global zone, edit **BAQSMPSU** following the instructions given within the job.

IBM strongly recommends creating new target and distribution zones and libraries for an installation of z/OS Connect EE because:

- z/OS Connect EE might require increased space for some target and distribution libraries.

- Using new zones allows the provided allocation jobs to be used to create new libraries and allows multiple versions of the product to be installed.

If you are installing into an existing global zone, check that:

- The PEMAX option entry is set to 9999, or left to default.
- The DSSPACE options entry specifies at least 800 directory blocks.
- The target zone contains DDDEF entries for MACLIB, MODGEN, CSSLIB, SCEELKED and SYSLIB. See sample job (BAQSMPSU) for examples.

If you need to create new target and distribution zones for z/OS Connect EE, edit **BAQSMPSU** following the instructions given within the job.

Update the job with a valid job card and submit it.

Expected Return Codes and Messages: The job consists of a number of steps, all of which should complete with a return code of 0. If any of the return codes is not 0, inspect the job output to determine what caused the problem and correct it, then rerun the job from the step that failed.

6.1.5 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job **BAQALLOC** to allocate the SMP/E target and distribution libraries for z/OS Connect EE. Consult the instructions in the sample job for more information.

Make sure the data sets are allocated on the required volumes.

Expected Return Codes and Messages:

You will receive a return code of 0 if this job runs correctly.

6.1.6 Create the UNIX System Services File System

BAQIZFS0 creates a directory (/usr/lpp/IBM/zosconnect) that is used as a parent directory for the zFS mounts required for each IBM z/OS Connect EE release. This directory and mount is only ever created once for all IBM z/OS Connect EE releases, and if the directory currently exists the job should not be run. The follow up job **BAQIZFS1** creates a release specific zFS mounted in this directory for this release of z/OS Connect EE.

The BAQIZFS0 job:

- Creates the `zosconnect` directory at `/usr/lpp/IBM`
- Mounts the zFS at directory `/usr/lpp/IBM/zosconnect`
- Changes the permission settings for the `/usr/lpp/IBM/zosconnect` directory to:
  - Owner=RWX
  - Group=RWX

- Other=R-X

(In octal form: 775)

Where:

- R equates to Read
- W equates to Write
- X equates to Execute
- - equates to no permission

Notes:

1. **BAQIZFS0 only ever needs to be run once.**
2. RACF ALTER ACCESS to the zFS data sets must be granted before running this BAQIZFS0.
3. The `/usr/lpp/IBM/zosconnect` directory contains only directories, each being a mount point.
4. z/OS Connect EE requires the MOUNT issued by **BAQIZFS0** to access files stored in the zFS, but the MOUNT command is lost when you re-IPL z/OS. In your working copy of the F2 data set, member **BAQBPXP0** contains a MOUNT command for `/usr/lpp/IBM/zosconnect`. Copy this command into a BPXPRMxx member of the SYS1.PARMLIB data set to ensure the mount is restored when z/OS is IPLed.
5. All steps of **BAQIZFS0** must end with return code zero for the job to be successful.

BAQIZFS1 creates a release specific zFS mounted in `/usr/lpp/IBM/zosconnect` for this release of z/OS Connect EE. This job:

- Unmounts the zFS at directory `/usr/lpp/IBM/zosconnect/v3r0` to allow the job to be rerun, and if necessary forces return code zero.
- Deletes `/usr/lpp/IBM/zosconnect/v3r0`. This is to allow the job to rerun, and if necessary forces return code zero.
- Deletes the zFS specified in the @zfs1dsn@ variable to allow the job to rerun, and if necessary forces return code zero.
- Creates the zFS specified by the @zfs1dsn@ variable.
- Creates the `v3r0` directory at `/usr/lpp/IBM/zosconnect/v3r0`.
- Mounts the zFS at directory `/usr/lpp/IBM/zosconnect/v3r0`.
- Changes the permission settings for the `v3r0` directory to 775.

All steps of **BAQIZFS1** must end with return code zero for the job to be successful.

z/OS Connect EE requires the MOUNT issued by **BAQIZFS1** to access files stored in the zFS, but the MOUNT command is lost when you re-IPL z/OS. In your working copy of the F2 data set, member **BAQBPXP1** contains a MOUNT command for `/usr/lpp/IBM/zosconnect/v3r0`. Copy this command into a BPXPRMxx member of the SYS1.PARMLIB dataset to ensure the mount is restored when z/OS is IPLed.

6.1.7 Allocate zFS Paths

The target system zFS data set must be mounted on the driving system when running the sample **BAQISMKD** job since the job will create paths in the zFS.

Before running the sample job to create the paths in the file system, you must ensure that OMVS is active on the driving system, and that the target system's zFS file system is mounted to the driving system. zFS must be active on the driving system if you are installing z/OS Connect EE into a file system that is zFS.

If you plan to install z/OS Connect EE into a new zFS file system, you must create the mountpoint and mount the new file system to the driving system. For z/OS Connect EE, the recommended mountpoint is shown in the sample job BAQIZFS1. Edit and submit **BAQISMKD** to allocate the zFS paths for z/OS Connect EE. Consult the instructions in the sample job for more information.

If you create a new zFS for this product, you should consider updating the BPXPRMxx PARMLIB member to mount the new file system at IPL This may be helpful if an IPL occurs before the installation is complete.

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 **BAQDDDEF** to create DDDEF entries for the SMP/E target and distribution data sets and directories for z/OS Connect EE. Make sure the call library DDDEFs point to the corresponding data sets for your z/OS target system. Consult the instructions in the sample job for more information.

Check the job output to verify that all directories have been created.

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

If you have obtained z/OS Connect EE as part of a CBPDO, and the RECEIVE has not been performed as part of the download process, use the RCVPDO job in the CBPDO RIMLIB data set to receive the z/OS Connect EE 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 **BAQRECV** (or job **BAQRECVE** if z/OS Connect EE was obtained via electronic media) to perform the SMP/E RECEIVE for z/OS Connect EE. Consult the instructions in the sample job for more information.

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

6.1.10 Perform SMP/E APPLY

1. Ensure that you have the latest HOLDDATA; then edit and submit sample job **BAQAPPLY** to perform an SMP/E APPLY CHECK for z/OS Connect EE. 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 APARs for the FMIDs you will be installing. An APPLY CHECK will help you determine if any HIPER APARs are applicable to the FMIDs you are installing. If there are any applicable HIPER 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 APARs. However, do not deploy the software until the unresolved HIPER APARs have been analyzed to determine their applicability. That is, before deploying the software either ensure fixing PTFs are applied to resolve all HIPER APARs, or ensure the problems reported by all HIPER 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
            SELECT(
                   fmid
                  ,fmid
                  ,...
                        )
           FORFMID(
                   fmid
                  ,fmid
                  ,...
                        ) CHECK
   SOURCEID(RSU*)
   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
         SELECT(
                fmid
               ,fmid
               ,...
                     )
        FORFMID(
                fmid
               ,fmid
               ,...
                     ) CHECK
SOURCEID(RSU*)
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.

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.

6.1.11 Perform SMP/E ACCEPT

Edit and submit sample job **BAQACCPT** to perform an SMP/E ACCEPT CHECK for z/OS Connect EE. Consult the instructions in the sample job for more information.

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

but not *warnings* (SMP/E treats bypassed PRE, ID, REQ, and IFREQ conditions as warnings rather than errors).

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

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

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

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

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

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

6.1.12 Run REPORT CROSSZONE

The SMP/E REPORT CROSSZONE command identifies requisites for products that are installed in separate zones. This command also creates APPLY and ACCEPT commands in the SMPPUNCH data set. You can use the APPLY and ACCEPT commands to install those cross-zone requisites that the SMP/E REPORT CROSSZONE command identifies.

After you install z/OS Connect EE, it is recommended that you run REPORT CROSSZONE against the new or updated target and distribution zones. REPORT CROSSZONE requires a global zone with ZONEINDEX entries that describe all the target and distribution libraries to be reported on.

For more information about REPORT CROSSZONE, see the SMP/E manuals.

6.2 Activating z/OS Connect EE

6.2.1 File System Execution

To complete the product installation, follow the steps documented by *Installing z/OS Connect EE* in the IBM documentation at: **https://www.ibm.com/docs/en/zosconnect/3.0**

Note: The file system where you install z/OS Connect EE must be mounted read/write. When the installation is complete, you can change the file system to read-only.

6.2.2 Configuring z/OS Connect EE to use z/OS authorized services

The Angel process is provided as part of the Liberty profile that is included in the z/OS Connect EE. The Angel process must be configured and started so that z/OS Connect EE can use z/OS authorized services.

More information about configuring the Liberty Angel process is documented in the *Configuring the Liberty Angel process and z/OS authorized services* section of the z/OS Connect EE documentation at: **https://www.ibm.com/docs/en/zosconnect/3.0**

6.2.3 Configuring CICS to use WebSphere Optimized Local Adapters (Optional)

Configuring CICS to use WebSphere Optimized Local Adapters(WOLA) is required only if the z/OS Connect EE WOLA service provider is to be used to connect to CICS.

WOLA is provided as part of the Liberty profile that is included in the z/OS Connect EE installation. To configure CICS to use WOLA the WOLA modules from the z/OS Connect EE installation directory must be copied from the UNIX System Services file system to a load library and the CICS region startup JCL modified appropriately.

More information about configuring CICS to use WOLA is documented in the *Configuring CICS to use WOLA* section of the z/OS Connect EE documentation at: **https://www.ibm.com/docs/en/zosconnect/3.0**

7.0 Notices

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