Program Directory for

IBM z/OS Debugger

V14.1.0

Program Number 5724-T07, 5655-AC5, 5655-Q50

FMIDs HADRE10, JADRE1J, JADRE1K

for Use with
z/OS V02.01.00 or later

Service Updated 8 September 2017

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GI13-4540-02

Note

Before using this information and the product it supports, be sure to read the general information under 7.0, “Notices” on page 54.

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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 z/OS Debugger. This publication refers to IBM z/OS Debugger as z/OS Debugger.

z/OS Debugger is available as a component of multiple products. Depending on which product you acquired, different functions of z/OS Debugger will be enabled or disabled.

- IBM Developer for z Systems V14.1.0, program number 5724-T07 (web download)
- IBM Developer for z Systems Enterprise Edition V14.1.0, program number 5655-AC5 (Shopz orderable)
- IBM Debug for z Systems V14.1.0, program number 5655-Q50 (Shopz orderable)

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 3 identifies the basic program materials and documentation for z/OS Debugger.
- 3.0, “Program Support” on page 7 describes the IBM support available for z/OS Debugger.
- 4.0, “Program and Service Level Information” on page 9 lists the APARs (program level) and PTFs (service level) that have been incorporated into z/OS Debugger.
- 5.0, “Installation Requirements and Considerations” on page 10 identifies the resources and considerations that are required for installing and using z/OS Debugger.
- 6.0, “Installation Instructions” on page 28 provides detailed installation instructions for z/OS Debugger. It also describes the procedures for activating the functions of z/OS Debugger, or refers to appropriate publications.

The rest of this section only applies when z/OS Debugger is ordered via Shopz. It does not apply when you downloaded it from the web.
Select this link to go to the next section: 1.1, “z/OS Debugger Description” on page 2

Before installing z/OS Debugger, 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.

z/OS Debugger 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 Debugger are included on the CBPDO tape.

Do not use this program directory if you install z/OS Debugger 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 Debugger Description

IBM z/OS Debugger helps z/OS application developers debug programs running in a variety of environments, such as batch, TSO, CICS, IMS, DB2, DB2 Stored Procedures, and z/OS UNIX System Services.

1.2 z/OS Debugger FMIDs

z/OS Debugger consists of the following FMIDs:

HADRE10
JADRE1J
JADRE1K

The rest of this section only applies when z/OS Debugger is ordered via Shopz. It does not apply when you downloaded it from the web.
Select this link to go to the next section: 2.0, "Program Materials" on page 3

You will receive the following materials:

- If you order only the base feature, you will receive the following materials:
  - z/OS Debugger Base (FMID HADRE10)
- If you order both the base and Japanese features, you will receive the following materials:
  - z/OS Debugger Base and Japanese (FMIDs HADRE10 and JADRE1J)
- If you order both the base and Korean features, you will receive the following materials:
  - z/OS Debugger Base and Korean (FMIDs HADRE10 and JADRE1K)
- If you order all--the base, Japanese, and Korean features, you will receive the following materials:
  - z/OS Debugger Base, Japanese, and Korean (FMIDs HADRE10, JADRE1J and JADRE1K)

2.0 Program Materials

An IBM program is identified by a program number.

z/OS Debugger is available as a component of multiple products. Depending on which product you acquired, different functions of z/OS Debugger will be enabled or disabled.

- IBM Developer for z Systems V14.1.0, program number 5724-T07 (web download)
- IBM Developer for z Systems Enterprise Edition V14.1.0, program number 5655-AC5 (Shopz orderable)
- IBM Debug for z Systems V14.1.0, program number 5655-Q50 (Shopz orderable)

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 Debugger. 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 28 for more information about how to install the program.

The rest of this section only applies when z/OS Debugger is ordered via Shopz. It does not apply when you downloaded it from the web.
Select this link to go to the next section: 2.2, “Optional Machine-Readable Material” on page 5

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

Figure 1 describes the program file content for z/OS Debugger. 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 -- Base

Name	ORG	RECFM	LRECL	BLK SIZE
SMPMCS	SEQ	FB	80	8800
IBM.HADRE10.F1	PDSE	FB	80	8800
IBM.HADRE10.F2	PDSE	FB	80	8800
IBM.HADRE10.F3	PDSE	U	0	6144
IBM.HADRE10.F4	PDSE	FB	80	8800
IBM.HADRE10.F5	PDSE	FB	80	8800
IBM.HADRE10.F6	PDSE	FB	80	8800
IBM.HADRE10.F7	PDSE	FB	80	8800
IBM.HADRE10.F8	PDSE	FB	80	8800
IBM.HADRE10.F9	PDSE	FB	80	8800
IBM.HADRE10.F10	PDSE	FB	80	8800

Figure 2. Program File Content -- Japanese

Name	ORG	RECFM	LRECL	BLK SIZE
SMPMCS	SEQ	FB	80	8800
IBM.JADRE1J.F1	PDSE	FB	80	8800
IBM.JADRE1J.F2	PDSE	FB	80	8800
IBM.JADRE1J.F3	PDSE	U	0	6144
IBM.JADRE1J.F4	PDSE	FB	80	8800
IBM.JADRE1J.F5	PDSE	FB	80	8800
IBM.JADRE1J.F6	PDSE	FB	80	8800

Figure 3. Program File Content -- Korean

Name	ORG	RECFM	LRECL	BLK SIZE
SMPMCS	SEQ	FB	80	8800
IBM.JADRE1K.F1	PDSE	FB	80	8800
IBM.JADRE1K.F2	PDSE	FB	80	8800
IBM.JADRE1K.F3	PDSE	U	0	6144
IBM.JADRE1K.F4	PDSE	FB	80	8800
IBM.JADRE1K.F5	PDSE	FB	80	8800
IBM.JADRE1K.F6	PDSE	FB	80	8800

2.2 Optional Machine-Readable Material

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

2.3 Program Publications

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

Figure 4 identifies the basic unlicensed program publications for z/OS Debugger. Those that are in softcopy format publications can be obtained from the IBM Publications Center website at http://www.ibm.com/shop/publications/order/.

Figure 4 (Page 1 of 2). Basic Material: Unlicensed

Publication Title	Form Number	Media Format
IBM z/OS Debugger Users Guide	SC27-4642	See note[1]
IBM z/OS Debugger Reference Summary	SC27-4643	See note[1]
IBM z/OS Debugger Reference and Messages	SC27-4644	See note[1]
IBM z/OS Debugger Customization Guide	SC27-4645	See note[1]

Figure 4 (Page 2 of 2). Basic Material: Unlicensed		
Publication Title	**Form Number**	**Media Format**
IBM z/OS Debugger API Users Guide and Reference	SC27-4647	See note[1]

Note:

1. These, and other, publications can be obtained from the Debug for z Systems section in the Developer for z Systems online library, http://www-01.ibm.com/support/docview.wss?uid=swg27048563.
2. Requisite information can be obtained by creating a report for z/OS Debugger on http://www.ibm.com/software/reports/compatibility/clarity/index.html.

2.3.1 Optional Program Publications

No optional publications are provided for z/OS Debugger.

2.4 Program Source Materials

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

2.5 Publications Useful During Installation

You might want to use the publications listed in Figure 5 during the installation of z/OS Debugger.

Figure 5. Publications Useful During Installation		
Publication Title	**Form Number**	**Media Format**
IBM SMP/E for z/OS User's Guide	SA22-7773	http://www.ibm.com/shop/publications/order/
IBM SMP/E for z/OS Commands	SA22-7771	http://www.ibm.com/shop/publications/order/
IBM SMP/E for z/OS Reference	SA22-7772	http://www.ibm.com/shop/publications/order/
IBM SMP/E for z/OS Messages, Codes, and Diagnosis	GA22-7770	http://www.ibm.com/shop/publications/order/

3.0 Program Support

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

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 Debugger, 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 6.1.14, “Perform SMP/E APPLY” on page 44 for a sample APPLY command

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

If the CBPDO for z/OS Debugger 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 z/OS Debugger are included in Figure 6.

Figure 6. PSP Upgrade and Subset ID

UPGRADE	SUBSET	Description
DEBUGE10	HADRE10	z/OS Debugger Base
DEBUGE10	JADRE1J	z/OS Debugger JPN
DEBUGE10	JADRE1K	z/OS Debugger KOR

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 7 on page 8 identifies the component IDs (COMPID) for z/OS Debugger.

Figure 7. Component IDs

FMID	COMPID	Component Name	RETAIN Release
HADRE10	5724T0713	z/OS Debugger Base	E10
JADRE1J	5724T0713	z/OS Debugger JPN	E1J
JADRE1K	5724T0713	z/OS Debugger KOR	E1K

4.0 Program and Service Level Information

This section identifies the program and relevant service levels of z/OS Debugger. 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 resolved APARs of previous releases of z/OS Debugger have been incorporated into z/OS Debugger.

4.2 Service Level Information

No PTFs against this release of z/OS Debugger have been incorporated into the product package.

Frequently check the z/OS Debugger 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 Debugger. 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 Debugger.

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 8. 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	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.

5.2 Target System Requirements

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

z/OS Debugger 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.

z/OS Debugger 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.

z/OS Debugger 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.

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.

The product in which you received z/OS Debugger contains multiple FMIDs, some of which provide services utilized by z/OS Debugger. See 6.3, “Product FMIDs” on page 52 for details.

Figure 9 lists the required service for z/OS operational requisites. Install the appropriate PTFs according to the level of your operating system.

Figure 9. Service for z/OS Operational Requisites

FMID	Product Name	PTF
z/OS V2.2		
HLE77A0	(Language Environment)	UI29282 UI30573 UI31702 UI33265 UI43053 UI45429 UI43458
z/OS V2.1		
HDZ2210	(DFSMS)	UA71130
HLE7790	(Language Environment)	UK95549 UI13453 UI16760 UI19022 UI19022 UI20212 UI23232 UI27324 UI27454 UI27850 UI29283 UI29373 UI29946 UI33267 UI43054 UI45431 UI43459

Figure 10 lists the conditional operational requisites.

Figure 10 (Page 1 of 3). Target System Conditional Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level	Function
5696-234	High Level Assembler for MVS & VM & VSE V1.6	Debug of Assembler programs
5648-B05	COBOL and CICS Command Level Conversion Aid for OS/390 & MVS & VM V2.1	Convert old COBOL source to supported compiler levels
Any **one** of the following:		
5655-AC5	Developer for z Systems Enterprise Edition V14.0 through V14.1	Remote debug on workstation
5724-T07	Developer for z Systems V14.0 through V14.1	Remote debug on workstation

Figure 10 (Page 2 of 3). Target System Conditional Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level	Function
5724-T07	Rational Developer for z Systems V9.5	Remote debug on workstation
5724-T07	Rational Developer for System z V9.1	Remote debug on workstation
Any **one** of the following:		
5655-EX1	Explorer for z/OS V3.0.1 through v3.1.1	Remote debug on workstation
5655-EXP	Explorer for z/OS V3.0	Remote debug on workstation
Any **one** of the following:		
5655-IPV	Application Delivery Foundation for z Systems Common Components V1.8	Services shared by various development related products
5655-IPV	Problem Determination Tools Common Component V1.7	Services shared by various development related products
Any **one** of the following:		
5655-Q42	File Manager for z/OS V14.1	Tools for working with z/OS data sets, DB2, CICS and IMS data
5655-Q12	File Manager for z/OS V13.1	Tools for working with z/OS data sets, DB2, CICS and IMS data
Any **one** of the following:		
5655-Q41	Fault Analyzer for z/OS V14.1	Application abend analysis
5655-Q11	Fault Analyzer for z/OS V13.1	Application abend analysis
Any **one** of the following:		
5722-DFJ	CICS TS for z/OS Value Unit Edition, V5.1 through V5.4	CICS support
5655-Y04	CICS TS for z/OS V5.1 through V5.4	CICS support
5655-S97	CICS TS for z/OS V4.2	CICS support
Any **one** of the following:		
5770-AF3	DB2 12 for z/OS Value Unit Edition	DB2 support
5659-DB2	DB2 12 for z/OS	DB2 support
5697-P43	DB2 11 for z/OS Value Unit Edition	DB2 support
5615-DB2	DB2 11 for z/OS	DB2 support
Any **one** of the following:		
5655-DSE	IMS Database Value Unit Edition, V14	IMS support
5635-A05	IMS V14	IMS support
5655-DSM	IMS Database Value Unit Edition, V13	IMS support
5635-A04	IMS V13	IMS support

Figure 10 (Page 3 of 3). Target System Conditional Operational Requisites		
Program Number	**Product Name and Minimum VRM/Service Level**	**Function**
Any **one** of the following:		
5650-ZOS	z/OS V2.1 (or later) C/C++ Element	Debug of C/C++ programs
5655-121	C/C++ for MVS/ESA V3	Debug of C/C++ programs
5688-216	AD/Cycle C/370 V1.2	Debug of C/370 programs
Any **one** of the following:		
5655-EC6	Enterprise COBOL for z/OS V6.1 through V6.2	Debug of COBOL programs
5655-W32	Enterprise COBOL for z/OS V5	Debug of COBOL programs
5655-S71	Enterprise COBOL for z/OS V4.2	Debug of COBOL programs
Any **one** of the following:		
5655-PL5	Enterprise PL/I for z/OS V5.1 through V5.2	Debug of PL/I programs
5655-W67	Enterprise PL/I for z/OS V4.3 through V4.5	Debug of PL/I programs

Figure 11 lists the required service for conditional operational requisites. Install the appropriate PTFs according to the level of your product.

Figure 11 (Page 1 of 2). Service for Conditional Operational Requisites		
FMID	**Product Name**	**PTF**
sub-systems		
HCI6900	CICS TS for z/OS V5.2	UI22206 UI30410
HCI6800	CICS TS for z/OS V5.1	UI13727 UI22205
HCI6600	CICS TS for z/OS V4.1	UK48726 UK62906
compilers		
HMQ4160	High Level Assembler for MVS & VM & VSE V1.6	UK47103 UK59311
HLB7790	z/OS 2.1 XL C/C++ Base	UI18562
HADB610	Enterprise COBOL for z/OS V6.1	UI43370 UI48286

Figure 11 (Page 2 of 2). Service for Conditional Operational Requisites

FMID	Product Name	PTF
HADB520	Enterprise COBOL for z/OS V5.2	UI42823 UI47619
H270440	Enterprise PL/I for z/OS V4.4	UI22280
H270430	Enterprise PL/I for z/OS V4.3	UI22279
miscellaneous		
HVWR170	Problem Determination Tools Common Component V1.7	UI12603 UI13773 UI17700 UI19050 UI20222 UI22417 UI22990 UI23592 UI25395 UI26366 UI27502 UI29687 UI29954 UI32435 UI32893 UI33670 UI35729 UI37986 UI40638 UI42350 UI43942 UI45980 UI47837 UI48368
H09F210	COBOL and CICS Command Level Conversion Aid for OS/390 and MVS and VM V2.1	UK18923 UK93163 UK95729 UI19930 UI25023 UI36219

Figure 12 lists old releases of conditional operational requisite products that are no longer in service.

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

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

Figure 12 (Page 1 of 3). Out-of-support Conditional Operational Requisites

Program Number	Product Name and VRM/Service Level	Function
sub-systems		

Figure 12 (Page 2 of 3). Out-of-support Conditional Operational Requisites

Program Number	Product Name and VRM/Service Level	Function
5655-147	CICS TS for OS/390 V1.3	CICS support
5697-E93	CICS TS for z/OS V2.2 through V2.3	CICS support
5655-M15	CICS TS for z/OS V3	CICS support
5655-S97	CICS TS for z/OS V4.1	CICS support
5675-DB2	DB2 UDB for z/OS and OS/390 V7	DB2 support
5625-DB2	DB2 UDB for z/OS V8	DB2 support
5635-DB2	DB2 V9 for z/OS	DB2 support
5697-P31	DB2 10 for z/OS Value Unit Edition	DB2 support
5605-DB2	DB2 10 for z/OS	DB2 support
5655-J38	IMS V9	IMS support
5635-A01	IMS V10	IMS support
5635-A02	IMS V11	IMS support
5655-DSQ	IMS Database Value Unit Edition, V12	IMS support
5635-A03	IMS V12	IMS support
compilers		
5696-234	High Level Assembler for MVS & VM & VSE V1.5	Debug of Assembler programs via the disassembly view
5694-A01	z/OS V1.13 C/C++ Element	Debug of C/C++ programs
5647-A01	OS/390 V2.10 C/C++ Element	Debug of C/C++ programs
5740-CB1	OS/VS COBOL V1.2.4	Debug of COBOL programs (with limitations)
5668-958, 5688-023	VS COBOL II V1.3.1, V1.3.2, V1.4	Debug of COBOL programs (with limitations)
5688-197	IBM COBOL for MVS & VM V1	Debug of COBOL programs
5648-A25	COBOL for OS/390 & VM V2.2	Debug of COBOL programs
5655-G53	IBM Enterprise COBOL for z/OS V3	Debug of COBOL programs

Figure 12 (Page 3 of 3). Out-of-support Conditional Operational Requisites

Program Number	Product Name and VRM/Service Level	Function
5655-S71	IBM Enterprise COBOL for z/OS V4.1	Debug of COBOL programs
5668-909, 5668-910	OS PL/I V2.1, V2.2, V2.3	Debug of PL/I programs (with limitations)
5655-B22	IBM VisualAge PL/I for OS/390 V2	Debug of PL/I programs
5688-235	IBM PL/I for MVS and VM V1.1.1	Debug of PL/I programs
5655-H31	Enterprise PL/I for z/OS V3	Debug of PL/I programs
5655-W67	Enterprise PL/I for z/OS V4.1 through V4.2	Debug of PL/I programs

Figure 13 lists the required service for the old releases of conditional operational requisite products in Figure 12 on page 15. Install the appropriate PTFs according to the level of your product.

Figure 13 (Page 1 of 3). Service for out-of-support Conditional Operational Requisites

FMID	Product Name	PTF
sub-systems		
HCI5300	CICS TS for OS/390 V1.3	UQ81716 UQ82557
HCI6200	CICS TS for z/OS V2.2	UQ81557 UQ82628
HCI6300	CICS TS for z/OS V2.3	UQ83866 UQ83946 UK22257 UK25447 UK31617
HCI6400	CICS TS for z/OS V3.1	UK11717 UK18764 UK21469 UK25495 UK31566 UK33555 UK39008 UK40994
HCI6500	CICS TS for z/OS V3.2	UK27838 UK31567 UK33556 UK39009 UK40995 UK48737
HDB7710	DB2 UDB for z/OS and OS/390 V7	UQ57178
compilers		

Figure 13 (Page 2 of 3). Service for out-of-support Conditional Operational Requisites

FMID	Product Name	PTF
HMQ4150	High Level Assembler for MVS & VM & VSE V1.5	UK33757 UK40904 UK42558 UK59303
H26L330	Enterprise COBOL for z/OS V3.3	UK02153
H26L320	Enterprise COBOL for z/OS and OS/390 V3.2	UK02152 UQ84365
H26L310	Enterprise COBOL for z/OS and OS/390 V3.1	UQ72888
H249200	COBOL for OS/390 & VM V2.2	UQ71482 UQ72385
H249100	COBOL for OS/390 & VM V2.1	UQ46089 UQ71481 UQ72384
J249101	COBOL for OS/390 & VM V2.1 (Mixed-case English)	UQ46090
J249102	COBOL for OS/390 & VM V2.1 (JPN)	UQ46091
H270420	Enterprise PL/I for z/OS V4.2	UI22276
H270380	Enterprise PL/I for z/OS V3.8	UK44457
H270370	Enterprise PL/I for z/OS V3.7	UK31095 UK39550 UK44456
H270360	Enterprise PL/I for z/OS V3.6	UK20098 UK21916 UK22225 UK29178 UK30600 UK31028 UK39549

Figure 13 (Page 3 of 3). Service for out-of-support Conditional Operational Requisites

FMID	Product Name	PTF
H270350	Enterprise PL/I for z/OS V3.5	UK20097 UK20187 UK22224 UK29177 UK30599
H270340	Enterprise PL/I for z/OS V3.4	UK00175 UK01048 UK01926 UK01955 UK30598 UQ96871
H270330	Enterprise PL/I for z/OS V3.3	UK01925 UQ83141 UQ83550 UQ84230 UQ85850 UQ91552 UQ96870
H270320	Enterprise PL/I for z/OS and OS/390 V3.2	UK01924 UQ71704 UQ82334 UQ83140 UQ83549 UQ84229 UQ96869
H270310	Enterprise PL/I for z/OS and OS/390 V3.1	UQ71463 UQ83139 UQ83548 UQ84228

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 Debugger 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 Debugger has no negative requisites.

5.2.3 DASD Storage Requirements

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

Figure 14 lists the total space that is required for each type of library.

Figure 14. Total DASD Space Required by z/OS Debugger -- Base

Library Type	Total Space Required in 3390 Trks	Description
Target	1704 Tracks	
Distribution	1677 Tracks	
Web Download	3036 Tracks	This row only applies when z/OS Debugger is downloaded from the web. It does not apply when you ordered it via Shopz. These are temporary data sets, which can be removed after the SMP/E install.

Figure 15. Total DASD Space Required by z/OS Debugger -- Japanese

Library Type	Total Space Required in 3390 Trks	Description
Target	123 Tracks	
Distribution	123 Tracks	
Web Download	178 Tracks	This row only applies when z/OS Debugger is downloaded from the web. It does not apply when you ordered it via Shopz. These are temporary data sets, which can be removed after the SMP/E install.

Figure 16. Total DASD Space Required by z/OS Debugger -- Korean

Library Type	Total Space Required in 3390 Trks	Description
Target	123 Tracks	
Distribution	123 Tracks	
Web Download	177 Tracks	This row only applies when z/OS Debugger is downloaded from the web. It does not apply when you ordered it via Shopz. These are temporary data sets, which can be removed after the SMP/E install.

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 6.1.12, “Allocate SMP/E Target and Distribution Libraries” on page 43.

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, 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.
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.

The following figures describe the target and distribution libraries required to install z/OS Debugger. The storage requirements of z/OS Debugger 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 17. Storage Requirements for z/OS Debugger Target Libraries -- Base

Library DDNAME	Member Type	Target Volume	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
SEQALPA	LMOD	ANY	U	PDS	U	0	2	2
SEQAAUTH	LMOD	ANY	U	PDSE	U	0	15	N/A
SEQAMOD	LMOD	ANY	U	PDSE	U	0	1200	N/A
SEQABMOD	LMOD	ANY	U	PDSE	U	0	10	N/A
SEQASAMP	Sample	ANY	U	PDSE	FB	80	82	25
SEQAEXEC	EXEC	ANY	U	PDSE	FB	80	144	15
SEQAMENU	Message	ANY	U	PDSE	FB	80	2	2
SEQAPENU	Panel	ANY	U	PDSE	FB	80	112	55
SEQASENU	Skeleton	ANY	U	PDSE	FB	80	9	5
SEQATLIB	Table	ANY	U	PDSE	FB	80	5	2
SEQAMENP	Message	ANY	U	PDSE	FB	80	2	2
SEQAPENP	Panel	ANY	U	PDSE	FB	80	112	55
SEQASENP	Skeleton	ANY	U	PDSE	FB	80	9	5

- SEQALPA must be a PDS.
- SEQAAUTH, SEQAMOD, and SEQABMOD must be a PDS/E.
- SEQAMENU, SEQAPENU, and SEQASENU are ISPF libraries in mixed-case English.
- SEQAMENP, SEQAPENP, and SEQASENP are ISPF libraries in uppercase English.
- See section "Choosing a method to start z/OS Debugger Utilities" in chapter "Customizing z/OS Debugger Utilities" in the *IBM z/OS Debugger Customization Guide* (SC27-4645) for additional considerations if you want to merge these ISPF libraries into the common system libraries.

Figure 18 (Page 1 of 2). Storage Requirements for z/OS Debugger Target Libraries -- Japanese

Library DDNAME	Member Type	Target Volume	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
SEQAMOD	LMOD	ANY	S	PDSE	U	0	10	N/A
SEQABMOD	LMOD	ANY	S	PDSE	U	0	4	N/A
SEQASAMP	Sample	ANY	S	PDSE	FB	80	4	3

Figure 18 (Page 2 of 2). Storage Requirements for z/OS Debugger Target Libraries -- Japanese

Library DDNAME	Member Type	Target Volume	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
SEQAEXEC	EXEC	ANY	S	PDSE	FB	80	6	3
SEQAMJPN	Message	ANY	U	PDSE	FB	80	2	2
SEQAPJPN	Panel	ANY	U	PDSE	FB	80	112	70
SEQASJPN	Skeleton	ANY	U	PDSE	FB	80	9	3

- SEQAMOD, and SEQABMOD must be a PDS/E.
- SEQAMJPN, SEQAPJPN, and SEQASJPN are ISPF libraries in Japanese.
- See section "Choosing a method to start z/OS Debugger Utilities" in chapter "Customizing z/OS Debugger Utilities" in the *IBM z/OS Debugger Customization Guide* (SC27-4645) for additional considerations if you want to merge these ISPF libraries into the common system libraries.

Figure 19. Storage Requirements for z/OS Debugger Target Libraries -- Korean

Library DDNAME	Member Type	Target Volume	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
SEQAMOD	LMOD	ANY	S	PDSE	U	0	10	N/A
SEQABMOD	LMOD	ANY	S	PDSE	U	0	4	N/A
SEQASAMP	Sample	ANY	S	PDSE	FB	80	4	3
SEQAEXEC	EXEC	ANY	S	PDSE	FB	80	6	3
SEQAMKOR	Message	ANY	U	PDSE	FB	80	2	2
SEQAPKOR	Panel	ANY	U	PDSE	FB	80	112	70
SEQASKOR	Skeleton	ANY	U	PDSE	FB	80	9	3

- SEQAMOD, and SEQABMOD must be a PDS/E.
- SEQAMKOR, SEQAPKOR, and SEQASKOR are ISPF libraries in Korean.
- See section "Choosing a method to start z/OS Debugger Utilities" in chapter "Customizing z/OS Debugger Utilities" in the *IBM z/OS Debugger Customization Guide* (SC27-4645) for additional considerations if you want to merge these ISPF libraries into the common system libraries.

Figure 20. Storage Requirements for z/OS Debugger Distribution Libraries -- Base

Library DDNAME	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
AEQAMOD	U	PDSE	U	0	1200	N/A
AEQASAMP	U	PDSE	FB	80	82	25
AEQAEXEC	U	PDSE	FB	80	144	15
AEQAMENU	U	PDSE	FB	80	2	2
AEQAPENU	U	PDSE	FB	80	112	55
AEQASENU	U	PDSE	FB	80	9	5
AEQATLIB	U	PDSE	FB	80	5	2
AEQAMENP	U	PDSE	FB	80	2	2
AEQAPENP	U	PDSE	FB	80	112	55
AEQASENP	U	PDSE	FB	80	9	5

Figure 21. Storage Requirements for z/OS Debugger Distribution Libraries -- Japanese

Library DDNAME	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
AEQAMOD	S	PDSE	U	0	14	N/A
AEQASAMP	S	PDSE	FB	80	4	3
AEQAEXEC	S	PDSE	FB	80	6	3
AEQAMJPN	U	PDSE	FB	80	2	2
AEQAPJPN	U	PDSE	FB	80	112	70
AEQASJPN	U	PDSE	FB	80	9	3

Figure 22 (Page 1 of 2). Storage Requirements for z/OS Debugger Distribution Libraries -- Korean

Library DDNAME	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
AEQAMOD	S	PDSE	U	0	14	N/A
AEQASAMP	S	PDSE	FB	80	4	3

Figure 22 (Page 2 of 2). Storage Requirements for z/OS Debugger Distribution Libraries -- Korean

Library DDNAME	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
AEQAEXEC	S	PDSE	FB	80	6	3
AEQAMKOR	U	PDSE	FB	80	2	2
AEQAPKOR	U	PDSE	FB	80	112	70
AEQASKOR	U	PDSE	FB	80	9	3

The rest of this section only applies when z/OS Debugger is downloaded from the web. It does not apply when you ordered it via Shopz.
Select this link to go to the next section: 5.3, "FMIDs Deleted" on page 27

The following figures list data sets that are not used by z/OS Debugger, but are required as input for SMP/E.

Figure 23. Storage Requirements for z/OS Debugger Web Download Data Sets -- Base

Data Set Name	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
hlq.IBM.HADRE10.F1	U	PDSE	FB	80	102	N/A
hlq.IBM.HADRE10.F2	U	PDSE	FB	80	168	N/A
hlq.IBM.HADRE10.F3	U	PDSE	U	0	1026	N/A
hlq.IBM.HADRE10.F4	U	PDSE	FB	80	2	N/A
hlq.IBM.HADRE10.F5	U	PDSE	FB	80	152	N/A
hlq.IBM.HADRE10.F6	U	PDSE	FB	80	10	N/A
hlq.IBM.HADRE10.F7	U	PDSE	FB	80	6	N/A
hlq.IBM.HADRE10.F8	U	PDSE	FB	80	2	N/A
hlq.IBM.HADRE10.F9	U	PDSE	FB	80	152	N/A
hlq.IBM.HADRE10.F10	U	PDSE	FB	80	10	N/A
hlq.IBM.HADRE10.SMPMCS	U	SEQ	FB	80	13	N/A
z/OS UNIX file system	U	zFS	N/A	N/A	1411	N/A

Note: These are temporary data sets, which can be removed after the SMP/E install.

Figure 24. Storage Requirements for z/OS Debugger Web Download Data Sets -- Japanese

Data Set Name	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
hlq.IBM.JADRE1J.F1	U	PDSE	FB	80	4	N/A
hlq.IBM.JADRE1J.F2	U	PDSE	FB	80	5	N/A
hlq.IBM.JADRE1J.F3	U	PDSE	U	0	8	N/A
hlq.IBM.JADRE1J.F4	U	PDSE	FB	80	2	N/A
hlq.IBM.JADRE1J.F5	U	PDSE	FB	80	151	N/A
hlq.IBM.JADRE1J.F6	U	PDSE	FB	80	10	N/A
hlq.IBM.JADRE1J.SMPMCS	U	SEQ	FB	80	4	N/A
z/OS UNIX file system	U	zFS	N/A	N/A	38	N/A

Note: These are temporary data sets, which can be removed after the SMP/E install.

Figure 25. Storage Requirements for z/OS Debugger Web Download Data Sets -- Korean

Data Set Name	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
hlq.IBM.JADRE1K.F1	U	PDSE	FB	80	4	N/A
hlq.IBM.JADRE1K.F2	U	PDSE	FB	80	5	N/A
hlq.IBM.JADRE1K.F3	U	PDSE	U	0	8	N/A
hlq.IBM.JADRE1K.F4	U	PDSE	FB	80	2	N/A
hlq.IBM.JADRE1K.F5	U	PDSE	FB	80	151	N/A
hlq.IBM.JADRE1K.F6	U	PDSE	FB	80	10	N/A
hlq.IBM.JADRE1K.SMPMCS	U	SEQ	FB	80	4	N/A
z/OS UNIX file system	U	zFS	N/A	N/A	37	N/A

Note: These are temporary data sets, which can be removed after the SMP/E install.

5.3 FMIDs Deleted

Installing z/OS Debugger 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 Debugger 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

Target libraries that contain load modules have some special considerations. After you have successfully installed the product, do the following steps:

- Place SEQALPA in the LPA list by adding it to an LPALSTxx member of parmlib that will be used for IPL.
- Place SEQABMOD in the link list by adding a LNKLST ADD statement for it to a PROGxx member of parmlib that will be used for IPL.
- APF-authorize SEQAAUTH, and SEQABMOD by adding APF ADD statements for them to a PROGxx member of parmlib that will be used for IPL. The other load module data sets can be APF-authorized, but it is not required.
- Ensure that the LPA, and APF-authorized data sets are access controlled. This to prevent unauthorized execution of the programs within, and to prevent programs from being added to the data sets.
- For ease of access by the users, you can place SEQAMOD in the link list by adding a LNKLST ADD statement for it to a PROGxx member of parmlib that will be used for IPL.

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 Debugger.

Please note the following points:

- If you want to install z/OS Debugger 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 Debugger

6.1.1 SMP/E Considerations for Installing z/OS Debugger

Use the SMP/E RECEIVE, APPLY, and ACCEPT commands to install this release of z/OS Debugger.

6.1.2 SMP/E Options Subentry Values

The recommended values for certain SMP/E CSI subentries are shown in Figure 26. 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 26. SMP/E Options Subentry Values

Subentry	Value	Comment
DSSPACE	(1200,1200,1400)	Space allocation
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.

6.1.3 SMP/E CALLLIBS Processing

z/OS Debugger uses the CALLLIBS function provided in SMP/E to resolve external references during installation. When z/OS Debugger is installed, ensure that DDDEFs exist for the following libraries:

- SCEELKED
- CSSLIB
- SEZATCP

Note: CALLLIBS uses the previous DDDEFs only to resolve the link-edit for z/OS Debugger. These data sets are not updated during the installation of z/OS Debugger.

6.1.4 Overview of the installation steps

Overview of steps required to install IBM z/OS Debugger.

1. Allocate file system to hold web download package
   (only applicable for web download, not Shopz orders)
2. Upload the web download package to the host
   (only applicable for web download, not Shopz orders)
3. Extract and expand the compressed SMPMCS and RELFILEs
   (only applicable for web download, not Shopz orders)

   Select this link to skip the web download specific steps: 6.1.8, “Sample Jobs” on page 38
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. Enable/Register z/OS Debugger
10. Remove old registrations
11. Run the Installation Verification Programs (IVPs)
12. Verify the z/OS Debugger Utilities Setup Utility Function
13. Perform SMP/E ACCEPT
14. Run REPORT CROSSZONE

6.1.5 Allocate file system to hold web download package

This section only applies when z/OS Debugger is downloaded from the web. It does not apply when it is ordered via Shopz.
Select this link to skip the web download specific steps: 6.1.8, “Sample Jobs” on page 38

The SMP/E input data sets to install IBM z/OS Debugger are provided as compressed files in archives HADRE10.pax.Z, JADRE1J.pax.Z, and JADRE1K.pax.Z, which must be uploaded to z/OS as a z/OS UNIX file. You can either create a new z/OS UNIX file system (zFS) or create a new directory in an existing file system to place the download package.

You can use the following sample JCL to create a new file system, and directory, for the download package. The sample assumes that you will upload only the base feature (FMID HADRE10). The size of the file system must be increased if you also include other features:

- base feature, provided in HADRE10.pax.Z: 1411 tracks
- Japanese feature, provided in JADRE1J.pax.Z: 38 tracks
- Korean feature, provided in JADRE1K.pax.Z: 37 tracks

```
//FILESYS  JOB <job information>
//*
//* - Provide valid job card information
//* - Change:
//*   @zfs_path@
//*   ----+----1----+----2----+----3----+----4----+----5
//*              - To the absolute z/OS UNIX path for the download
//*                package (starting with /)
//*              - Maximum length is 50 characters
//*              - Do not include a trailing /
//*   @zfs_dsn@
//*              - To your file system data set name
//*
//* Your userid MUST be defined as a SUPERUSER to successfully
//* run this job
//*
//CREATE   EXEC PGM=IDCAMS,REGION=0M,COND=(0,LT)
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
  DEFINE CLUSTER ( -
         NAME(@zfs_dsn@) -
         TRK(1411 10) -
         LINEAR -
         SHAREOPTIONS(3) -
         )
//*
//         SET ZFSDSN='@zfs_dsn@'
//FORMAT   EXEC PGM=IOEAGFMT,REGION=0M,COND=(0,LT),
//            PARM='-aggregate &ZFSDSN -compat'
//*STEPLIB  DD DISP=SHR,DSN=IOE.SIOELMOD        before z/OS 1.13
//*STEPLIB  DD DISP=SHR,DSN=SYS1.SIEALNKE       from z/OS 1.13
//SYSPRINT DD SYSOUT=*
//*
//MOUNT    EXEC PGM=IKJEFT01,REGION=0M,COND=(0,LT)
//SYSEXEC  DD DISP=SHR,DSN=SYS1.SBPXEXEC
//SYSTSPRT DD SYSOUT=*
//SYSTSIN  DD *
  PROFILE MSGID WTPMSG
  oshell umask 0022; +
    mkdir -p @zfs_path@
  MOUNT +
    FILESYSTEM('@zfs_dsn@') +
    MOUNTPOINT('@zfs_path@') +
    MODE(RDWR) TYPE(ZFS) PARM('AGGRGROW')
//*
```

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

6.1.6 Upload the web download package to the host

This section only applies when z/OS Debugger is downloaded from the web. It does not apply when it is ordered via Shopz.
Select this link to skip the web download specific steps: 6.1.8, “Sample Jobs” on page 38

Upload the HADRE10.readme.txt file, and JADRE1J.readme.txt or JADRE1K.readme.txt if required, in text format and the HADRE10.pax.Z file, and JADRE1J.pax.Z or JADRE1K.pax.Z, in binary format from your workstation to the z/OS UNIX file system.

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 27. 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
d:	Location of the downloaded files
@zfs_path@	z/OS UNIX path where to store the files. This matches the @zfs_path@ variable you specified in the previous step.

Issue these commands to upload the z/OS Debugger Base:

```
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)): tsouid
331 Send password please.
Password: tsopw
230 tsouid is logged on.  Working directory is "tsouid.".
ftp> cd @zfs_path@
250 HFS directory @zfs_path@ is the current working directory
ftp> ascii
200 Representation type is Ascii NonPrint
ftp> put d:\HADRE10.readme.txt
200 Port request OK.
125 Storing data set @zfs_path@/HADRE10.readme.txt
250 Transfer completed successfully.
ftp: 20169 bytes sent in 0.01 sec. (1366.67 Kb/s)
ftp> binary
200 Representation type is Image
ftp> put d:\HADRE10.pax.Z
```

```
200 Port request OK.
125 Storing data set @zfs_path@/HADRE10.pax.Z
250 Transfer completed successfully.
ftp: 43739136 bytes sent in 1.26 sec. (1040.52 Kb/s)
ftp> quit
221 Quit command received. Goodbye.
```

Issue these commands to upload the z/OS Debugger Japanese feature:

```
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)): tsouid
331 Send password please.
Password: tsopw
230 tsouid is logged on.  Working directory is "tsouid.".
ftp> cd @zfs_path@
250 HFS directory @zfs_path@ is the current working directory
ftp> ascii
200 Representation type is Ascii NonPrint
ftp> put d:\JADRE1J.readme.txt
200 Port request OK.
125 Storing data set @zfs_path@/JADRE1J.readme.txt
250 Transfer completed successfully.
ftp: 19521 bytes sent in 0.01 sec. (1323.80 Kb/s)
ftp> binary
200 Representation type is Image
ftp> put d:\JADRE1J.pax.Z
200 Port request OK.
125 Storing data set @zfs_path@/JADRE1J.pax.Z
250 Transfer completed successfully.
ftp: 870912 bytes sent in 1.26 sec. (1115.22 Kb/s)
ftp> quit
221 Quit command received. Goodbye.
```

Issue these commands to upload the z/OS Debugger Korean feature:

```
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)): tsouid
331 Send password please.
Password: tsopw
230 tsouid is logged on.  Working directory is "tsouid.".
ftp> cd @zfs_path@
250 HFS directory @zfs_path@ is the current working directory
ftp> ascii
200 Representation type is Ascii NonPrint
```

```
ftp> put d:\JADRE1K.readme.txt
200 Port request OK.
125 Storing data set @zfs_path@/JADRE1K.readme.txt
250 Transfer completed successfully.
ftp: 19521 bytes sent in 0.01 sec. (1371.34 Kb/s)
ftp> binary
200 Representation type is Image
ftp> put d:\JADRE1K.pax.Z
200 Port request OK.
125 Storing data set @zfs_path@/JADRE1K.pax.Z
250 Transfer completed successfully.
ftp: 838656 bytes sent in 1.26 sec. (1201.43 Kb/s)
ftp> quit
221 Quit command received. Goodbye.
```

6.1.7 Extract and expand the compressed SMPMCS and RELFILEs

This section only applies when z/OS Debugger is downloaded from the web. It does not apply when it is ordered via Shopz.
Select this link to skip the web download specific steps: 6.1.8, “Sample Jobs” on page 38

The HADRE10.readme.txt, JADRE1J.readme.txt, and JADRE1K.readme.txt files uploaded in the previous step each hold a sample JCL to expand the compressed SMPMCS and RELFILEs from the uploaded HADRE10.pax.Z, JADRE1J.pax.Z, and JADRE1K.pax.Z files into data sets for use by the SMP/E RECEIVE job. The JCLs are repeated here for your convenience.

- @zfs_path@ matches the variable you specified in the previous step.
- If the 'oshell' command gets a RC=256 and message
  "pax: checksum error on tape (got ee2e, expected 0)", then the
  archive file was not uploaded to the host in binary format.
- GIMUNZIP allocates data sets to match the definitions of
  the original data sets. You may encounter errors if your SMS ACS
  routines alter the attributes used by GIMUNZIP.
  If this occurs, specify a non-SMS managed volume for the
  GIMUNZIP allocation of the data sets. For example:
  ```
  <ARCHDEF archid="..."
        storclas="storage_class" volume="data_set_volume"
        newname="..."/>
  ```

Customize and submit this JCL to expand the z/OS Debugger Base:

```
//EXTRACT  JOB <job information>
//*
//*   - Provide valid job card information
//*   - Change:
//*       @PREFIX@
//*       ----+----1----+----2----+
```

```
//*                  - To your desired data set name prefix
//*                  - Maximum length is 25 characters
//*                  - This value is used for the names of the
//*                    data sets extracted from the download-package
//*       @zfs_path@
//*       ----+----1----+----2----+----3----+----4----+----5
//*                  - To the absolute z/OS UNIX path for the
//*                    download-package (starting with /)
//*                  - Maximum length is 50 characters
//*                  - Do not include a trailing /
//*
//UNPAX    EXEC PGM=IKJEFT01,REGION=0M,COND=(0,LT)
//SYSEXEC  DD DISP=SHR,DSN=SYS1.SBPXEXEC
//SYSTSPRT DD SYSOUT=*
//SYSTSIN  DD *
  oshell cd @zfs_path@/ ; +
    pax -rvf HADRE10.pax.Z
//*
//GIMUNZIP EXEC PGM=GIMUNZIP,REGION=0M,COND=(0,LT)
//*STEPLIB  DD DISP=SHR,DSN=SYS1.MIGLIB
//SYSUT3   DD UNIT=SYSALLDA,SPACE=(CYL,(50,10))
//SYSUT4   DD UNIT=SYSALLDA,SPACE=(CYL,(25,5))
//SMPOUT   DD SYSOUT=*
//SYSPRINT DD SYSOUT=*
//SMPDIR   DD PATHDISP=KEEP,
// PATH='@zfs_path@/'
//SYSIN    DD *
```

```
<GIMUNZIP>
<ARCHDEF archid="SMPMCS"
         newname="@PREFIX@.IBM.HADRE10.SMPMCS"/>
<ARCHDEF archid="IBM.HADRE10.F1"
         newname="@PREFIX@.IBM.HADRE10.F1"/>
<ARCHDEF archid="IBM.HADRE10.F2"
         newname="@PREFIX@.IBM.HADRE10.F2"/>
<ARCHDEF archid="IBM.HADRE10.F3"
         newname="@PREFIX@.IBM.HADRE10.F3"/>
<ARCHDEF archid="IBM.HADRE10.F4"
         newname="@PREFIX@.IBM.HADRE10.F4"/>
<ARCHDEF archid="IBM.HADRE10.F5"
         newname="@PREFIX@.IBM.HADRE10.F5"/>
<ARCHDEF archid="IBM.HADRE10.F6"
         newname="@PREFIX@.IBM.HADRE10.F6"/>
<ARCHDEF archid="IBM.HADRE10.F7"
         newname="@PREFIX@.IBM.HADRE10.F7"/>
<ARCHDEF archid="IBM.HADRE10.F8"
         newname="@PREFIX@.IBM.HADRE10.F8"/>
<ARCHDEF archid="IBM.HADRE10.F9"
         newname="@PREFIX@.IBM.HADRE10.F9"/>
<ARCHDEF archid="IBM.HADRE10.F10"
         newname="@PREFIX@.IBM.HADRE10.F10"/>
</GIMUNZIP>
//*
```

Customize and submit this JCL to expand the z/OS Debugger Japanese feature:

```
//EXTRACT  JOB <job information>
//*
//*   - Provide valid job card information
//*   - Change:
//*       @PREFIX@
//*       ----+----1----+----2----+
//*                   - To your desired data set name prefix
//*                   - Maximum length is 25 characters
//*                   - This value is used for the names of the
//*                     data sets extracted from the download-package
//*       @zfs_path@
//*       ----+----1----+----2----+----3----+----4----+----5
//*                   - To the absolute z/OS UNIX path for the download
//*                     package (starting with /)
//*                   - Maximum length is 50 characters
//*                   - Do not include a trailing /
//*
//UNPAX    EXEC PGM=IKJEFT01,REGION=0M,COND=(0,LT)
//SYSEXEC  DD DISP=SHR,DSN=SYS1.SBPXEXEC
//SYSTSPRT DD SYSOUT=*
//SYSTSIN  DD *
```

```
  oshell cd @zfs_path@/ ; +
    pax -rvf JADRE1J.pax.Z
//*
//GIMUNZIP EXEC PGM=GIMUNZIP,REGION=0M,COND=(0,LT)
//*STEPLIB  DD DISP=SHR,DSN=SYS1.MIGLIB
//SYSUT3   DD UNIT=SYSALLDA,SPACE=(CYL,(50,10))
//SYSUT4   DD UNIT=SYSALLDA,SPACE=(CYL,(25,5))
//SMPOUT   DD SYSOUT=*
//SYSPRINT DD SYSOUT=*
//SMPDIR   DD PATHDISP=KEEP,
// PATH='@zfs_path@/'
//SYSIN    DD *
<GIMUNZIP>
<ARCHDEF archid="SMPMCS"
         newname="@PREFIX@.IBM.JADRE1J.SMPMCS"/>
<ARCHDEF archid="IBM.JADRE1J.F1"
         newname="@PREFIX@.IBM.JADRE1J.F1"/>
<ARCHDEF archid="IBM.JADRE1J.F2"
         newname="@PREFIX@.IBM.JADRE1J.F2"/>
<ARCHDEF archid="IBM.JADRE1J.F3"
         newname="@PREFIX@.IBM.JADRE1J.F3"/>
<ARCHDEF archid="IBM.JADRE1J.F4"
         newname="@PREFIX@.IBM.JADRE1J.F4"/>
<ARCHDEF archid="IBM.JADRE1J.F5"
         newname="@PREFIX@.IBM.JADRE1J.F5"/>
<ARCHDEF archid="IBM.JADRE1J.F6"
         newname="@PREFIX@.IBM.JADRE1J.F6"/>
</GIMUNZIP>
//*
```

Customize and submit this JCL to expand the z/OS Debugger Korean feature:

```
//EXTRACT  JOB <job information>
//*
//*   - Provide valid job card information
//*   - Change:
//*       @PREFIX@
//*       ----+----1----+----2----+
//*                   - To your desired data set name prefix
//*                   - Maximum length is 25 characters
//*                   - This value is used for the names of the
//*                     data sets extracted from the download-package
//*       @zfs_path@
//*       ----+----1----+----2----+----3----+----4----+----5
//*                   - To the absolute z/OS UNIX path for the download
//*                     package (starting with /)
//*                   - Maximum length is 50 characters
//*                   - Do not include a trailing /
//*
```

```
//UNPAX    EXEC PGM=IKJEFT01,REGION=0M,COND=(0,LT)
//SYSEXEC  DD DISP=SHR,DSN=SYS1.SBPXEXEC
//SYSTSPRT DD SYSOUT=*
//SYSTSIN  DD *
  oshell cd @zfs_path@/ ; +
    pax -rvf JADRE1K.pax.Z
//*
//GIMUNZIP EXEC PGM=GIMUNZIP,REGION=0M,COND=(0,LT)
//*STEPLIB  DD DISP=SHR,DSN=SYS1.MIGLIB
//SYSUT3   DD UNIT=SYSALLDA,SPACE=(CYL,(50,10))
//SYSUT4   DD UNIT=SYSALLDA,SPACE=(CYL,(25,5))
//SMPOUT   DD SYSOUT=*
//SYSPRINT DD SYSOUT=*
//SMPDIR   DD PATHDISP=KEEP,
// PATH='@zfs_path@/'
//SYSIN    DD *
<GIMUNZIP>
<ARCHDEF archid="SMPMCS"
         newname="@PREFIX@.IBM.JADRE1J.SMPMCS"/>
<ARCHDEF archid="IBM.JADRE1K.F1"
         newname="@PREFIX@.IBM.JADRE1K.F1"/>
<ARCHDEF archid="IBM.JADRE1K.F2"
         newname="@PREFIX@.IBM.JADRE1K.F2"/>
<ARCHDEF archid="IBM.JADRE1K.F3"
         newname="@PREFIX@.IBM.JADRE1K.F3"/>
<ARCHDEF archid="IBM.JADRE1K.F4"
         newname="@PREFIX@.IBM.JADRE1K.F4"/>
<ARCHDEF archid="IBM.JADRE1K.F5"
         newname="@PREFIX@.IBM.JADRE1K.F5"/>
<ARCHDEF archid="IBM.JADRE1K.F6"
         newname="@PREFIX@.IBM.JADRE1K.F6"/>
</GIMUNZIP>
//*
```

6.1.8 Sample Jobs

The following sample installation jobs are provided as part of the product to help you install z/OS Debugger:

Figure 28 (Page 1 of 2). Sample Installation Jobs -- BASE

Job Name	Job Type	Description	RELFILE
EQAWEDIT	MACRO	ISPF Editor macro to aid in updating the sample jobs (optional)	IBM.HADRE10.F1
EQAWSMPE	SMP/E	Sample job to create an SMP/E environment (optional)	IBM.HADRE10.F1

Figure 28 (Page 2 of 2). Sample Installation Jobs -- BASE

Job Name	Job Type	Description	RELFILE
EQAWRECV	RECEIVE	Sample SMP/E RECEIVE job	IBM.HADRE10.F1
EQAWALOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HADRE10.F1
EQAWDDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.HADRE10.F1
EQAWAPLY	APPLY	Sample SMP/E APPLY job	IBM.HADRE10.F1
EQAWACPT	ACCEPT	Sample SMP/E ACCEPT job	IBM.HADRE10.F1
EQAWRPXZ	SMP/E	Sample REPORT CROSSZONE job	IBM.HADRE10.F1

Note: When z/OS Debugger is downloaded from the web, the RELFILE data set name will be prefixed by your chosen high level qualifier, as documented in section 6.1.7, “Extract and expand the compressed SMPMCS and RELFILEs” on page 34.

Figure 29. Sample Installation Jobs -- Japanese

Job Name	Job Type	Description	RELFILE
EQAWEDIJ	MACRO	ISPF Editor macro to aid in updating the sample jobs (optional)	IBM.JADRE1J.F1
EQAWRECJ	RECEIVE	Sample SMP/E RECEIVE job	IBM.JADRE1J.F1
EQAWALOJ	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.JADRE1J.F1
EQAWDEFJ	DDDEF	Sample job to define SMP/E DDDEFs	IBM.JADRE1J.F1
EQAWAPLJ	APPLY	Sample SMP/E APPLY job	IBM.JADRE1J.F1
EQAWACPJ	ACCEPT	Sample SMP/E ACCEPT job	IBM.JADRE1J.F1

Note: When z/OS Debugger is downloaded from the web, the RELFILE data set name will be prefixed by your chosen high level qualifier, as documented in section 6.1.7, “Extract and expand the compressed SMPMCS and RELFILEs” on page 34.

Figure 30 (Page 1 of 2). Sample Installation Jobs -- Korean

Job Name	Job Type	Description	RELFILE
EQAWEDIK	MACRO	ISPF Editor macro to aid in updating the sample jobs (optional)	IBM.JADRE1K.F1
EQAWRECK	RECEIVE	Sample SMP/E RECEIVE job	IBM.JADRE1K.F1
EQAWALOK	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.JADRE1K.F1
EQAWDEFK	DDDEF	Sample job to define SMP/E DDDEFs	IBM.JADRE1K.F1
EQAWAPLK	APPLY	Sample SMP/E APPLY job	IBM.JADRE1K.F1

Figure 30 (Page 2 of 2). Sample Installation Jobs -- Korean

Job Name	Job Type	Description	RELFILE
EQAWACPK	ACCEPT	Sample SMP/E ACCEPT job	IBM.JADRE1K.F1

Note: When z/OS Debugger is downloaded from the web, the RELFILE data set name will be prefixed by your chosen high level qualifier, as documented in section 6.1.7, “Extract and expand the compressed SMPMCS and RELFILEs” on page 34.

The rest of this section only applies when z/OS Debugger is ordered via Shopz. It does not apply when you downloaded it from the web.
Select this link to go to the next section: 6.1.9, “Set up ISPF Editor Macro (optional)” on page 42

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.11, “Perform SMP/E RECEIVE” on page 43) then copy the jobs from the RELFILES to a work data set for editing and submission. See Figure 28 on page 38 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.

To copy the sample jobs for z/OS Debugger Base, use this JCL:

```
//STEP1    EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//TAPEIN   DD DSN=IBM.HADRE10.F1,
//            DISP=(OLD,KEEP),
//            LABEL=(x,SL),
//            VOL=SER=ADRE10,
//            UNIT=tunit
//FILEIN   DD DSN=IBM.HADRE10.F1,
//            DISP=SHR,
//*           VOL=SER=filevol,
//            UNIT=SYSALLDA
//OUT      DD DSNAME=jcl-library-name,
//            DISP=(NEW,CATLG,DELETE),
//            SPACE=(TRK,(102,5,5)),
//*           VOL=SER=dasdvol,
//            UNIT=SYSALLDA
//SYSUT3   DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN    DD *
    COPY INDD=xxxxIN,OUTDD=OUT
    SELECT MEMBER=(EQAWEDIT,EQAWSMPE,EQAWRECV,EQAWALOC)
    SELECT MEMBER=(EQAWDDEF,EQAWAPLY,EQAWACPT,EQAWRPXZ)
/*
```

To copy the sample jobs for z/OS Debugger Japanese feature, use this JCL:

```
//STEP1    EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//TAPEIN   DD DSN=IBM.JADRE1J.F1,
//            DISP=(OLD,KEEP),
//            LABEL=(x,SL),
//            VOL=SER=ADRE1J,
//            UNIT=tunit
//FILEIN   DD DSN=IBM.JADRE1J.F1,
//            DISP=SHR,
//*           VOL=SER=filevol,
//            UNIT=SYSALLDA
//OUT      DD DSNAME=jcl-library-name,
//            DISP=(NEW,CATLG,DELETE),
//            SPACE=(TRK,(4,5,5)),
//*           VOL=SER=dasdvol,
//            UNIT=SYSALLDA
//SYSUT3   DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN    DD *
    COPY INDD=xxxxIN,OUTDD=OUT
    SELECT MEMBER=(EQAWEDIJ,EQAWRECJ,EQAWALOJ)
    SELECT MEMBER=(EQAWDEFJ,EQAWAPLJ,EQAWACPJ)
/*
```

To copy the sample jobs for z/OS Debugger Korean feature, use this JCL:

```
//STEP1    EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//TAPEIN   DD DSN=IBM.JADRE1K.F1,
//            DISP=(OLD,KEEP),
//            LABEL=(x,SL),
//            VOL=SER=ADRE1K,
//            UNIT=tunit
//FILEIN   DD DSN=IBM.JADRE1K.F1,
//            DISP=SHR,
//*           VOL=SER=filevol,
//            UNIT=SYSALLDA
//OUT      DD DSNAME=jcl-library-name,
//            DISP=(NEW,CATLG,DELETE),
//            SPACE=(TRK,(4,5,5)),
//*           VOL=SER=dasdvol,
//            UNIT=SYSALLDA
//SYSUT3   DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN    DD *
    COPY INDD=xxxxIN,OUTDD=OUT
    SELECT MEMBER=(EQAWEDIK,EQAWRECK,EQAWALOK)
    SELECT MEMBER=(EQAWDEFK,EQAWAPLK,EQAWACPK)
/*
```

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

TAPEIN:
tunit is the unit value 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.HADRE10.F1, IBM.JADRE1J.F1, and IBM.JADRE1K.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. Uncomment the statment if a volume serial must be provided.
SYSIN:
xxxxIN is either TAPEIN or FILEIN depending on your input DD statement.

6.1.9 Set up ISPF Editor Macro (optional)

An ISPF editor macro is provided to aid you in making changes to z/OS Debugger SMP/E installation jobs. The macro lets you substitute proper values for all of the required variables in those jobs instead of having you make the changes repeatedly by hand.

- EQAWEDIT, provided with the SMP/E jobs for the base product, updates the SMP/E jobs for the base product:
  EQAWSMPE, EQAWRECV, EQAWALOC,
  EQAWDDEF, EQAWAPLY, EQAWACPT
- EQAWEDIJ, provided with the SMP/E jobs for the Japanese feature, updates the SMP/E jobs for the base product and the Japanese feature:
  EQAWSMPE, EQAWRECV, EQAWALOC,
  EQAWDDEF, EQAWAPLY, EQAWACPT,
  EQAWRECJ, EQAWALOJ,
  EQAWDEFJ, EQAWAPLJ, EQAWACPJ
- EQAWEDIK, provided with the SMP/E jobs for the Korean feature, updates the SMP/E jobs for the base product and the Korean feature:
  EQAWSMPE, EQAWRECV, EQAWALOC,
  EQAWDDEF, EQAWAPLY, EQAWACPT,
  EQAWRECK, EQAWALOK,
  EQAWDEFK, EQAWAPLK, EQAWACPK

Edit the macro and provide the proper values. Consult the instructions in the macro for more information.

After making the changes, either copy the macro to any data set in your TSO logon procedure SYSEXEC concatenation, or issue the commands below to make the macro immediately accessible to your current ISPF session:

```
From ISPF option 6, issue:

ALLOCATE FI(SYSUEXEC) DA('dsn') SHR REU
  where dsn is the data set holding the macro
ALTLIB ACTIVATE USER(EXEC)
```

Consult the instructions in the macro on how to invoke it.

6.1.10 Create SMP/E environment (optional)

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

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 EQAWSMPE. 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.

6.1.11 Perform SMP/E RECEIVE

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

If your order contains the Japanese feature, edit and submit sample job EQAWRECJ to perform the SMP/E RECEIVE for that feature. Consult the instructions in the sample job for more information.

If your order contains the Korean feature, edit and submit sample job EQAWRECK to perform the SMP/E RECEIVE for that feature. 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.

6.1.12 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job EQAWALOC to allocate the SMP/E target and distribution libraries for z/OS Debugger. Consult the instructions in the sample job for more information.

If your order contains the Japanese feature, edit and submit sample job EQAWALOJ to allocate the SMP/E target and distribution libraries for that feature. Consult the instructions in the sample job for more information.

If your order contains the Korean feature, edit and submit sample job EQAWALOK to allocate the SMP/E target and distribution libraries for that feature. 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.

6.1.13 Create DDDEF Entries

Edit and submit sample job EQAWDDEF to create DDDEF entries for the SMP/E target and distribution libraries for z/OS Debugger. Consult the instructions in the sample job for more information.

If your order contains the Japanese feature, edit and submit sample job EQAWDEFJ to create DDDEF entries for the SMP/E target and distribution libraries for that feature. Consult the instructions in the sample job for more information.

If your order contains the Korean feature, edit and submit sample job EQAWDEFK to create DDDEF entries for the SMP/E target and distribution libraries for that feature. 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.

6.1.14 Perform SMP/E APPLY

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

   If your order contains the Japanese feature, edit and submit sample job EQAWAPLJ to perform an SMP/E APPLY CHECK for that feature. Consult the instructions in the sample job for more information.

   If your order contains the Korean feature, edit and submit sample job EQAWAPLK to perform an SMP/E APPLY CHECK for that feature. 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.

6.1.15 Enable/Register z/OS Debugger

Product registration information for z/OS Debugger can be found in the *IBM z/OS Debugger Customization Guide* (SC27-4645) publication.

6.1.16 Run the Installation Verification Programs (IVPs)

When z/OS Debugger is purchased as part of IBM Developer for z Systems, it only interacts with the GUI interface provided by IBM Developer for z Systems. This implies that in this situation, you cannot run the IVPs listed here.

Some IVPs require that certain PTFs be applied before you can successfully run them. To find the requisite PTFs, run the REPORT CROSSZONE job as shown in section 6.1.19, “Run REPORT CROSSZONE” on page 51.

Some IVPs also require certain customization to the product before you can successfully run them. See the specific information in each table below.

Depending on the compiler languages (COBOL, C, PL/I, or assembler) that your site uses, you can run one or all of the IVPs. Consult the instructions in each IVP for the expected return code and output. All of the IVPs are in the SEQASAMP library.

Figure 31 lists the IVPs for batch mode.

Figure 31 (Page 1 of 2). z/OS Debugger IVPs for Batch Mode

IVP Name	Description
EQAWIVPA[1]	Dynamic Debug facility and Language Environment Assembler
EQAWIVPC[1]	Dynamic Debug facility and Non-Language Environment Assembler
EQAWIVPF[1]	Dynamic Debug facility and Enterprise PL/I TEST(ALL,SYM,NOHOOK)
EQAWIVPG	z/OS C DEBUG(FORMAT(DWARF),HOOK(LINE,NOBLOCK,PATH),SYMBOL)
EQAWIVPI[1]	Dynamic Debug facility and Enterprise PL/I TEST(ALL,SYM,NOHOOK,SEPARATE)
EQAWIVPJ[1]	Dynamic Debug facility and LangX Language Environment COBOL IVP
EQAWIVPM	z/OS C DEBUG(FORMAT(DWARF),HOOK(LINE,NOBLOCK,PATH),SYMBOL), XPLINK

Figure 31 (Page 2 of 2). z/OS Debugger IVPs for Batch Mode

IVP Name	Description
EQAWIVPP[1]	Dynamic Debug facility and COBOL TEST(NONE,SYM,SEPARATE) COBOL for OS/390 and VM Enterprise COBOL for z/OS and OS/390 V3 Enterprise COBOL for z/OS V3 and V4
EQAWIVPS[1]	Dynamic Debug facility and Disassembly
EQAWIVPT[1]	Dynamic Debug facility and COBOL TEST Enterprise COBOL for z/OS V5 and V6
EQAWIVPV[1]	Dynamic Debug facility and OS/VS COBOL
EQAWIVPX[1]	Dynamic Debug facility and Non-Language Environment VS COBOL II
EQAWIVP1	COBOL TEST(ALL) COBOL for MVS and VM COBOL for OS/390 and VM Enterprise COBOL for z/OS and OS/390 V3 Enterprise COBOL for z/OS V3 and V4
EQAWIVP2	C TEST(ALL)
EQAWIVP3	PL/I for MVS and VM TEST(ALL)
EQAWIVP4[1]	Dynamic Debug facility and COBOL TEST(NONE,SYM) COBOL for OS/390 and VM Enterprise COBOL for z/OS and OS/390 V3 Enterprise COBOL for z/OS V3 and V4
EQAWIVP8	VisualAge or Enterprise PL/I TEST(ALL)

Note:

1. See chapter "Installing the z/OS Debugger SVCs" in the *IBM z/OS Debugger Customization Guide* (SC27-4645) before running these IVPs.

Figure 32 lists the IVPs for Remote debug in standard mode.

Figure 32 (Page 1 of 2). z/OS Debugger IVPs for Remote debug in standard mode

IVP Name	Description
EQAZIVPF[1]	Language Environment High Level Assembler Version 1 Release 6 ADATA
EQAZIVPI[1]	Enterprise PL/I for z/OS Version 4 or Version 5 31-bit TEST(NOHOOK,SEPARATE)
EQAZIVPP[1]	Enterprise PL/I for z/OS Version 5 64-bit TEST
EQAZIVPT[1]	Enterprise COBOL for z/OS Version 5 or Version 6 TEST
EQAZIVP5[1]	Enterprise COBOL for z/OS Version 3 Release 4 or Version 4 NOTEST

Figure 32 (Page 2 of 2). z/OS Debugger IVPs for Remote debug in standard mode

IVP Name	Description
EQAZIVP6[1]	z/OS XL C DEBUG(FORMAT(DWARF),NOHOOK)

Note:

1. See chapter "Installing the z/OS Debugger SVCs" **and** chapter "Debug Manager (DBGMGR)" in the *IBM z/OS Debugger Customization Guide* (SC27-4645) before running these IVPs.

Figure 33 lists the IVPs for full-screen mode using the Terminal Interface Manager.

Figure 33. z/OS Debugger IVPs for Full-screen Mode using the Terminal Interface Manager

IVP Name	Description
EQAWIVPB[2]	Dynamic Debug facility and Language Environment Assembler
EQAWIVPD[2]	Dynamic Debug facility and Non-Language Environment Assembler
EQAWIVPK[2]	Dynamic Debug facility and LangX Language Environment COBOL IVP
EQAWIVPU[2]	Dynamic Debug facility and COBOL TEST Enterprise COBOL for z/OS V5 and V6
EQAWIVPW[2]	Dynamic Debug facility and OS/VS COBOL
EQAWIVPY[2]	Dynamic Debug facility and Non-Language Environment VS COBOL II
EQAWIVP5[1]	COBOL TEST(ALL) COBOL for MVS and VM COBOL for OS/390 and VM Enterprise COBOL for z/OS and OS/390 V3 Enterprise COBOL for z/OS V3 and V4
EQAWIVP6[1]	C TEST(ALL)
EQAWIVP7[1]	PL/I for MVS and VM TEST(ALL)
EQAWIVP9[1]	VisualAge or Enterprise PL/I TEST(ALL)

Note:

1. See chapter "Enabling debugging in full-screen mode using the Terminal Interface Manager" in the *IBM z/OS Debugger Customization Guide* (SC27-4645) before running these IVPs.
2. See chapter "Enabling debugging in full-screen mode using the Terminal Interface Manager" **and** chapter "Installing the z/OS Debugger SVCs" before running these IVPs. Both of these chapters are in the *IBM z/OS Debugger Customization Guide* (SC27-4645).

Figure 34 lists the IVPs for running under CICS in full-screen mode.

Figure 34 (Page 1 of 2). z/OS Debugger IVPs for Running under CICS in Full-screen Mode

IVP Name	Description
EQAWIVCC[2]	Dynamic Debug facility and Non-Language Environment Assembler

Figure 34 (Page 2 of 2). z/OS Debugger IVPs for Running under CICS in Full-screen Mode

IVP Name	Description
EQAWIVCG[1]	z/OS C DEBUG(FORMAT(DWARF),HOOK(LINE,NOBLOCK,PATH),SYMBOL)
EQAWIVCI[2]	Dynamic Debug facility and Enterprise PL/I TEST(ALL,SYM,NOHOOK,SEPARATE)
EQAWIVCJ[2]	Dynamic Debug facility and LangX Language Environment COBOL CICS IVP
EQAWIVCP[2]	Dynamic Debug facility and COBOL TEST(NONE,SYM,SEPARATE) COBOL for OS/390 and VM Enterprise COBOL for z/OS and OS/390 V3 Enterprise COBOL for z/OS V3 and V4
EQAWIVCT[2]	Dynamic Debug facility and COBOL TEST Enterprise COBOL for z/OS V5 and V6
EQAWIVC2[1]	C TEST(ALL)
EQAWIVC8[1]	VisualAge or Enterprise PL/I TEST(ALL)

Note:

1. See chapter "Adding support for debugging under CICS" in the *IBM z/OS Debugger Customization Guide* (SC27-4645) before running these IVPs.
2. See chapter "Adding support for debugging under CICS" **and** chapter "Installing the z/OS Debugger SVCs" before running these IVPs. Both of these chapters are in the *IBM z/OS Debugger Customization Guide* (SC27-4645).

Figure 35 lists the IVPs for running under CICS in standard mode.

Figure 35. z/OS Debugger IVPs for Running under CICS in standard mode

IVP Name	Description
EQAZIZCG	z/OS XL C DEBUG(FORMAT(DWARF),NOHOOK)
EQAZIZCI	Enterprise PL/I for z/OS Version 4 or Version 5 31-bit TEST(NOHOOK,SEPARATE)
EQAZIZCT	Enterprise COBOL for z/OS Version 5 or Version 6 TEST
EQAZIZC4	Enterprise COBOL for z/OS Version 3 Release 4 or Version 4 NOTEST

Figure 36 lists the IVPs for Load Module Analyzer.

Figure 36. z/OS Debugger IVPs for Load Module Analyzer

IVP Name	Description
EQAWLMA	Load Module Analyzer

Figure 37 lists the IVPs for z/OS Debugger Code Coverage.

Figure 37. z/OS Debugger IVPs for z/OS Debugger Code Coverage	
IVP Name	**Description**
EQACC1VZ	Enterprise COBOL for z/OS and OS/390 V3 Enterprise COBOL for z/OS V3 and V4
EQACC2VZ	Enterprise PL/I for z/OS V4.2 through V4.5 and V5
EQACC3VZ	z/OS XL C
EQACC4VZ	Enterprise COBOL for z/OS V5 and V6

6.1.17 Verify the z/OS Debugger Utilities Setup Utility Function

You can verify the installation and customization of the z/OS Debugger Utilities Setup Utility function by following one (or more) of the samples described in "Appendix D. Examples: Preparing programs and modifying setup files with z/OS Debugger Utilities" in the *IBM z/OS Debugger Users Guide* (SC27-4642).

See "Customizing z/OS Debugger Utilities" in the *IBM z/OS Debugger Customization Guide* (SC27-4645) first for customization information.

6.1.18 Perform SMP/E ACCEPT

Edit and submit sample job EQAWACPT to perform an SMP/E ACCEPT CHECK for z/OS Debugger. Consult the instructions in the sample job for more information.

If your order contains the Japanese feature, edit and submit sample job EQAWACPJ to perform an SMP/E ACCEPT CHECK for that feature. Consult the instructions in the sample job for more information.

If your order contains the Korean feature, edit and submit sample job EQAWACPK to perform an SMP/E ACCEPT CHECK for that feature. 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.

6.1.19 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 Debugger, it is recommended that you run REPORT CROSSZONE against the new or updated target and distribution zones. REPORT CROSSZONE requires a global zone with ZONEINDEX entries that describe all the target and distribution libraries to be reported on.

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

6.1.20 Cleaning Up Obsolete Data Sets, Paths, and DDDEFs

The web download data sets listed in Figure 23 on page 25 (section 5.2.3, “DASD Storage Requirements” on page 19) are temporary data sets. You can delete these data sets after you complete the SMP/E install.

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

- AEQABIN: obsolete as of Debug Tool V13.1.0.
- SEQABIN: obsolete as of Debug Tool V13.1.0.
- LPALIB is no longer required as of Debug Tool V4.1. However, if you install z/OS Debugger in a zone that currently contains an old release that has an LPALIB, ensure that you leave the old LPALIB allocated so that SMP/E can perform the proper cleanup. After you complete the installation of z/OS Debugger V14.1.0, do **not** delete this data setas it may contain other products' modules.
- SEQALPA, which was obsolete as of Debug Tool V1.3, is now required as of Debug Tool V4.1.
- AEQAMLIB, AEQAPLIB, AEQASLIB: obsolete as of Debug Tool V3.1.0.
- SEQAMLIB, SEQAPLIB, SEQASLIB: obsolete as of Debug Tool V3.1.0.

- SEQACLIS, SEQADUM, SEQAIENU, SEQALPA, SEQAOS2, SEQAPROC, SEQA2ENU: obsolete as of Debug Tool V1.3.0.
- AEQACLIS, AEQAIENU, AEQAMOD2, AEQAOS2, AEQASRC2, AEQA2ENU: obsolete as of Debug Tool V1.3.0.

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

- AEQABIN: obsolete as of Debug Tool V13.1.0.
- SEQABIN: obsolete as of Debug Tool V13.1.0.
- LPALIB is no longer required as of Debug Tool V4.1. However, if you install z/OS Debugger in a zone that currently contains an old release that has an LPALIB, ensure that you leave the old LPALIB allocated so that SMP/E can perform the proper cleanup. After you complete the installation of z/OS Debugger V14.1.0, do **not** delete this data setas it may contain other products' modules.
- SEQALPA, which was obsolete as of Debug Tool V1.3, is now required as of Debug Tool V4.1.
- AEQAMLIB, AEQAPLIB, AEQASLIB: obsolete as of Debug Tool V3.1.0.
- SEQAMLIB, SEQAPLIB, SEQASLIB: obsolete as of Debug Tool V3.1.0.
- SEQACLIS, SEQADUM, SEQAIENU, SEQALPA, SEQAOS2, SEQAPROC, SEQA2ENU: obsolete as of Debug Tool V1.3.0.
- AEQACLIS, AEQAIENU, AEQAMOD2, AEQAOS2, AEQASRC2, AEQA2ENU: obsolete as of Debug Tool V1.3.0.

6.2 Product Customization

The publication *IBM z/OS Debugger Customization Guide* (SC27-4645) contains the necessary information to customize and use z/OS Debugger.

The publication *IBM z/OS Debugger Users Guide* (SC27-4642) contains information on possible compilation and link edit changes you may need to make to your build processes in order to debug your programs with z/OS Debugger.

6.3 Product FMIDs

The product in which you received z/OS Debugger contains multiple FMIDs, some of which provide services utilized by z/OS Debugger.

- IBM z/OS Debugger
  IBM z/OS Debugger provides debug related services. Installation information can be found in *Program Directory for IBM z/OS Debugger* (GI13-4540).
- IBM COBOL and CICS Command Level Conversion Aid for OS/390 and MVS and VM

IBM COBOL and CICS Command Level Conversion Aid for OS/390 and MVS and VM provides services to handle older COBOL programs. Installation information can be found in *Program Directory for IBM COBOL and CICS Command Level Conversion Aid for OS/390 and MVS and VM* (GI10-5080).

- IBM Application Delivery Foundation for z Systems Common Components
  IBM Application Delivery Foundation for z Systems Common Components provides services shared by multiple products. Installation information can be found in *Program Directory for IBM Application Delivery Foundation for z Systems Common Components* (GI10-8969).

  Some functions in z/OS Debugger require services provided by IBM Application Delivery Foundation for z Systems Common Components.

- IBM Explorer for z/OS
  IBM Explorer for z/OS provides z/OS access related services shared by multiple products. Installation information can be found in *Program Directory for IBM Explorer for z/OS* (GI13-4314).

  Some functions in z/OS Debugger require services provided by IBM Explorer for z/OS.

7.0 Notices

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APAR numbers are provided in this document to assist in locating PTFs that may be required. Ongoing problem reporting may result in additional APARs being created. Therefore, the APAR lists in this document may not be complete. To obtain current service recommendations and to identify current product service requirements, always contact the IBM Customer Support Center or use S/390 SoftwareXcel to obtain the current "PSP Bucket".

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Reader's Comments

Program Directory for IBM z/OS Debugger, September 2017

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