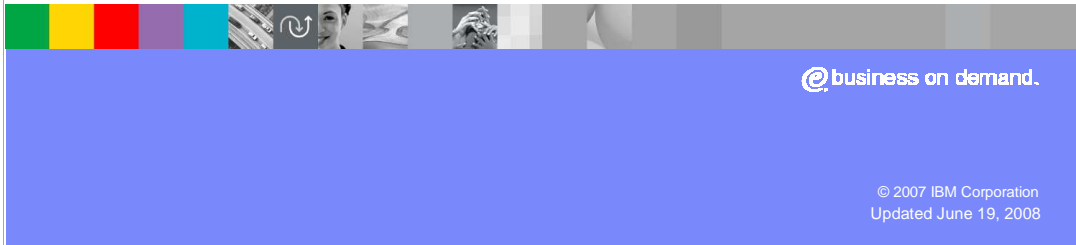




IBM Software Group

IBM® WebSphere® Extended Deployment V6.1 for z/OS®

Packaging and installation



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This presentation will discuss creating and migrating WebSphere Extended Deployment V6.1 cells on z/OS.

This module references

WebSphere Extended Deployment Data Grid, which is now called WebSphere eXtreme Scale; and

WebSphere Extended Deployment Operations Optimization, which is now called WebSphere Virtual Enterprise.

Though the module uses the previous names, the technical material covered is still accurate.

Agenda

- Packaging and installation overview
- Installation
- Troubleshooting
- Summary



The first topic discussed is the new packaging for WebSphere Extended Deployment. This will be followed with a discussion on installing the libraries and finally a slide on where to look when you have problems.

Overview

- WebSphere Extended Deployment V6.1 is a 'stack' product for WebSphere Application Server Network Deployment
 - ▶ Requires WebSphere Application Server V6.1.0.8
- WebSphere Extended Deployment V6.1 consists of three packages
 - ▶ **Compute grid**
 - ▶ **Data grid**
 - ▶ **Operations optimization**
- Existing WebSphere Network Deployment profiles must be updated
 - New Extended Deployment profiles can be created, or existing profiles can be 'augmented' to Extended Deployment profiles



WebSphere Extended deployment V6.1 for z/OS is added to or stacked on an existing WebSphere Application Server V6.1.0.8 cell. WebSphere Extended Deployment can be ordered as a complete package or can be ordered as one or more of its components: Compute Grid, Data Grid, and Operations Optimization. The details of these individual components are discussed in other presentations in IBM Education Assistant. Extended deployment profiles or nodes are created by augmenting Network Deployment profiles. The next few charts will look at each of these packages.

Note that the middleware agent found on other platforms does not operate with version 6.1 of z/OS Extended Deployment, nor can the middleware agent running on another platform be federated into a z/OS WebSphere Extended Deployment cell.

Key feature categories

Compute grid package

- Batch workload services
- Compute-intensive workload services
- Long running workload scheduler
- WSGrid



The compute grid package is the most interesting for z/OS applications and allows running a mixture of transactional batch and conventional batch in an efficient manner. One big advantage is that it allows you to keep just one copy of your business logic. Another piece of the compute grid is to run compute intensive applications in an efficient way. Standard transaction processing assumes short execution times. Compute intensive Java programs are not compatible with the transactional model. The long running scheduler controls both types of compute grid jobs and is fully integrated with z/OS WLM. WSGRID is an interface between conventional batch and transactional batch. WSGRID is started from JES and connects with long running scheduler using MQ.

Key feature categories

Data grid package

- Partitioning facility
- Object grid



The data grid package provides fast data sharing and caching between nodes using a fast efficient object grid server. When combined with the partitioning facility of Extended Deployment, the result can be a large increase in transaction throughput.

Key feature categories

Operations optimization package

- Workload routing (HTTP, SOAP, JMS)
- Dynamic operations
- Advanced administrative features



The operations optimization package has several subcomponents which can shape message routing and emulate zWLM to some extent for distributed platforms. On z/OS it provides an effective interface between WebSphere and zWLM. The advanced administration has several pieces that are presented in other IBM Education Assistant presentation under WebSphere Extended Deployment

Visualization

- Application placement
- Health management
- Application edition management
- Centralized Install Manager
- Highly available deployment manager
- Repository checkpoint capability
- Administration of non-WebSphere nodes

Agenda

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Installation is a little different for WebSphere Extended Deployment V6.1 libraries than a base WebSphere install. The next section presents an overview of both the packaging and the installation process.

General installation process

- WebSphere Application Server Network Deployment V6.1.0.8 must be installed before installing WebSphere Extended Deployment V6.1
- Perform SMP/E installation
- Create a Network Deployment cell
- Run the z/PMT utility to create augmentation JCL
- Upload and run augmentation JCL



To create a WebSphere Extended Deployment cell, you first create a Network Deployment cell with the normal process. Next you perform an SMP/E installation of the WebSphere Extended Deployment libraries. Your SMP/E tasks will depend on which set of WebSphere Extended Deployment packages you purchased. Then you convert your configuration hfs or zfs to Extended Deployment by augmenting your Network Deployment cell. Note that during augmentation, the base Network Deployment libraries and the basic structure of your base Network Deployment cell are not changed. This is a generic rule that stack products can't make dramatic changes because other stacked products might required the basic structure to remain in tact. The augmentation process is similar to creating a Network Deployment cell, you use the zPMT tool to generate a series of JCL that converts your Network Deployment cell to an Extended Deployment cell.

Prerequisites (derived from base WebSphere)

- Hardware requirements
 - ▶ Any hardware that supports WebSphere Application Server V6.1.0.8
- Software requirements
 - ▶ WebSphere Application Server V6.1.0.8



Prerequisite WebSphere Application Server for z/OS V6.1 provides the entire runtime environment needed for WebSphere Extended Deployment for z/OS V6.1 There are no additional CDs or products shipped with WebSphere Extended Deployment for z/OS V6.1.

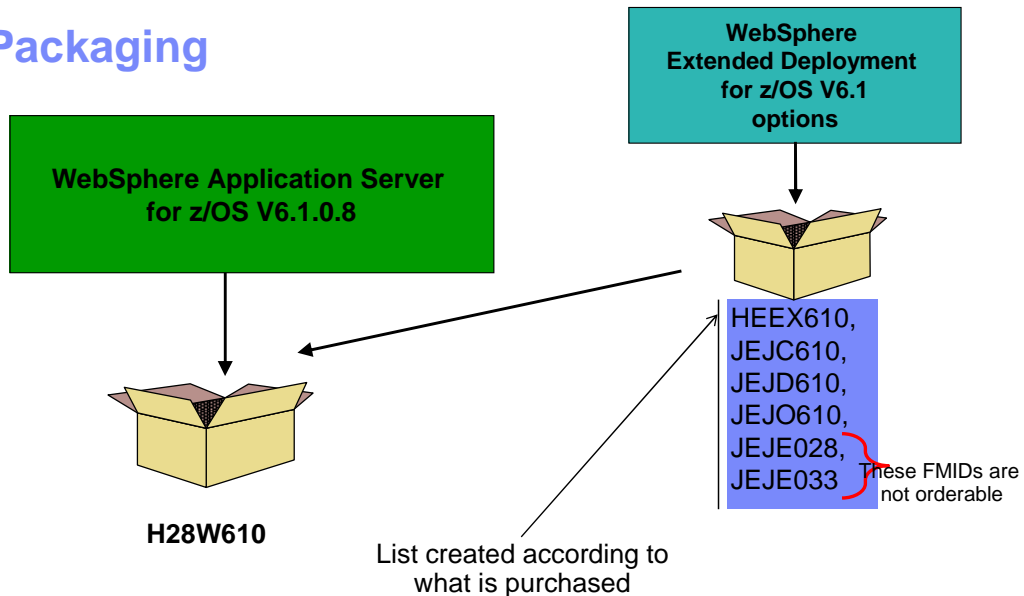
Required PTF's for z/OS

PTF	Target
PK41100	Extended Deployment V6.1.0.2
PK45355	Network Deployment V6.1.0.8
UK25154	FMID HEEX610
UK25165	FMID JEJC610
UK25170	FMID JEJD610
UK25168	FMID JEJO610



This table lists the PTFs that you might need to apply. The first two PTFs listed are required before performing a migration. The last four PTFs are required for the corresponding FMIDs that you purchased. For example, if you purchased the compute grid package, this is FMID JEJC610 and you will need to apply PTF UK25165 after you finish installing the WebSphere Extended Deployment libraries

Packaging



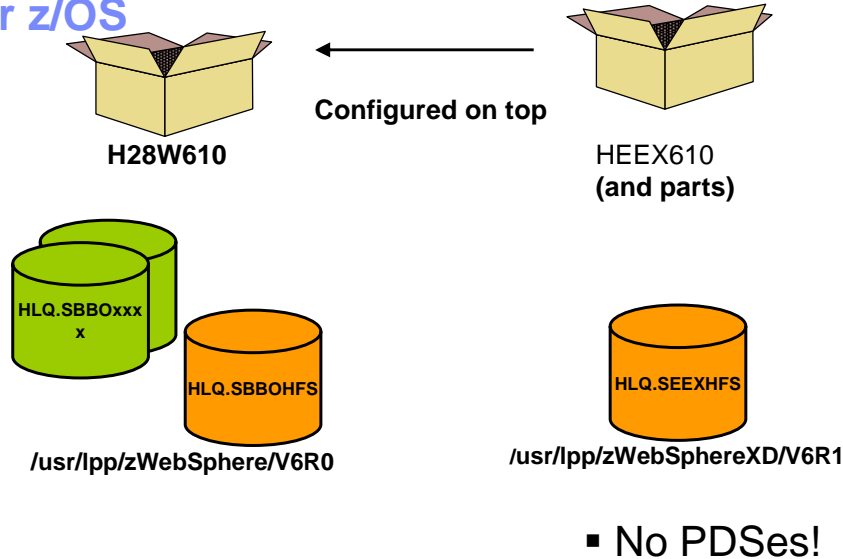
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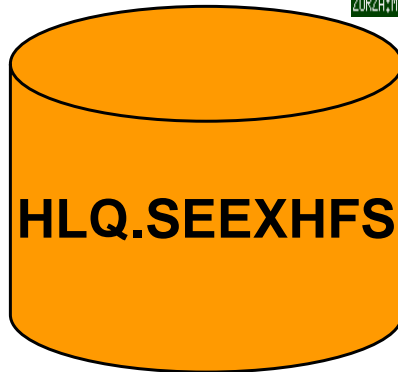
This slide shows the packaging of the products. WebSphere Extended Deployment for z/OS V6.1 is built on top of WebSphere Application Server for z/OS V6.1.0.8, as shown on a previous slide. You must start with a WebSphere Application Server V6.1 and then apply PTF's to bring your configuration to the V6.1.0.8 level, which is the required level. There are several new FMIDs for the Extended Deployment product as shown on the slide: HEEX610, JEJC610, JEJD610, JEJO610, JEJE028 and JEJE033. WebSphere Extended Deployment consists of three pieces. You can order any one, two or all three parts. Your order will be shipped by bolder and will contain the FMIDs required for your order. The FMIDs JEJE028 and JEJE033 are not specifically ordered by you, instead you will receive the appropriate one based on what piece or pieces you order. A slide further on shows this in more detail. In any case you must perform an SMP/e lay down for all the FMIDs you receive.

Structure for WebSphere Process Server for z/OS and WebSphere Enterprise Service Bus for z/OS



WebSphere Extended Deployment for z/OS is a pure Java implementation so there is no need for PDSes in the products. The code is fully contained in the HFSes shown. There is no need for the high-level qualifier for the stack products to be the same as the high-level qualifier used for the WebSphere base product. The hfs path for the stacked products should be different from each other and the base Network Deployment installation. Appropriate soft links will automatically be created or changed in your configuration tree.

SMP/E directory configuration



/usr/lpp/zWebSphereXD/V6R1

```
ZORZA:WVS213:/etc/WAS60F/usr/lpp/zWebSphereXD/V6R1#>ls -l
```

```
184320 Apr 30 13:57 IBM
8192 Apr 30 13:50 InstallSamples
8192 Apr 30 13:56 bin
8192 Apr 30 13:50 etc
8192 Apr 30 13:50 features
8192 Apr 30 13:50 firststeps
8192 Apr 30 13:56 installableApps
8192 Apr 30 13:56 installedFilters
28672 Apr 30 13:56 lib
8192 Apr 30 13:55 license.xd
8192 Apr 30 13:55 longRunning
8192 Apr 30 13:50 optionalLibraries
8192 Apr 30 13:56 plugins
8192 Apr 30 13:50 profileTemplates
8192 Apr 30 13:55 properties
8192 Apr 30 13:50 systemApps
8192 Apr 30 13:57 tio
8192 Apr 30 13:50 web
```

This slide shows the HFS for the WebSphere Extended Deployment as installed by SMP/E. The default paths are shown along with the naming for the HFS file that will contain the product code.

WebSphere Extended Deployment V6.1 FMIDs

- Complete package:
 - ▶ HEEX610 - WebSphere Extended Deployment for z/OS V6.1 Base
 - ▶ JEJC610 - WebSphere Extended Deployment for z/OS Compute Grid
 - ▶ JEJD610 - WebSphere Extended Deployment for z/OS Data Grid
 - ▶ JEJ0610 - WebSphere Extended Deployment for z/OS Operations Optimization
 - ▶ JEJE028 - WebSphere Extended Deployment for z/OS PID P28 Registration Partial package:



The WebSphere Extended Deployment V6.1 Base FMID is required plus one or more of the following optional packages: Operations Optimization, Data Grid, and Compute Grid. If you order the complete package, Boulder will package these together and send them to you.

WebSphere Extended Deployment V6.1 FMIDs

- Partial package:
 - ▶ HEE610 - WebSphere Extended Deployment for z/OS V6.1 Base
 - ▶ JEJE033 - WebSphere Extended Deployment for z/OS PID S33 Registration
 - ▶ And at least one of the following optional component FMIDs:
 - JEJC610 - WebSphere Extended Deployment for z/OS Compute Grid
 - JEJD610 - WebSphere Extended Deployment for z/OS Data Grid
 - JEJ0610 - WebSphere Extended Deployment for z/OS Operations Optimization



The WebSphere Extended Deployment V6.1 Base FMID is required plus one or more of the following optional packages: Operations Optimization, Data Grid, and Compute Grid. If you order a partial package, Boulder will package together the top two FMIDs and whichever you purchase from the bottom list.

SMP/E particulars

- EEXRECEV (full package)

```
//SMPCTL DD *  
SET BOUNDARY(GLOBAL) OPTIONS(ZOSOFT).  
RECEIVE SELECT(HEEX610  
                JEJC610  
                JEJD610  
                JEJE028  
                JEJO610)
```

- EEXRECEV (Compute Grid Only)

```
//SMPCTL DD *  
SET BOUNDARY(GLOBAL) OPTIONS(ZOSOFT).  
RECEIVE SELECT(HEEX610  
                JEJC610  
                JEJE033)
```



In the SMP/E receive step, you need to receive the FMIDs that were sent to you. The top picture shows receiving a complete package and the bottom picture shows the JCL stanza for receiving the compute grid package only.

SMP/E particulars

- EEXAPPLY

```

Menu  Utilities  Compilers  Help
BROWSE  JIMP.INSTALLF.JCL(EEXAPPLY) - 01.03  Line 00000042 Col 001 080
Command ==> Scroll ==> CSR
//STEP1 EXEC PGM=GISMP, REGION=0M, TIME=NOLIMIT
//SMPCSI DD DSN=WASG0003300.SMPE.CSI,DISP=SHR
//SMPCNTL DD DDNAME=P28
P28 DD *
SET BOUNDARY(WAST)
APPLY CHECK
FORFMID(HEEX610, JEJE028, JEJC610, JEJD610, JEJO610)
SELECT(HEEX610, JEJE028, JEJC610, JEJD610, JEJO610)
GROUPEXTEND(NOAPARS, NOUSERMODS)
BYPASS(HOLDSYS, XZIFREQ).
*
//S3300C DD *
SET BOUNDARY(WAST) .
APPLY CHECK
FORFMID(HEEX610, JEJE033, JEJO610)
SELECT(HEEX610, JEJE033, JEJO610)
XZGROUP(#tzone1 #tzone2 #tzone3)
GROUPEXTEND(NOAPARS, NOUSERMODS)
BYPASS(HOLDSYS, XZIFREQ).
*
//S33DG DD *
SET BOUNDARY(WAST) .
APPLY CHECK
FORFMID(HEEX610, JEJE033, JEJD610)
SELECT(HEEX610, JEJE033, JEJD610)
XZGROUP(#tzone1 #tzone2 #tzone3)
GROUPEXTEND(NOAPARS, NOUSERMODS)
BYPASS(HOLDSYS, XZIFREQ).
*
//S33CG DD *
SET BOUNDARY(WAST) .
APPLY CHECK
FORFMID(HEEX610, JEJE033, JEJC610)
SELECT(HEEX610, JEJE033, JEJC610)
XZGROUP(#tzone1 #tzone2 #tzone3)
GROUPEXTEND(NOAPARS, NOUSERMODS)
BYPASS(HOLDSYS, XZIFREQ).
*
***** Bottom of Data *****

```

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The SMP/E apply check and apply JCL sample JCL provided allows for packages that can be sent to you. You must verify your package is selected. The top most red circle shows receiving the complete package, or 'P28'. The red circle just below and to the left shows the start of the SMP/E stanza to apply the full package. The green Circle shows the start of the stanza to apply the operations optimization package only.

Agenda

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The final section describes logs used for problem determination.

Installation logs

- WAS.XD.install.log
 - ▶ Main WebSphere Extended Deployment installation log
- augmentProfile<profilename>.log
 - ▶ Logs for profile augmentation
 - ▶ Will contain reason for failure if the augment process fails



The installation logs are located in the logs subdirectory of the <WAS_HOME> directory that you selected for installation. The main installation log is named WAS.XD.install.log. If your installation fails, check this log for errors. Tasks launched by the installer, such as profile augmentation, also have their own logs.

Agenda

- Packaging and installation overview
- Installation configuration
- Troubleshooting
- Summary



This section will provide a summary of this presentation.

Summary

- WebSphere Extended Deployment is an add-on to WebSphere Application Server
 - ▶ Requires WebSphere Application Server V6.1.0.8
- Extended deployment V6.1 consists of 3 packages:
 - ▶ Operations optimization
 - ▶ Data grid
 - ▶ Compute grid
- Updated profile management tool used to create and augment Extended Deployment profiles.



In summary, installing WebSphere Extended Deployment V6.1 requires that you first install WebSphere Application Server V6.1.0.8, since WebSphere Extended Deployment is an add-on product, rather than a stand-alone product. Next you create augmentation jobs for each WebSphere Extended Deployment package you purchased and each node in your WebSphere cell.

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