



IBM Software Group

IBM WebSphere eXtreme Scale V7.0 for z/OS

Installation and customization



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Updated October 23, 2009

This presentation will discuss the installation of WebSphere® eXtreme Scale V7.0 on z/OS®.

WebSphere eXtreme Scale overview

- WebSphere eXtreme Scale operates as an in-memory data grid that dynamically caches, partitions, replicates, and manages application data and business logic across multiple servers
- Performs massive volumes of transaction processing with high efficiency and linear scalability
- Provides qualities of service such as
 - Transactional integrity
 - High availability
 - Predictable response times



WebSphere eXtreme Scale operates as an in-memory data grid that dynamically caches, partitions, replicates, and manages application data and business logic across multiple servers.

The product enables data-intensive business applications to process massive volumes of transactions with high efficiency and linear scalability.

It provides transactional integrity and transparent failover to ensure high availability, high reliability, and predictable response times.

z/OS eXtreme Scale support

- eXtreme Scale clients are supported on the z/OS platform
 - ▶ Clients can contain a “near-cache” copy of the data
- z/OS applications must connect to an eXtreme Scale server running on a distributed platform to perform various operations, such as create, retrieve, update, or delete, to the objects in the grid



WebSphere eXtreme Scale V7.0 provides client support access on the z/OS platform. Clients can contain a near-cache copy of the data. However, an application deployed to z/OS will require access to an eXtreme Scale server on an off-platform OS, such as Linux®. The z/OS eXtreme Scale client must connect to the off-platform eXtreme Scale server in order to perform various operations to objects in the grid, such as create, retrieve, update, or delete.

General installation process

- WebSphere Application Server V6.1 for z/OS or WebSphere Application Server V7.0 for z/OS must be installed before installing WebSphere eXtreme Scale
- Create a Network Deployment profile (NOT cell)
- Perform SMP/E installation of eXtreme Scale for z/OS
- Run the WebSphere Customization Tools V7.0.0.3 (or higher) to create augmentation JCL
- Upload and run augmentation JCL to augment the Network Deployment profile for eXtreme Scale

To install a WebSphere eXtreme Scale client on z/OS, you first create a Network Deployment profile through the normal process. Do not create a Network Deployment cell profile, as it can not be augmented for eXtreme Scale. Next, you perform an SMP/E installation of the WebSphere eXtreme Scale V7 for z/OS libraries. Then you convert your configuration hfs or zfs to eXtreme Scale by augmenting your Network Deployment profile. 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 general rule that stack products can not make dramatic changes because other stack products might require the basic structure to remain intact. The augmentation process is similar to creating a Network Deployment profile; you use the WebSphere Customization Tools utility to generate a series of JCL that will convert your Network Deployment profile to an eXtreme Scale profile.

Prerequisites (derived from base WebSphere)

- Hardware requirements
 - ▶ Any hardware that supports WebSphere Application Server V6.1 or V7.0
- Software requirements
 - ▶ WebSphere Application Server V6.1.0.27 (or higher)
 - ▶ WebSphere Application Server V7.0.0.5 (or higher)
 - ▶ z/OS V1.7 (or higher)
 - ▶ Java™ 2 Technology Edition SDK 1.4 (or higher)



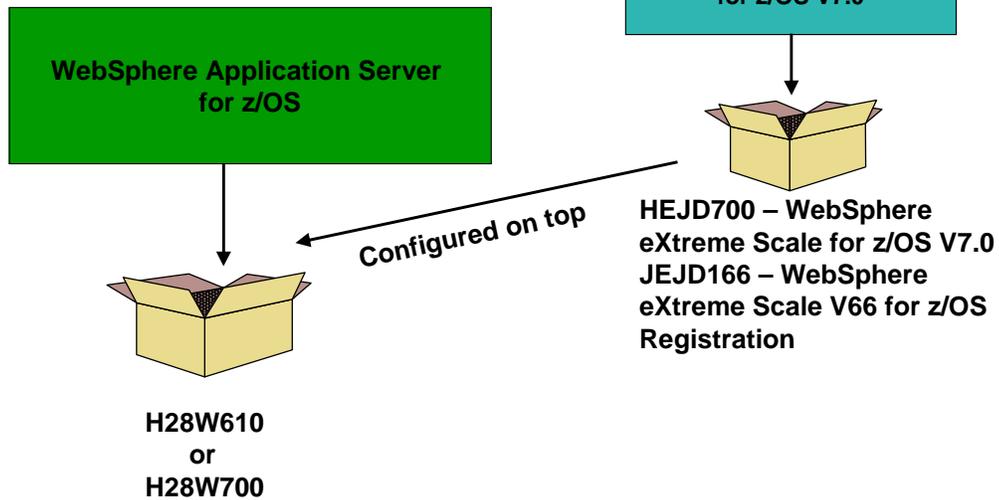
Prerequisite WebSphere Application Server for z/OS V6.1.0.27 or WebSphere Application Server for z/OS V7.0.0.3 provides the entire runtime environment needed for WebSphere eXtreme Scale for z/OS V7.0. You should also have z/OS v1.7 and Java 2 Technology Edition SDK 1.4 installed on your system.

Required PTF's for z/OS

PTF	Target
UK24627	Network Deployment V6.1.0.27
UK24628	Network Deployment V6.1.0.27
UK24629	Network Deployment V6.1.0.27
UK24631	Network Deployment V6.1.0.27
UK24641	Network Deployment V6.1.0.27
UK24643	Network Deployment V6.1.0.27

This table lists the PTFs that you will need to apply if you have WebSphere Application Server V6.1.0.27 installed.

Packaging



This slide shows the packaging of the products by FMID. WebSphere eXtreme Scale for z/OS V7.0 is built on top of WebSphere Application Server for z/OS V6.1.0.27 or V7.0.0.5. If you are using WebSphere Application Server V6.1, you must apply the PTF's shown on the previous slide to bring your configuration to the level required first. The FMIDs for the eXtreme Scale product are HEJD700 and JEJD166. You must perform an SMP/E installation for these FMIDs.

SMP/E directory configuration



/usr/lpp/zWebSphereXS/V7R0

```
hlq@hlq215:/etc/HAS600/usr/lpp/zWebSphereXS/V7R0>ls -l
```

```
10673 Jul 24 15:41 EJDDRMak
36864 Jul 24 15:41 IBM
8192 Jul 24 10:36 InstallSamples
8192 Jul 24 15:41 bin
8192 Jul 24 15:41 etc
8192 Jul 24 10:36 features
8192 Jul 24 10:36 firststeps
8192 Jul 24 15:41 installableApps
8192 Jul 24 15:41 lib
8192 Jul 24 15:41 license.xd
8192 Jul 24 14:55 license.xs
8192 Jul 24 10:36 optionalLibraries
8192 Jul 24 15:41 plugins
8192 Jul 24 10:36 profileTemplates
8192 Jul 24 10:36 properties
8192 Jul 24 10:36 systemApps
8192 Jul 24 15:41 util
```



This slide shows the HFS for WebSphere eXtreme Scale as installed by SMP/E. The default paths are shown along with the naming for the HFS file that will contain the product code. There is no need for the high-level qualifier for 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 particulars

- EJDRECEV (full package)

```
//SMPCNTL DD *
  SET BOUNDARY(GLOBAL) OPTIONS(ZOSOPT).
  RECEIVE SELECT (HEJD700, JEJD166)
```

- EJDAPPLY

```
//STEP1 EXEC PGM=GIMSMP, REGION=0M, TIME=NOLIMIT
//SMPCSI DD DSN=WAS60D.EJD.CSI, DISP=SHR
//SMPCNTL DD *
  SET BOUNDARY(WAST) .
  APPLY
  FORFMID(HEJD700, JEJD166)
  SELECT(HEJD700, JEJD166)
  XZGROUP(WAS61T WAS70T)
  GROUPEXTEND(NOAPARS, NOUSERMODS)
  BYPASS(HOLDSYS, XZIFREQ).
```



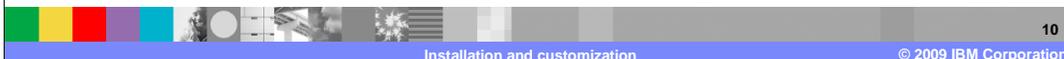
In the SMP/E receive step, you need to receive the FMIDs that were sent to you. This picture shows the JCL stanzas required to receive a complete package.

The SMP/E apply check and apply JCL provided applies the ordered FMIDs and maintenance. You must verify the FMIDs in your package are selected. Notice the line circled in red; it specifies that the SMP/E apply processing should occur in both WebSphere Application Server V6.1 and WebSphere Application Server V7.0 zones, should either one or both be present on the target system.

These are only two of the jobs that must be run to install the product. Follow the WebSphere eXtreme Scale Program Directory to run all installation steps.

Customizing eXtreme Scale for z/OS

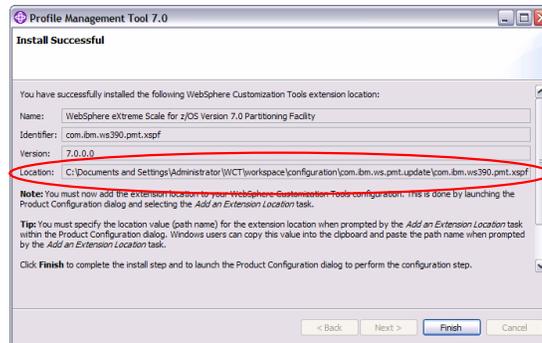
- Install WebSphere Customization Tools V7.0.0.3
- Upload the xs.wct and xspf.wct extension files from your z/OS system to the WebSphere Customization Tools application and restart the utility
- Use the Profile Management Tool function within the WebSphere Customization Tools utility to generate customization definitions and augmentation jobs
- Upload and run the customized augmentation jobs to augment your Network Deployment profile for WebSphere eXtreme Scale V7.0



To customize WebSphere eXtreme Scale for z/OS V7, begin by installing the WebSphere Customization Tools utility, V7.0.0.3 (or higher). FTP the eXtreme Scale extension files from your z/OS system, upload them to the WebSphere Customization Tools application, and restart the utility. Then generate the customization definitions and augmentation JCL through the Profile Management Tool function of the WebSphere Customization Tools utility. Upload the customized jobs associated with your definitions to your z/OS system and run them to augment your Network Deployment profile to a WebSphere eXtreme Scale V7.0 profile.

Customization hints and tips

- Install each eXtreme Scale extension file individually and restart the WebSphere Customization Tools utility after each installation
 - ▶ On the “Install Successful” panel, do not immediately hit the “Finish” button
 - ▶ Copy and save the data from the “location” field
- To remove an extension, you must manually delete its folder from C:\Documents and Settings\Administrator\WCT\workspace\configuration

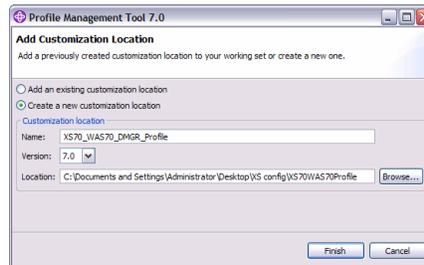


This is a screen capture of the “Install successful” panel for the WebSphere Customization Tools extension installation utility.

You should install each eXtreme Scale extension file one at a time and restart the WebSphere Customization Tools utility after each extension installation. Note that before you click Finish on this panel, you must copy and save the data from the location field, circled here in red. You will need to use that information later.

Customization hints and tips

- Check the “Create a new customization location” option every time you are generating a new profile
- Use meaningful names for your new eXtreme Scale profile
- Select the version that corresponds to the WebSphere Application Server product installed on your target system
- Use a new profile folder location every time you create a new customization definition



When you create a new eXtreme Scale customization definition using the Profile Management Tool, or click the “Add” button, you will see the panel displayed here.

Each time you are generating a new customization definition, check the “Create a new customization location” option.

It is important to use meaningful names for your new eXtreme Scale customization definition. It is suggested that you include the version of eXtreme Scale you are using, the version of WebSphere Application Server you are installing on top of, and what type of profile you are creating (Deployment manager or application server profile for example) in the profile name.

Then, select the version that corresponds to the WebSphere Application Server product installed on the target z/OS system that you installed WebSphere eXtreme Scale to.

You should use a new profile folder location every time you create a customization definition. You should avoid storing all profiles in the same folder.

Summary

- WebSphere eXtreme Scale for z/OS V7.0 is an add-on to WebSphere Application Server
 - ▶ Requires WebSphere Application Server V6.1.0.27 or WebSphere Application Server V7.0.0.3
- Updated WebSphere Customization Tools utility is used to create and augment WebSphere eXtreme Scale profiles
- Only eXtreme Scale clients are supported on the z/OS platform



In summary, installing WebSphere eXtreme Scale for z/OS V7.0 requires that you first install WebSphere Application Server V6.1.0.27 or WebSphere Application Server V7.0.0.3, since WebSphere eXtreme Scale is an add-on product, rather than a stand-alone product.

You perform an SMP/E installation of the WebSphere eXtreme Scale V7 for z/OS libraries and then you convert your configuration hfs or zfs to eXtreme Scale by augmenting your Network Deployment profile using the updated WebSphere Customization Tools utility.

WebSphere eXtreme Scale V7.0 provides only client support access on the z/OS platform. The z/OS eXtreme Scale client must connect to an off-platform eXtreme Scale server in order to interact with the eXtreme Scale grid.

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