Program Directory for
WebSphere Process Server
for z/OS

Version 6 Release 1 Modification 2

Program Number 5655-N53

FMID HWPS612

for use with
z/OS V1.7 or higher

Document Date: August 2008

GI11-2906-00

Note!

Before using this information and the product it supports, be sure to read the general information under 7.0, “Notices” on page 37.

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1.0 Introduction

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 Process Server for z/OS V6.1.2. This publication refers to WebSphere Process Server for z/OS V6.1.2 as WebSphere Process Server.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 3 identifies the basic and optional program materials and documentation for WebSphere Process Server.
- 3.0, “Program Support” on page 6 describes the IBM support available for WebSphere Process Server.
- 4.0, “Program and Service Level Information” on page 8 lists the APARs (program level) and PTFs (service level) incorporated into WebSphere Process Server.
- 5.0, “Installation Requirements and Considerations” on page 9 identifies the resources and considerations required for installing and using WebSphere Process Server.
- 6.0, “Installation Instructions” on page 22 provides detailed installation instructions for WebSphere Process Server. It also describes the procedures for activating the functions of WebSphere Process Server, or refers to appropriate publications.

Before installing WebSphere Process Server, read the *CBPDO Memo To Users* and the *CBPDO Memo To Users Extension* that were supplied with this program in softcopy form as well as this Program Directory and then keep them for future reference. Section 3.2, “Preventive Service Planning” on page 6 tells you how to find any updates to the information and procedures in this Program Directory.

WebSphere Process Server is supplied in a Custom-Built Product Delivery Offering (CBPDO, 5751-CS3). The Program Directory is provided in softcopy form on the CBPDO tape which is identical to the hardcopy form provided with your order. All service and HOLDDATA for WebSphere Process Server are included on the CBPDO tape.

Do not use this Program Directory if you are installing WebSphere Process Server with a SystemPac or ServerPac. When using these offerings, use the jobs and documentation supplied with the offering. This documentation may point you to specific sections of the Program Directory as required.

1.1 WebSphere Process Server Description

WebSphere Process Server delivers a flexible connectivity infrastructure to integrate applications and services. It can be used to reduce the number, size, and complexity of interfaces:

Matches and routes messages between services

Converts transport protocols between requestor and service

Transforms message formats between requestor and service

Distributes business events to and from disparate resources

With Web services and Java Message Service (JMS) connectivity and service-oriented integration, you can improve flexibility, minimize disruption, and allow intelligent interactions with business events.

1.2 WebSphere Process Server FMIDs

WebSphere Process Server consists of the following FMIDs:

HWPS612 - WebSphere Process Server for z/OS V6.1.2
H28W610 - WebSphere Application Server for z/OS V6.1.0
JIWO610 - WebSphere Application Server for z/OS V6.1 Optional Materials

Note!

The Java Software Development Kit(SDK) is now shipped, installed, and serviced as part of WebSphere Application Server. There is no longer a seperate FMID for the SDK. This makes the WebSphere Application Server for z/OS products independent of any other SDK installed on the same z/OS systems.

2.0 Program Materials

An IBM program is identified by a program number. The program number for WebSphere Process Server is 5655-N53.

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

The program announcement material describes the features supported by WebSphere Process Server. Ask your IBM representative for this information if you have not already received a copy.

2.1 Basic Machine-Readable Material

The distribution medium for this program is 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 22 for more information about how to install the program.

Information about the physical tape for the Basic Machine-Readable Materials for WebSphere Process Server can be found in the *CBPDO Memo To Users Extension*.

Included with this product are media kits (LK4T-1484, LK4T-1485, LK4T-1486, LK4T-1487, LK4T-1488, LK4T-1489, and LK4T-1490) containing software that is not intended to run on z/OS. These media kits provide additional value and tool support for your production and development environments. The use of these DVDs and CDs is optional. See the Packaging topics in the WebSphere Process Server Information Center for information on using these DVDs and CDs.

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for WebSphere Process Server.

2.3 Program Publications

The following sections identify the basic and optional publications for WebSphere Process Server. Note the main documentation distribution medium for WebSphere Process Server is the Information Center, which can be accessed from the WebSphere Process Server product documentation page at: http://www.ibm.com/software/integration/wps/library/infocenter

In addition to the Information Center, WebSphere Process Server product documentation is available in PDF format on the same Web site.

2.3.1 Basic Program Publications

Figure 1 on page 4 identifies the basic unlicensed program publications for WebSphere Process Server. You can download the program directory for WebSphere Process Server from http://www.ibm.com/software/integration/wps/library/infocenter.

Figure 1. Basic Material: Unlicensed Publications

Publication Title	Form Number
Program Directory for WebSphere Process Server	GI11-2906-00
License Information WebSphere Process Server for z/OS Carefully read the WebSphere Process Server for z/OS License Information, a copy of which is provided to you with your order. This document contains the product-specific terms and conditions for WebSphere Process Server for z/OS.	LC23-4990-03

Figure 2 identifies the basic unlicensed or licensed publications that are not available in hardcopy form, but are available through the internet or other media for WebSphere Process Server.

All of the documents listed in Figure 2 are available for download at the WebSphere Process Server Library page: http://www.ibm.com/software/integration/wps/library/infocenter

Figure 2. Basic Material: Other Unlicensed or Licensed Publications

Publication Title	Form Number	How Available
WebSphere Process Server for z/OS V6.1.2 Product overview	-	Library page
WebSphere Process Server for z/OS V6.1.2 Planning	-	Library page
WebSphere Process Server for z/OS V6.1.2 Installing	-	Library page
WebSphere Process Server for z/OS V6.1.2 Migrating to WebSphere Process Server	-	Library page
WebSphere Process Server for z/OS V6.1.2 Administering WebSphere Process Server	-	Library page
WebSphere Process Server for z/OS V6.1.2 Developing and deploying modules	-	Library page
WebSphere Process Server for z/OS V6.1.2 Monitoring	-	Library page
WebSphere Process Server for z/OS V6.1.2 Tuning	-	Library page
WebSphere Process Server for z/OS V6.1.2 Troubleshooting	-	Library page

2.3.2 Optional Program Publications

There are no optional publications for WebSphere Process Server for z/OS.

2.4 Program Source Materials

No program source materials or viewable program listings are provided for WebSphere Process Server.

2.5 Publications Useful During Installation

The publications listed in Figure 3 may be useful during the installation of WebSphere Process Server. To order copies, contact your IBM representative or visit the IBM Publications Center on the World Wide Web at:
http://www.ibm.com/shop/publications/order

You can also access these publications online at:

http://publibz.boulder.ibm.com/cgi-bin/bookmgr_OS390/

Figure 3. Publications Useful During Installation

Publication Title	Form Number
IBM SMP/E for z/OS User's Guide	SA22-7773
IBM SMP/E for z/OS Commands	SA22-7771
IBM SMP/E for z/OS Reference	SA22-7772
IBM SMP/E for z/OS Messages, Codes, and Diagnosis	GA22-7770
z/OS MVS JCL Reference	SA22-7597
z/OS System Codes	SA22-7626
IBM Software Delivery Standard Packaging Rules for z/OS-Based Products	SC23-3695

3.0 Program Support

This section describes the IBM support available for WebSphere Process Server.

3.1 Program Services

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

3.2 Preventive Service Planning

Before installing WebSphere Process Server, it is VERY IMPORTANT that you review the current Preventive Service Planning (PSP) information. The PSP buckets maintain current lists (which have been identified since the package was created) of any recommended or required service for this package's installation. This includes software PSP information that contains HIPER, and/or required PTFs against the base release.

While there can be overlap between SW, HW, and functional PSP buckets, reviewing all that apply to this package will ensure that you identify any known service required for your installation of this package.

If you obtained WebSphere Process Server as part of a CBPDO, there is HOLDDATA included on the PDO.

If the CBPDO for WebSphere Process Server is more than two weeks old when you install it, you should contact the IBM Support Center, use S/390 SoftwareXcel to obtain the current "PSP Bucket" or obtain the current PSP from the Web at https://techsupport.services.ibm.com/server/390.psp390.

For program support, access the Software Support Web site at http://www-3.ibm.com/software/support/

PSP Buckets are identified by UPGRADEs, which specify product levels, and SUBSETs, which specify the FMIDs for a product level. The UPGRADE and SUBSET values for WebSphere Process Server are:

Figure 4. PSP Upgrade and Subset ID

UPGRADE	SUBSET	Description
WPSZ	HWPS612	WebSphere Process Server for z/OS

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 advise how you should submit any needed information or documentation.

Figure 5 on page 7 identifies the component IDs (COMPID) for WebSphere Process Server.

Figure 5. Component IDs

FMID	COMPID	Component Name	RETAIN Release
HWPS612	5655N5300	WebSphere Process Server for z/OS V6.1.2	612
H28W610	5655I3500	WebSphere Application Server for z/OS V6.1.0	610
JIWO610	--	WebSphere Application Server for z/OS V6.1 Optional Materials. Optional Materials delivered in this FMID will receive unique COMPIDs at the time of their delivery.	610

4.0 Program and Service Level Information

This section identifies the program and any relevant service levels of WebSphere Process Server. The program level refers to the APAR fixes incorporated into the program. The service level refers to the PTFs incorporated into the program.

4.1 Program Level Information

The following APAR fixes against previous releases of WebSphere Process Server have been incorporated into this release. They are listed by FMID.

- FMID HWPS610

  PK59140

4.2 Service Level Information

No PTFs against this release of WebSphere Process Server have been incorporated into the product tape.

No PTFs against this release of WebSphere Process Server have been incorporated into the Web deliverable.

Over time it is HIGHLY recommended that you frequently check the WebSphere Process Server PSP bucket for HIPER and SPECIAL Attention PTFs against all FMID(s) which should be installed.

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating WebSphere Process Server. The following terminology is used:

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

  The program may have specific operating system or product level requirements for utilizing processes such as binder or assembly utilities during the install.

- *Target system*: the system on which the program is intended to run.

  The program may have specific product level requirements such as needing access to another product's library for link-edits that may directly affect the elements during the install or for its basic or enhanced operation. These requirements may be mandatory or optional.

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.

5.1 Driving System Requirements

This section describes the environment of the driving system required to install WebSphere Process Server.

5.1.1 Machine Requirements

The driving system can run in any hardware environment that supports the required software.

5.1.2 Programming Requirements

Figure 6. Driving System Software Requirements	
Program Number	**Product Name and Minimum VRM/Service Level**
EITHER 5694-A01 or 5665-G52:	
5694-A01	z/OS V1.7 or higher, and the following APARs OA11519, OA11699, or later. Also required is IBM SMP/E for z/OS with APAR IO04924 or later
5655-G52	z/OS.e V1.7 or higher, with PTFs to satisfy APARs OA11519, OA11699, or later. Also required is IBM SMP/E for z/OS with APAR IO04924 or later
5655-I56	Java 2 Technology Edition SDK 1.4 or higher

WebSphere Process Server for z/OS V6.1.2 installs in the z/OS (Z038) SREL.

Notes:

1. SMP/E uses the Java SDK to install WebSphere Application Server and WebSphere Process Server, you must install SDK 1.4 or higher on the driving system.

   You can download a free copy of Java SDK 1.4 from:

   http://www.ibm.com/servers/eserver/zseries/software/java

   This SDK is different from the imbedded SDK mentioned in the following notes.
2. UNIX must be up in full function mode on your driving system so that the utilities are available for the Shell Script support.
3. The following installation jobs, as well as the SMP/E APPLY job, should be run under a user ID with UID(0), or with a user ID with read access to the BPX.SUPERUSER resource in the RACF facility class. This installation user ID must also have read access to the facility class resources BPX.FILEATTR.PROGCTL, BPX.FILEATTR.APF, and BPX.FILEATTR.SHARELIB.
   - BBOISMKD
   - BPZISMKD

5.2 Target System Requirements

This section describes the environment of the target system required to install and use WebSphere Process Server.

WebSphere Process Server installs in the z/OS (Z038) SREL.

5.2.1 Machine Requirements

The target system can run in any hardware environment that supports the required software.

5.2.2 Programming Requirements

5.2.2.1 Installation Requisites: An installation requisite is defined as a product that is required and **must** be present or one that is not required but **should** be present on the system for the successful installation of this product.

A mandatory installation requisite identifies products that are required, without exception, or this product **will not install** on your system. This includes products specified as PREs or REQs.

Figure 7. Mandatory Installation Requisites

Program Number	Product Name and Minimum VRM/Service Level
Any **one** of the following:	
5694-A01	z/OS V1.7 or higher, and the following APARs OA11519, OA11699, or later. Also Required is z/OS UNIX System Services and the hierarchical file system (HFS) or zSeries file system(zFS)
5655-G52	z/OS.e V1.7 or higher, with PTFs to satisfy APARs OA11519, OA11699, or later. Also Required is z/OS UNIX System Services and the hierarchical file system (HFS) or zSeries file system(zFS)

A conditional installation requisite identifies products that are **not** required for successful install but may resolve such things as certain warning messages at installation time. They include products that are specified as IF REQs.

WebSphere Process Server has no conditional installation requisites.

5.2.2.2 Operational Requisites: An operational requisite is defined as a product that is required and **must** be present or a product that is not required but **should** be present on the system in order for this product to operate all or some of its functions.

A mandatory operational requisite identifies products that are required, without exception, or this product **will not operate** its basic function unless the requisite is met. This includes products specified as PREs or REQs.

Figure 8. Mandatory Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level
Any **one** of the following:	
5694-A01	z/OS V1.7 or higher, and the following APARs OA11519, OA11699, or later
5655-G52	z/OS.e V1.7 or higher with PTFs to satisfy APARs OA11519, OA11699, or later

A conditional operational requisite identifies products that are **not required** for the basic function but are needed at run time for this product to utilize specific functions. They may include products specified as IF REQs.

Figure 9 (Page 1 of 2). Conditional Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level	Function
5694-A01 or 5655-G52	z/OS or z/OS.e V1.7 or higher with PTFs UQ88825, UA13606, UQ88986, UQ89754, UQ90946, UQ90077, UQ91768, UQ90822, UQ92626 and UA12453	Required by JDK V5 64-bit processing.
5655-N01	WebSphere Application Server V6.1.0.17	Required for 64-bit processing
5655-N01	WebSphere Application Server for z/OS V6.1 Optional Materials	Required if you want to use the optional materials.
5625-DB2, or 5635-DB2	DB2 for z/OS with the relevant APARs and PTFs: V8.1 or later with APARs PK00615, PQ84577, PQ87786, PQ88082, UQ86912, PK25139, and PTFs UK01566, UQ86912, UQ91762, UQ88239, UQ92168, UQ85537 V9.1 or later with APAR PK41173	Required to use Web Services UDDI and session persistence for Web container or if your application environment accesses DB2 through Java DataBase Connectivity (JDBD) or through IBM Connection/Connector for Java. Required for Type 2 and Type 4 DB2 drivers. Additionally, APAR PK25139 provides DB2 drivers Version 2.10.4.4 and is required for Type 2 drivers for 64 bit processing on DB2 V7 and V8.
5655-K61, or 5655-N97	DB2 licensed utilities: DB2 for z/OS V8: 5655-K61 DB2 Utilities Suite for z/OS. DB2 for z/OS V9: 5655-N97 DB2 Utilities Suite for z/OS.	Required for use of DB2. Alternatively, you can use an equivalent licensed utility.
5655-147	CICS TS V2.3 or later	Required if your application environment uses CICS Transaction Server.
5655-M69	CICS Transaction Gateway for z/OS V6.0	Required if your application environment accesses CICS TS through the CICS Transaction Gateway (CICS TG), See www.ibm.com/cics/ctg for more information.
5655-R25	CICS Transaction Gateway for z/OS V7.0 or later	Required for 64-bit processing and also provides better performance with WebSphere Application Server V6.1 and Java V5.

Figure 9 (Page 2 of 2). Conditional Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level	Function
5655-C56	IMS V8 or later	Required if your application environment accesses IMS through Java DataBase Connectivity (JDBC) or through IBM Connect/Connector for Java.
5655-J38 or 5635-A01	IMS V9 and APAR PK30868 or IMS V10 and APARs PK39061, PK49198	Required for 64-bit processing.
5655-L82	WebSphere MQ V6 with APAR PK31289 (also referred to as WebSphere MQ v6.0.2.1)	Required for 64-bit processing.
5655-R17	WebSphere Portal Enable for z/OS V6	Required for 64-bit processing.

5.2.2.3 Toleration/Coexistence Requisites: A toleration/coexistence requisite is defined as a product that 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 Process Server has no toleration/coexistence requisites.

5.2.2.4 Incompatibility (Negative) Requisites: A negative requisite identifies products that must *not* be installed on the same system as this product.

WebSphere Process Server has no negative requisites.

5.2.3 DASD Storage Requirements

WebSphere Process Server libraries can reside on all z/OS or z/OS.e supported DASD types.

Figure 10 lists the total space required for each type of library.

Figure 10. Total DASD Space Required by WebSphere Process Server

Library Type	Total Space Required (3390 Tracks)	Component
Target	1850	WebSphere Application Server
Target	20	WebSphere Process Server
Distribution	18555	WebSphere Application Server
Distribution	9524	WebSphere Process Server
HFS or zFS	28050	WebSphere Application Server
HFS or zFS	11600	WebSphere Process Server

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 release of this product 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 6.1.8, “Allocate SMP/E Target and Distribution Libraries” on page 26.
3. Abbreviations used for the HFS or zFS Path type are:

   N New path, created by this product.
   X Path created by this product, but may already exist from a previous release.
   P Previously existing path, created by another product.
4. All target and distribution libraries listed have the following attributes:

   - The default name of the data set 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, unless PDSE is explicitly specified.
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.

6. All target libraries listed which contain load modules have the following attributes: (See the customization instruction for details)
   - Some target libraries or library members must be placed in the LPA.
   - Some target libraries or library members must be placed in the LNKLST.
   - Some target libraries must be APF-authorized.
7. All of the storage requirements quoted for WebSphere Application Server are copied from the WebSphere Application Server for z/OS V6.1.0 Program Directory (GI11-2825-06).

Figure 11. Storage Requirements for SMP/E Work Data Sets

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	80	10
SMPWRK6	E	PDS	FB	80	4100	100
SYSUT1	E	SEQ	--	--	7500	0
SYSUT2	E	SEQ	--	--	30	0
SYSUT3	E	SEQ	--	--	30	0
SYSUT4	E	SEQ	--	--	30	0

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

Figure 12. Storage Requirements for SMP/E Data Sets

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	8000	80
SMPSCDS	E	PDS	FB	80	15	80
SMPSTS	E	PDS	FB	80	15	80

The following figures describe the target and distribution libraries and HFS or zFS paths required to install WebSphere Process Server. The storage requirements of WebSphere Process Server must be added to the storage required by other programs having data in the same library or path.

The data in these tables should be used when determining which libraries can be merged into common data sets. In addition, because some ALIAS names may not be unique, ensure that no naming conflicts will be introduced before merging libraries.

Figure 13. Storage Requirements for WebSphere Process Server Target Libraries

Library DDNAME	Member Type	Target Volume	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
SBBOCLIB	Clist	TVOL1	U	PDS	FB	80	20	5
SBBODSD	DATA	TVOL2	U	PDSE	FB	80	60	-
SBBOEXEC	EXEC	TVOL1	U	PDS	VB	255	10	5
SBBOJCL	Sample	TVOL2	U	PDS	FB	80	10	5
SBBOLD2	LMOD	TVOL1	U	PDSE	U	0	10	-
SBBOLOAD	LMOD	TVOL1	U	PDSE	U	0	1467	-
SBBOLPA	LMOD	TVOL1	U	PDSE	U	0	21	-
SBBOMAC	MACRO	TVOL2	U	PDS	FB	80	10	5
SBBOMIG	LMOD	TVOL1	U	PDSE	U	0	41	-
SBBOMJPN	Message	TVOL1	U	PDS	FB	80	10	5
SBBOMLIB	Message	TVOL1	U	PDS	FB	80	10	5
SBBOMSG	Message	TVOL1	U	PDS	VB	255	10	5
SBBOPJPN	Panel	TVOL1	U	PDS	FB	80	30	10
SBBOPLIB	Panel	TVOL1	U	PDS	FB	80	30	10
SBBOSLB2	SKEL	TVOL1	U	PDS	VB	255	14	5
SBBOSLIB	SKEL	TVOL1	U	PDS	FB	80	40	10
SBPZEXEC	EXEC	TVOL1	U	PDSE	VB	255	10	-
SBPZJCL	Sample	TVOL2	U	PDSE	FB	80	14	-

Figure 14. WebSphere Process Server HFS or zFS Paths

DDNAME	TYPE	Path Name
SBBOBIN1	N	/usr/lpp/zWebSphere/V6R1/bin/IBM/
SBBODWN	N	/usr/lpp/zWebSphere/V6R1/downloads2/IBM/
SBBOEBCD	N	/usr/lpp/zWebSphere/V6R1/IBM/
SBBOJAR	N	/usr/lpp/zWebSphere/V6R1/IBM/
SBBOEXP1	N	/usr/lpp/zWebSphere/V6R1/lib/IBM/
SBBOANT	N	/usr/lpp/zWebSphere/V6R1/IBM/
SBBOZAR	N	/usr/lpp/zWebSphere/V6R1/IBM/
SBPZANT	N	/usr/lpp/zWPS/V6R1M2/IBM/
SBPZEBCD	N	/usr/lpp/zWPS/V6R1M2/IBM/
SGLDHCLI	P	/usr/lpp/ldapclient/IBM/
SGSKHFS	P	/usr/lpp/gskssl/IBM/
SIMWSA	P	/usr/lpp/internet/samples/API/IBM/

Figure 15 (Page 1 of 2). Storage Requirements for WebSphere Process Server Distribution Libraries

Library DDNAME	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
ABBOANT	U	PDS	VB	255	9388	550
ABBOCLIB	U	PDS	FB	80	20	10
ABBOEBCD	N	PDS	VB	31000	14	10
ABBOEXEC	U	PDS	VB	255	10	5
ABBOEXP	U	PDS	FB	80	41	5
ABBOINC	U	PDS	VB	255	15	5
ABBOJAR	U	PDS	VB	255	7000	50
ABBOJCL	U	PDS	FB	80	10	5
ABBOMJPN	U	PDS	FB	80	10	5
ABBOMAC	U	PDS	FB	80	10	5
ABBOMLIB	U	PDS	FB	80	10	5
ABBOMSG	U	PDS	VB	255	10	5

Figure 15 (Page 2 of 2). Storage Requirements for WebSphere Process Server Distribution Libraries

Library DDNAME	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
ABBOOBJ	U	PDSE	U	0	1101	-
ABBOPJPN	U	PDS	FB	80	27	10
ABBOPLIB	U	PDS	FB	80	27	10
ABBOSLB2	U	PDS	VB	255	14	5
ABBOSLIB	U	PDS	FB	80	38	10
ABBOZAR	U	PDS	VB	255	15626	10
ABPZANT	U	PDSE	VB	255	9400	-
ABPZEBCD	U	PDSE	VB	31000	20	-
ABPZEXEC	U	PDSE	VB	255	10	-
ABPZJCL	U	PDSE	FB	80	14	-

Notes:

1. IBM recommends the following Distribution Library Data Set secondary allocation:
   - ABBOZAR 1000 tracks
2. WebSphere Process Server will require several thousand additional tracks (3390) for run-time data sets; the amount of space depends on the application server structure to be used, the applications to be run and the amount of data storage the applications will require.
3. WebSphere Process Server requires significantly larger amounts of HFS or zFS storage for downloadable Application Server Client code. See 6.1.8, “Allocate SMP/E Target and Distribution Libraries” on page 26 for more information.

5.3 FMIDs Deleted

Installing WebSphere Process Server 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 Process Server into separate SMP/E target and distribution zones.

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 Process Server is a functional successor to the following products:

- WebSphere Business Integration Server Foundation Version 5.1 (5655-L85)
- WesbSphere Process Server 6.0.1 (5655-N53)
- WesbSphere Process Server 6.0.2 (5655-N53)
- WesbSphere Process Server 6.1 (5655-N53)

The IBM Software Development Kit for z/OS Java 2 Technology Edition, Version 5.0, which is included as part of WebSphere Process Server, is a functional successor to various Java products from IBM, including those shipped with previous releases of WebSphere Application Server for z/OS and OS/390.

If you have previously installed any of these products, you should take the following considerations into account when installing WebSphere Process Server.

5.4.1 SMP/E Considerations

IBM recommends that you install WebSphere Process Server into a new set of SMP/E zones, including SMPCSI, target, distribution, and HFS or zFS data sets, to allow independent maintenance of WebSphere Application Server, z/OS, and other subsystems. This program directory provides sample jobs and instructions to create such an SMP/E environment.

If you install WebSphere Process Server into SMP/E target and distribution zones that contain a previous WebSphere Application Server release, you must completely remove the old release from the target and distribution zones **before** installing the new release. This can be done by receiving, applying, and accepting a "dummy sysmod" such as the following:

```
++FUNCTION (DELWAS4).
++VER(Z038) DELETE(
       H28W410/WebSphere Application Server 4.1/
       ).
```

This will remove the old WebSphere Application Server release from target and distribution libraries as well as from the SMPCSI; therefore, you may wish to make copies of these libraries before applying the sysmod above. When the old WebSphere Application Server release has been deleted, remove any DDDEFs for the old release from the target and distribution zones, and install the new WebSphere Application Server release with new target and distribution data sets, using the instructions in this program directory.

5.4.2 Selecting Driving System Mount points

During installation of WebSphere Process Server on the driving system, the target HFS or zFS file systems must be mounted at the following mount points:

-PathPrefix-/usr/lpp/zWPS/V6R1M2

-PathPrefix-/usr/lpp/zWebSphere/V6R1

where -PathPrefix- is an HFS or zFS path prefix such as /SERVICE or /WAS61. Use of a path prefix allows maintenance to be applied to a copy of the WebSphere Application Server HFS or zFS data sets without disturbing the production HFS or zFS data sets. For more information on the use of an HFS or zFS path prefix during product maintenance, see the UNIX System Services Planning book for your release of z/OS.

If you use a separate HFS or zFS for the downloadable Application Server Clients in WebSphere Application Server, mount it at:

-PathPrefix-/usr/lpp/zWebSphere/V6R1/downloads2

before applying maintenance.

Care must be taken that maintenance is applied to the proper HFS or zFS. Be sure to verify that the correct HFS or zFS is mounted at your service mount point(s) whenever maintenance is applied.

5.4.3 Selecting Target System Mount points

During customization and operation of WebSphere Process Server on the target system, the target HFS or zFS file system must be mounted at the following mount point:

- A WebSphere Process Server mount point, normally /usr/lpp/zWPS/V6R1M2
- A WebSphere mount point, normally /usr/lpp/zWebSphere/V6R1

  If you use a separate HFS or zFS for the downloadable Application Server Clients in WebSphere Application Server, mount it at:

  /usr/lpp/zWebSphere/V6R1/downloads2

  on those systems from which you want to download the Application Server Client code. The files in this HFS or zFS are not required for the product to run on z/OS.

Notes:

1. WebSphere Process Server also uses a customization HFS or zFS for each server node; by default, the initial customization HFS or zFS is mounted at: /zWPS/V6R1M2. Data in this HFS or zFS is **not** compatible with releases of WebSphere Application Server prior to WebSphere Process Server Version 6.1.0. Do not attempt to reuse a customization HFS or zFS from WebSphere Application Server V3.02, V4.0, V4.0.1, V5.0, or V5.1 with WebSphere Process Server.
2. Refer to the WebSphere Information Center Reference Library for migrating Version 5 servers to Version 6.

5.4.4 Removal of WebSphere Application Server Levels

WebSphere Application Server versions prior to WebSphere Application Server for z/OS V6.1.0 must be maintained until all applications have been migrated to Version 6.1.0

Refer to the WebSphere Application Server for z/OS information center for information about migrating to V6.1.0

6.0 Installation Instructions

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

This release of WebSphere Process Server is installed using the SMP/E RECEIVE, APPLY and ACCEPT commands. The SMP/E dialogs may be used to accomplish the SMP/E installation steps.

WebSphere Process Server can be installed into new or existing SMP/E zones.

6.1 Installing WebSphere Application Server

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

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

This product is available as a Web download package, or in the customized offerings. If you are downloading this product from the Web, follow the instructions below. If you have received this product from customized offerings, go to 6.1.2, “SMP/E Considerations for Installing WebSphere Application Server” on page 23.

6.1.1 SMP/E Considerations for Using the SMP/E Web Download

The SMP/E Web download package for WebSphere Application Server is packaged using the SMP/E GIMZIP function, which was introduced in SMP/E for z/OS V3.1. Although GIMZIP and GIMUNZIP are used for the packaging, the full SMP/E RECEIVE FROMNETWORK function is not available with this package. The SMP/E GIMUNZIP function is required to process the downloaded package. Refer to z/OS SMP/E Reference for information about using GIMZIP and GIMUNZIP. You need to ensure that you have met the driving system requirements as documented in Driving System Requirements.

You will need to perform the following tasks:

1. For a description of the GIMZIP and GIMUNZIP function, refer to the SMP/E Web page at: http://www.ibm.com/servers/eserver/zseries/zos/smpe/.

   Ensure that configuration requirements for using GIMUNZIP have been completed.
2. Allocate a R/W HFS or zFS directory on the z/OS system where the package will be staged. This is the repository for the download package.
3. Download the Web package. The package is available from the following Web site: https://www14.software.ibm.com/webapp/ShopzSeries/ShopzSeries.jsp.

There are two parts of the package:

a. bbo.README.txt

   This file contains a sample job that performs the following tasks. It must be updated to reflect your environment. Make sure this file is transferred from the download site as a text file.

   - Executes the z/OS UNIX System Services UNIX System Services pax command to extract the GIMZIP archives from the download package.
   - Executes the GIMUNZIP program to expand the GIMZIP archives and places their contents in data sets that can be processed by SMP/E.
   - Executes the SMP/E RECEIVE from DASD function to receive the FMID.

b. bbo.pax.Z

   This pax archive file contains the SMP/E MCS and the associated RELFILEs. This must be downloaded to a node that has connectivity to the target z/OS system. Transfer the file to the host using binary format.

4. Run the sample job in bsb.README.txt. This job will perform the required tasks up to and including the SMP/E RECEIVE from DASD step.
5. Complete the installation using the instructions in this program directory.

6.1.2 SMP/E Considerations for Installing WebSphere Application Server

IBM recommends installing WebSphere Application Server into a new set of SMP/E zones, including target, distribution, and HFS or zFS data sets. This allows separate maintenance of z/OS and WebSphere software. Sample jobs BBOCSICR and BBOZNCRT can be customized for your system and used to create a new CSI and SMP/E TARGET and DLIB zones. These jobs can be found in the product relfile IBM.H28W610.F1 and IBM.H28W610.F4, which is loaded during SMP/E processing; see Figure 16 on page 24 for a list of sample jobs.

If you choose to install WebSphere Application Server into existing SMP/E target and distribution zones, be sure to remove any previous versions of WebSphere Application Server from the zones and remove the previous version's DDDEFs **before** installing the new version. See 5.4.1, “SMP/E Considerations” on page 19 for more information.

WebSphere Application Server for z/OS V6.1.0 installation does not require a DDDEF for SYSLIB; however, SMP/E APPLY processing expects to have one. If necessary, create DDDEFs for SMPMTS and SYSL.MACLIB; and create a SYSLIB DDDEF that points to a concatention of these two data sets. See IBM SMP/E for z/OS and OS/390 Reference for more information about the SYSLIB concatenation.

6.1.3 Sample Jobs

Sample jobs to allocate the target and distribution libraries, set up directories, and create DDDEF entries for the WebSphere Application Server for z/OS elements have been provided.

Figure 16 on page 24 lists the sample jobs for WebSphere Application Server.

Figure 16. Sample Installation Jobs

Job Name	Job Type	Description	RELFILE
BBOCSICR	Setup	Sample job to create an SMP/E global zone	IBM.H28W610.F1
BBOZNCRT	Setup	Sample job to create SMP/E target and distribution zones	IBM.H28W610.F1
BBOXZDEF	Setup	Sample job to add additional target zone definitions for cross-zone prerequisite checking	IBM.H28W610.F1
BBOALLOC	ALLOCATE	Sample job to allocate target and distribution libraries for WebSphere Application Server	IBM.H28W610.F1
BBOISMKD	MKDIR	Sample job to invoke the supplied BBOMKDIR EXEC to create HFS paths for WebSphere Application Server	IBM.H28W610.F1
BBODDDEF	DDDEF	Sample job to define SMP/E DDDEFs for WebSphere Application Server	IBM.H28W610.F1
BBOAPPLY	APPLY	Sample job to apply base and maintenance	IBM.H28W610.F1
BBOACCEP	ACCEPT	Sample job to accept base and maintenance	IBM.H28W610.F1

You can access the sample installation jobs by performing an SMP/E RECEIVE and then copying the jobs from the RELFILEs to a work data set for editing and submission. See Figure 16 to find the appropriate RELFILE data set.

Each sample job contains comments with specific instructions for customization.

You may also choose to copy the jobs from the tape or product files by submitting the jobs below. Use either the //TAPEIN or the //FILEIN DD statement, depending on your distribution medium, and comment out or delete the other statement. Add a job card and change the lowercase parameters to uppercase values to meet your site's requirements before submitting.

```
//STEP1    EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//TAPEIN   DD DSN=IBM.H28W610.F1,UNIT=tunit,
//         VOL=SER=volser,LABEL=(x,SL),
//         DISP=(OLD,KEEP)
//FILEIN   DD DSN=IBM.H28W610.F1,UNIT=SYSALLDA,DISP=SHR,
//         VOL=SER=filevol
//OUT      DD DSNAME=jcl-library-name,
//         DISP=(NEW,CATLG,DELETE),
```

```
//          VOL=SER=dasdvol,UNIT=SYSALLDA,
//          SPACE=(TRK,(30,20,5))
//SYSUT3    DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN     DD *
    COPY INDD=xxxxIN,OUTDD=OUT
/*
```

In the sample above, update the statements as noted below:

If using TAPEIN:

tunit is the unit value matching the product tape.
volser is the volume serial matching the product tape.
x is the tape file number where the data set name is on the tape.
Refer to the documentation provided by CBPDO to see where IBM.H28W610.F1 is on the tape.

If using FILEIN

filevol is the volume serial of the DASD device where the downloaded files reside.

OUT

jcl-library-name is the name of the output data set where the sample jobs will be stored.
dasdvol is the volume serial of the DASD device where the output data set will reside.

SYSIN

xxxxIN is either TAPEIN or FILEIN depending on your input DD statement.

6.1.4 Allocate SMP/E CSI (Optional)

If you are using an existing CSI, do not execute this job.

If you are allocating a new SMP/E CSI data set for this install, edit and submit sample job BBOCSICR to allocate the SMP/E CSI data set for WebSphere Application Server for z/OS. Consult the instructions in the sample job for more information.

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

6.1.5 Define New SMP/E TARGET and DLIB Zones (Optional)

Edit and submit sample job BBOZNCRT to define new SMP/E Target and Distribution zones. Consult the instructions in the sample job for more information.

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

6.1.6 Add Target Zones for Cross-Zone Prerequisite Checking

Because the WebSphere Application Server component has a number of maintenance requirements for the target z/OS systems, we recommend that you add the appropriate SMP/E target zones (z/OS, DB2, CICS, and IMS) to the WebSphere Application Server SMP/E global zone. This will allow SMP/E to check each zone for maintenance required by WebSphere Application Server for z/OS.

Customize and run the BBOXZDEF job to add target zones to the global zone which will be used for the SMP/E APPLY and ACCEPT steps below.

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

6.1.7 Perform SMP/E RECEIVE

Having obtained WebSphere Application Server as part of a CBPDO, use the RCVPDO job found in the CBPDO RIMLIB data set to RECEIVE the H28W610 FMIDs as well as any service, HOLDDATA, included on the CBPDO tape. For more information, refer to the documentation included with the CBPDO.

The CBPDO contains all non-integrated PTFs for every WebSphere Application Server for z/OS 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.

To receive service for WebSphere Application Server for z/OS select FMID H28W610.

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

6.1.8 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job BBOALLOC to allocate the SMP/E target and distribution libraries for WebSphere Application Server. Consult the instructions in the sample job for more information.

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

6.1.9 Allocate HFS or zFS PATHS

Customize the sample job BBOISMKD to mount the WebSphere Application Server for z/OS product HFS(s) or zFS(s) and create the target directories needed to install the WebSphere Application Server component.

Important!

- The BBOISMKD and BBODDDEF jobs use -PathPrefix- to represent a service directory on your driving system. It is assumed that you will be mounting WebSphere Application Server for z/OS data sets under a service directory that already contains the /usr and /usr/lpp directories. If you specify a -PathPrefix- directory which does not contain /usr and usr/lpp subdirectories, you must manually create these subdirectories before running the BBOISMKD job. If -PathPrefix-/usr/lpp is not a read/write HFS or zFS, you will need to manually create some additional subdirectories as well. See the comments in the BBOISMKD job for further information.
- The BBOISMKD job will mount the product HFS or zFS and create all product directories in it.

Run the customized sample job BBOISMKD under a user ID that has certain system privileges; refer to 6.1, “Installing WebSphere Application Server” on page 22 for a summary of the privileges that you need to run the BBOISMKD successfully.

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

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

Verify that the product HFS or zFS is mounted at:

-PathPrefix-/usr/lpp/zWebSphere/V6R1

If you are making a second product HFS or zFS for downloads, verify that it is mounted at:

-PathPrefix-/usr/lpp/zWebSphere/V6R1/downloads2

6.1.10 Create DDDEF Entries

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

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

6.1.11 Perform SMP/E APPLY

SMP/E apply processing for WebSphere Application Server for z/OS V6.1.0 uses the Java SDK JAR command to extract certain files. In order for the JAR command to run correctly, SMP/E must be running with the fix for APAR IO04924, and the user ID used to run the BBOAPPLY job must have the SDK bin directory in its Unix System Services PATH.

If BBOZNCRT was not run, set your SMPJHOME DDDEF to your Java PATH. For example:

PATH=/usr/lpp/java/IBM/J1.4/bin:<rest of PATH>

Test the availability of the JAR command by logging in to the OMVS shell with the user ID that will be used to run the BBOAPPLY job and entering the command "jar"; the JAR command should print its usage information. See the z/OS UNIX System Services User's Guide for information about using /etc/profile and $HOME/.profile scripts.

Run the SMP/E APPLY job with a user ID that has certain system privileges; refer to 6.1, “Installing WebSphere Application Server” on page 22 for a summary of the privileges that you need to run the BBOAPPLY successfully.

Customize and run the sample job BBOAPPLY to perform an SMP/E APPLY CHECK of the WebSphere Application Server base and service.

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass any of the following on the APPLY CHECK: PRE, ID, REQ, and IFREQ. This is because the SMP/E root cause analysis identifies the cause only of **ERRORS** and not of **WARNINGS** (bypassed SYSMODs are treated as warnings, not errors, by SMP/E). The GROUPEXTEND operand indicates that SMP/E should APPLY all requisite SYSMODs. The requisite SYSMODs may be part of other products; review the APPLY CHECK output carefully before proceeding.

Expected Return Codes and Messages: You will receive a return code of 0 if this job runs correctly (or a return code of 4, if any HOLDs are bypassed).

When you have resolved any problems indicated by the APPLY CHECK, remove the CHECK operand and run the job again to perform the APPLY.

Expected Return Codes and Messages from APPLY: You will receive a return code of 0 if this job runs correctly (or a return code of 4, if any HOLDs are bypassed).

6.1.12 Perform SMP/E ACCEPT

Customize and run the sample job BBOACCEP to perform an SMP/E ACCEPT CHECK of the WebSphere Application Server base and service.

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass any of the following on the ACCEPT CHECK: PRE, ID, REQ, and IFREQ. This is because the SMP/E root cause analysis identifies the cause only of **ERRORS** and not of **WARNINGS** (bypassed SYSMODs are treated as warnings, not errors, by SMP/E).

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

When you have resolved any problems indicated by the ACCEPT CHECK, remove the CHECK operand and run the job again to perform the ACCEPT.

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

6.2 Installing WebSphere Process Server

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

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

This product is available as a Web download package, or in the customized offerings. If you are downloading this product from the Web, follow the instructions below. If you have received this product

from customized offerings, go to 6.2.2, “SMP/E Considerations for Installing WebSphere Process Server” on page 30.

6.2.1 SMP/E Considerations for Using the SMP/E Web Download

The SMP/E Web download package for WebSphere Process Server is packaged using the SMP/E GIMZIP function, which was introduced in SMP/E for z/OS V3.1. Although GIMZIP and GIMUNZIP are used for the packaging, the full SMP/E RECEIVE FROMNETWORK function is not available with this package. The SMP/E GIMUNZIP function is required to process the downloaded package. Refer to z/OS SMP/E Reference for information about using GIMZIP and GIMUNZIP. You need to ensure that you have met the driving system requirements as documented in Driving System Requirements.

You will need to perform the following tasks:

1. For a description of the GIMZIP and GIMUNZIP function, refer to the SMP/E Web page at: http://www.ibm.com/servers/eserver/zseries/zos/smpe/.

   Ensure that configuration requirements for using GIMUNZIP have been completed.

2. Allocate a R/W HFS or zFS directory on the z/OS system where the package will be staged. This is the repository for the download package.

3. Download the Web package. The package is available from the following Web site: https://www14.software.ibm.com/webapp/ShopzSeries/ShopzSeries.jsp.

   There are two parts of the package:

   a. bpz.README.txt

      This file contains a sample job that performs the following tasks. It must be updated to reflect your environment. Make sure this file is transferred from the download site as a text file.

      - Executes the z/OS UNIX System Services UNIX System Services pax command to extract the GIMZIP archives from the download package.
      - Executes the GIMUNZIP program to expand the GIMZIP archives and places their contents in data sets that can be processed by SMP/E.
      - Executes the SMP/E RECEIVE from DASD function to receive the FMID.

   b. bpz.pax.Z

      This pax archive file contains the SMP/E MCS and the associated RELFILEs. This must be downloaded to a node that has connectivity to the target z/OS system. Transfer the file to the host using binary format.

4. Run the sample job in bsb.README.txt. This job will perform the required tasks up to and including the SMP/E RECEIVE from DASD step.

5. Complete the installation using the instructions in this program directory.

6.2.2 SMP/E Considerations for Installing WebSphere Process Server

WebSphere Process Server must be installed into the same Target and Distribution zones as WebSphere Application Server for z/OS.

6.2.3 Sample Jobs

Sample jobs to allocate the target and distribution libraries, set up directories, and create DDDEF entries for the WebSphere Process Server elements have been provided.

Figure 17 lists the sample jobs for WebSphere Process Server.

Figure 17. Sample Installation Jobs

Job Name	Job Type	Description	RELFILE
BPZCSICR	Setup	Creates a new SMP/E Consolidated Software Inventory (CSI) global zone.	IBM.HWPS612.F1
BPZRECEV	RECIEVE	Performs the RECIEVE for the installation.	IBM.HWPS612.F1
BPZALLOC	ALLOCATE	Allocates the TARGET and DISTRIBUTION libraries.	IBM.HWPS612.F1
BPZALHFS	ALLOCATE	Allocates the HFS libraries.	IBM.HWPS612.F1
BPZALZFS	ALLOCATE	Allocates the zFS libraries.	IBM.HWPS612.F1
BPZISMKD	MKDIR	Runs the BBOMKDIR EXEC job to create file system paths for WebSphere Application Server.	IBM.HWPS612.F1
BPZZNCRT	Setup	Creates SMP/E TARGET and DISTRIBUTION zones.	IBM.HWPS612.F1
BPZZONES	Setup	Defines TARGET and DLIB zones for an already allocated CSI.	IBM.HWPS612.F1
BPZDDDEF	DDDEF	Defines SMP/E DDDEFs for WebSphere Application Server.	IBM.HWPS612.F1
BPZXZDEF	Setup	Adds additional target zone definitions for cross-zone prerequisite checking.	IBM.HWPS612.F1
BPZAPPLY	APPLY	Applies base and maintenance	IBM.HWPS612.F1
BPZACCEP	ACCEPT	Accept base and maintenance	IBM.HWPS612.F1

You can access the sample installation jobs by performing an SMP/E RECEIVE and then copying the jobs from the RELFILEs to a work data set for editing and submission. See Figure 17 to find the appropriate relfile data set.

The sample job below points to F1. You will also need to run the UNLOAD again for F4.

You might also choose to copy the jobs from the tape or product files by submitting the job below. Use either the //TAPEIN or the //FILEIN DD statement, depending on your distribution medium, and comment

out or delete the other statement. Add a job card and change the lowercase parameters to uppercase values to meet your site's requirements before submitting.

```
//STEP1    EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//TAPEIN   DD DSN=IBM.HWPS612.F1,UNIT=tunit,
//         VOL=SER=volser,LABEL=(x,SL),
//         DISP=(OLD,KEEP)
//FILEIN   DD DSN=IBM.HWPS612.F1,UNIT=SYSALLDA,DISP=SHR,
//         VOL=SER=filevol
//OUT      DD DSNAME=jcl-library-name,
//         DISP=(NEW,CATLG,DELETE),
//         VOL=SER=dasdvol,UNIT=SYSALLDA,
//         SPACE=(TRK,(30,20,5))
//SYSUT3   DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN    DD *
    COPY INDD=xxxxIN,OUTDD=OUT
/*
```

In the sample above, update the statements as noted below:

If using TAPEIN:

tunit is the unit value matching the product tape.

volser is the volume serial matching the product tape.

x is the tape file number where the data set name is on the tape.

Refer to the documentation provided by CBPDO to see where IBM.HWPS612.F1 is on the tape.

If using FILEIN

filevol is the volume serial of the DASD device where the downloaded files reside.

OUT

jcl-library-name is the name of the output data set where the sample jobs will be stored.

dasdvol is the volume serial of the DASD device where the output data set will reside.

SYSIN

xxxxIN is either TAPEIN or FILEIN depending on your input DD statement.

Customize each of the sample jobs listed in Figure 17 on page 30. Each sample job contains comments with specific instructions for customization.

6.2.4 Create CSI Global Zone

If you want to install WebSphere Process Server into a new CSI, customize and run the BPZCSICR job.

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

6.2.5 Perform SMP/E RECEIVE

If you ordered WebSphere Process Server for z/OS V6.1.2 using CBPDO receive function SYSMOD and service by running the RCVPDO job. For more information, refer to *MVS CBPDO Memo to User Extension*, which is included with the CBPDO.

The CBPDO contains all non-intergrated PTFs for every WebSphere Process Server FMID. (Cumulative service is including in CBPDO orders so there is no separate cumulative service tape). Depending on the options selected when you ordered the CBPDO, your order might contain service for other products in your profile.

If you ordered a stand-alone product tape instead of using CBPDO, customize and run the BPZRECEV job.

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

6.2.6 Allocate SMP/E Target and Distribution Libraries

Customize and run sample job BPZALLOC to allocate the SMP/E target and distribution libraries for WebSphere Process Server. Refer to the instructions in the sample job for more information.

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

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

6.2.7 Create the USS File System

If you are installing in a zFS file system, customize and run the BPZALZFS sample job to define the file system libraries.

Otherwise, if you are installing in an HFS file system, customize and run the BPZALHFS sample job to define the file system libraries.

Run only one of these jobs.

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

6.2.8 Allocate HFS or zFS PATHS

Customize the sample job BPZISMKD to mount the WebSphere Process Server for z/OS product file systems and create the target directories needed to install the WebSphere Process Server component.

Important!

The BPZISMKD and BPZDDDEF jobs use -PathPrefix- to represent a service directory on your driving system. It is assumed that you are mounting WebSphere Process Server HFS or zFS data sets under a service directory that already contains the /usr and /usr/lpp directories. If you specify a -PathPrefix- directory that does not contain /usr and usr/lpp subdirectories, you must manually create these subdirectories before running the BPZISMKD job. If -PathPrefix-/usr/lpp is not a read/write HFS or zFS, you must manually create some additional subdirectories as well. See the comments in the BPZISMKD job for further information.

Run the customized sample job BPZISMKD under a user ID that has certain system privileges; refer to 6.2, “Installing WebSphere Process Server” on page 28 for a summary of the privileges that you need to run the BPZISMKD successfully.

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

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

Verify that the product file system is mounted at:

-PathPrefix-/usr/lpp/zWPS/V6R1M2

6.2.9 Define Target and Distribution Zones.

To create a new global CSI containing data sets in target and distribution zones, customize and run the BPZZNCRT sample job.

To define new target and distribution zones on an already allocated CSI, customize and run the BPZZONES sample job.

6.2.10 Define SMP/E DDDEFs

Customize and run the sample job BPZDDDEF to create SMP/E DDDEFs for target and distribution data sets and directories. Make sure the call library DDDEFs point to the corresponding data sets for your z/OS target system.

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

6.2.11 Add Target Zones for Cross-Zone Prerequisite Checking

Because the WebSphere Process Server component has a number of maintenance requirements for the target z/OS systems, add the appropriate SMP/E target zones (z/OS, DB2, CICS, and IMS) to the WebSphere Process Server SMP/E global zone. This will allow SMP/E to check each zone for maintenance required by WebSphere Process Server.

Customize and run the BPZXZDEF job to add target zones to the global zone which will be used for the SMP/E APPLY and ACCEPT steps below.

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

6.2.12 Perform SMP/E APPLY

SMP/E apply processing for WebSphere Process Server for z/OS uses the Java SDK JAR command to extract certain files. In order for the JAR command to run correctly, SMP/E must have the fix for APAR IO04924 applied.

A new DDDEF entry named SMPJHOME in the target zone is required. The samples job (BPZZNCRT) includes a DDDEF entry to address this specific issue. For example:

```
//SMPJHOME DD PATH='/usr/lpp/java/J5.0'
```

Run the SMP/E APPLY job with a user ID that has certain system privileges; refer to 6.2, “Installing WebSphere Process Server” on page 28 for a summary of the privileges that you need to run the BPZAPPLY successfully.

Customize and run the sample job BPZAPPLY to perform an SMP/E APPLY CHECK of the WebSphere Process Server base and service.

Expected Return Codes and Messages: You will receive a return code of 0 if this job runs correctly (or a return code of 4, if any HOLDs are bypassed).

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass any of the following on the APPLY CHECK: PRE, ID, REQ, and IFREQ. This is because the SMP/E root cause analysis identifies the cause only of **ERRORS** and not of **WARNINGS** (bypassed SYSMODs are treated as warnings, not errors, by SMP/E). The GROUPEXTEND operand indicates that SMP/E should APPLY all requisite SYSMODs. The requisite SYSMODs may be part of other products; review the APPLY CHECK output carefully before proceeding.

When you have resolved any problems indicated by the APPLY CHECK, remove the CHECK operand and run the job again to perform the APPLY.

Expected Return Codes and Messages from APPLY: You will receive a return code of 0 if this job runs correctly (or a return code of 4, if any HOLDs are bypassed).

6.2.13 Perform SMP/E ACCEPT

Customize and run the sample job BPZACCEP to perform an SMP/E ACCEPT CHECK of the WebSphere Process Server base and service.

If you are installing into an existing SMP/E CSI, the IEBCOPY utility needs to have at least 2M work area for the ACCEPT step. Add the following PARM to the IEBCOPY utility entry:

```
WORK=2M
```

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

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass any of the following on the ACCEPT CHECK: PRE, ID, REQ, and IFREQ. This is because the SMP/E root cause analysis identifies the cause only of **ERRORS** and not of **WARNINGS** (bypassed SYSMODs are treated as warnings, not errors, by SMP/E).

The GROUPEXTEND operand indicates that SMP/E should ACCEPT all requisite SYSMODs. The requisite SYSMODs may be part of other products; review the ACCEPT CHECK output carefully before proceeding.

When you have resolved any problems indicated by the ACCEPT CHECK, remove the CHECK operand and run the job again to perform the ACCEPT.

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

6.3 Activating WebSphere Process Server

6.3.1 HFS Execution

If you choose to have the HFS or zFS in which you have installed WebSphere Process Server mounted in read-only mode during execution, then the following tasks are required to accomplish this:

If you have included a mount statement in BPXPRMxx PARMLIB member for this HFS, ensure it includes the operand MODE(READ).

To Change the HFS filesystem to read only in Unix System Services, execute the following USS commands:

1. unmount -o immediate *pathname*
2. mount -t hfs -d *destsys* -f *fsname* -r *pathname*

For a detailed explanation of the above commands, refer to the z/OS UNIX System Services Command Reference, listed in Figure 3 on page 5.

6.3.2 WebSphere Process Server configuration

WebSphere Process Server must be configured when SMP/E installation is complete. See the *WebSphere Process Server for z/OS installation topics* in the information center for more information on how to enable WebSphere Process Server for use, along with additional information from the WebSphere Process Server Infocenter, which is located at:

http://publib.boulder.ibm.com/infocenter/dmndhelp/v6r1m2/index.jsp

6.3.3 Mount the HFS or zFS Data Set on the Target System

Before proceeding with activation, copy the WebSphere Process Server and WebSphere Application Server HFS or zFS data sets from the driving system to the target system. Mount them on the target system at the target system mount point. See 5.4.3, “Selecting Target System Mount points” on page 20, for assistance in selecting the mount point. If you have selected the default mount points, you can use the following TSO commands on your target system to mount the HFS or zFS data set (if you are using zFS, replace HFS with ZFS. This must reflect what you decided at the ALLOCATE and MKDIR steps):

```
MOUNT FILESYSTEM('hlq.SBPZHFS')
  MOUNTPOINT('/usr/lpp/zWPS/V6R1M2') TYPE(HFS) MODE(READ)

MOUNT FILESYSTEM('hlq.SBBOHFS')
  MOUNTPOINT('/usr/lpp/zWebSphere/V6R1') TYPE(HFS) MODE(READ)
```

Add these mounts to your BPXPRMxx member in parmlib to ensure that these file systems are mounted at IPL. To apply service to the WebSphere Process Server for z/OS V6.1.2 product you will need to perform the following tasks:

1. Apply Service on the driving system.
2. Copy the WebSphere Process Server for z/OS V6.1.2 file system from the driving system to the target system.
3. Stop any servers on the target system.
4. Unmount the HFS or zFS data set from the target mount point.
5. Mount the new serviced copy at the target mount point and restart the server or servers.

6.3.4 Activating WebSphere Process Server

The WebSphere Process Server for z/OS Information Center contains the step-by-step prodcedures to complete the installation and configuration of WebSphere Process Server.

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Reader's Comments

Program Directory for WebSphere Process Server for z/OS V6.1.2, August 2008

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satisfied  <====================>  dissatisfied  applicable
   1        2        3        4         5            N
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	Satisfaction					
Ease of product installation	1	2	3	4	5	N
Contents of Program Directory	1	2	3	4	5	N
Installation Verification Programs	1	2	3	4	5	N
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Readability and organization of Program Directory tasks	1	2	3	4	5	N
Necessity of all installation tasks	1	2	3	4	5	N
Accuracy of the definition of the installation tasks	1	2	3	4	5	N
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___ ServerPac
___ Independent
___ Other

Is this the first time your organization has installed this product?

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___ No

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