IBM

Program Directory for

WebSphere Application Server

for z/OS V5.0

For CBPDO Installation and ServerPac Reference

Version 5 Release 0 Modification 0

Program Number 5655-I35

for Use with
OS/390 V2R10, z/OS V1R1 or higher, and z/OS.e V1R3 or higher
CBPDO Level SMC0305
Service Level PUT0301

Document Date: July 1, 2003

GI11-2825-02

Note!

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

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1.0 Introduction

If you are installing WebSphere Application Server for z/OS V5.0 with a SystemPac or ServerPac, this program directory is used for reference only. When using these offerings, use the jobs and documentation supplied with the offering, which may point you to specific sections of this program directory as required.

If you are installing WebSphere Application Server for z/OS V5.0 using the MVS Custom-Built Product Delivery Offering (CBPDO, 5751-CS3), a softcopy program directory is provided on the CBPDO tape which is identical to the printed copy shipped with your order. Your CBPDO contains a softcopy preventive service planning (PSP) upgrade for this product. All service and HOLDDATA for WebSphere Application Server for z/OS V5.0 are included on the CBPDO tape.

This program directory is intended for the system programmer responsible for program installation and maintenance. It contains information concerning the material and procedures associated with the installation of WebSphere Application Server for z/OS V5.0. You should read all of this program directory before installing the program, then keep it for future reference.

The program directory contains the following sections:

- 2.0, "Program Materials" on page 5 identifies the basic and optional program materials and documentation for WebSphere Application Server for z/OS V5.0.

- 3.0, "Program Support" on page 9 describes the IBM support available for WebSphere Application Server for z/OS V5.0.

- 4.0, "Program and Service Level Information" on page 11 lists the APARs (program level) and PTFs (service level) incorporated into WebSphere Application Server for z/OS V5.0.

- 5.0, "Installation Requirements and Considerations" on page 13 identifies the resources and considerations for installing and using WebSphere Application Server for z/OS V5.0.

- 6.0, "Installation Instructions" on page 29 provides detailed installation instructions for WebSphere Application Server for z/OS V5.0. It also describes the procedures for activating the functions of WebSphere Application Server for z/OS V5.0, or refers to appropriate publications.

Before installing WebSphere Application Server for z/OS V5.0, read 3.2, "Preventive Service Planning" on page 9. This section tells you how to find any updates to the information and procedures in this program directory.

1.1   WebSphere Application Server for z/OS V5.0 Description

WebSphere Application Server for z/OS V5.0 is an e-business application deployment environment built on open standards-based technology. It is the cornerstone of WebSphere application offerings and services, providing support for Servlets, JavaServer Pages (JSPs), and Enterprise Java Beans (EJB), in compliance with Java 2 Enterprise Edition (J2EE) specifications. Version 4 brought together the Standard Edition and Enterprise Edition into a single product, providing a single offering. WebSphere Application Server for z/OS V5.0 continues to support connector access to CICS, IMS, and DB2. It also provides support for

1

connections across applications running on Web servers with back-end systems such as DB2, CICS, and IMS. Included in this support is IBM Developer's Kit for OS/390, Java 2 Technology Edition at the SDK 1.3.1 level, which supplies the base support for applications at the Java 2 API level.

A 'Reduced Function" version of WebSphere MQ for z/OS V5.3.1 is also included in this version of WebSphere Application Server for z/OS V5.0. The 'Reduced Function' provides support to allow J2EE-compliant JMS applications to perform messaging within WebSphere Application Server for z/OS V5.0.

- Customers who want JMS-enabled applications to be able to pass messages to other applications in an MQSeries network, or to use MQSeries messaging to communicate with legacy applications via the MQSeries IMS or CICS bridges, will need a separately installed, full function WebSphere MQSeries to provide this connectivity.

- Customers who have a pre-existing full function MQSeries, or who want their JMS applications to work with a full function MQSeries, should not install the 'reduced function' form of MQSeries provided with WebSphere Application Server for z/OS V5.0.

- Customers who install the 'reduced function' form of WebSphere MQSeries can choose to upgrade it to a 'full function' WebSphere MQSeries at a later time by installing the 'full function' feature provided by the WebSphere MQSeries for z/OS V5.3.1 product.

  Note: WebSphere Application Server for z/OS V5.0 can operationally co-exist with WebSphere Application Server for OS/390 and z/OS V4.

1.2 WebSphere Application Server for z/OS V5.0 FMIDs

WebSphere Application Server for z/OS V5.0 consists of the FMIDs listed in Figure 1. An explanation of the table headings is listed below.

Element Name the name of the element

Level the latest level of WebSphere Application Server in which the element changed. For non-exclusive elements, the equivalent level of the stand-alone product is listed in parentheses.

Excl indicates whether the element is exclusive (available only in WebSphere Application Server for z/OS V5.0)

ALLOC indicates whether the element has a sample allocate job

DDDEF indicates whether the element has a sample job to define DDDEF entries

POST-I indicates whether the element has any post-installation jobs

IVP indicates whether the element has any installation verification procedure (IVP) jobs

MKDIR indicates whether the element has any make directory jobs

Figure 1. WebSphere Application Server for z/OS V5.0 FMIDs							
Element Name **FMIDs**	**Level**	**E X C L**	**A L L O C**	**D D D E F**	**P O S T - I**	**I V P**	**M K D I R**
Application Server H28W500	V5R0M0	Y	Y	Y	Y	Y	Y
IBM Developer Kit for OS/390, Java™ 2 Technology Edition HJVA130	V3R5M0 (IBM Developer Kit for OS/390, Java 2 Technology Edition, V1R1M1, 5655-D35)	N	Y	Y	N	N	Y
IBM WebSphere MQ for z/OS HMS5310 (base) JMS5311 (US English) JMS5312 (Japanese) JMS5313 (Chinese) JMS5314 (Upper English) JMS5318 (Java Support)	V5R3M1 (WebSphere MQ for z/OS, 5655-F10)	N N N N N N	Y Y Y Y Y Y	Y N N N N Y	N N N N N N	Y N N N N N	N N N N N Y

2.0 Program Materials

An IBM program is identified by a program number and a feature number. The program number for WebSphere Application Server for z/OS V5.0 is 5655-I35.

Basic Machine-Readable Materials are materials that are supplied under the base license and feature code, and are required for the use of the product. Optional Machine-Readable Materials are orderable under separate feature codes, and are not required for the product to function.

The program announcement material describes the features supported by WebSphere Application Server for z/OS V5.0. Ask your IBM representative for this information if you have not already received a copy.

2.1 Basic Machine-Readable Material

See Figure 1 for the list of FMIDs available for WebSphere Application Server for z/OS V5.0, or see the *MVS CBPDO Memo to User's Extension* for a full list of FMIDs and detailed information on tape volumes and file format.

The distribution medium for this program is magnetic tape or downloadable files. It is installed using SMP/E, and is in SMP/E RELFILE format. See 6.0, "Installation Instructions" on page 29, for more information about how to install the program.

Feature Number	Description	R/M
Figure 2. Basic Material: Program Tape		
5802	WebSphere Application Server V5.0. which includes code from: • IBM Developer Kit for OS/390 (5655-D35), Java 2 Technology Edition, V1R1M0 • IBM WebSphere MQ for z/OS (5655-F10)	N

 * R/M = Restricted Materials of IBM

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for WebSphere Application Server for z/OS V5.0.

2.3 Program Publications

The following sections identify the basic and optional publications for WebSphere Application Server for z/OS V5.0.

2.3.1 Basic Program Publications

The bulk of the information for WebSphere Application Server for z/OS V5.0 is provided through the WebSphere Application Server for z/OS V5.0 InfoCenter, which is accessible through the WebSphere Application Server for z/OS library Web site.

Figure 3 identifies the basic unlicensed program publications for WebSphere Application Server for z/OS V5.0. These publications may be viewed online, or downloaded for printing at **http://www.ibm.com/software/webserver/appserv/**

Note:

A hardcopy publication of *WebSphere Application Server for z/OS V5.0 License Information, GA22-7908*, is provided in the package you receive. The additional publications listed can be viewed online.

Figure 3. Basic Material: Unlicensed Publications	
Publication Title	**Form Number**
WebSphere Application Server V5.0 for z/OS: Installation and Customization	GA22-7910
WebSphere Application Server V5.0 for z/OS: Diagnosis	GA22-7914
WebSphere Application Server V5.0 for z/OS: Operations and Administration	SA22-7912
WebSphere Application Server V5.0 for z/OS: Messages and Codes	GA22-7915

2.3.2 Optional Program Publications

Figure 4 identifies the optional unlicensed program publications for WebSphere Application Server for z/OS V5.0. These publications may be viewed online or downloaded for printing at **http://www.ibm.com/software/webservers/appserv/library.html**

Additional MQ Series publications may also be viewed online, at **http://www-3.ibm.com/software/ts/mqseries/library/**

Figure 4. Optional Material: Unlicensed Publications	
Publication Title	**Form Number**
Building Business Solutions with WebSphere	SC09-4432
Writing Enterprise Java Beans in WebSphere	SC09-4431

Information about the IBM Developer Kit for OS/390, Java 2 Technology Edition product is available electronically at **http://www.s390.ibm.com/java**.

2.4 Program Source Materials

No program source materials or viewable program listings are provided for WebSphere Application Server for z/OS V5.0.

2.5 Publications Useful During Installation

In addition to those included in Figure 3 on page 6, publications listed in Figure 5 and Figure 6 on page 8 may be useful during the installation of WebSphere Application Server for z/OS V5.0. If you are installing WebSphere Application Server for z/OS V5.0 onto an OS/390 system, refer to the publications in Figure 5. If you are installing WebSphere Application Server for z/OS V5.0 onto a z/OS system, refer to the publications in Figure 6 on page 8. To order copies for any of the listed publications, contact your IBM representative.

Figure 5. OS/390 Publications Useful During Installation	
Publication Title	**Form Number**
WebSphere MQ for z/OS System Setup Guide	SC34-6052
OS/390 Information Roadmap	GC28-1727
OS/390 MVS JCL Reference	GC28-1757
OS/390 MVS System Codes	GC28-1780
OS/390 MVS System Messages, Vol 1 (ABA-ASA)	GC28-1784
OS/390 MVS System Messages, Vol 2 (ASB-EZM)	GC28-1785
OS/390 MVS System Messages, Vol 3 (GDE-IEB)	GC28-1786
OS/390 MVS System Messages, Vol 4 (IEC-IFD)	GC28-1787
OS/390 MVS System Messages, Vol 5 (IGD-IZP)	GC28-1788
OS/390 SMP/E Commands	SC28-1805
OS/390 SMP/E Messages and Codes	SC28-1738
OS/390 SMP/E Reference	SC28-1806
OS/390 SMP/E User's Guide	SC28-1740
OS/390 Planning for Installation	GC28-1726
OS/390 UNIX System Services Command Reference	SC28-1892
OS/390 UNIX System Services Planning	SC28-1890

If you are installing WebSphere Application Server for z/OS V5.0 onto a z/OS system, the following publications may be useful.

Figure 6. z/OS Publications Useful During Installation	
Publication Title	**Form Number**
WebSphere MQ for z/OS System Setup Guide	SC34-6052
z/OS Information Roadmap	SA22-7500
z/OS MVS JCL Reference	SA22-7597
z/OS MVS System Codes	SA22-7626
z/OS MVS System Messages, Vol 1 (ABA-AOM)	SA22-7631
z/OS MVS System Messages, Vol 2 (ARC-ASA)	SA22-7632
z/OS MVS System Messages, Vol 3 (ASB-BPX)	SA22-7633
z/OS MVS System Messages, Vol 4 (CBD-DMO)	SA22-7634
z/OS MVS System Messages, Vol 5 (EDG-GFS)	SA22-7635
z/OS MVS System Messages, Vol 6 (GOS-IEA)	SA22-7636
z/OS MVS System Messages, Vol 7 (IEB-IEE)	SA22-7637
z/OS MVS System Messages, Vol 8 (IEF-IGD)	SA22-7638
z/OS MVS System Messages, Vol 9 (IGF-IWM)	SA22-7639
z/OS MVS System Messages, Vol 10 (IXC-IZP)	SA22-7640
SMP/E Commands	SA22-7771
SMP/E Messages, Codes, and Diagnosis	GA22-7770
SMP/E Reference	SA22-7772
SMP/E User's Guide	SA22-7773
z/OS Planning for Installation	GA22-7504
z/OS UNIX System Services Command Reference	SA22-7802
z/OS UNIX System Services Planning	GA22-7800

2.6 WebSphere for z/OS Tools and Supplements

For additional WebSphere for z/OS tools and supplements, go to

http://www.ibm.com/software/webservers/appserv/zos_os390/download.html

3.0 Program Support

This section describes the IBM support available for WebSphere Application Server for z/OS V5.0.

3.1 Program Services

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

3.2 Preventive Service Planning

Before installing WebSphere Application Server for z/OS V5.0, you should review the current Preventive Service Planning (PSP) information.

If you obtained WebSphere Application Server for z/OS V5.0 as part of a CBPDO, there is HOLDDATA and PSP information included on the CBPDO tape. If the CBPDO is more than two weeks old when you install it, you should contact the IBM Support Center or use S/390 SoftwareXcel to obtain the current "PSP Bucket".

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 WebSphere Application Server for z/OS V5.0 are:

Figure 7. PSP Upgrade and Subset ID		
UPGRADE	**SUBSET**	**Description**
WASAS500	WAS500	WebSphere Application Server for z/OS V5.0
JAVAOS390	HJVA130	IBM Developer Kit for OS/390, Java 2 Technology Edition
MQMESA	HMS5310	IBM WebSphere MQ for z/OS Base
MQMESA	JMS5311	IBM Websphere MQ for z/OS US English ENU
MQMESA	JMS5312	IBM WebSphere MQ for z/OS Japanese JPN
MQMESA	JMS5313	IBM WebSphere MQ for z/OS Simplified Chinese CHS
MQMESA	JMS5314	IBM WebSphere MQ for z/OS Uppercase English ENP
MQMESA	JMS5318	IBM WebSphere MQ for z/OS Java Support

3.3 Statement of Support Procedures

Report any difficulties you have using this program to your IBM Support Center. If an APAR is required, the Support Center will provide the address to which any needed documentation can be sent.

Figure 8 identifies the component IDs (COMPID) for WebSphere Application Server for z/OS V5.0.

		Figure 8. Component IDs	
FMID	**COMPID**	**Component Name**	**RETAIN Release**
H28W500	5655I3500	WebSphere for z/OS	500
H28W500	5655I3505	Event Broker	500
HJVA130	5648C9800	IBM Developer Kit for OS/390, Java 2 Technology Edition (JAVA 2(1.3) Common)	130
HJVA130	5648C9801	IBM Developer Kit for OS/390, Java 2 Technology Edition (JAVA JDK for OS/390)	130
HMS5310	5655F1000	IBM WebSphere MQ for z/OS Base	310
JMS5311	5655F1000	IBM Websphere MQ for z/OS US English ENU	311
JMS5312	5655F1000	IBM WebSphere MQ for z/OS Japanese JPN	312
JMS5313	5655F1000	IBM WebSphere MQ for z/OS Simplified Chinese CHS	313
JMS5314	5655F1000	IBM WebSphere MQ for z/OS Uppercase English ENP	314
JMS5318	5655F1000	IBM WebSphere MQ for z/OS Java Support	318

4.0 Program and Service Level Information

This section identifies the program and any relevant service levels of WebSphere Application Server for z/OS V5.0. The program level refers to the APAR fixes incorporated into the program. The service level refers to the integrated PTFs.

4.1 Program Level Information

All applicable WebSphere for z/OS APARs for previous releases of WebSphere, and closed before 03/21/2003, have been incorporated into WebSphere Application Server for z/OS V5.0.

The following APARs, which were reported on previous releases and closed FIN, have been included in this WebSphere version.

```
PQ57023 PQ57771 PQ59175 PQ60591 PQ60876 PQ62798 PQ68757
```

- **FMID HJVA130 (IBM Developer Kit for OS/390, Java 2 Technology Edition)**

  No APARs have been incorporated at this time.

- **FMID HMS5310 (IBM WebSphere MQ for z/OS Base)**

  ```
  PQ43381 PQ43383 PQ43384 PQ43385 PQ43387 PQ43573 PQ43578 PQ43579
  PQ43708 PQ43709 PQ43750 PQ44232 PQ44308 PQ44309 PQ44312 PQ44313
  PQ44328 PQ44330 PQ44523 PQ44540 PQ44541 PQ44576 PQ44642 PQ44683
  PQ44763 PQ44894 PQ44926 PQ44946 PQ44980 PQ44995 PQ45036 PQ45038
  PQ45143 PQ45922 PQ46038 PQ46192 PQ46219 PQ46515 PQ46551 PQ46646
  PQ46678 PQ46904 PQ47285 PQ47286 PQ47331 PQ47650 PQ47740 PQ47745
  PQ47748 PQ47772 PQ47989 PQ47990 PQ48057 PQ48107 PQ48356 PQ48505
  PQ48547 PQ48561 PQ48834 PQ48837 PQ49067 PQ49077 PQ49094 PQ49103
  PQ49174 PQ49237 PQ49262 PQ49337 PQ49397 PQ49423 PQ59514 PQ49629
  PQ49705 PQ49795 PQ49921 PQ50184 PQ50237 PQ50398 PQ50450 PQ50623
  PQ50726 PQ50734 PQ50738 PQ50811 PQ50882 PQ50968 PQ51027 PQ51408
  PQ51475 PQ51857 PQ51927 PQ51972 PQ52012 PQ52013 PQ52125 PQ52271
  PQ52272 PQ52332 PQ52398 PQ52561 PQ52589 PQ52601 PQ52691 PQ52723
  PQ52787 PQ52801 PQ52857 PQ52891 PQ52937 PQ53104 PQ53138 PQ53152
  PQ53250 PQ53442 PQ53443 PQ53480 PQ53567 PQ53578 PQ53659 PQ53675
  PQ53805 PQ53995 PQ54249 PQ54328 PQ54476 PQ54573 PQ54967 PQ55054
  ```

```
PQ55091 PQ55093 PQ55135 PQ55179 PQ55269 PQ55279 PQ55315 PQ55455
PQ55859 PQ55916 PQ55986 PQ56026 PQ56027 PQ56039 PQ56161 PQ56178
PQ56199 PQ56303 PQ56362 PQ56379 PQ56410 PQ56418 PQ56527 PQ56575
PQ56630 PQ56930 PQ57264 PQ57355 PQ57410 PQ57474 PQ57605 PQ57623
PQ57667 PQ57718 PQ57790 PQ57932 PQ57942 PQ58037 PQ58201 PQ58371
PQ58407 PQ58508 PQ58704 PQ58859 PQ58931 PQ59165 PQ59201 PQ59233
PQ59249 PQ59316 PQ59338 PQ59580 PQ59661 PQ59818 PQ59899 PQ60022
PQ60192 PQ60518 PQ60526 PQ60618 PQ60688 PQ60730 PQ60750 PQ60966
PQ61363 PQ61555 PQ61714 PQ61993 PQ62070 PQ62085 PQ62456 PQ62754
PQ63319 PQ63813 PQ64222 PQ65428 PQ65735 PQ65977 PQ65997 PQ66006
PQ66071 PQ66280 PQ66455 PQ66520 PQ66674 PQ66781 PQ66817 PQ66911
PQ67053 PQ67277 PQ67375 PQ67470 PQ67502 PQ67597 PQ67857 PQ68009
PQ68097 PQ68116 PQ68223 PQ68284 PQ69780 PQ62766 PQ62767 PQ63500
PQ63534 PQ65195 PQ65327 PQ65331 PQ65576 PQ65725 PQ65800 PQ65802
PQ66171 PQ66199 PQ66229 PQ66517 PQ66764 PQ66779 PQ67214 PQ67347
PQ67943 PQ68041 PQ68248 PQ68347 PQ68751 PQ69141
```

- **FMID JMS5318 (IBM WebSphere MQ for z/OS Java Support)**

  No APARs have been incorporated at this time.

- **FMID JMS5313 (IBM WebSphere MQ for z/OS Simplified Chinese CHS)**

  No APARs have been incorporated at this time.

- **FMID JMS5312 (IBM WebSphere MQ for z/OS Japanese JPN)**

  No APARs have been incorporated at this time.

- **FMID JMS5311 (IBM Websphere MQ for z/OS US English ENU)**

  No APARs have been incorporated at this time.

- **FMID JMS5314 (IBM WebSphere MQ for z/OS Uppercase English ENP)**

  No APARs have been incorporated at this time.

4.2 Service Level Information

No PTFs against this version of WebSphere Application Server for z/OS V5.0 have been incorporated into the product tape.

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating WebSphere Application Server for z/OS V5.0. The following terminology is used:

- *Driving system*: the system used to install the program

- *Target system*: the system on which the program is installed

In many cases, the same system can be used as both a driving system and a target system. However, you may want to set up a clone of your system to use as a target system by making a separate, IPL-able copy of the running system. The clone should 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.

Some cases where two systems should be used include the following:

- When installing a new level of a product that is already installed, the new product will delete the old one. By installing onto a separate target system, you can test the new product while still keeping the old one in production.

- When installing a product that shares libraries or load modules with other products, the installation can disrupt the other products. Installing onto a test system or clone will allow you to assess these impacts without disrupting your production system.

Note: If your SMPLTS data set is currently a PDS, you must allocate a new PDSE, copy your existing SMPLTS into it, then change the SMPLTS DDDEF entry to indicate the new PDSE data set. For more information, see Figure 14 on page 20.

5.1 Driving System Requirements

This section describes the environment of the driving system required to install WebSphere Application Server for z/OS V5.0.

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 9. Driving System Software Requirements	
Program Number	**Product Name and Minimum VRM/Service Level**
Any **one** of the following:	
5647-A01	OS/390 V2R10
	Note:
	OS/390 V2R10 and z/OS V1R1 customers need to order SMP/E V3.1. There is no need to order SMP/E V3.1 (5655-G44) if you are using z/OS V1R2 or higher.
5694-A01	z/OS V1R1 or higher
	Note:
	OS/390 V2R10 and z/OS V1R1 customers need to order SMP/E V3.1. There is no need to order SMP/E V3.1 (5655-G44) if you are using z/OS V1R2 or higher.
5655-G52	z/OS.e V1R3 or higher

Notes:

1. UNIX must be up in full function mode on your driving system so that the utilities are available for the Shell Script support.

2. Before installing WebSphere Application Server for z/OS V5.0, you must ensure that the target system's HFS is available (OMVS active and the target file systems mounted) for processing.

3. An SMP/E utility entry for the binder is required. You can specify any of these program names in the UTILITY entry: IEWBLINK, HEWL, IEWL, LINKEDIT, or HEWLH096. (The linkage editor which uses the names HEWLKED, HEWLF064, IEWLF440, IEWLF880, and IEWLF128 cannot be used.)

4. The following installation jobs, as well as the SMP/E APPLY job, must be run under a userid with UID(0), or with a userid with read access to the BPX.SUPERUSER resource in the RACF facility class. This installation userid must also have read access to the facility class resources BPX.FILEATTR.PROGCTL and BPX.FILEATTR.APF.

   - AJVISMKD

   - BBOISMKD

   - CSQ8JMKJ

5.2 Target System Requirements

This section describes the environment of the target system required to install and use WebSphere Application Server for z/OS V5.0.

5.2.1 Machine Requirements

WebSphere Application Server for z/OS V5.0 will run on any hardware that supports the OS/390 (V2R10 and later), z/OS, and z/OS.e operating systems.

5.2.2 Programming Requirements

5.2.2.1 Mandatory Requisites

A mandatory requisite is defined as a product that is required without exception; this product either **will not install** or **will not function** unless this requisite is met. This includes products that are specified as REQs or PREs.

Figure 10 (Page 1 of 2). Mandatory Requisites	
Program Number	**Product Name and Minimum VRM/Service Level**
Any **one** of the following:	
5647-A01	OS/390 V2R10 with APARs/PTFs: UQ43857, UQ45856, UQ46971, UQ49015, UW70444, UW70548, UW71651, UW71902, UW72075, UW72078, UW73408, UW73722, UW74449, UW78191, UW78426, UW78430, UW81159, UW79243, UW79370, UW79448
5694-A01	z/OS V1R1 with APARs/PTFs: UQ43857, UQ45856, UQ49015, UW70444, UW70548, UW72075, UW72078, UW73408,UW73722, UW78191, UW78426, UW78431,UW78432 UW79243, UW79370, UW79448
5694-A01	z/OS V1R2 There are no additional APARs/PTFs to be installed
5655-G52	z/OS.e V1R3 There are no additional APARs/PTFs to be installed
Any **one** of the following:	
5647-A01	OS/390 V2R10 with Security Server (priced optional feature) enabled, with APARs/PTFs: UW71575, UW71902, UW76076, UW76457, UW79934, UW79938, UW78361, UW76120
5694-A01	z/OS V1R1 with Security Server (priced optional feature) enabled, with APARs/PTFs: UW71575, UW71902, UW76076, UW76457 UW79938, UW78361, UW76120

Figure 10 (Page 2 of 2). Mandatory Requisites	
Program Number	**Product Name and Minimum VRM/Service Level**
5694-A01	z/OS V1R2 or higher with Security Server (priced optional feature) enabled. There are no additional APARs/PTFs to be installed.
5655-G52	z/OS.e V1R3 or higher with Security Server (priced optional feature) enabled. There are no additional APARs/PTFs to be installed.
5655-D35	IBM Developer Kit for OS/390 JAVA™ 2 Technology Edition (included with this product) with PTF UQ73928

5.2.2.2 Functional Requisites

A functional requisite is defined as a product that is **not** required for the successful installation of this product or for the basic function of the product, but **is** needed at run time for a specific function of this product to work. This includes products that are specified as IF REQs.

Note: PTFs listed in bold are not included in the SMP/E logic on the product tape and need to be ordered and installed separately.

Figure 11 (Page 1 of 3). Functional Requisites		
Program Number	**Product Name and Minimum VRM/Service Level**	**Function**
5647-A01	OS/390 V2R10 with PTF UQ57046 or	Serving HTTP Requests
5694-A01	z/OS V1R1, which includes IBM HTTP Server with PTF UQ57046 (OS/390 V2R10 or z/OS)	

Figure 11 (Page 2 of 3). Functional Requisites		
Program Number	**Product Name and Minimum VRM/Service Level**	**Function**
5647-A01 5694-A01	OS/390 V2R10 or z/OS V1R1 (or higher) which includes Communications Server or a functionally equivalent product	Java networking classes
5647-A01 5694-A01	OS/390 V2R10 which includes Communications Server X-Windows or z/OS V1R1 (or higher) which includes Communications Server X-Windows (X11R4 support)	Java windowing support
5694-A01	z/OS V1R1 (or higher) with Security Server RACF (priced optional feature) enabled with PTF UW78361	EJB Roles support
5647-A01 5694-A01	OS/390 V2R10 with C/C++ Debug Tool (priced optional feature), enabled or z/OS V1R1 (or higher) with C/C++ Debug Tool (priced optional feature), enabled	WebSphere Business Application
5655-147	CICS CTS V1.3	Component Broker Business Application
5655-158	IMS V7 R1 with PTFs: UQ22097, UQ23685, UQ30721, UQ32135, UQ35463, UQ35464, UQ39673, UQ42049	
And the following:		

Figure 11 (Page 3 of 3). Functional Requisites		
Program Number	**Product Name and Minimum VRM/Service Level**	**Function**
5675-DB2	DB2 Version 7. Use of DB2 requires licensed utilities, from IBM or equivalent. **5697-E98 -- DB2 Utilities Suite, or equivalent,** is recommended, in addition to DB2 itself. DB2 is required for the following: • Web Services UDDI • Session in memory for web container UQ50308, UQ51529, UQ52259, UQ52315, UQ53392, UQ52145, UQ54728, UQ54729, **UQ56929**	

Note: If you plan to run multiple levels of DB2 in a data sharing environment (for example, 7.1 and 6.1), there are coexistence PTFs that need to be installed. Please consult the DB2 publications or support for the specific APARs to install.

5.2.2.3 Toleration/Coexistence Requisites

A toleration/coexistence requisite is defined as a product or service which must be present on a sharing system. 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 at different time intervals.

WebSphere Application Server for z/OS V5.0 has no toleration/coexistence requisites.

5.2.2.4 Incompatibility (Negative) Requisites

A negative requisite identifies products which must *not* be installed on the same system as this product.

WebSphere Application Server for z/OS V5.0 has no negative requisites.

5.2.3 DASD Storage Requirements

WebSphere Application Server for z/OS V5.0 libraries can reside on any DASD device supported by OS/390, z/OS, or z/OS.e. Space requirements are given here in 3390 tracks.

Figure 12 lists the total space required for each type of library.

Figure 12 (Page 1 of 2). Total DASD Space Required by WebSphere Application Server for z/OS V5.0	
Library Type	**Total Space Required (3390 tracks)**
Target	10750
Distribution	16075

Figure 12 (Page 2 of 2). Total DASD Space Required by WebSphere Application Server for z/OS V5.0	
Library Type	**Total Space Required (3390 tracks)**
HFS	11250

Notes:

1. IBM recommends use of system-determined block sizes for efficient DASD utilization for all non-RECFM U data sets. For RECFM U data sets, IBM recommends a block size of 32760, which is the most efficient from a performance and DASD utilization perspective.

2. Abbreviations used for the data set type are:

   U   Unique data set, allocated by this product and used only by this product. To determine the correct storage needed for this data set, this table provides all required information; no other tables (or program directories) need to be referenced for the data set size.

   S   Shared data set, allocated by this product and used by this product and others. To determine the correct storage needed for this data set, the storage size given in this table needs to be added to 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 others. This data set is NOT allocated by this product. To determine the correct storage needed for this data set, the storage size given in this table needs to be added to other tables (perhaps in other program directories). This existing data set must have enough free space to accommodate the storage size given in this table.

   If you currently have a previous version of the WebSphere Application Server installed in these libraries, the installation of this release will delete the old one and reclaim the space used by the old release and any service that had been installed. You can determine whether or not 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 on the names and sizes of the required data sets, please refer to 6.1.6, "Define Target and Distribution Libraries for WebSphere Application Server for z/OS V5.0" on page 43.

3. Abbreviations used for the HFS Path type are:

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

4. All target and distribution libraries have the following attributes:

   - The default name of the data set may be changed.
   - The default block size of the data set may be changed.
   - The data set may be merged with another data set that has equivalent characteristics.
   - The data set may be either a PDS or a PDSE.

5. All target libraries listed have the following attributes:

- The data set may be SMS-managed.
- It is not required for the data set to be SMS-managed.
- It is not required for the data set to reside on the IPL volume.
- The values in the "Member Type" column are not necessarily the actual SMP/E element types identified in the SMPMCS.

Library DDNAME	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
SMPWRK1	E	PDS	FB	80	120	10
SMPWRK2	E	PDS	FB	80	30	10
SMPWRK3	E	PDS	FB	80	9500	150
SMPWRK4	E	PDS	FB	80	40	10
SMPWRK6	E	PDS	FB	80	4500	100
SYSUT1	E	SEQ	--	--	7500	0
SYSUT2	E	SEQ	--	--	30	0
SYSUT3	E	SEQ	--	--	30	0
SYSUT4	E	SEQ	--	--	30	0

Figure 13. Storage Requirements for SMP/E Work Data Sets

Figure 14 provides an estimate of the storage needed in the SMP/E data sets for WebSphere Application Server for z/OS V5.0. The estimates must be added to those of any other programs and service being installed to determine the total additional storage requirements.

The SMPLTS data set must be a PDSE. If your existing SMPLTS is a PDS, you will need to allocate a new PDSE, copy your existing SMPLTS into it, then change the SMPLTS DDDEF entry to indicate the new PDSE data set.

Library DDNAME	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
SMPLTS	E	PDSE	U	0	6535	-
SMPMTS	E	PDS	FB	80	15	80
SMPPTS	E	PDS	FB	80	4000	80
SMPSCDS	E	PDS	FB	80	15	80

Figure 14 (Page 1 of 2). Storage Requirements for SMP/E Data Sets

Figure 14 (Page 2 of 2). Storage Requirements for SMP/E Data Sets							
Library DDNAME		TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
SMPSTS		E	PDS	FB	80	15	80

Figure 15, Figure 16 on page 23, and Figure 17 on page 23 describe the target and distribution libraries and HFS paths required to install WebSphere Application Server for z/OS V5.0. The storage requirements of WebSphere Application Server for z/OS V5.0 must be added to the storage required by other programs having data in the same library or path.

Note: The data in these tables should be used when determining 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 15 (Page 1 of 3). Storage Requirements for WebSphere Application Server for z/OS V5.0 Target Libraries								
Library DDNAME	Member Type	Target Volume	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
SAJVSMP1	Sample	TVOL2	U	PDS	FB	80	3	2
SBBOCLIB	Clist	TVOL1	U	PDS	FB	80	51	5
SBBODSD	DATA	TVOL2	U	PDSE	FB	80	66	-
SBBOEXEC	EXEC	TVOL1	U	PDS	VB	255	26	5
SBBOJCL	Sample	TVOL2	U	PDS	FB	80	80	5
SBBOLD2	LMOD	TVOL1	U	PDSE	U	0	5	-
SBBOLOAD	LMOD	TVOL1	U	PDSE	U	0	1267	-
SBBOLPA	LMOD	TVOL1	U	PDSE	U	0	20	-
SBBOMIG	LMOD	TVOL1	U	PDSE	U	0	40	-
SBBOMJPN	Message	TVOL1	U	PDS	FB	80	5	5
SBBOMLIB	Message	TVOL1	U	PDS	FB	80	5	5
SBBOMSG	Message	TVOL1	U	PDS	VB	255	19	5
SBBOPJPN	Panel	TVOL1	U	PDS	FB	80	63	10
SBBOPLIB	Panel	TVOL1	U	PDS	FB	80	82	10
SBBOSLB2	Skeleton	TVOL1	U	PDS	VB	255	76	5
SBBOSLIB	Skeleton	TVOL1	U	PDS	FB	80	113	10

Library DDNAME	Member Type	Target Volume	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
SCSQANLC	LMOD	TVOL1	U	PDS	U	0	18	10
SCSQANLE	LMOD	TVOL1	U	PDS	U	0	14	7
SCSQANLK	LMOD	TVOL1	U	PDS	U	0	19	10
SCSQANLU	LMOD	TVOL1	U	PDS	U	0	14	7
SCSQASMS	Sample	TVOL2	U	PDS	FB	80	14	3
SCSQAUTH	LMOD	TVOL1	U	PDS	U	0	867	525
SCSQC370	Macro	TVOL2	U	PDS	FB	80	25	3
SCSQC37S	Sample	TVOL2	U	PDS	FB	80	63	3
SCSQCICS	LMOD	TVOL1	U	PDS	U	0	57	15
SCSQCOBC	Macro	TVOL2	U	PDS	FB	80	24	4
SCSQDEFS	Data	TVOL2	U	PDS	FB	80	33	3
SCSQEXEC	CLIST	TVOL1	U	PDS	FB	80	25	3
SCSQINST	Procedure	TVOL1	U	PDS	FB	80	20	3
SCSQLINK	LMOD	TVOL1	U	PDS	U	0	4	3
SCSQLOAD	LMOD	TVOL1	U	PDS	U	0	272	21
SCSQMACS	Macro	TVOL2	U	PDS	FB	80	39	4
SCSQMSGC	Message	TVOL1	U	PDS	FB	80	8	3
SCSQMSGE	Message	TVOL1	U	PDS	FB	80	8	3
SCSQMSGK	Message	TVOL1	U	PDS	FB	80	8	3
SCSQMSGU	Message	TVOL1	U	PDS	FB	80	8	3
SCSQMVR1	LMOD	TVOL1	U	PDSE	U	0	135	N/A
SCSQMVR2	LMOD	TVOL1	U	PDSE	U	0	93	N/A
SCSQPLIC	Macro	TVOL2	U	PDS	FB	80	18	3
SCSQPNLA	Panel	TVOL1	U	PDS	FB	80	8	4
SCSQPNLC	Panel	TVOL1	U	PDS	FB	80	50	130
SCSQPNLE	Panel	TVOL1	U	PDS	FB	80	56	147
SCSQPNLK	Panel	TVOL1	U	PDS	FB	80	56	148
SCSQPNLU	Panel	TVOL1	U	PDS	FB	80	55	147
SCSQPROC	Procedure	TVOL1	U	PDS	FB	80	33	6

Figure 15 (Page 2 of 3). Storage Requirements for WebSphere Application Server for z/OS V5.0 Target Libraries

Library DDNAME	Member Type	Target Volume	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
SCSQSNLC	LMOD	TVOL1	U	PDS	U	0	2	3
SCSQSNLE	LMOD	TVOL1	U	PDS	U	0	2	3
SCSQSNLK	LMOD	TVOL1	U	PDS	U	0	2	3
SCSQSNLU	LMOD	TVOL1	U	PDS	U	0	2	3
SCSQTBLC	Table	TVOL2	U	PDS	FB	80	2	3
SCSQTBLE	Table	TVOL2	U	PDS	FB	80	2	3
SCSQTBLK	Table	TVOL2	U	PDS	FB	80	2	3
SCSQTBLU	Table	TVOL2	U	PDS	FB	80	2	3

Figure 15 (Page 3 of 3). Storage Requirements for WebSphere Application Server for z/OS V5.0 Target Libraries

DDNAME	TYPE	Path Name
SAJVHFSI	X	/usr/lpp/java/IBM
SBBOBIN1	N	/usr/lpp/zWebSphere/V5R0M0 /bin/IBM/
SBBOEXP1	N	/usr/lpp/zWebSphere/V5R0M0 /lib/IBM/
SBBOANT	N	/usr/lpp/zWebSphere/V5R0M0 /IBM/
SCSQOJS	N	/usr/lpp/mqm/V5R3M1/IBM/

Figure 16. WebSphere Application Server for z/OS V5.0 HFS Paths

Library DDNAME	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
AAJVSMP1	U	PDS	FB	80	3	2
AAJVS390	U	PDS	VB	256	1772	2
ABBOCLIB	U	PDS	FB	80	15	5
ABBOANT	U	PDS	VB	255	3360	100

Figure 17 (Page 1 of 3). Storage Requirements for WebSphere Application Server for z/OS V5.0 Distribution Libraries

Figure 17 (Page 2 of 3). Storage Requirements for WebSphere Application Server for z/OS V5.0 Distribution Libraries						
Library DDNAME	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
ABBOEXEC	U	PDS	VB	255	6	5
ABBOEXP	U	PDS	FB	80	54	5
ABBOINC	U	PDS	VB	255	7	10
ABBOJCL	U	PDS	FB	80	15	5
ABBOMJPN	U	PDS	FB	80	5	5
ABBOMLIB	U	PDS	FB	80	5	5
ABBOMSG	U	PDS	VB	255	5	5
ABBOOBJ	U	PDSE	U	0	1334	-
ABBOPJPN	U	PDS	FB	80	15	15
ABBOPLIB	U	PDS	FB	80	26	10
ABBOSLB2	U	PDS	VB	255	20	5
ABBOSLIB	U	PDS	FB	80	26	10
ACSQASMS	U	PDS	FB	80	14	3
ACSQC370	U	PDS	FB	80	25	3
ACSQC37S	U	PDS	FB	80	63	3
ACSQCOBC	U	PDS	FB	80	24	4
ACSQDEFS	U	PDS	FB	80	33	3
ACSQEXEC	U	PDS	FB	80	25	3
ACSQINST	U	PDS	FB	80	20	3
ACSQMACS	U	PDS	FB	80	39	4
ACSQMOD	U	PDS	U	00	1653	N/A
ACSQMSGC	U	PDS	FB	80	8	3
ACSQMSGE	U	PDS	FB	80	8	3
ACSQMSGK	U	PDS	FB	80	8	3
ACSQMSGU	U	PDS	FB	80	8	3
ACSQOJSH	U	PDS	VB	130	1	1
ACSQOJTR	U	PDS	VB	32000	350	1
ACSQPLIC	U	PDS	FB	80	13	3
ACSQPNLA	U	PDS	FB	80	8	4

Library DDNAME	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
Figure 17 (Page 3 of 3). Storage Requirements for WebSphere Application Server for z/OS V5.0 Distribution Libraries						
ACSQPNLC	U	PDS	FB	80	50	130
ACSQPNLE	U	PDS	FB	80	56	147
ACSQPNLK	U	PDS	FB	80	56	148
ACSQPNLU	U	PDS	FB	80	55	147
ACSQPROC	U	PDS	FB	80	33	6
ACSQTBLC	U	PDS	FB	80	2	3
ACSQTBLE	U	PDS	FB	80	2	3
ACSQTBLK	U	PDS	FB	80	2	3
ACSQTBLU	U	PDS	FB	80	2	3

WebSphere Application Server for z/OS V5.0 will require additional space for data sets, HFS files, and DB2 tables used by customer applications. Space requirements will vary with the application.

5.3 FMIDs Deleted

Installing WebSphere Application Server for z/OS V5.0 may result in the deletion of other FMIDs. To see what FMIDs will be deleted, examine the ++VER statement in the product's SMPMCS.

If you do not wish to delete these FMIDs at this time, you must install WebSphere Application Server for z/OS V5.0 into separate SMP/E target and distribution zones.

Note: These FMIDs will not automatically be deleted from the Global Zone. Consult the SMP/E manuals for instructions on how to do this.

5.4 Special Considerations

WebSphere Application Server for z/OS V5.0 is a functional successor to the following products:

- WebSphere Application Server Version 3.02 Standard Edition (5655-A98)
- WebSphere Application Server Version 3.02 Enterprise Edition (5655-A98)
- WebSphere Application Server Version 3.5 Standard Edition (5655-A98)
- WebSphere Application Server Version 4.0 for z/OS and OS/390 (5655-F31)

- WebSphere Application Server Version 4.0.1 for z/OS and OS/390 (5655-F31)

In addition, the Software Development Kit (SDK) included with WebSphere Application Server Version 5.0 is identical to the SDK contained in the following products, and is a functional successor to various old Java levels.

- IBM Developer Kit for OS/390™, Java 2 Technology Edition, V1.1 (5655-D35)

- WebSphere Application Server for OS/390 Version 3.5 Standard Edition (5665-F31)

- WebSphere Application Server V4.0 for z/OS and OS/390 (5655-F31)

- WebSphere Application Server Version 4.0.1 for z/OS and OS/390 (5655-F31)

If you have previously installed any of these products, you should take the following considerations into account when installing WebSphere Application Server for z/OS V5.0.

5.4.1 SMP/E Considerations

WebSphere Application Server for z/OS V5.0 will delete previous versions of WebSphere for OS/390 and WebSphere MQ for z/OS if installed into the same SMP/E zone. When installing WebSphere Application Server for z/OS V5.0 into the same SMP/E zones used for your OS/390 or z/OS operating system, you will either have to re-install WAS 5.0 in the new zones in which OS/390 or z/OS is installed when upgrading to a new release of OS/390 or z/OS, or use the SMP/E BUILDMCS command to get WebSphere Application Server for z/OS V5.0 in the same SMP/E zones as the new release of OS/390 or z/OS.

We recommend that you install WebSphere Application Server for z/OS V5.0 into a new set of SMP/E zones, including target, distribution, and HFS data sets, to allow easier and separate migrations of z/OS or OS/390, and WebSphere. This program directory provides sample jobs to create such an SMP/E environment.

5.4.2 Selecting Driving System Mountpoints

During installation of WebSphere Application Server for z/OS V5.0 on the driving system, the target HFS file systems must be mounted at the following mountpoints:

- /-PathPrefix-/usr/lpp/java

- /-PathPrefix-/usr/lpp/zWebSphere/V5R0M0

- /-PathPrefix-/usr/lpp/mqm/V5R3M1

where /-PathPrefix- is an HFS path prefix such as /SERVICE or /WAS50. Use of a path prefix allows maintenance to be applied to a copy of the WebSphere HFS data sets without disturbing the production HFS data sets. For more information on the use of an HFS path prefix during product maintenance, see the Unix System Services Planning book for your release of OS/390 or z/OS (see Figure 5 on page 7).

Care must be taken that maintenance is applied to the proper HFS. You may wish to use a separate HFS path prefix for each WebSphere release to prevent inadvertent modification of the wrong WebSphere level.

5.4.3 Selecting Target System Mountpoints

During customization and operation of WebSphere Application Server for z/OS V5.0 on the target system, the target HFS file systems must be mounted at the following mountpoints:

- an SDK mountpoint, normally /usr/lpp/java

- a WebSphere mountpoint, normally /usr/lpp/zWebSphere/V5R0M0

- an MQSeries Java support mountpoint, normally /usr/lpp/mqm/V5R3M1

If the SDK mountpoint is in use on the target system by an identical version of the SDK that shipped in WebSphere Application Server for z/OS V5.0 (see list above), then the existing SDK HFS at this mountpoint can be replaced with the one installed as part of WebSphere Application Server for z/OS V5.0, after ensuring that the maintenance level of the new SDK is at least as high as that of the old SDK. (This should normally be the case, as WebSphere Application Server code usually requires a very current SDK maintenance level.)

If the MQSeries Java support mountpoint is in use on the target system by an identical version of the MQSeries Java support to that shipped in WebSphere Application Server for z/OS V5.0, then the existing MQSeries Java support at this mountpoint can be replaced with the one installed as part of WebSphere Application Server for z/OS V5.0, after ensuring that the maintenance level of the new MQSeries Java support is at least as high as that of the old MQSeries Java support. (This should normally be the case, as WebSphere Application Server code usually requires a very current MQSeries Java support maintenance level.)

The WebSphere mountpoint is version-specific and new with Version 5.0; there should be no conflict with mountpoints for previous versions.

In the remainder of this program directory, it is assumed that the SDK mountpoint and WebSphere mountpoint used for WebSphere for z/OS and OS/390 have been chosen according to the above requirements.

5.4.4 Removal of Older Java and WebSphere Levels

Java applications written to use older versions of Java (i.e., those versions prior to SDK 1.3.0) may not run properly with the SDK contained in WebSphere Application Server for z/OS V5.0. Information on incompatibilities between older levels of JAVA and SDK 1.3.0 can be found on the Web at **http://www.ibm.com/s390/java**

The older Java level(s) should be maintained until all applications dependent on them have been migrated to the new SDK.

WebSphere Application Server versions prior to WebSphere Application Server for z/OS V5.0 should be maintained until all applications have been migrated to Version 5.0.

Older versions of WebSphere Application Server for z/OS and OS/390 can be removed from the target system as soon as the migration process to WebSphere Application Server for z/OS V5.0 is complete.

6.0 Installation Instructions

This section describes the installation method, and the step-by-step procedures to install, and activate the functions of, WebSphere Application Server for z/OS V5.0.

Note:

- WebSphere Application Server for z/OS V5.0 should be installed into a separate SMP/E zone from OS/390 or z/OS. IBM strongly recommends that the product be installed in a new set of SMP/E zones and libraries. This includes SMP/E target and distribution zones, as well as the HFS data set. A sample job to create and initialize the SMPCSI and SMP/E control data sets is provided below; consult the SMP/E documentation for more information.

- Sample jobs have been provided to help perform some, or all, of the installation tasks. The SMP/E jobs assume that all DDDEF entries required for SMP/E execution have been defined in the appropriate zones.

  If you are not installing a new WebSphere MQ for z/OS, then you do not need to customize, or run any CSQ8xxxx jobs.

- The SMP/E dialogs may be used instead of the sample jobs to accomplish the SMP/E installation steps.

6.1 Installing WebSphere Application Server for z/OS V5.0

6.1.1 Create New SMP/E Zones for WebSphere Application Server V5.0

IBM strongly recommends that WebSphere Application Server V5.0 be installed in a new set of SMP/E zones and libraries. There are two sample jobs that follow. The first sample job provides an example of setting up a new SMP/E CSI (including a new GLOBAL zone) for WebSphere Application Server for z/OS V5.0. You may use this sample if you wish to place this product in a new SMP/E GLOBAL zone - if you do use it, then you would also use the second sample job to set up the new target and distribution zones.

The second sample job provides an example of setting up new SMP/E target and distribution zones. You can use this job independent of the first sample job if you want to define new target and distribution zones in an existing SMP/E GLOBAL zone. By using your existing GLOBAL zone, you do not have to redefine many SMP/E GLOBAL data sets and the SMP/E OPTIONS entries. Please note that, if using just the second sample job, you will need to edit the job with the appropriate GLOBAL ZONEINDEX information, and any other information to reflect your SMP/E product environment.

```
//SMPEJOB1  JOB
//*=========================================================*
//* THIS JOB CREATES A NEW GLOBAL SMPE ENVIRONMENT
//*  FOR WEBSPHERE 5.0.
//****************************************************************
//*                                                             *
//*  NOTE: This is neither a JCL procedure nor a complete job.  *
```

```
//*   Before using this job, you will need to make the following   *
//*   modifications:                                               *
//*                                                                *
//*   1) Add the job card parameters to meet your system          *
//*      requirements                                              *
//*   2) Change #GLOBALCSI to the dataset name of your global CSI  *
//*      data set                                                  *
//*   3) Change #TZONE to the name of your target zone             *
//*   4) Change #DZONE to the name of your distribution zone       *
//*   5) Change #HHH to the appropriate high-level qualifier       *
//*   6) Change #VOLSER to the volser you will be using            *
//*                                                                *
//*   Notes:                                                       *
//*                                                                *
//*   1. This job should complete with a return code 0.           *
//*                                                                *
//*   2. Please review your OS390 data set allocations for the     *
//*      following datasets                                        *
//*                                                                *
//*        MACLIB                                                  *
//*                                                                *
//*      If the OS390 data set high-level qualifiers are different *
//*      from the defaults please change accordingly.             *
//*                                                                *
//*****************************************************************
//*=========================================================*
//*---------------------------------------------------------*
//* THIS STEP ALLOCATES THE NEW SMP/E CSI
//*---------------------------------------------------------*
//BUILDCSI EXEC PGM=IDCAMS,REGION=4M
//SYSPRINT DD    SYSOUT=*
//SMPE     DD    VOL=SER=#VOLSER,UNIT=3390,DISP=SHR
//SYSIN    DD    *
  DEFINE   CLUSTER(                              -
               NAME(#GLOBALCSI)                  -
               FREESPACE(10,5)                   -
               KEYS(24 0)                        -
               RECORDSIZE(24 143)                -
               SHAREOPTIONS(2,3)                 -
               UNIQUE                            -
               VOLUME(#VOLSER) )                 -
          DATA(                                  -
               NAME(#GLOBALCSI.DATA)             -
               CONTROLINTERVALSIZE(4096)         -
               CYLINDERS(25 5))                  -
          INDEX(                                 -
               NAME(#GLOBALCSI.INDEX)            -
               IMBED                             -
```

```
              CYLINDERS(2 1))
/*
//*----------------------------------------------------------*
//* THE RACF GROUP AND PROFILE FOR THE NEW HLQ FOR THE      *
//* SMPE DATASETS SHOULD ALREADY BE DEFINED.                *
//*----------------------------------------------------------*
//*
//*------------------------------------------------------------*
//* THIS STEP INITIALIZES THE NEW CSI                          *
//*------------------------------------------------------------*
//INITCSI EXEC PGM=IDCAMS,REGION=2M,COND=(0,LT)
//GBLCSI   DD   DSN=#GLOBALCSI,DISP=OLD
//ZPOOL    DD   DSN=SYS1.MACLIB(GIMZPOOL),DISP=SHR
//SYSPRINT DD   SYSOUT=*
//SYSIN    DD   *
  REPRO OUTFILE(GBLCSI) INFILE(ZPOOL)
/*
//*------------------------------------------------------------*//
//* THIS STEP ALLOCATES THE BASE SET OF SMPE DATASETS.       *//
//*------------------------------------------------------------*//
//SMPEDS  EXEC PGM=IEFBR14
//SMPLOG   DD   DSN=#HHH.SMPLOG,DISP=(NEW,CATLG,DELETE),
//             DCB=(RECFM=VB,LRECL=510,BLKSIZE=3200),
//             UNIT=3390,VOL=SER=#VOLSER,
//             SPACE=(CYL,(5,2))
//SMPLOGA  DD   DSN=#HHH.SMPLOGA,DISP=(NEW,CATLG,DELETE),
//             DCB=(RECFM=VB,LRECL=510,BLKSIZE=3200),
//             UNIT=3390,VOL=SER=#VOLSER,
//             SPACE=(CYL,(5,2))
//SMPPTS   DD   DSN=#HHH.SMPPTS,DISP=(NEW,CATLG,DELETE),
//             DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160),
//             UNIT=3390,VOL=SER=#VOLSER,
//             SPACE=(TRK,(4000,400,80))
/*
//*----------------------------------------------------------*
//* THIS STEP CREATES THE OPTIONS ENTRY
//*----------------------------------------------------------*
//OPTIONS EXEC PGM=GIMSMP,COND=(0,LT)
//SMPCSI   DD   DSN=#GLOBALCSI,DISP=SHR
//SMPLOG   DD   DSN=#HHH.SMPLOG,DISP=SHR
//SMPLOGA  DD   DSN=#HHH.SMPLOGA,DISP=SHR
//SMPPTS   DD   DSN=#HHH.SMPPTS,DISP=SHR
//SMPOUT   DD   SYSOUT=*
//SYSPRINT DD   SYSOUT=*
//SMPCNTL  DD   *
  SET BDY(GLOBAL) .
   UCLIN.
    ADD OPTIONS(OS390OPT)
     RETRYDDN(ALL)
```

```
       DSPREFIX(#HHH)
       DSSPACE(5000,1000,1300)
        ASM(ASMA90)
        AMS(IDCAMS)
        COPY(IEBCOPY)
        HFSCOPY(BPXCOPY)
        COMP(IEBCOPY)
        RETRY(IEBCOPY)
        LKED(HEWLH096)
        ZAP(IMASPZAP)
        UPDATE(IEBUPDTE).
     ENDUCL.
/*
//*-------------------------------------------------------------*
//* THIS STEP CREATES THE GLOBAL ZONE ZONEINDEX ENTRY           *
//*-------------------------------------------------------------*
//GLOBAL   EXEC PGM=GIMSMP
//SMPCSI    DD   DSN=#GLOBALCSI,DISP=SHR
//SMPLOG    DD   DSN=#HHH.SMPLOG,DISP=SHR
//SMPLOGA   DD   DSN=#HHH.SMPLOGA,DISP=SHR
//SMPPTS    DD   DSN=#HHH.SMPPTS,DISP=SHR
//SMPOUT    DD   SYSOUT=*
//SYSPRINT DD   SYSOUT=*
//SMPCNTL   DD   *
  SET       BDY(GLOBAL) .
   UCLIN.
    ADD GZONE
     SREL(Z038)
     ZONEINDEX((#TZONE,#GLOBALCSI,TARGET)
               (#DZONE,#GLOBALCSI,DLIB))
     OPTIONS(OS390OPT)
    ZDESC(GLOBAL Zone for WAS 5.0.).
   ENDUCL.
/*
//*-----------------------------------------------------------*
//* THIS STEP CREATES THE UTILITY ENTRIES                     *
//*-----------------------------------------------------------*
//UTILS    EXEC PGM=GIMSMP,COND=(4,LT)
//SMPCSI    DD   DSN=#GLOBALCSI,DISP=SHR
//SMPLOG    DD   DSN=#HHH.SMPLOG,DISP=SHR
//SMPLOGA   DD   DSN=#HHH.SMPLOGA,DISP=SHR
//SMPPTS    DD   DSN=#HHH.SMPPTS,DISP=SHR
//SMPOUT    DD   SYSOUT=*
//SYSPRINT DD   SYSOUT=*
//SMPCNTL   DD   *
  SET BDY(GLOBAL).
   UCLIN.
    ADD UTILITY(ASMA90 ) NAME(ASMA90 ) RC(0) PRINT(ASMOUT)
         PARM(XREF(SHORT),NOLIST,DECK,NOOBJECT).
```

```
      ADD UTILITY(HEWLH096) NAME(HEWLH096) RC(4) PRINT(LKEDOUT)
           PARM(SIZE=(1526K,100K),NCAL,LIST,LET,XREF).
      ADD UTILITY(IDCAMS  ) NAME(IDCAMS  ) RC(0) PRINT(VSAMOUT).
      ADD UTILITY(IEBCOPY ) NAME(IEBCOPY ) RC(0) PRINT(COPYOUT).
      ADD UTILITY(BPXCOPY ) NAME(BPXCOPY ) RC(0) PRINT(SYSPRINT).
      ADD UTILITY(IEBUPDTE) NAME(IEBUPDTE) RC(0) PRINT(UPDTOUT).
      ADD UTILITY(IEWL    ) NAME(IEWL    ) RC(4) PRINT(LKEDOUT)
           PARM(SIZE=(1526K,100K),NCAL,LIST,LET,XREF).
      ADD UTILITY(IMASPZAP) NAME(IMASPZAP) RC(0) PRINT(ZAPOUT).
    ENDUCL.
/*
//*-------------------------------------------------------------*
//* THIS STEP DEFINES ALL THE NECESSARY BASE DDDEF ENTRIES    *
//*-------------------------------------------------------------*
//DDDEFS   EXEC PGM=GIMSMP,COND=(4,LT)
//SMPCSI   DD   DSN=#GLOBALCSI,DISP=SHR
//SMPLOG   DD   DSN=#HHH.SMPLOG,DISP=SHR
//SMPLOGA  DD   DSN=#HHH.SMPLOGA,DISP=SHR
//SMPPTS   DD   DSN=#HHH.SMPPTS,DISP=SHR
//SMPOUT   DD   SYSOUT=*
//SYSPRINT DD   SYSOUT=*
//SMPCNTL  DD   *
  SET BDY(GLOBAL).
   UCLIN.
    ADD DDDEF(SMPTLIB)  VOLUME(#VOLSER) UNIT(3390).
    ADD DDDEF(SMPPTS )  DA(#HHH.SMPPTS) SHR
         UNIT(3390) VOLUME(#VOLSER).
    ADD DDDEF(SMPDEBUG) DA(#HHH.SMPDEBUG) SHR
         UNIT(3390) VOLUME(#VOLSER).
    ADD DDDEF(SMPLTS )  DA(#HHH.SMPLTS) SHR
         UNIT(3390) VOLUME(#VOLSER).
    ADD DDDEF(SMPMTS )  DA(#HHH.SMPMTS) SHR
         UNIT(3390) VOLUME(#VOLSER).
    ADD DDDEF(SMPSTS )  DA(#HHH.SMPSTS) SHR
         UNIT(3390) VOLUME(#VOLSER).
    ADD DDDEF(SMPLOG )  DA(#HHH.SMPLOG) SHR
         UNIT(3390) VOLUME(#VOLSER).
    ADD DDDEF(SMPLOGA)  DA(#HHH.SMPLOGA) SHR
         UNIT(3390) VOLUME(#VOLSER).
    ADD DDDEF(SMPSCDS)  DA(#HHH.SMPSCDS) SHR
         UNIT(3390) VOLUME(#VOLSER).
    ADD DDDEF(SMPWRK1 ) SPACE(120,120)  DIR(10)  TRACKS.
    ADD DDDEF(SMPWRK2 ) SPACE(30,30)    DIR(10)  TRACKS.
    ADD DDDEF(SMPWRK3 ) SPACE(9500,950) DIR(150) TRACKS.
    ADD DDDEF(SMPWRK4 ) SPACE(80,40)    DIR(10)  TRACKS.
    ADD DDDEF(SMPWRK6 ) SPACE(4100,410) DIR(100) TRACKS.
    ADD DDDEF(SYSUT1 )  SPACE(120,120)           TRACKS.
    ADD DDDEF(SYSUT2 )  SPACE(30,30)             TRACKS.
    ADD DDDEF(SYSUT3 )  SPACE(30,30)             TRACKS.
```

```
     ADD DDDEF(SYSUT4  ) SPACE(30,30)                    TRACKS.
     ADD DDDEF(COPYOUT)  SYSOUT(*).
   ENDUCL.
/*
//***************************************************

//SMPEJOB2  JOB
//*==========================================================*
//* THIS JOB CREATES NEW TARGET AND DLIB ZONES FOR AN
//*  EXISTING GLOBAL SMPE ENVIRONMENT FOR WEBSPHERE 5.0
//******************************************************************
//*                                                                *
//*  NOTE: This is neither a JCL procedure nor a complete job.     *
//*  Before using this job, you will need to make the following    *
//*  modifications:                                                *
//*                                                                *
//*  1) Add the job card parameters to meet your system            *
//*     requirements                                               *
//*  2) Change #GLOBALCSI to the dataset name of your global CSI   *
//*     data set                                                   *
//*  3) Change #TZONE to the name of your target zone              *
//*  4) Change #DZONE to the name of your distribution zone        *
//*  5) Change #HHH to the appropriate high-level qualifier        *
//*  6) Change #VOLSER to the volser you will be using             *
//*                                                                *
//*  Notes:                                                        *
//*                                                                *
//*  1. This job should complete with a return code 0.            *
//*                                                                *
//*  2. Please review your OS390 data set allocations for the      *
//*     following datasets                                         *
//*                                                                *
//*       MACLIB                                                   *
//*                                                                *
//*     If the OS390 data set high-level qualifiers are different  *
//*     from the defaults please change accordingly.              *
//*                                                                *
//******************************************************************
//*==========================================================*
//*
//*----------------------------------------------------------*//
//* THIS STEP ALLOCATES THE BASE SET OF SMPE DATASETS.      *//
//*----------------------------------------------------------*//
//SMPEDS  EXEC PGM=IEFBR14
//SMPLTS   DD  DSN=#HHH.SMPLTS,DISP=(NEW,CATLG,DELETE),
//             DCB=(RECFM=U,LRECL=0,BLKSIZE=32760),DSNTYPE=LIBRARY,
//             UNIT=3390,VOL=SER=#VOLSER,
//             SPACE=(TRK,(6535,653,1))
```

```
//SMPMTS   DD  DSN=#HHH.SMPMTS,DISP=(NEW,CATLG,DELETE),
//            DCB=(RECFM=FB,LRECL=80,BLKSIZE=0),
//            UNIT=3390,VOL=SER=#VOLSER,
//            SPACE=(TRK,(15,5,80))
//SMPSCDS  DD  DSN=#HHH.SMPSCDS,DISP=(NEW,CATLG,DELETE),
//            DCB=(RECFM=FB,LRECL=80,BLKSIZE=0),
//            UNIT=3390,VOL=SER=#VOLSER,
//            SPACE=(TRK,(15,2,80))
//SMPSTS   DD  DSN=#HHH.SMPSTS,DISP=(NEW,CATLG,DELETE),
//            DCB=(RECFM=FB,LRECL=80,BLKSIZE=0),
//            UNIT=3390,VOL=SER=#VOLSER,
//            SPACE=(TRK,(15,2,80))
//*
//*----------------------------------------------------------*
//* THIS STEP ADDS THE TARGET AND DLIB ZONE NAMES AND POINTS TO
//* THE APPROPRIATE OPTIONS ENTRY.
//*----------------------------------------------------------*
//DEFZONE EXEC PGM=GIMSMP,COND=(0,LT)
//SMPCSI   DD  DSN=#GLOBALCSI,DISP=SHR
//SMPLOG   DD  DSN=#HHH.SMPLOG,DISP=SHR
//SMPLOGA  DD  DSN=#HHH.SMPLOGA,DISP=SHR
//SMPPTS   DD  DSN=#HHH.SMPPTS,DISP=SHR
//SMPOUT   DD  SYSOUT=*
//SYSPRINT DD  SYSOUT=*
//SMPCNTL  DD  *
  SET BDY(#TZONE).
   UCLIN.
    ADD TZONE(#TZONE) OPTIONS(OS390OPT) SREL(Z038) RELATED(#DZONE)
     ZDESC(TARGETZone for WAS 5.0).
   ENDUCL.
  SET BDY(#DZONE).
   UCLIN.
    ADD DZONE(#DZONE) OPTIONS(OS390OPT) SREL(Z038) RELATED(#TZONE)
     ZDESC(DLIB Zone for WAS 5.0).
   ENDUCL.
/*
//*----------------------------------------------------------*
//* THIS STEP DEFINES ALL THE NECESSARY BASE DDDEF ENTRIES    *
//*----------------------------------------------------------*
//DDDEFS  EXEC PGM=GIMSMP,COND=(4,LT)
//SMPCSI   DD  DSN=#GLOBALCSI,DISP=SHR
//SMPLOG   DD  DSN=#HHH.SMPLOG,DISP=SHR
//SMPLOGA  DD  DSN=#HHH.SMPLOGA,DISP=SHR
//SMPPTS   DD  DSN=#HHH.SMPPTS,DISP=SHR
//SMPOUT   DD  SYSOUT=*
//SYSPRINT DD  SYSOUT=*
//SMPCNTL  DD  *
  SET BDY(#TZONE).
   UCLIN.
```

```
   ADD DDDEF(SMPTLIB)  VOLUME(#VOLSER) UNIT(3390).
   ADD DDDEF(SMPPTS )  DA(#HHH.SMPPTS) SHR
       UNIT(3390) VOLUME(#VOLSER).
   ADD DDDEF(SMPDEBUG) DA(#HHH.SMPDEBUG) SHR
       UNIT(3390) VOLUME(#VOLSER).
   ADD DDDEF(SMPLTS )  DA(#HHH.SMPLTS) SHR
       UNIT(3390) VOLUME(#VOLSER).
   ADD DDDEF(SMPMTS )  DA(#HHH.SMPMTS) SHR
       UNIT(3390) VOLUME(#VOLSER).
   ADD DDDEF(SMPSTS )  DA(#HHH.SMPSTS) SHR
       UNIT(3390) VOLUME(#VOLSER).
   ADD DDDEF(SMPLOG )  DA(#HHH.SMPLOG) SHR
       UNIT(3390) VOLUME(#VOLSER).
   ADD DDDEF(SMPLOGA)  DA(#HHH.SMPLOGA) SHR
       UNIT(3390) VOLUME(#VOLSER).
   ADD DDDEF(SMPSCDS)  DA(#HHH.SMPSCDS) SHR
       UNIT(3390) VOLUME(#VOLSER).
   ADD DDDEF(SMPWRK1 ) SPACE(120,120)  DIR(10)  TRACKS.
   ADD DDDEF(SMPWRK2 ) SPACE(30,30)    DIR(10)  TRACKS.
   ADD DDDEF(SMPWRK3 ) SPACE(9500,950) DIR(150) TRACKS.
   ADD DDDEF(SMPWRK4 ) SPACE(80,40)    DIR(10)  TRACKS.
   ADD DDDEF(SMPWRK6 ) SPACE(4100,410) DIR(100) TRACKS.
   ADD DDDEF(SYSUT1  ) SPACE(7500,750)          TRACKS.
   ADD DDDEF(SYSUT2  ) SPACE(30,30)             TRACKS.
   ADD DDDEF(SYSUT3  ) SPACE(30,30)             TRACKS.
   ADD DDDEF(SYSUT4  ) SPACE(30,30)             TRACKS.
   ADD DDDEF(COPYOUT)  SYSOUT(*).
   ADD DDDEF(ASMOUT)   SYSOUT(*).
   ADD DDDEF(LKEDOUT)  SYSOUT(*).
   ADD DDDEF(VSAMOUT)  SYSOUT(*).
   ADD DDDEF(UPDTOUT)  SYSOUT(*).
   ADD DDDEF(ZAPOUT)   SYSOUT(*).
   ADD DDDEF(MACLIB )  DA(SYS1.MACLIB) SHR
       UNIT(3390) VOLUME(#VOLSER).
   ADD DDDEF(SYSLIB )  CONCAT(MACLIB).
  ENDUCL.
 SET BDY(#DZONE).
UCLIN.
   ADD DDDEF(SMPTLIB)  VOLUME(#VOLSER) UNIT(3390).
   ADD DDDEF(SMPPTS )  DA(#HHH.SMPPTS) SHR
       UNIT(3390) VOLUME(#VOLSER).
   ADD DDDEF(SMPDEBUG) DA(#HHH.SMPDEBUG) SHR
       UNIT(3390) VOLUME(#VOLSER).
   ADD DDDEF(SMPLTS )  DA(#HHH.SMPLTS) SHR
       UNIT(3390) VOLUME(#VOLSER).
   ADD DDDEF(SMPMTS )  DA(#HHH.SMPMTS) SHR
       UNIT(3390) VOLUME(#VOLSER).
   ADD DDDEF(SMPSTS )  DA(#HHH.SMPSTS) SHR
       UNIT(3390) VOLUME(#VOLSER).
```

```
      ADD DDDEF(SMPLOG )  DA(#HHH.SMPLOG) SHR
           UNIT(3390) VOLUME(#VOLSER).
      ADD DDDEF(SMPLOGA)  DA(#HHH.SMPLOGA) SHR
           UNIT(3390) VOLUME(#VOLSER).
      ADD DDDEF(SMPSCDS)  DA(#HHH.SMPSCDS) SHR
           UNIT(3390) VOLUME(#VOLSER).
      ADD DDDEF(SMPWRK1 ) SPACE(120,120)  DIR(10)  TRACKS.
      ADD DDDEF(SMPWRK2 ) SPACE(30,30)    DIR(10)  TRACKS.
      ADD DDDEF(SMPWRK3 ) SPACE(9500,950) DIR(150) TRACKS.
      ADD DDDEF(SMPWRK4 ) SPACE(80,40)    DIR(10)  TRACKS.
      ADD DDDEF(SMPWRK6 ) SPACE(4100,410) DIR(100) TRACKS.
      ADD DDDEF(SYSUT1  ) SPACE(120,120)           TRACKS.
      ADD DDDEF(SYSUT2  ) SPACE(30,30)             TRACKS.
      ADD DDDEF(SYSUT3  ) SPACE(30,30)             TRACKS.
      ADD DDDEF(SYSUT4  ) SPACE(30,30)             TRACKS.
      ADD DDDEF(COPYOUT)  SYSOUT(*).
      ADD DDDEF(ASMOUT)   SYSOUT(*).
      ADD DDDEF(LKEDOUT)  SYSOUT(*).
      ADD DDDEF(VSAMOUT)  SYSOUT(*).
      ADD DDDEF(UPDTOUT)  SYSOUT(*).
      ADD DDDEF(ZAPOUT)   SYSOUT(*).
      ADD DDDEF(MACLIB )  DA(SYS1.MACLIB) SHR
      UNIT(3390) VOLUME(#VOLSER).
      ADD DDDEF(SYSLIB )  CONCAT(MACLIB).
    ENDUCL.
/*
```

These two sample jobs are not shipped with this product.

For more information on setting up the SMP/E environment, see the *SMP/E User's Guide* for your release
of z/OS or OS/390.

6.1.2 Create a Cross-Zone Set

WebSphere Application Server for z/OS V5.0 and OS/390 requires that products to be used with it be at
fairly current maintenance levels. Much of this prerequisite maintenance can be checked automatically by
SMP/E, if **cross-zone processing** is used to check associated SMP/E zones for installed PTF levels.

There are two different methods that can be used for cross-zone processing. A zone group can be
defined and added to the install jobs, or the XZGROUP operand can be used. XZGROUP(value) contains
a list of ZONESETs or zones that are used to establish the zone group. Each value in the list must be a
valid ZONESET or zone name. XZGROUP(value) would be added to the install jobs instead of adding the
XZREQCHK operand to one or more ZONESETs.

The operand XZREQ provides a method for a user to more easily install cross-zone requisites. SMP/E
identifies the cross-zone requisites needed in the set-to zone by reading CIFREQ data in the secondary
zones of the zone group in effect for the current APPLY/ACCEPT commands. Any CIFREQ data that is

for FMIDs installed, or being installed, into the set-to zone that are not yet in the set-to zone causes the required SYSMODs to become candidates for installation. If the FORFMID operand is also used, the FMID specified on the CIFREQ must match one of the FMIDs specified on the FORFMID operand for the SYSMOD to become a candidate.

By adding the new XZREQ operand, the CIFREQ SYSMODs are installed automatically into the set-to zone. However, XZREQ does not install the CIFREQs in the other cross-dependent zones. An APPLY XZREQ needs to be performed against the other zones to synchronize service.

Note: If SYSMODs being installed into the set-to zone have requirements against the other cross-zones, that service must be APPLY'd to those zones before installation can be completed into the set-to zone.

For more information on this operand, refer to *OS/390 SMP/E Commands,* SC28-1805. See Figure 18 on page 39 for an example of how to set up the ZONEINDEX, ZONESET, and XZREQCHK for use during the APPLY/ACCEPT. See Figure 24 on page 50 for an example of the APPLY using the XZREQ operand.

```
//ZINDEX   JOB (Job parameters)
//SMPE     EXEC PGM=GIMSMP
//STEPLIB DD (If needed for SMP/E)
//SYSPRINT DD SYSOUT=*
//SMPCSI   DD DSN=was.global.csi,DISP=SHR
//SMPCNTL  DD *
  SET BDY(GLOBAL) .
    UCLIN .
      ADD GLOBALZONE ZONEINDEX(
        (os390t,os390.target.csi,TARGET)
        (jes2tgt,jes2.target.csi,TARGET)
        (jes3tgt,jes3.target.csi,TARGET)
        (pptgt,pgmprod.target.csi,TARGET)
        (db2tgt,db2.target.csi,TARGET)
        (imstgt,ims.target.csi,TARGET)
        (cicstgt,cics.target.csi, TARGET)) .

      ADD ZONESET(XZONE)
        ZONE(wast,
             os390t,
             jes2tgt,
             jes3tgt,
             pptgt,
             cicstgt,
             db2tgt,
             imstgt)
        XZREQCHK(YES) .
    ENDUCL.
/*
```

Figure 18. Sample Job to Add XZREQCHK(YES) to a ZONESET Entry

┌─ Required Updates ─────────────────────────────

1. Update the job parameters.

2. Update the STEPLIB DD statement (if necessary for your system).

3. Replace the CSI name on the SMPCSI DD statement with your CSI name.

4. Update cross-dependency zones and CSI names.

Successful processing issues a return code of 0.

6.1.3 RECEIVE WebSphere Application Server for z/OS V5.0

RECEIVE FMIDs and service for the WebSphere Application Server for z/OS V5.0 elements by running the RCVPDO job. For more information, refer to *MVS CBPDO Memo to User Extension* included with the CBPDO.

The CBPDO contains all non-integrated PTFs for every WebSphere Application Server for z/OS V5.0 FMID. (Cumulative service is included in CBPDO orders, so there is no separate cumulative service tape.) Depending on the options selected when you ordered the CBPDO, your order may contain service for other products in your profile, or for just the WebSphere Application Server for z/OS V5.0 FMIDs. As a result, maintenance may be delivered that is already APPLY'd and ACCEPT'd.

If you are installing MQ Series V5.3.1, you may need to update the RCVPDO job to reflect the appropriate information of what CSI you wish to use. If using the WebSphere Application Server for z/OS V5.0 CSI, please refer to 6.1.4.1, "SMP/E Global Zone" on page 41. This section will help you determine what information is needed to update the RCVPDO job with.

If you are not installing WebSphere MQ for z/OS at this time, do not receive FMIDs HMS5310, JMS5311, JMS5314, JMS5318, JMS5312, or JMS5313.

Successful RECEIVE processing issues a return code of 0.

6.1.4 Customizing the MQ Support Installation Jobs

WebSphere Application Server for z/OS V5.0 uses elements of WebSphere MQ for z/OS to provide integrated messaging support. You can choose either a pre-existing installation of WebSphere MQ for z/OS to provide this support, or to install the WebSphere MQ for z/OS provided with WebSphere Application Server for z/OS V5.0.

If you choose to install the WebSphere MQ for z/OS provided with WebSphere Application Server for z/OS V5.0, there are two methods for customizing the sample install jobs found in 6.1.5, "Sample Jobs" on page 41.

- Batch update method - read Appendix A, "Customizing the WebSphere MQ for z/OS Installation jobs" on page 59, and perform the steps described to customize the "CSQ8xxxx" jobs mentioned in the following sections before proceeding with the installation.

- Manual update method - When you get to 6.1.5, "Sample Jobs" on page 41, customize the "CSQ8xxxx" jobs by following the comments in the job. You will need to add a job card.

6.1.4.1 SMP/E Global Zone

WebSphere MQ for z/OS can be installed using the global zone just defined for WebSphere Application Server for z/OS V5.0.

To use the WebSphere Application Server for z/OS V5.0 global zone, ensure that GZONECSI and SHLQUAL are set to the values used in the WebSphere Application Server for z/OS V5.0 CSI. (refer to Appendix A, "Customizing the WebSphere MQ for z/OS Installation jobs" on page 59).

6.1.4.2 Target and distribution zones

If you need to create new target and distribution zones for WebSphere MQ, run the following jobs:

- CSQ8TZON to create a target zone
- CSQ8DZON to create a distribution zone

Expected Return Codes and Messages:

Both jobs consist 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, correct it, and then rerun the job from the step that failed.

6.1.5 Sample Jobs

Sample jobs to allocate the target and distribution libraries, set up HFS directories, and create DDDEF entries for the WebSphere Application Server for z/OS V5.0 elements have been provided. After RECEIVE processing, the jobs can be found in the SMPTLIB data sets. Copy the sample jobs to a work data set and customize them. For specific instructions on customizing, see the comments in the sample jobs.

Figure 19 lists the locations of the sample ALLOCATE, MKDIR, and DDDEF jobs for WebSphere Application Server for z/OS V5.0.

Figure 19 (Page 1 of 2). Sample Installation Jobs			
Job Name	**Job Type**	**Description**	**RELFILE**
AJVALLOC	ALLOCATE	Sample job to allocate target and distribution libraries for IBM Developer Kit for OS/390, Java 2 Technology Edition	IBM.HJVA130.F2
BBOALLOC	ALLOCATE	Sample job to allocate target and distribution libraries for Application Server	IBM.H28W500.F1
CSQ8ALOC	ALLOCATE	Sample job to allocate target and distribution libraries for IBM WebSphere MQ for z/OS Simplified Chinese CHS	IBM.HMS5310.F2

Figure 19 (Page 2 of 2). Sample Installation Jobs			
Job Name	**Job Type**	**Description**	**RELFILE**
CSQ8ALOE	ALLOCATE	Sample job to allocate target and distribution libraries for IBM WebSphere MQ for z/OS Base and IBM Websphere MQ for z/OS US English ENU	IBM.HMS5310.F2
CSQ8ALOK	ALLOCATE	Sample job to allocate target and distribution libraries for IBM WebSphere MQ for z/OS Japanese JPN	IBM.HMS5310.F2
CSQ8ALOU	ALLOCATE	Sample job to allocate target and distribution libraries for IBM WebSphere MQ for z/OS Uppercase English ENP	IBM.HMS5310.F2
CSQ8JALO	ALLOCATE	Sample job to allocate libraries for MQSeries JMS feature	IBM.HMS5310.F2
AJVISMKD	MKDIR	Sample job to invoke the supplied AJVMKDIR EXEC to allocate HFS paths for IBM Developer Kit for OS/390, Java 2 Technology Edition	IBM.HJVA130.F2
BBOISMKD	MKDIR	Sample job to invoke the supplied BBOMKDIR EXEC to allocate HFS paths for Application Server	IBM.H28W500.F1
CSQ8JMKJ	MKDIR	Sample job to create the HFS path forMQSeries JMS feature	IBM.HMS5310.F2
AJVDDDEF	DDDEF	Sample job to define SMP/E DDDEFs for IBM Developer Kit for OS/390, Java 2 Technology Edition	IBM.HJVA130.F2
BBODDDEF	DDDEF	Sample job to define SMP/E DDDEFs for Application Server	IBM.H28W500.F1
CSQ8DDDF	DDDEF	Sample job to define target and distribution libraries for MQ Series	IBM.HMS5310.F2
CSQ8JDDD	DDDEF	Sample job to define libraries for MQSeries JMS feature	IBM.HMS5310.F2
Note:			
Please see the paragraph below containing notes for customizing installation jobs.			

Customizing installation jobs:

1. If required, customized versions of CSQ8xxx jobs can be found in THQ.TCSQINST, once the steps in Appendix A, "Customizing the WebSphere MQ for z/OS Installation jobs" on page 59 have been completed.

2. Before running the CSQ8JMKJ job, ensure that the CSQ8JMKR exec is in the same dataset. The CSQ8MKJ job expects the CSQ8JMKR exec to be in the same dataset during execution.

3. You will need to edit the CSQ8DDDF job and comment out the CHGPATH step, and the ADD DDDEF statements for the following DDNAMES:

HFS PATHS: **SCSQOBIN, SCSQODOC, SCSQODOE, SCSQODOK, SCSQODOU, SCSQONLC, SCSQONLE, SCSQONLK, SCSQONLU, SCSQOSMP**

Distribution Libraries: **ACSQOBIN, ACSQODOC, ACSQODOE, ACSQODOK, ACSQODOU, ACSQONLC, ACSQONLE, ACSQONLK, ACSQONLU, ACSQOSMP**

4. **Expected Return Code for sample jobs is RC 0.**

The DDDEFs belong to the Internet Gateway feature (FMID JMS5316), which is not shipped with WebSphere Application Server for z/OS V5.0.

6.1.6 Define Target and Distribution Libraries for WebSphere Application Server for z/OS V5.0

Submit the customized AJVALLOC and BBOALLOC jobs to define target and distribution libraries.

Expected Return Codes and Messages: RC=0

If you are installing WebSphere MQ for z/OS at this time, submit the customized CSQ8ALOE and CSQ8JALO jobs. Although you can modify the jobs to install into your root HFS, IBM strongly suggests that you allocate a new HFS for this product. Check the allocation and deallocation messages to be certain the data sets were allocated and cataloged correctly.

Expected Return Codes and Messages: RC=0

If you are installing WebSphere MQ with national language support (Chinese, Japanese, or Uppercase English), run the appropriate customization allocation jobs listed in Figure 19 on page 41 for the language(s) you choose.

Expected Return Codes and Messages: RC=0

6.1.7 Set Up HFS Directories for WebSphere Application Server for z/OS V5.0

At this time, you need to make the HFS data sets which will contain the HFS target directories available to install WebSphere Application Server for z/OS V5.0. (Remember, although you can install WebSphere Application Server for z/OS V5.0 into your existing root HFS data set, IBM strongly recommends that they be separate.) There are three HFS data sets which are required for WebSphere Application Server for z/OS V5.0. For Application Server, sample job BBOALLOC, which you ran in the previous section, allocated the Application Server HFS data sets. For IBM Developer Kit for OS/390, Java 2 Technology Edition, you must manually create the Java HFS. The following JCL can be used:

```
//W501AJVA  JOB
//*------------------------------------------------------------*//
//* THIS STEP ALLOCATES THE NEW JAVA HFS                       *//
//*------------------------------------------------------------*//
//ALLOCHFS EXEC PGM=IEFBR14
//HFS      DD  DSN=your.java.hfs,
//             UNIT=3390,VOL=SER=tttttt,
//               SPACE=(CYL,(350,15,1)),
//             DSNTYPE=HFS,
//             DISP=(NEW,CATLG)
```

Figure 20. Sample Allocate Job for Java HFS

Modify this job to meet your installation standards, and submit it. Alternatively, you can allocate the Java
HFS using ISPF option 3.2.

Required Updates

1. Update the job parameters.

2. Update the HFS DD statement DSN=, to the appropriate dataset name.

3. Update the VOL=SER=, to the appropriate volume name.

EXPECTED RETURN CODES AND MESSAGES: RC=0

If you are installing WebSphere MQ at this time, and want to create an HFS data set for the WebSphere
MQ Java support code, the following JCL can be used:

```
//W501MQJ  JOB
//*------------------------------------------------------------*//
//* THIS STEP ALLOCATES THE NEW WebSphere MQ JAVA HFS          *//
//*------------------------------------------------------------*//
//ALLOCHFS EXEC PGM=IEFBR14
//HFS      DD  DSN=your.mqjava.hfs,
//             UNIT=3390,VOL=SER=tttttt,
//               SPACE=(CYL,(20,4,1)),
//             DSNTYPE=HFS,
//             DISP=(NEW,CATLG)
//*------------------------------------------------------------*//
```

Figure 21. Sample HFS data set for the WebSphere MQ Java Support code

Modify this job to meet your installation standards, and submit it. Alternatively, you can allocate the HFS
using ISPF option 3.2.

EXPECTED RETURN CODES AND MESSAGES: RC=0

If you have allocated the optional HFS data sets for WAS temp text, you must make them available on
your driving system for installation. For IBM Developer Kit for OS/390, Java 2 Technology Edition, use the
following sample commands to create the mountpoint and mount the IBM Developer Kit for OS/390, Java
2 Technology Edition HFS data set:

From the Unix shell:

```
mkdir -PathPrefix-/usr/lpp/java
```

From TSO:

```
MOUNT FILESYSTEM('your.java.hfs')
  MOUNTPOINT('-PathPrefix-/usr/lpp/java') TYPE(HFS) MODE(RDWR)
```

Once the Java Development Kit HFS has been mounted, run the customized sample jobs AJVISMKD and
BBOISMKD, listed in Figure 19 on page 41, from a userid that is UID(0), or that has read access to the
BPX.SUPERUSER resource in the RACF facility class. The userid also needs read access to the
BPX.FILEATTR.PROGCTL and BPX.FILEATTR.APF facility class resources. You will receive a return
code of 0 for each step, if it is successful.

If WebSphere MQ for z/OS is being installed at this time, mount the HFS using:

From the Unix shell:

```
mkdir -p -PathPrefix-/usr/lpp/mqm/V5R3M1
```

From TSO:

```
MOUNT FILESYSTEM('your.mqm.hfs')
MOUNTPOINT('-PathPrefix-/usr/lpp/mqm/V5R3M1') TYPE(HFS)MODE(RDWR)
```

then run the customized sample job CSQ8JMKJ to create the WebSphere MQ Java Support subdirectory.

EXPECTED RETURN CODES AND MESSAGES: RC=0

Once the customized sample jobs AJVISMKD, BBOISMKD, and CSQ8JMKJ provided in Figure 19 on page 41, have been run, and before continuing with the installation of WebSphere Application Server for z/OS V5.0, you must verify the following:

1. You have allocated three HFS data sets for WebSphere Application Server for z/OS V5.0 - one for each element (Application Server, IBM Developer Kit for OS/390, Java 2 Technology Edition, and WebSphere MQ).
2. You have defined a mountpoint for each of the three HFS data sets (for instance: -PathPrefix-/usr/lpp/zWebSphere/V5R0M0, -PathPrefix-/usr/lpp/java, and -PathPrefix-/usr/lpp/mqm/V5R3M1).
3. You have mounted the three HFS data sets, one for each element (Application Server, IBM Developer Kit for OS/390, Java 2 Technology Edition,and WebSphere MQ), to your driving system.

Note:

If you are not installing MQ at this time, there is no requirement for the MQ HFS (-PathPrefix-/usr/lpp/mqm/V5R3M1) to be defined or mounted on the driving system.

After you have verified the above items, continue with the installation in defining the DDDEFS for WebSphere Application Server for z/OS V5.0.

6.1.8 SMP/E CALLLIBS Processing and Side Decks Processing

WebSphere Application Server for z/OS V5.0 uses the CALLLIBS function provided in SMP/E and definition side decks to resolve external references during installation. When WebSphere Application Server for z/OS V5.0 is installed, ensure that DDDEFs exist in the WebSphere Application Server for z/OS V5.0 target zone for libraries listed in Figure 22.

The DDDEFs should point to the appropriate data sets used by the target OS/390 or z/OS system; that is, the version of OS/390 or z/OS on which the Application Server will be run, if different from that of the system being used to install the product.

Figure 21 lists the common DDDEFs needed by WebSphere and MQSeries for CALLLIBs processing.

Figure 22. DDDEFs required for CALLLIBs processing			
DDDEFs	**Element of OS/390 or z/OS Product**	**Req'd by Application Server**	**Req'd by MQSeries**
CSSLIB	BCP callable services	X	X
SCEECPP	Language Environment	X	X
SCEELKED	Language Environment	X	X
SCEELKEX	Language Environment	X	
SCEEOBJ	Language Environment	X	
SCEESPC	Language Environment	X	X
SCLBSID	C/C++ IBM Open Class Library	X	
SCSFMOD0	Cryptographic Services ICSF	X	
SEZACMTX	Communications Server		X
SGLDHCLI	Security Server LDAP Server	X	
SGSKHFS	Cryptographic Services System SSL	X	X
SIMWSA	IBM HTTP Server	X	

Notes:

1. The DDDEFs above are used only to resolve the link-edit for WebSphere Application Server for z/OS V5.0 using CALLLIBS. These data sets are not updated during the installation of WebSphere Application Server for z/OS V5.0.

2. SCEERUN must be in the STEPLIB of the APPLY and ACCEPT jobs for the installation to be successful.

WebSphere Application Server for z/OS V5.0 installation does not require a DDDEF for SYSLIB; however, SMP/E APPLY processing expects to find one. If necessary, create DDDEFs for SMPMTS and SYS1.MACLIB, and create a SYSLIB DDDEF that points to a concatenation of these two data sets. See *OS/390 SMP/E Reference* for more information about the SYSLIB concatenation.

6.1.9 Define DDDEFs for WebSphere Application Server for z/OS V5.0

Run the customized sample jobs AJVDDDEF and BBODDDEF.

EXPECTED RETURN CODES AND MESSAGES: RC=0

If WebSphere MQ for z/OS is being installed at this time, run the customized sample jobs CSQ8DDDF and CSQ8JDDD to create SMP/E DDDEFs for target and distribution data sets. Remove the ADD DDDEF statements for CSSLIB, SCEECPP, SCEELKED, SCEESPC and SGSKHFS from the CSQ8DDDF job before running it, since these DDDEFs are also created by job BBODDDEF. You should receive a return code of 0. If any of the DDDEF entries exist, you will get a non-zero return code. Check the output to see what caused the non-zero return code.

Figure 19 on page 41 lists the locations of the sample jobs.

EXPECTED RETURN CODES AND MESSAGES: RC=0

6.1.10 Perform SMP/E APPLY CHECK for WebSphere Application Server for z/OS V5.0 FMIDs and Service

Run an APPLY CHECK to identify any requisite service and additional holds. Resolve any holds and receive any requisite service identified by the APPLY CHECK before the next step.

Figure 23 shows a sample APPLY CHECK for WebSphere Application Server for z/OS V5.0.

```
//CHECK JOB <job parameters>
//STEP1 EXEC PGM=GIMSMP,REGION=0M,TIME=NOLIMIT
//STEPLIB DD (if needed for SMP/E)
//SMPCSI  DD DSN=was.global.csi,DISP=SHR
//SMPCNTL DD *
  SET BOUNDARY(targetzone)
      OPTIONS(OS390OPT) .
       APPLY CHECK XZREQ
        FORFMID(HJVA130, H28W500, HMS5310, JMS5311,
        JMS5318, JMS5314, JMS5312, JMS5313)
        SELECT(HJVA130, H28W500, HMS5310, JMS5311,
        JMS5318, JMS5314, JMS5312, JMS5313)
        GROUPEXTEND(NOAPARS,NOUSERMODS)
        BYPASS(HOLDSYSTEM).
 /*
```

Figure 23. SMP/E APPLY CHECK

1. Update the job parameters.

2. Update the STEPLIB DD statement (if necessary for your system).

3. Replace the CSI name on the SMPCSI DD statement with your CSI name.

4. Update targetzone to your target zone name.

5. Remove JMS5312, JMS5313, and JMS5314 if you choose not to install NLV features. MQ Series install is optional. Remove all HMSxxxx and JMSxxxx FMIDs if you are not installing WebSphere MQ for z/OS at this time.

Expected Return Codes and Messages:

If cross-zone requisites encounter problems, the following messages may be issued:

- "GIM35925I CROSS-ZONE REQUISITE SYSMOD aaaaaaa REQUIRED IN ZONE bbbbbbb WAS MISSING."

  Where

  aaaaaaa -- SYSMOD ID
  bbbbbbb -- zone name that needs the cross-zone requisite

If service containing ++**HOLD** is being installed, then RC=4 and the following messages will be issued:

- "GIM42001W THE FOLLOWING CONDITIONS FOR SYSMOD aaaaaaa WERE NOT SATISFIED, BUT WERE IGNORED BECAUSE THE BYPASS OPERAND WAS SPECIFIED. PROCESSING CONTINUES."

  where aaaaaaa--SYSMOD ID

- "GIM35966I SYSTEM HOLD aaaaaaaa ORIGINATED BY SYSMOD bbbbbbb WAS BYPASSED."

  where: aaaaaaaa--system hold reason ID and bbbbbbb--SYSMOD ID

Otherwise, RC=0

Notes:

1. The XZREQ operand needs to be specified only when cross-zone processing is required. If this operand is specified when there is no zone group set up, the following message will be received, which is acceptable:

   - "GIM50810W THE XZREQ OPERAND WAS SPECIFIED ON THE APPLY COMMAND BUT SINCE NO ZONES WERE APPLICABLE FOR CROSS-ZONE REQUISITE CHECKING, THE XZREQ OPERAND WILL BE IGNORED."

6.1.11 Perform SMP/E APPLY for WebSphere Application Server for z/OS V5.0 FMIDs and Service

Once all exceptions reported by the APPLY CHECK have been resolved, run the SMP/E APPLY step to install the WebSphere Application Server for z/OS V5.0 products. This job must be run under a userid with either UID(0), or with a userid with read access to the BPX.SUPERUSER RACF Facility class. Also, the userid must have read access to the BPX.FILEATTR.PROGCTL and BPX.FILEATTR.APF resources in the RACF Facility class. **In addition, you must remove the LISTPRIV parameter from your GLOBAL zone linkedit utility in your SMP/E CSI.**

Note: Using NOLIST in the SMP/E UTILITY entry for the binder will allow APPLY processing to complete faster, as well as reduce the amount of output generated by more than half (without using NOLIST, approximately 10 million lines of output are created).

Figure 24 shows a sample APPLY for the WebSphere Application Server for z/OS V5.0 functions, plus RECEIVE'd PTFs for these functions.

```
//APPLY JOB <job parameters>
//STEP1 EXEC PGM=GIMSMP,REGION=0M,TIME=NOLIMIT
//STEPLIB DD (if needed for SMP/E)
//SMPCSI  DD DSN=was.global.csi,DISP=SHR
//SMPCNTL DD *
  SET BOUNDARY(targetzone)
      OPTIONS(OS390OPT) .
       APPLY XZREQ
        FORFMID(HJVA130, H28W500, HMS5310, JMS5311,
        JMS5318, JMS5314, JMS5312, JMS5313)
        SELECT(HJVA130, H28W500, HMS5310, JMS5311,
        JMS5318, JMS5314, JMS5312, JMS5313)
        GROUPEXTEND(NOAPARS,NOUSERMODS)
        COMPRESS(ALL)
        BYPASS(HOLDSYSTEM).
 /*
```

Figure 24. SMP/E APPLY

Expected Return Codes and Messages:

During the link-edit processing the following message may be issued.

- "IEW2454W SYMBOL xxxxxxxx UNRESOLVED. NO AUTOCALL (NCAL) SPECIFIED."

- "IEW2480W A711 EXTERNAL SYMBOL xxxxxxxxx OF TYPE xx WAS ALREADY DEFINED AS A
  SYMBOL OF TYPE xx IN SECTION xxxxxxxx."

- "IEW2482W A712 THE ORIGINAL DEFINITION WAS IN A MODULE IDENTIFIED BY DDNAME
  xxxxxxxx. THE DUPLICATE DEFINITION IS IN SECTION xxxxxxx IN A MODULE IDENTIFIED BY
  DDNAME xxxxxxxx."

These messages are acceptable and can be ignored.

If service containing ++**HOLD** is being installed, then RC=4 and the following messages will be issued:

- "GIM42001W THE FOLLOWING CONDITIONS FOR SYSMOD aaaaaaa WERE NOT SATISFIED,
  BUT WERE IGNORED BECAUSE THE BYPASS OPERAND WAS SPECIFIED. PROCESSING
  CONTINUES."

  where aaaaaaa--SYSMOD ID

- "GIM35966I SYSTEM HOLD aaaaaaaa ORIGINATED BY SYSMOD bbbbbbb WAS BYPASSED."

  where: aaaaaaaa--system hold reason ID and bbbbbbb--SYSMOD ID

Otherwise RC=0

6.1.12 Perform SMP/E ACCEPT CHECK for WebSphere Application Server for z/OS V5.0 FMIDs and Service

Run an ACCEPT CHECK to identify any requisite service and additional holds. Resolve any holds, and
RECEIVE and APPLY any requisite service identified by ACCEPT CHECK before the next step.

Figure 25 on page 52 shows a sample ACCEPT CHECK for WebSphere Application Server for z/OS
V5.0.

```
//CHECK JOB <job parameters>
//STEP1 EXEC PGM=GIMSMP,REGION=0M,TIME=NOLIMIT
//STEPLIB DD (if needed for SMP/E)
//SMPCSI  DD DSN=was.global.csi,DISP=SHR
//SMPCNTL DD *
  SET BOUNDARY(dlibzone)
     OPTIONS(OS390OPT) .
       ACCEPT CHECK
        FORFMID(HJVA130, H28W500, HMS5310, JMS5311,
        JMS5318, JMS5314, JMS5312, JMS5313)
        SELECT(HJVA130, H28W500, HMS5310, JMS5311,
        JMS5318, JMS5314, JMS5312, JMS5313)
        GROUPEXTEND(NOAPARS,NOUSERMODS)
        BYPASS(HOLDSYS).
/*
```

Figure 25. SMP/E ACCEPT CHECK

Required Updates

1. Update the job parameters.

2. Update the STEPLIB DD statement (if necessary for your system).

3. Replace the CSI name on the SMPCSI DD statement with your CSI name.

4. Update dlibzone to your dlib zone name.

5. Remove JMS5312, JMS5313, and JMS5314 if you choose not to install these NLV features. MQ Series install is optional. Remove all HMSxxxx and JMSxxxx FMIDs if you are not installing WebSphere MQ Series for z/OS at this time.

Expected Return Codes and Messages:

If service containing ++**HOLD** is being installed, then RC=4 and the following messages will be issued:

- "GIM42001W THE FOLLOWING CONDITIONS FOR SYSMOD aaaaaaa WERE NOT SATISFIED, BUT WERE IGNORED BECAUSE THE BYPASS OPERAND WAS SPECIFIED. PROCESSING CONTINUES."

    where aaaaaaa--SYSMOD ID

- "GIM35966I SYSTEM HOLD aaaaaaaa ORIGINATED BY SYSMOD bbbbbbb WAS BYPASSED."

    where: aaaaaaaa--system hold reason ID and bbbbbbb--SYSMOD ID

Otherwise, RC=0

6.1.13 Perform SMP/E ACCEPT for WebSphere Application Server for z/OS V5.0 FMIDs and Service

Figure 26 shows a sample ACCEPT for WebSphere Application Server for z/OS V5.0.

```
//ACCEPT JOB<job parameters>
//STEP1 EXEC PGM=GIMSMP,REGION=0M,TIME=NOLIMIT
//STEPLIB DD (if needed for SMP/E)
//SMPCSI  DD DSN=was.global.csi,DISP=SHR
//SMPCNTL DD *
  SET BOUNDARY(dlibzone)
      OPTIONS(OS390OPT) .
       ACCEPT
        FORFMID(HJVA130, H28W500, HMS5310,JMS5311,
        JMS5318, JMS5314, JMS5312, JMS5313)
        SELECT(HJVA130, H28W500, HMS5310, JMS5311,
        JMS5318, JMS5314, JMS5312, JMS5313)
        GROUPEXTEND(NOAPARS,NOUSERMODS)
        COMPRESS(ALL)
        BYPASS(HOLDSYS).
/*
```

Figure 26. SMP/E ACCEPT

Required Updates

1. Update the job parameters.

2. Update the STEPLIB DD statement (if necessary for your system).

3. Replace the CSI name on the SMPCSI DD statement with your CSI name.

4. Update dlibzone to your dlib zone name.

5. Remove JMS5312, JMS5313, and JMS5314 if you choose not to install these NLV features. MQ Series install is optional. Remove all HMSxxxx and JMSxxxx FMIDs if you are not installing WebSphere MQ for z/OS at this time.

Expected Return Codes and Messages:

If service containing ++**HOLD** is being installed, then RC=4 and the following messages will be issued:

- "GIM42001W THE FOLLOWING CONDITIONS FOR SYSMOD aaaaaaa WERE NOT SATISFIED, BUT WERE IGNORED BECAUSE THE BYPASS OPERAND WAS SPECIFIED. PROCESSING CONTINUES."

  where aaaaaaa--SYSMOD ID

- "GIM35966I SYSTEM HOLD aaaaaaaa ORIGINATED BY SYSMOD bbbbbbb WAS BYPASSED."

  where: aaaaaaaa--system hold reason ID and bbbbbbb--SYSMOD ID

Otherwise RC=0

6.2 Activating WebSphere Application Server for z/OS V5.0

6.2.1 Migrating from Previous Releases of WebSphere Application Server

For information on migration, see the WebSphere Application Server for
z/OS InfoCenter, which is accessible through the library Web site
http://www.ibm.com/software/webservers/appserv/zos_os390/library.html.

6.2.2 Mount the HFS Data Sets on the Target System

Before proceeding with activation, unmount the WebSphere Application Server HFS data sets on the
driving system, and mount them on the target system at the target system mountpoints. See 5.4.3,
"Selecting Target System Mountpoints" on page 27, for assistance in selecting these mountpoints. If you
have selected the default mountpoints, you can use the following TSO commands on your target system
to mount the HFS data sets:

```
MOUNT FILESYSTEM('your.java.hfs') MOUNTPOINT('/usr/lpp/java') TYPE(HFS) MODE(READ)
MOUNT FILESYSTEM('hlq.SBBOHFS') MOUNTPOINT('/usr/lpp/zWebSphere/V5R0M0')  TYPE(HFS) MODE(READ)
MOUNT FILESYSTEM('your.mqjms.hfs') MOUNTPOINT('/usr/lpp/mqm/V5R3M1') TYPE(HFS) MODE(READ)
```

You will probably want to add these mounts to your BPXPRMxx members in parmlib to ensure that these
data sets are always mounted. When, at a later date, you need to perform service on the WebSphere
Application Server for z/OS V5.0 product:

- Temporarily unmount the HFS data sets.
- Mount HFS data sets to be serviced (-pathprefix-) mountpoints you created for installation.
- Apply the service.
- Unmount both data sets from the service mountpoint.
- Remount them at the production mountpoints given above.

6.2.3 Activating Application Server

WebSphere Application Server for z/OS V5.0: Installation and Customization, GA22-7834, contains the
step-by-step procedures to activate the functions of Application Server.

6.2.4 Activating IBM Developer Kit for OS/390, Java 2 Technology Edition

There are no further actions required to activate IBM Developer Kit for OS/390, Java 2 Technology Edition other than the actions documented in this program directory.

6.2.4.1 Update the Environment Path

IBM Developer Kit for OS/390, Java 2 Technology Edition is invoked as a command under the UNIX System Services shell. The path environment variable must be updated to point to the Java executables so that the command will be found. This can be done with the following shell command:

```
export PATH=/usr/lpp/java/IBM/J1.3/bin:$PATH
```

The export command references the default path into which IBM Developer Kit for OS/390, Java 2 Technology Edition was installed. If you changed the default path, change the export command accordingly.

Alternatively, you can add the IBM Developer Kit for OS/390, Java 2 Technology Edition path to the system path variable contained in /etc/profile.

Once the path environment variable has been set, you can enter the following shell commands:

```
java
```

```
java -version
```

IBM Developer Kit for OS/390, Java 2 Technology Edition is successfully installed if the java command responds with a summary of available options, and the version option responds with the current version of the IBM Developer Kit for OS/390, Java 2 Technology Edition code.

6.2.4.2 Using the Just-In-Time Compiler

IBM Developer Kit for OS/390, Java 2 Technology Edition contains a Just-In-Time (JIT) compiler built specifically for OS/390. The JIT compiler provides execution time improvements over the interpreter. By default, the JIT compiler is activated, but can be deactivated by setting an environment variable.

To deactivate usage of the JIT, issue the following shell command prior to invoking Java:

```
export JAVA_COMPILER=
```

To activate usage of the JIT after it has been deactivated, issue the following shell command prior to invoking Java:

```
unset JAVA_COMPILER
```

Note that the environment variable names and values are case sensitive and should be entered exactly as shown.

6.2.4.3 Using Windowing Support

To use the Java Windowing Support (AWT), the X/Windows feature of TCP/IP must be installed on the OS/390 or z/OS host. Your workstation must also have the appropriate X/Windows server software to communicate with the host.

The DISPLAY environment variable must be set to the IP address or name of the X server (the workstation) on which the window is to be displayed. For example,

```
export DISPLAY=myhost.hursley.ibm.com:0.0
```

defines `myhost.hursley.ibm.com` as the workstation running the X server.

The DISPLAY variable must be set prior to invoking Java.

6.2.4.4 Audio Support

Audio is not supported when running applets. An applet that attempts to use audio will function, but no audio will be produced.

For general information about running Java applications and compiling Java source, visit the Web site http://www.ibm.com/java.

6.2.5 Activating WebSphere MQ for z/OS

Before you can start to use WebSphere MQ for z/OS, it must be customized. This is described in the *WebSphere MQ for z/OS System Setup Guide, SC34-6052*.

The customization steps require changes to system parmlibs, and may need an IPL to activate the changes.

Installation verification programs are provided with WebSphere MQ for z/OS. These cannot be run until WebSphere MQ for z/OS has been customized and a WebSphere MQ for z/OS subsystem has been activated.

6.2.5.1 Preparing LPA data sets

By default, two WebSphere MQ data sets have to be added to the LPA; SCSQLINK, and one of the following:

- SCSQSNLE
- SCSQSNLC
- SCSQSNLK
- SCSQSNLU

A user modification is provided in CSQ8ERLY, in data set THQ.TCSQINST that moves the contents of the SCSQSNLx data set into SCSQLINK so that only one data set needs to be added to the LPA. Customize job CSQ8ERLY and run it; it should complete with return code 4.

The return code of 4 should be accompanied by the following message:

```
GIM61901W LMOD CSQNL28x WAS NOT MOVED BY SYSMOD CSQ8RLY BECAUSE
CSQNL28x IS NOT IN THE dist ZONE
```

where **"dist"** is the name you allocated for the distribution zone and **"x"** is the language suffix used in customizing the job.

Appendix A. Customizing the WebSphere MQ for z/OS Installation jobs

The following sections lead you through customizing the WebSphere MQ for z/OS installation jobs which have names like `CSQ8xxxx`.

The process is to:

- Choose values for data set names appropriate for your site's standards.
- Edit `CSQ8SYSW`, the global customization job, filling in the values you have chosen.
- Submit `CSQ8SYSW`, which will perform the customizing of all the other `CSQ8xxxx` jobs you will need to complete your installation of WebSphere MQ for z/OS.

A.1.1 Choosing values

A.1.1.1 High-level qualifiers

Use Figure 27 to plan the high-level qualifiers for the WebSphere MQ for z/OS data sets.

Parameter name in the sample JCL provided	Default value	Assigned value	Description
CSSQUAL	SYS1		High-level qualifiers for the OS/390 callable service library CSSLIB
DHLQUAL	MQ.DLIB		High-level qualifiers for the WebSphere MQ for z/OS distribution data sets
DHQ	DHQ		High-level qualifiers for the UCSQINST data set into which the installation JCL will be loaded from tape
LEQUAL	PP.ADLE370		High-level qualifiers for the Language Environment target libraries
MACQUAL	SYS1		High-level qualifier for the `SYS1.MACLIB` library This library is referenced during definition of the SMP/E global zone to initialize the VSAM CLUSTER as an SMP/E CSI.
PATHPREFIX	/usr/lpp/mqm/V5R3M1		Install path for the IBM WebSphere MQ for z/OS Java Support

Figure 27 (Page 1 of 2). High-level qualifiers for data set names

Figure 27 (Page 2 of 2). High-level qualifiers for data set names			
Parameter name in the sample JCL provided	Default value	Assigned value	Description
SHLQUAL	MQ.SMPE		High-level qualifiers for the new SMP/E data sets that you are going to use to install WebSphere MQ for z/OS If you are going to install into existing data sets, this name is already defined.
TCPQUAL	PP.TCPIP		High-level qualifiers for the IBM TCP/IP target libraries
SSLPREFIX			Any prefix required on the driver system for the /usr/lpp/gskssl directory Installation will use /SSLPREFIX/usr/lpp/gskssl.
THFSPATH			Not required
THLQUAL	MQ.TLIB		High-level qualifiers for the WebSphere MQ for z/OS target data sets
THQ	THQ		High-level qualifiers for the TCSQINST data set into which the customized installation JCL will be placed
Note: If required, DHQ can be the same as DHLQUAL, and THQ can be the same as THLQUAL.			

If these high-level qualifiers do not already exist, you must define them to RACF, or any other security product you are using, and have ALIAS definitions in the master catalog.

The TSO userid used to install or service WebSphere MQ for z/OS requires RACF ALTER access to these high-level qualifiers. See the *WebSphere MQ for z/OS System Setup Guide* (Figure 5 on page 7) for details of the security authorization required for running WebSphere MQ for z/OS.

If you are going to use the Spool Display and Search Facility (SDSF) to look at the output from the installation jobs, you must have authorization to use the prefix CSQ8* to view them, or you must customize the names of the jobs to use a prefix to which you are authorized. This can be done using the JCPREF option in CSQ8SYSJ as described in A.1.3, "Customize the sample installation JCL" on page 63.

A.1.1.2 Volume and unit names

Plan the volume and unit names shown in Figure 28. These are used by the supplied sample JCL during the installation of WebSphere MQ for z/OS. You must decide where you are going to install the product, taking into account the space requirements (see Figure 17 on page 23 and Figure 13 on page 20), and how frequently the data sets are going to be accessed.

Figure 28. Volume and unit names			
Parameter Name in the Sample Jobs	**Values Required**	**Value Specified**	**Description**
SMPVOL	VOLSER and unit type		SMP/E data set volume if installing into new SMP/E data sets Also used for temporary libraries
TARVOL	VOLSER		WebSphere MQ for z/OS target data set volume
DISVOL	VOLSER		WebSphere MQ for z/OS distributiondata set volume
DISKUNIT	Unit type		Type of disk unit for target and distribution data set volumes
TAPEUNIT	Tape unit type		Unit type of the tape drive used to read the WebSphere MQ for z/OS tapes

Notes:

1. You can use esoteric values such as SYSDA or SYSALLDA for the unit type of TARVOL and DISVOL by substituting a period (.) for the VOLSER in the customization step in section A.1.3, "Customize the sample installation JCL" on page 63.
2. SMPVOL must have both the VOLSER and the unit type specified.

A.1.1.3 SMP/E Environment

You must also decide whether to install WebSphere MQ for z/OS into a new or existing SMP/E environment. Remember that installing a new release of WebSphere MQ for z/OS into the same SMP/E zones as an existing release will cause the earlier level to be deleted from both the SMP/E zones and the existing release data sets.

If you are going to install into the same SMP/E zones, then to preserve your current release while you install and test the new release, you should copy the existing release data sets into data sets with different names. Do not rename or delete the current data sets because they need to be available to SMP/E for delete processing during the installation of the new release. If they are not available, the APPLY and ACCEPT steps will fail with a return code of 12. After running a successful ACCEPT of the WebSphere MQ for z/OS products, the previous release data sets are no longer required and can be deleted when testing of the new release has been completed.

If you use existing SMP/E data sets, you need to know the names of your target zone and distribution zone, and the data set name of your global CSI.

You must also decide upon the names for the SMP/E zones.

Figure 29. Target and distribution zone names			
Parameter Name in the Sample Jobs	**Default Value**	**Assigned Value**	**Description**
DZNAME	DZONE		The name of your distribution zone
GZONECSI	NEW		The data set name of your global zone CSI
LETZN	LETZN		The name of the target zone in which Language Environment is installed
OS390TZN	OS390TZN		The name of the target zone in which OS/390 callable services are installed
TCPTZN	TCPTZN		The name of the target zone in which IBM TCP/IP is installed.
TZNAME	TZONE		The name of your target zone
Note: If you are using the LINK command, and Language Environment, IBM TCP/IP, and OS/390 callable services are installed in the same SMP/E target zone, LETZN, TCPTZN, and OS390TZN must **all** be set to the same value.			

A.1.1.4 HFS

The IBM WebSphere MQ for z/OS Java Support installs into the HFS in Unix System Services. By default, code is installed under the path /usr/lpp/mqm/V5R3M1.

If you choose to change this default behavior, then modify the **PATHPREFIX** value in CSQ8SYSW.

Figure 30. Path for IBM WebSphere MQ for z/OS Java Support		
Default value	**Assigned Value**	**Description**
/usr/lpp/mqm/V5R3M1		The path for IBM WebSphere MQ for z/OS Java Support

A.1.2 Create the installation JCL

This section describes how to customize the **CSQ8xxxx** jobs for your environment.

A.1.2.1 Read in the sample installation JCL

Copy the installation jobs from the SMPTLIB into a work data set, DHQ.UCSQINST, by submitting the job below:

1. Type in the following JCL as DHQ.XCSQINST, a sequential dataset, substituting the values you have chosen for **dqh**, **dasdvol**, and **filevol** into the JCL, and adding job statement information if required. **IBM** is the high-level qualifier specified as the DSPREFIX value in the SMPTLIB DDDEF or the OPTIONS entry of the global zone.

```
//OFFTAPE JOB
//TALLOC   EXEC PGM=IEBCOPY,REGION=1024K
//SYSPRINT DD SYSOUT=*
//IN       DD DSN=IBM.HMS5310.F2,
//         UNIT=SYSALLDA,
//         VOL=SER=FILEVOL
//         DISP=OLD
//OUT      DD DSN=dhq.UCSQINST,
//         DCB=(LRECL=80,RECFM=FB,BLKSIZE=8800),
//         SPACE=(CYL,(1,1,20)),
//         VOL=SER=dasdvol,UNIT=SYSALLDA,
//         DISP=(NEW,CATLG)
//SYSUT3   DD SPACE=(TRK,(5)),UNIT=SYSALLDA
//SYSUT4   DD SPACE=(TRK,(5)),UNIT=SYSALLDA
  COPY INDD=FILEIN,OUTDD=OUT
/*
//
```

2. Run the above job to load the samples. The job should finish with a return code of 0.

   If the return code is not 0, check the job output carefully to ensure that the sample jobs have been copied correctly. If the sample jobs have not been copied correctly, correct any errors found, and re-submit the job.

You have now read all the sample jobs into the data set DHQ.UCSQINST.

The next step is to customize the sample jobs for your system.

A.1.3 Customize the sample installation JCL

To customize the sample installation JCL, use the customization job CSQ8SYSW provided with WebSphere MQ for z/OS.

> **'Reduced Function' form**
>
> You are installing a 'reduced function' form of the WebSphere MQ supplied as part of a WebSphere Application Server, so you will need to edit the customization job CSQ8SYSW.
>
> CSQ8SYSW is set up to customize only those jobs required for the installation of a 'reduced function' form of WebSphere MQ.

If you use CSQ8SYSW, you can customize the sample jobs by adding the names you chose in section A.1.1.1, "High-level qualifiers" on page 59, to CSQ8SYSW in DHQ.UCSQINST and running this job.

We recommend that you customize all the installation jobs together, although you might not need some of them until later.

CSQ8SYSW calls a CLIST to copy and edit the sample jobs from `DHQ.UCSQINST` to `THQ.TCSQINST`. If `THQ.TCSQINST` does not exist, it is created by CSQ8SYSW. Full instructions for modifying CSQ8SYSW are included in its comments. Where selections are to be made, this is usually done by removing the leading asterisk.

The following rules apply when updating CSQ8SYSW:

- Enter values in the correct case (uppercase for everything except SLLPREFIX, THFSPATH, and PATHPREFIX, which can contain lowercase letters).

- The keywords in the JCL can appear in any order and start in any column, as long as they are the first non-blank characters on a line and are within columns 1 through 72.

- If you place a non-blank character before a keyword, the line is treated as a comment. Use an asterisk as the non-blank character to avoid accidentally forming a valid keyword.

- Do not delete lines in CSQ8SYSW because you might need them in the future. If they do not apply, comment them out by placing an asterisk at the beginning of the unwanted lines.

Use your usual editor to update CSQ8SYSW in `DHQ.UCSQINST` as follows:

1. Change the job statement at the top of CSQ8SYSW to match the requirements of your enterprise. If you need to code a 'TIME=' parameter on your JCL, a value of 10 minutes CPU time is enough to run CSQ8SYSW.

2. Customize the JCL statements in Section 2 of CSQ8SYSW with the names you have chosen for DHQ and THQ. Replace the variable DHQ for the SYSPROC and MINPUT lines, and the variable THQ for the MOUTPUT line.

3. Select the features you want (none of the features are mutually exclusive):

    a. Since you are installing a 'reduced function' form of WebSphere MQ, some features are not available for installation and the leading asterisk should not be removed from the corresponding feature in CSQ8SYSW.
    b. Both the base and U.S. English (mixed case) FMIDS must always be installed; do **not** change this.

    The following tokens are used in CSQ8SYSW:

    MQM
    Base product

    MQMNL US ENGLISH
    U.S. English (mixed case) language feature

    MQMNL JAPANESE
    Optional Japanese language feature

    MQMNL SIMPLIFIED CHINESE
    Optional simplified Chinese language feature

MQMNL UPPERCASE ENGLISH
Optional U.S. English (uppercase) language feature

JMS Java Support
IBM WebSphere MQ for z/OS Java Support

4. Choose which sample jobs you want to customize. CSQ8SYSW is supplied with only those jobs selected which are appropriate for the features supplied with WebSphere Application Server.

   You can change this default behavior, if required, by 'commenting out' the select statements with an asterisk in column 1.

5. Type job statement information for the sample jobs. You must leave the characters

```
 JOB  //xxxxxxxx  JOB
```

intact and insert your parameters after the second 'JOB' on this line. If your enterprise does not require any additional information on the job statement, you must still leave this line intact. You can also add lines such as /*ROUTE or /*JOBPARM by using the JOB keyword.

You can enter more than one line for your JOB statement. Begin each line with the keyword JOB, followed by at least one blank, and type the text as you would expect to see it in the resulting JCL, including all punctuation such as start of line '//' and end of line commas.

If your enterprise needs a 'TIME=' parameter, you must specify a value large enough to run the SMP/E APPLY step. This can take up to 120 minutes for WebSphere MQ for z/OS.

Below is an example of a JOB statement with some additional information:

```
JOB //XXXXXXXX JOB (ACCOUNT),CLASS=A,MSGLEVEL=(1,1)
```

The following lines show a case where there is so much information added that a continuation statement has been created:

```
JOB //XXXXXXXX JOB (ACCOUNT),CLASS=A,MSGLEVEL=(1,1),
JOB // USER=USERID,NOTIFY=USERID
```

6. You can change the default value of the prefix, 'CSQ8', next to the 'JCPREF' keyword. If you change it to a value that is one to four characters long, the prefix will be concatenated with the last four characters of the JCL member name to form the job name. If you change the prefix to a value that is five to eight characters long, the prefix alone will form the job name.

7. Type the values you have chosen for the WebSphere MQ product high-level qualifiers, where they are different from the defaults.

8. Type the values you have chosen for your system high-level qualifiers, where they are different from the defaults.

9. Type the values you have chosen for your volume serial numbers and unit types, where they are different from the defaults.

   To let the system choose the volumes for the target and distribution libraries (TARVOL and DISVOL), change 'VOLSER' to a '.'. (Quotes should not be used in the JCL.) The SMP/E volume and unit type must be changed to an existing volume name and its actual unit type.

10. Type the SMP/E zone names you have chosen if they are different from the defaults. If you use your existing SMP/E data sets, you must customize the names of your target zone, distribution zone, and global CSI data set.

    If you intend to let WebSphere MQ for z/OS create a new SMP/E environment, leave the SMP/E information as it is.

    Specifying NEW for GZONECSI means that the customization step will add the name SHLQUAL.GLOBAL.CSI for the global zone CSI. If you wish to use a different global zone CSI, you must specify the fully qualified name for GZONECSI.

11. Type the HFS install path for the IBM WebSphere MQ for z/OS Java Support, if it is different from the default.

12. Run CSQ8SYSW. It should finish with a return code of 0.

    If the return code is not 0, inspect the output to discover what caused the problem. CSQ8SYSW can be run again when the error has been corrected, but running it many times might cause the output data set `THQ.TCSQINST` to need compressing.

13. To continue the installation, return to 6.1.4.1, "SMP/E Global Zone" on page 41. You can use the customized versions of the "CSQ8xxxx" jobs from the "THQ.TCSQINST" data set to perform the steps, noted in 6.1.5, "Sample Jobs" on page 41.

Notes:

1. The customization process may cause some JCL and data to extend beyond column 71. This may result in truncation of data in some pages, especially if a user-selected value such as an HFS path or data set name is much longer than the default. All customized jobs should be inspected before they are run.

Reader's Comments

Program Directory for WebSphere Application Server for z/OS V5.0 Service Level PUT0301

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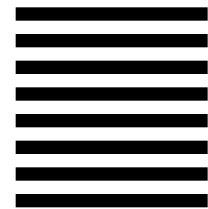
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