



Program Directory for WebSphere Extended Deployment Compute Grid for z/OS

Version 8 Release 0 Modification 0

Program Number 5655-V62
FMID HEJC800

for use with

WebSphere Application Server for z/OS V8.0
OR
WebSphere Application Server for z/OS V7.0

ON
z/OS V1.10 or higher

Document Date: June 2012

GI11-9849-01

Note

Before using this information and the product it supports, be sure to read the general information under 7.0, "Notices" on page 28.

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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 Extended Deployment Compute Grid for z/OS V8.0. The name WebSphere Extended Deployment Compute Grid for z/OS V8.0 will be used throughout this program directory to refer to the product.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 6 identifies the basic and optional program materials and documentation for WebSphere Extended Deployment Compute Grid for z/OS V8.0.
- 3.0, “Program Support” on page 9 describes the IBM support available for WebSphere Extended Deployment Compute Grid for z/OS V8.0.
- 4.0, “Program and Service Level Information” on page 11 lists the PTF (service level) incorporated into WebSphere Extended Deployment Compute Grid for z/OS V8.0.
- 5.0, “Installation Requirements and Considerations” on page 12 identifies the resources and considerations required for installing and using WebSphere Extended Deployment Compute Grid for z/OS V8.0.
- 6.0, “Installation Instructions” on page 20 provides detailed installation instructions for WebSphere Extended Deployment Compute Grid for z/OS V8.0. It also describes the procedures for activating the functions of WebSphere Extended Deployment Compute Grid for z/OS V8.0, or refers to appropriate publications.

WebSphere Extended Deployment Compute Grid for z/OS V8.0 is an assembly of functions that when added to WebSphere Application Server for z/OS V8.0 or, WebSphere Application Server for z/OS V7.0 plus the enabling service level, will extend its capabilities and manageability.

This product is shipped alone through CBPDO and as an additional feature to the WebSphere ServerPac.

Prerequisite WebSphere Application Server for z/OS V8.0 or WebSphere Application Server for z/OS V7.0 provides the entire runtime environment needed for WebSphere Extended Deployment Compute Grid for z/OS V8.0. There are no additional CDs or products shipped with WebSphere Extended Deployment Compute Grid for z/OS V8.0.

Before installing WebSphere Extended Deployment Compute Grid for z/OS V8.0, read the Memo to Users Extension that is supplied with this program in softcopy form as well as this Program Directory. Consider keeping them for future reference. Section 3.2, “Preventive Service Planning” on page 9 tells you how to find any updates to the information and procedures in this Program Directory.

When WebSphere Extended Deployment Compute Grid for z/OS V8.0 is supplied in a Custom-Built Product Delivery Offering (CBPDO, 5751-CS3), the Program Directory is provided in softcopy form on the CBPDO tape that is identical to the hardcopy form provided with your order. Your CBPDO contains a

softcopy preventive service planning (PSP) upgrade for this product. All service and HOLDDATA for WebSphere Extended Deployment Compute Grid for z/OS V8.0 are included on the CBPDO tape.

1.1 WebSphere Extended Deployment Compute Grid for z/OS V8.0 Description

WebSphere Extended Deployment Compute Grid for z/OS V8.0 provides a batch platform with a managed batch execution environment that enables the entry, execution, and management of Java batch processing on mainframe or in distributed environments. This product provides an infrastructure for batch processing to share business logic with OLTP applications as well as applications written in traditional languages. This infrastructure lowers cost by reducing the risk and management effort while providing customers an "always-on" business experience. This "always on" business experience eliminates offline batch windows and delivers to the enterprise a quality of service required by mission critical batch applications. WebSphere Extended Deployment Compute Grid for z/OS V8.0 provides the ability for batch jobs and online transaction processing to execute concurrently.

1.1.1 Specific Production Information

WebSphere Extended Deployment Compute Grid for z/OS V8.0 provides services for job scheduling and management, execution control, and monitoring of JAVA transactional batch, compute-intensive and non-JAVA workloads. WebSphere Extended Deployment Compute Grid for z/OS V8.0 has the following main features:

- Pojo-based Batch application development
- End-to-end application development tooling that includes a J2SE development environment, application development frameworks and libraries, single-server local unit-test environment, and packaging and deployment tools
- A complete batch execution platform that includes a job dispatcher for governing the execution of batch applications, multi-tenant batch container for executing batch applications with services, such as a checkpoint/restart and a job management console for job submission and monitoring (typically superseded by an enterprise scheduler)
- Parallel processing features for partitioning large batch jobs into smaller sub-jobs, dispatching the sub-jobs across a cluster of multi-tenant batch containers, which allow for governing the lifecycle of the top-level job and its many sub-jobs, and providing features for log aggregation
- Integration with enterprise schedulers and enterprise monitors, including features for integrating on z/OS
- Innovative job classes for WebSphere Extended Deployment Compute Grid for z/OS V8.0 workloads that establish a policy for resource consumption that permits the management and control of execution time, the number of concurrent jobs, the size of job log and job output queue storage as well as integrating with workload management to enable 24x7 batch processing through job pacing and throttling
- Security integration features that include security roles for job submitters and job administrators

- Features and strategies for disaster recovery and high availability, with scalability for each of the runtime components - the Job Dispatcher, Multi-tenant Batch Containers, and Parallel Job Manager

1.1.1.1 Worthwhile Features: WebSphere Extended Deployment Compute Grid for z/OS V8.0 has the following features that are worthy of note.

- Use of the IBM Installation Manager (IM) for multiple platforms to enable consistent installation of WebSphere Extended Deployment Compute Grid for z/OS V8.0 on different platforms.
- The WebSphere Extended Deployment Compute Grid for z/OS V8.0 COBOL Container provides the ability for Java batch applications to invoke standard COBOL modules. It allows for fine-grained reuse of existing COBOL assets in support of enterprise batch modernization scenarios. The COBOL container supports connection sharing between Java and COBOL within the same transactional scope and COBOL working storage isolation among multiple requestors. Tool-driven call stub generation delivers natural language call semantics to Java programmers.
- Parallel Job Manager enhancements to provide higher throughput for small jobs by taking advantage of multi-threading within a single JVM.

1.1.1.2 Functional Enhancements: WebSphere Extended Deployment Compute Grid for z/OS V8.0 is enhanced in the following ways:

Developer

WebSphere Extended Deployment Compute Grid for z/OS V8.0 contains many new and changed features for application developers. Batch programming model enhancements include:

- Support for local transaction mode operation in addition to global transaction support

A new step-level property is available for use

```
com.ibm.websphere.batch.transaction.policy={global|local|compat}
```

- When global is specified, all job-related artifacts (callbacks, BDSes, checkpoint algorithm, etc) are called in global transaction mode.
- When local is specified, all job-related artifacts (callbacks, BDSes, checkpoint algorithm, etc) are called in local transaction mode.
- When compat is specified, BatchJobStep is invoked in global transaction mode.
- A new job-level xJCL element provides for a new call-back API for Job/step initializers and listeners during job life-cycle (in addition to job step initialization).

This call back API allows developers to add job initialization and cleanup processing to their job. The callback class can be called from job, step, and data stream batch artifacts.

- A job log SPI with the ability to modify/suppress job log content

The job log SPI has the following options:

- Suppressing the log line by not logging it

- Logging to the job log only and not to the server log
- Logging to the server log only and not to job log
- Logging to the job log and server log
- Modifying the log line text itself
- An additional transaction time-out option for batch step and input/output stream initialization

Users can specify a separate timeout value for step setup events, such as "BDS open" from the timeout value used for the main process job step loop. This option can be specified to set transaction timeout for BDS initialization across every BOS.

Security

WebSphere Extended Deployment Compute Grid for z/OS V8.0 contains the following security enhancements:

- Finer grained security for job management for group level security in addition to existing role check authorization

A "submitter" role can now be mapped to an LDAP group. When a person creates a job, anyone in the same group can edit, submit, and cancel the job.
- WebSphere Extended Deployment Compute Grid for z/OS V8.0 supports class loading from OSGI bundles by allowing you to specify classpath on a per job step basis for "batch" and "compute intensive" job steps.

Administration

WebSphere Extended Deployment Compute Grid for z/OS V8.0 contains the following administrative enhancements:

- Providing key record processing metrics: number processed, number of retries, number of records skipped in the BDS framework

Batch applications can read input that includes records in error. You can have policies about this that allow a certain number of records to be skipped.

Applications can typically run into errors during an optimistic updates. In some cases, a delay and simply retrying can solve the problem. The ability to better manage failed updates and perform retries will be built into the BDSFW.

Batch application developers have two ways to manage bad records - declarative and programmatic. The batch data stream framework can keep track of skips and retries and recorded on a per-step basis in the system tables.
- Persistent execution context and persistent job level context

A single JobStepContext object will exist across all job steps. This context object will exist before the job-level callback (if specified) and is invoked for "begin" processing and exists until after the job-level context (if specified) is invoked for "end" processing. This object allows for applications to share information between steps by providing a scratch pad that will also be persisted.

1.1.1.3 Other Features and Enhancements: WebSphere Extended Deployment Compute Grid for z/OS V8.0 offers functionality for users who are going to customize, administer, monitor, and tune production server environments as well as those who are going to deploy and operate batch applications.

- Memory overload protection where you can specify an upper limit of memory consumption that a job can have. This enhances job management.

WebSphere Extended Deployment Compute Grid for z/OS V8.0 introduces a simple, optional "memory" tag in the xJCL to allow users to specify an upper limit of memory consumption for the job. This is understood to be a "best guess" and is not enforced in terms of actual limitation on the amount of memory a job may use. The memory tag will be used to ensure the batch container does not allow too many jobs to run concurrently in the same application server environment.

- Enhancements to the Job Management Console

- Restarting batch jobs in 'Execution Failed' state

During batch job processing, the job state is updated in the job scheduler database and can be viewed in the job management console. If a failure occurs before a batch step initializes, the batch job enters an execution failed state. Otherwise, it enters a restartable state. A job in an "execution failed" state can be restarted.

- Ability to save user filters

You can customize the Job Management Console (JMC) for ease in troubleshooting jobs. Your preferences can be saved.

- Ease of migrating applications developed using WebSphere Application Server V7 Feature Pack for Modern Batch and Batch applications written using WebSphere Application Server for z/OS V8.0 or WebSphere Application Server for z/OS V7.0.
- Ease of migration from WebSphere Extended Deployment Compute Grid V6.1.1 to WebSphere Extended Deployment Compute Grid for z/OS V8.0

1.2 WebSphere Extended Deployment Compute Grid for z/OS V8.0 FMIDs

The Installation Manager repository for WebSphere Extended Deployment Compute Grid for z/OS V8.0 consists of the following FMID:

<i>Figure 1. Basic FMIDs</i>	
FMID	Description
HEJC800	WebSphere Extended Deployment Compute Grid for z/OS V8.0

2.0 Program Materials

An IBM program is identified by a program number. The program number for WebSphere Extended Deployment Compute Grid for z/OS V8.0 is 5655-V62.

Basic Machine-Readable Materials are materials that are supplied under the base license 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 Extended Deployment Compute Grid for z/OS V8.0. 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 20 for more information about how to install the program.

Information about the physical tape for the Basic Machine-Readable Materials for WebSphere Extended Deployment Compute Grid for z/OS V8.0 can be found in the *CBPDO Memo To Users Extension*.

2.2 Optional Machine-Readable Material

WebSphere Extended Deployment Compute Grid for z/OS V8.0 has NO optional machine-readable materials.

2.3 Program Publications

The following sections identify the basic and optional publications for WebSphere Extended Deployment Compute Grid for z/OS V8.0. Note the main documentation distribution medium for WebSphere Extended Deployment Compute Grid for z/OS V8.0 is the Information Center, located at

[http://www14.software.ibm.com/webapp/wsbroker/redirect?
version=compgrid8&product=was-nd-mp&topic=cg80_library](http://www14.software.ibm.com/webapp/wsbroker/redirect?version=compgrid8&product=was-nd-mp&topic=cg80_library)

In addition to the Information Center, other WebSphere Extended Deployment Compute Grid for z/OS V8.0 articles are available in PDF format at the same URL.

2.3.1 Basic Program Publications

Figure 2 identifies the basic unlicensed program publications for WebSphere Extended Deployment Compute Grid for z/OS V8.0. Downloadable copies of only the program directory are available at

http://www14.software.ibm.com/webapp/wsbroker/redirect?version=compgrid8&product=was-nd-mp&topic=cg80_library

<i>Figure 2. Basic Material: Unlicensed Publications</i>	
Publication Title	Form Number
Program Directory for WebSphere Extended Deployment Compute Grid for z/OS V8.0	GI11-9849-01
License Information WebSphere Extended Deployment Compute Grid for z/OS V8.0	GC27-3930-00
Carefully read the WebSphere Extended Deployment Compute Grid for z/OS V8.0 IBM International Program License Agreement GC27-3930-00, a copy of which will be provided to you with the order (Hardcopy or Electronic format); The License Agreement may contain terms that supercede the Licensed terms included with this program component.	

2.3.2 Optional Program Publications

WebSphere Extended Deployment Compute Grid for z/OS V8.0 has NO optional publications.

2.4 Program Source Materials

No program source materials or viewable program listings are provided for WebSphere Extended Deployment Compute Grid for z/OS V8.0.

2.5 Publications Useful During Installation

The publications listed in Figure 3 on page 8 may be useful during the installation of WebSphere Extended Deployment Compute Grid for z/OS V8.0. 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://www-1.ibm.com/servers/eserver/zseries/zos/bkserv/>

Figure 3. Publications Useful During Installation

Publication Title	Form Number
<i>IBM SMP/E for z/OS and OS/390 User's Guide</i>	SA22-7773
<i>IBM SMP/E for z/OS and OS/390 Commands</i>	SA22-7771
<i>IBM SMP/E for z/OS and OS/390 Reference</i>	SA22-7772
<i>IBM SMP/E for z/OS and OS/390 Messages, Codes, and Diagnosis</i>	GA22-7770
<i>z/OS MVS JCL Reference</i>	SA22-7597
<i>z/OS System Codes</i>	SA22-7626
<i>Installation Manager for z/OS V1.4 Program Directory</i>	GI11-9852-01

3.0 Program Support

This section describes the IBM support available for WebSphere Extended Deployment Compute Grid for z/OS V8.0.

3.1 Program Services

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

3.2 Preventive Service Planning

Before installing WebSphere Extended Deployment Compute Grid for z/OS V8.0, you should review the current Preventive Service Planning (PSP) information. If you obtained WebSphere Extended Deployment Compute Grid for z/OS V8.0 as part of a CBPDO, there is HOLDDATA and PSP information included on the CBPDO.

If the CBPDO for WebSphere Extended Deployment Compute Grid for z/OS V8.0 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".

For program support, access the Software Support at the following Web site:

<http://www.ibm.com/support>

PSP Buckets are identified by UPGRADEs, which specify product levels, and SUBSETs, which specify the FMIDs for a product level. The UPGRADE and SUBSET values for WebSphere Extended Deployment Compute Grid for z/OS V8.0 are shown as follows:

Figure 4. PSP Upgrade and Subset ID

UPGRADE	SUBSET	Description
WASCG800	HEJC800	WebSphere Extended Deployment Compute Grid for z/OS V8.0

You should also consult the following PSP bucket for information related to the IBM Installation Manager.

Figure 5. PSP Upgrade and Subset ID

UPGRADE	SUBSET	Description
IIMZOSV1	HGIN140	Installation Manager for z/OS V1.4.3

3.3 Statement of Support Procedures

Report any difficulties you have using this program to your IBM Support Center. For technical support assistance visit

<http://www.ibm.com/support>

and perform a search on the symptoms you are experiencing with this program. For additional assistance, contact your IBM software support center at 1-800-IBM-SERV (800-426-7378), selecting option #2 for software assistance.

If an APAR is required, the Support Center will provide the address to which any needed documentation can be sent.

Figure 6 identifies the component IDs (COMPID) for WebSphere Extended Deployment Compute Grid for z/OS V8.0.

<i>Figure 6. Component IDs for WebSphere Extended Deployment Compute Grid for z/OS V8.0</i>			
FMID	COMPID	Component Name	RETAIN Release
HEJC800	5655V6201	WebSphere Extended Deployment Compute Grid for z/OS V8.0	800

4.0 Program and Service Level Information

This section identifies the program and any relevant service levels of WebSphere Extended Deployment Compute Grid for z/OS V8.0. 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

This is the first release of WebSphere Extended Deployment Compute Grid for z/OS V8.0.

4.2 Service Level Information

No PTFs against this release of WebSphere Extended Deployment Compute Grid for z/OS V8.0 have been incorporated into the product tape.

It is highly recommended that you frequently check the WebSphere Extended Deployment Compute Grid for z/OS V8.0 PSP Bucket for HIPER and SPECIAL Attention PTFs against all FMIDs that you must install.

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating WebSphere Extended Deployment Compute Grid for z/OS V8.0. 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.

5.1 Driving System Requirements

This section describes the environment of the driving system required to install WebSphere Extended Deployment Compute Grid for z/OS V8.0.

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 7 (Page 1 of 2). Driving System Software Requirements

Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in this product's shipment?
5694-A01	z/OS	V01.10.00	N/A	No
APAR OA34228 must be applied to the z/OS driving system				

Figure 7 (Page 2 of 2). Driving System Software Requirements

Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in this product's shipment?
5655-G44	IBM SMP/E for z/OS	V03.5	N/A	No
Any one of the following:				
5655-N98	IBM 31-bit SDK for z/OS, JAVA 2 Technology Edition, Version 5	V05.0	N/A	No
-- OR --				
5655-N99	IBM 64-bit SDK for z/OS, JAVA 2 Technology Edition, V5	V05.0	N/A	No

Note: Installation may require migration to new z/OS releases to be service supported. See

http://www-01.ibm.com/software/support/lifecycle/index_a_z.html

- UNIX System Services must be up in full function mode on your driving system so that the utilities are available for the Shell Script support.
- Installation may require migration to new z/OS releases to be service supported. See http://www-01.ibm.com/software/support/lifecycle/index_a_z.html

5.2 Target System Requirements

This section describes the environment of the target system required to customize and use WebSphere Extended Deployment Compute Grid for z/OS V8.0.

5.2.1 Machine Requirements

The target system can run in any hardware environment that supports WebSphere Application Server for z/OS V8.0 or WebSphere Application Server for z/OS V7.0 plus service associated with PTF 7.0.0.15 for z/OS. Consider using binary floating point hardware, such as S/390 Parallel Enterprise Server Generation 5 systems, and later.

5.2.2 Programming Requirements

5.2.2.1 Installation Requisites: Installation requisites defines products that are 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.

Mandatory installation requisites identify products that are required, without exception, or this product **will not install** on your system. This includes products specified as PREs or REQs.

Figure 8. Mandatory Installation Requisites for WebSphere Extended Deployment Compute Grid for z/OS V8.0

Program Number	Product Name and Minimum VRM/Service Level
5694-A01	z/OS Version 1.10 or above
APAR OA34228 must be applied to the z/OS target system	
5655-G44	IBM SMP/E for z/OS Version 3.05 or above
5655-W65	IBM Installation Manager V1.4 or above
5655-W65	WebSphere Application Server for z/OS V8.0 - if WebSphere Extended Deployment Compute Grid for z/OS V8.0 will be used with WebSphere Application Server for z/OS V8.0
one of the following:	
5655-N98	IBM 31-bit SDK for z/OS, JAVA 2 Technology Edition, V5
-- OR --	
5655-N99	IBM 64-bit SDK for z/OS, JAVA 2 Technology Edition, V5

The installation may require migration to new z/OS releases to be service supported. See

http://www-01.ibm.com/software/support/lifecycle/index_a_z.html

Conditional installation requisite identify 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 Extended Deployment Compute Grid for z/OS V8.0 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.

<i>Figure 9. Mandatory Operational Requisites</i>	
Program Number	Product Name and Minimum VRM/Service Level
-- EITHER OF THE FOLLOWING: --	
5655-N02	WebSphere Application Server for z/OS V7.0
-- OR --	
5655-W65	WebSphere Application Server for z/OS V8.0

Conditional operational requisites identify 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.

WebSphere Extended Deployment Compute Grid for z/OS V8.0 has NO conditional operational requisites.

5.2.2.3 Toleration/Coexistence Requisites: A toleration/coexistence requisite is defined as a product 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 Extended Deployment Compute Grid for z/OS V8.0 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 Extended Deployment Compute Grid for z/OS V8.0 has NO negative requisites.

5.2.3 DASD Storage Requirements

WebSphere Extended Deployment Compute Grid for z/OS V8.0 libraries can reside on all z/OS supported DASD types.

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

<i>Figure 10 (Page 1 of 2). Total DASD Space Required by WebSphere Extended Deployment Compute Grid for z/OS V8.0</i>		
Library Type	Total Space Required (3390 Tracks)	Component
Target	20	WebSphere Extended Deployment Compute Grid for z/OS V8.0
Distribution	750	WebSphere Extended Deployment Compute Grid for z/OS V8.0

Figure 10 (Page 2 of 2). Total DASD Space Required by WebSphere Extended Deployment Compute Grid for z/OS V8.0

Library Type	Total Space Required (3390 Tracks)	Component
File System	900	For the product repository
File System	1200	Additional tracks in the WebSphere Application Server for z/OS V8.0 product file system (if used with WebSphere Application Server for z/OS V8.0)
File System	1200	Tracks in a new file system (if used with WebSphere Application Server for z/OS V7.0)

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.

3. Abbreviations used for the HFS 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 a PDS or 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. Some target libraries must be APF-authorized; some target libraries or library members must be placed in the LPA or LINKLST. See the customization instructions for details.

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

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

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
SMPLTS	E	PDSE	U	0	50	-
SMPMTS	E	PDS	FB	80	15	80
SMPPTS	E	PDS	FB	80	8000	80

Figure 12 (Page 2 of 2). Storage Requirements for SMP/E Data Sets

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
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 paths required to install WebSphere Extended Deployment Compute Grid for z/OS V8.0. The storage requirements of WebSphere Extended Deployment Compute Grid for z/OS V8.0 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 13. Storage Requirements for WebSphere Extended Deployment Compute Grid for z/OS V8.0 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
SEJCEXEC	EXEC	TVOL1	U	PDS	VB	255	10	5
SEJ CJCL	Sample	TVOL2	U	PDS	FB	80	10	5

Figure 14. WebSphere Extended Deployment Compute Grid for z/OS V8.0 HFS Paths

DDNAME	T Y P E	Path Name
SEJ CIMR	N	/usr/lpp/InstallationManagerRepository/HEJC800/IBM
SMPJHOME	N	/usr/lpp/java/J5.0

Figure 15. Storage Requirements for WebSphere Extended Deployment Compute Grid for z/OS V8.0 Distribution Libraries

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
AEJCEXEC	U	PDS	VB	255	10	5
AEJCJCL	U	PDS	FB	80	10	5
AEJCIMR	U	PDS	VB	255	752	50

Notes: WebSphere Extended Deployment Compute Grid for z/OS V8.0 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.

5.3 FMIDs Deleted

Installing WebSphere Extended Deployment Compute Grid for z/OS V8.0 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 want to delete these FMIDs at this time, you must install WebSphere Extended Deployment Compute Grid for z/OS V8.0 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 Extended Deployment Compute Grid for z/OS V8.0 has NO special considerations for the target system.

6.0 Installation Instructions

This chapter describes the installation method and the step-by-step procedures to install and to activate the functions of WebSphere Extended Deployment Compute Grid for z/OS V8.0.

6.1 Installing the Installation Manager repository for WebSphere Extended Deployment Compute Grid for z/OS V8.0

WebSphere Extended Deployment Compute Grid for z/OS V8.0 is installed using the Installation Manager and a repository containing the WebSphere Extended Deployment Compute Grid for z/OS V8.0 code.

You must first create an IBM Installation Manager on your z/OS system. To create the IBM Installation Manager, follow the instructions presented in the Installation Manager information center located at the following URL.

<http://publib.boulder.ibm.com/infocenter/install/v1r4/index.jsp>

A summary of using the Installation Manager is located in the Installation Manager for z/OS V1.4.3 Program Directory, GI11-9852-00, which can be accessed here:

<http://www-306.ibm.com/software/webservers/appserv/was/library/>

Install the IBM Installation Manager repository for WebSphere Extended Deployment Compute Grid for z/OS V8.0 using SMP/E as explained in section 6.1.1, “Sample Jobs for WebSphere Extended Deployment Compute Grid for z/OS V8.0” through 6.1.9, “Mount the WebSphere Extended Deployment Compute Grid for z/OS V8.0 repository” on page 25. ,*Mount the

Follow the instructions in section 6.2, “Installing WebSphere Extended Deployment Compute Grid for z/OS V8.0 for use with WebSphere Application Server for z/OS V7.0” on page 25 to create a copy of the WebSphere Extended Deployment Compute Grid for z/OS V8.0 for use with WebSphere Application Server for z/OS V7.0.

Follow the instructions in section 6.3, “Install the WebSphere Extended Deployment Compute Grid for z/OS V8.0 for use with WebSphere Application Server for z/OS V8.0” on page 26 to create a copy of the WebSphere Extended Deployment Compute Grid for z/OS V8.0 for use with WebSphere Application Server for z/OS V8.0.

6.1.1 Sample Jobs for WebSphere Extended Deployment Compute Grid for z/OS V8.0

The following sample installation jobs are provided as part of the product to help you install WebSphere Extended Deployment Compute Grid for z/OS V8.0.

Figure 16 (Page 1 of 2). Sample Installation Jobs - HEJC800

Job Name	Job Type	Description	RELFIL
EJCCSICR	SETUP	Sample job to create an SMP/E global zone and required data sets	IBM.HEJC800.F1
EJCZNCRT	SETUP	Sample job to create an SMP/E target zone and dlib zone, and required data sets	IBM.HEJC800.F1
EJCRECEV	RECEIVE	Sample job to receive SMP/E deliverables for the WebSphere Extended Deployment Compute Grid for z/OS V8.0 repository	IBM.HEJC800.F1
EJCALLOC	ALLOCATE	Sample job to allocate target and distribution libraries for the WebSphere Extended Deployment Compute Grid for z/OS V8.0 repository	IBM.HEJC800.F1
EJCISMKD	MKDIR	Sample job to allocate the system paths for the Installation Manager for the WebSphere Extended Deployment Compute Grid for z/OS V8.0 repository	IBM.HEJC800.F1
EJCDDDEF	DDDEF	Sample job to define SMP/E DDDEFs for the Installation Manager for the WebSphere Extended Deployment Compute Grid for z/OS V8.0 repository	IBM.HEJC800.F1
EJCAPPLY	APPLY	Sample APPLY job for the Installation Manager for the WebSphere Extended Deployment Compute Grid for z/OS V8.0 repository	IBM.HEJC800.F1
EJCACCEP	ACCEPT	Sample ACCEPT job for the Installation Manager for the WebSphere Extended Deployment Compute Grid for z/OS V8.0 repository	IBM.HEJC800.F1
EJC1CFS	ALLOC	Sample ALLOCATE job to allocate a file system for WebSphere Extended Deployment Compute Grid for z/OS V8.0 for use with WebSphere Application Server for z/OS V7.0.	IBM.HEJC800.F1
EJC1INST	INSTALL	Sample INSTALL job to install WebSphere Extended Deployment Compute Grid for z/OS V8.0 for use with WebSphere Application Server for z/OS V7.0.	IBM.HEJC800.F1
EJC1UNIN	UNINSTALL	Sample UNINSTALL job to uninstall WebSphere Extended Deployment Compute Grid for z/OS V8.0 previously installed for use with WebSphere Application Server for z/OS V7.0.	IBM.HEJC800.F1
EJC2INST	INSTALL	Sample INSTALL job to install WebSphere Extended Deployment Compute Grid for z/OS V8.0 for use with WebSphere Application Server for z/OS V8.0.	IBM.HEJC800.F1

Figure 16 (Page 2 of 2). Sample Installation Jobs - HEJC800

Job Name	Job Type	Description	RELFILE
EJC2UNIN	UNINSTALL	Sample UNINSTALL job to uninstall WebSphere Extended Deployment Compute Grid for z/OS V8.0 previously installed for use with WebSphere Application Server for z/OS V8.0.	IBM.HEJC800.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 on page 20 to find the appropriate relfile data set.

You can also copy the sample installation jobs from the tape or product files by submitting the following job. Depending on your distribution medium, use either the //TAPEIN or the //FILEIN DD statement and comment out or delete the other statement. Before you submit the job, add a job card and change the lowercase parameters to uppercase values to meet the requirements of your site.

```
//STEP1 EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//TAPEIN DD DSN=IBM.HEJC800.F1,UNIT=tunit,
// VOL=SER=volser,LABEL=(x,SL),
// DISP=(OLD,KEEP)
//FILEIN DD DSN=IBM.HEJC800.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,(primary,secondary,dir))
//SYSUT3 DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN DD *
COPY INDD=xxxxIN,OUTDD=OUT
/*
```

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

TAPEIN:

tunit is the unit value that matches the product tape.

volser is the volume serial that matches the product tape.

x is the tape file number that indicates the location of the data set name on the tape.

See the documentation that is provided by CBPDO for the location of IBM.fmid.Fy on the tape.

FILEIN:

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

OUT:

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

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

SYSIN:

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

6.1.2 Create SMP/E zones (optional)

You can install the WebSphere Extended Deployment Compute Grid for z/OS V8.0 repository using an existing SMP/E global zone, or create a new one.

To create a new SMP/E global zone, edit and submit sample job EJCCSICR.

You can install the WebSphere Extended Deployment Compute Grid for z/OS V8.0 repository into existing target and distribution zones, or create new ones.

To create new SMP/E target and distribution zones, edit and submit sample job EJCZNCRT.

Note: The Installation Manager repository for WebSphere Extended Deployment Compute Grid for z/OS V8.0 is only required when building the WebSphere Application Server for z/OS code. Therefore, you may want to store them separately, apart from software libraries that must be replicated on each system in your data center.

6.1.3 Perform SMP/E RECEIVE

If you have obtained WebSphere Extended Deployment Compute Grid for z/OS V8.0 as part of a CBPDO, use the RCVPDO job in the CBPDO RIMLIB data set to receive the WebSphere Extended Deployment Compute Grid for z/OS V8.0 repository FMID, service, and HOLDDATA that are included on the CBPDO tape. For more information, see the documentation that is included in the CBPDO.

The FMID for the WebSphere Extended Deployment Compute Grid for z/OS V8.0 repository is HEJC800.

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

6.1.4 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job EJCALLOC to allocate the SMP/E target and distribution libraries for the WebSphere Extended Deployment Compute Grid for z/OS V8.0 repository. Consult the instructions in the sample job for more information.

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

6.1.5 Allocate File system Paths

Edit and submit sample job EJCISMKD to mount the file system for the WebSphere Extended Deployment Compute Grid for z/OS V8.0 repository at mountpoint

```
-PathPrefix-/usr/lpp/InstallationManagerRepository/HEJC800
```

and create required subdirectories. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: You will receive return code of 0 if the job runs correctly, unless some of the required directories already exist, in which case you will receive a return code of 4.

6.1.6 Create DDDEF Entries

Edit and submit sample job EJCDDDEF to create DDDEF entries for the SMP/E target and distribution libraries for the WebSphere Extended Deployment Compute Grid for z/OS V8.0 repository. Consult the instructions in the sample job for more information.

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

6.1.7 Perform SMP/E APPLY

Edit and submit sample job EJCAPPLY to perform an SMP/E APPLY CHECK for the WebSphere Extended Deployment Compute Grid for z/OS V8.0 repository. Consult the instructions in the sample job for more information. After you take actions that are indicated by the APPLY CHECK, remove the CHECK operand and run the job again to perform the APPLY.

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

Expected Return Codes and Messages from APPLY CHECK: You will receive a return code of 0 if this job runs correctly, unless one or more HOLDs was bypassed, in which case you will receive a return code of 4.

Expected Return Codes and Messages from APPLY: You will receive a return code of 0 if this job runs correctly, unless one or more HOLDs was bypassed, in which case you will receive a return code of 4.

6.1.8 Perform SMP/E ACCEPT

Edit and submit sample job EJCACCEP to perform an SMP/E ACCEPT CHECK for the WebSphere Extended Deployment Compute Grid for z/OS V8.0 repository. Consult the instructions in the sample job for more information.

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

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

Expected Return Codes and Messages from ACCEPT CHECK: You will receive a return code of 0 or 4 if this job runs correctly, unless one or more HOLDs was bypassed, in which case you will receive a return code of 4.

Expected Return Codes and Messages: from ACCEPT You will receive a return code of 0 or 4 if this job runs correctly, unless one or more HOLDS was bypassed, in which case you will receive a return code of 4.

6.1.9 Mount the WebSphere Extended Deployment Compute Grid for z/OS V8.0 repository

The SEJCIMR file system now contains the Installation Manager repository for the WebSphere Extended Deployment Compute Grid for z/OS V8.0 product. If PTFs were applied, it may also contain additional fix packs for WebSphere Extended Deployment Compute Grid for z/OS V8.0 - any of which can be installed.

Unmount the SEJCIMR file system and remount it *read-only* at a location of your choice. The recommended location is:

```
/usr/lpp/InstallationManagerRepository/HEJC800
```

6.2 Installing WebSphere Extended Deployment Compute Grid for z/OS V8.0 for use with WebSphere Application Server for z/OS V7.0

This part of the program directory explains the steps in creating a copy of the WebSphere Extended Deployment Compute Grid for z/OS V8.0 product for use with WebSphere Application Server for z/OS V7.0

When used with WebSphere Application Server for z/OS V7.0, the WebSphere Extended Deployment Compute Grid for z/OS V8.0 product code is installed into its own product file system.

6.2.1 Create the WebSphere Extended Deployment Compute Grid for z/OS V8.0 product file system

Edit and submit sample job EJC1CFS to allocate and mount a new file system for the WebSphere Extended Deployment Compute Grid for z/OS V8.0 product code. Consult the instructions in the sample job for more information.

Mount this file system at the location where the Installation Manager will install the product code. The file system must be mounted read/write at this location whenever the Installation Manager will install, uninstall, or apply maintenance to the products in the file system. The mount location does not need to be the same location at which the file system is mounted in production.

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

6.2.2 Install the WebSphere Extended Deployment Compute Grid for z/OS V8.0 product

Edit and submit sample job EJC1INST to install the WebSphere Extended Deployment Compute Grid for z/OS V8.0 product code with the IBM Installation Manager. Consult the instructions in the sample job for more information.

By default, the latest version of the product is installed from the product repository. To install a particular level of the product from the repository, see the instructions in the sample job.

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

When the installation is complete, unmount the product file system and remount it on your target system at the location at which it is to be accessed.

6.3 Install the WebSphere Extended Deployment Compute Grid for z/OS V8.0 for use with WebSphere Application Server for z/OS V8.0

This part of the program directory explains the steps in creating a copy of the WebSphere Extended Deployment Compute Grid for z/OS V8.0 product for use with WebSphere Application Server for z/OS.

When used with WebSphere Application Server for z/OS V8.0, the WebSphere Extended Deployment Compute Grid for z/OS V8.0 product code is installed into the WebSphere Application Server for z/OS V8.0 file system.

6.3.1 Mount the WebSphere Application Server for z/OS file system

Choose the copy of the WebSphere Application Server for z/OS product that you will use with WebSphere Extended Deployment Compute Grid for z/OS V8.0.

Mount the WebSphere Application Server for z/OS product file system, read/write, at the same location at which it was originally installed with the IBM Installation Manager.

You can use the `zMountFileSystem.sh` script in the `eclipse/tools` subdirectory of the Installation Manager binaries location to mount this file system. For example,

```
cd /InstallationManager/bin/eclipse/tools
zMountFileSystem.sh -name WAS.V80.SBBOHFS
                    -mountpoint /usr/lpp/zWebSphere/V8R0
```

You can add the `-owner`, `-group`, and `-perm` options to this command to set the ownership and permissions for all files in the file system.

6.3.2 Install the WebSphere Extended Deployment Compute Grid for z/OS V8.0 product

Edit and submit sample job EJC2INST to install the WebSphere Extended Deployment Compute Grid for z/OS V8.0 product code with the IBM Installation Manager. Consult the instructions in the sample job for more information.

By default, the latest version of the product is installed from the product repository. To install a particular level of the product from the repository, see the instructions in the sample job.

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

When the installation is complete, unmount the product file system and remount it on your target system at the location at which it is to be accessed.

6.4 Activating WebSphere Extended Deployment Compute Grid for z/OS V8.0

For instructions on how to activate and use WebSphere Extended Deployment Compute Grid for z/OS V8.0, see the WebSphere Extended Deployment Compute Grid for z/OS V8.0 information center, accessible from this URL:

<http://www-306.ibm.com/software/webservers/appserv/was/library/>

When configuring WebSphere Extended Deployment Compute Grid for z/OS V8.0 for use with WebSphere Application Server for z/OS V7.0, you will specify the path to the (separate) copy of the WebSphere Extended Deployment Compute Grid for z/OS V8.0 product code.

When configuring WebSphere Extended Deployment Compute Grid for z/OS V8.0 for use with WebSphere Application Server for z/OS V8.0, you will not need to specify a path to a (separate) copy of the WebSphere Extended Deployment Compute Grid for z/OS V8.0 product code.

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Program Directory for WebSphere Extended Deployment Compute Grid for z/OS V8.0, June 2012

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RATING SCALE						
very satisfied	<----->				very dissatisfied	not applicable
1	2	3	4	5	N	

	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
Time to install the product	1	2	3	4	5	N
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
Technical level of the installation tasks	1	2	3	4	5	N
Ease of getting the system into production after installation	1	2	3	4	5	N

How did you order this product?

- CBPDO
- CustomPac
- ServerPac
- Independent
- Other

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

- Yes
- No

Were the people who did the installation experienced with the installation of z/OS products?

- Yes

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