

IBM WebSphere eXtreme Scale for z/OS Version 8.6

*Customization Guide*

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## Chapter 1. Customizing WebSphere eXtreme Scale for z/OS

Using the WebSphere® Customization Toolbox, you can generate and run customized jobs to customize WebSphere eXtreme Scale for z/OS®.

### Before you begin

- Verify that your system contains the latest level of WebSphere Application Server Network Deployment:
  - If you are running Version 7.0, your system must contain fix pack 25 at a minimum. See *Installing your Version 7.0 application serving environment* for more information.
  - If you are running Version 8.0, your system must contain fix pack 4 at a minimum. See *Installing your Version 8.0 application serving environment* for more information.
  - If you are running Version 8.5, your system must contain fix pack 1 at a minimum. See *Installing and configuring your Version 8.5 application serving environment* for more information.
- Install WebSphere eXtreme Scale for z/OS. See the *WebSphere eXtreme Scale Program Directory* on the Library Page for more information.

### About this task

Using the WebSphere Customization Toolbox, generate customization definitions and upload and run customized jobs to customize WebSphere eXtreme Scale for z/OS. See the following topics for more information:

### Procedure

- Chapter 2, “Installing the WebSphere Customization Toolbox,” on page 3
- Chapter 3, “Generating customization definitions,” on page 5
- Chapter 4, “Uploading and running customized jobs,” on page 7



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## Chapter 2. Installing the WebSphere Customization Toolbox

Install the WebSphere Customization Toolbox to customize your WebSphere eXtreme Scale for z/OS environment.

### Before you begin

- Install WebSphere eXtreme Scale for z/OS. See the *WebSphere eXtreme Scale Program Directory* on the Library Page for more information.
- You must use the latest version of the WebSphere Customization Toolbox to successfully install the product extension files.

### About this task

The WebSphere Customization Tools is a workstation-based graphical tool you use to create customized jobs that build WebSphere eXtreme Scale for z/OS runtime environments.

### Procedure

1. Use FTP to copy the `xs.wct` extension file from your z/OS system to the workstation on which you are installing the WebSphere Customization Tools. The extension files are stored in the following z/OS directory depending on the version of WebSphere Application Server that you are using.
  - WebSphere Application Server for z/OS, Version 7  
`/usr/lpp/zWebSphereXS/WXS-version/util/WCT`
  - WebSphere Application Server for z/OS, Version 8  
`/usr/lpp/zWebSphere/WAS-version/util/WCT`
2. Download and install the latest version of the WebSphere Customization Toolbox.
3. Upload the `xs.wct` file to the WebSphere Customization Toolbox application.
  - a. Start the WebSphere Customization Toolbox application on your workstation.
  - b. Click **Help** > **Software Updates** > **Manage Extension**.
  - c. From the WebSphere Customization Toolbox Extension panel, click **Install**.
  - d. From the Source Archive File panel, click **Browse**, navigate to the directory in which you copied the `xs.wct` file in step 1, and click **Open**.
  - e. Click **Next** on the Source Archive panel.
  - f. Click **Next** on the Extension summary panel, and click **Finish** on the WebSphere Customization Toolbox Extension panel.
  - g. The Install Successful panel is displayed, click **Finish**.
  - h. The installed extension is displayed in the WebSphere Customization Toolbox Extensions panel, click **Finish**.
  - i. Click **Yes** to restart the WebSphere Customization Toolbox.
4. From the WebSphere Customization Toolbox Extension panel, click **Install**.
5. From the Source Archive File panel, click **Browse**, navigate to the directory in which you copied the `xspf.wct` file in step 1, and click **Open**.
6. Click **Next** on the Summary panel.

7. Click **Next** on the Extension summary panel, and click **Finish** on the WebSphere Customization Toolbox Extension panel

### **What to do next**

After you upload both extension files and restart the WebSphere Customization Toolbox, you can use the Profile Management Tool to generate customization definitions for WebSphere eXtreme Scale for z/OS. See Chapter 3, "Generating customization definitions," on page 5 for more information.



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## Chapter 3. Generating customization definitions

Use the Profile Management Tool function within the WebSphere Customization Toolbox to generate customization definitions and create customized jobs for WebSphere eXtreme Scale for z/OS.

### Before you begin

- Verify that your system contains the latest level of WebSphere Application Server Network Deployment. See Chapter 1, “Customizing WebSphere eXtreme Scale for z/OS,” on page 1.

### About this task

You can generate customization definitions using the Profile Management Tool, which is provided in the WebSphere Customization Tools. A *customization definition* is a set of files used to create customized jobs for configuring WebSphere eXtreme Scale for z/OS.

### Procedure

1. Start the Profile Management Tool.
  - **Windows** Click **Start > Programs > IBM WebSphere > WebSphere Customization Toolbox > WebSphere Customization Toolbox**. After the application starts, click the **Profile Management Tool** tab.
  - **Linux** Run the shell script, `wct.sh`, which is in the `/opt/IBM/WebSphere/Toolbox/` directory. After the application starts, click the **Profile Management Tool** tab.
2. Using the customization locations that you have added or created for WebSphere Application Server for z/OS, select the profile that you want to augment from the Customization Locations list of the existing WebSphere Application Server product version that is installed on your z/OS operating system.

**Note:** Do not use the same location that you are using for other WebSphere eXtreme Scale customization definitions.

3. Select an environment from the Customization Definitions list for WebSphere Application Server for z/OS. Click **Augment** to create the response file and list of instructions for augmenting the WebSphere Application Server for z/OS runtime environment. The Profile Management Tool Environment Selection panel is displayed.
4. Select the environment to augment from the Environments list, and click **Next**.
  - Management
  - Application server
  - Managed (custom) node

The Profile Management Tool Augment Selection panel is displayed.

5. Select the type of augmentation to apply from the list of Augment types, and click **Next**.
6. Complete the fields on the panels. Specify the values for the parameters that are used to create your WebSphere Application Server for z/OS runtime environment.

7. Click **Augment** to generate the customization definition.
8. Click **Finish** to close the dialog, and continue.

### **What to do next**

Upload the customized job to your target z/OS system. See Chapter 4, “Uploading and running customized jobs,” on page 7 for more information.

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## Chapter 4. Uploading and running customized jobs

After you generate the customization definitions, you can upload and run the customized jobs that are associated with the definitions to your WebSphere eXtreme Scale for z/OS system.

### Before you begin

Generate the customization definitions for the jobs that you want to upload to your z/OS system. For more information, see Chapter 3, “Generating customization definitions,” on page 5.

### About this task

Upload and run the customized jobs that you created using the WebSphere Customization Tools to administer and monitor your WebSphere eXtreme Scale for z/OS environment.

### Procedure

1. Upload the customized jobs. On the **Customization Definitions** tab, select the jobs that you want to upload and click **Process**. The Profile Management Tool Select Process Type panel is displayed.
2. Select the **FTP upload type** for the target z/OS operating system, and click **Next**. Specify the required information on the Upload Customization Definition panel.
3. Click **Finish**.
4. Run the customized jobs. Click the **Customization Instructions** tab, and follow the customization instructions for each job.



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## Chapter 5. Configuring WebSphere eXtreme Scale for the Liberty profile on z/OS operating systems

After you install Liberty profile for z/OS operating systems, you can configure the Liberty profile server to run your WebSphere eXtreme Scale applications.

### Before you begin

Install the Liberty profile on your z/OS operating system. To complete the installation for WebSphere eXtreme Scale, see the information about the Liberty profile and the UNIX Shell.

### About this task

Complete the steps in this task after you have successfully create the Liberty profile `server.xml` file. When you successfully create the `server.xml` file with the **server create server1** command, output similar to the following example is displayed:

```
Server server1 created.
```

### Procedure

1. Open the `server.xml` file in the `wlp_install/usr/servers/server1/` directory. When you run the command **server create server1**, the `server.xml` file is created and contains the following configuration:

```
<server description="new server">
<!-- Enable features -->
<featureManager>
<feature>jsp-2.2</feature>
</featureManager>

<httpEndpoint id="defaultHttpEndpoint"
host="localhost"
httpPort="9080"
httpsPort="9443" />
</server>
```

2. Enter the following command to start the Liberty profile server:

```
server start server1
```

When the server starts successfully, the output that is similar to the following example is displayed:

```
Server server1 started with process ID 67371533.
```

You have created and started your first Liberty profile server instance. By default, that server listens on `localhost:9080`. The server uses user identity.

3. Enable the eXtreme Scale server feature in the Liberty profile. Modify the `server.xml` file to configure a catalog server with default settings. Use the following attributes in the `server.xml` file, which tells eXtreme Scale to create a catalog and container server:

```
<!-- Enable features -->
<featureManager>
  <feature>eXtremeScale.server-1.1</feature>
</featureManager>
```

```
<xsServer isCatalog="true" />
<logging traceSpecification="*=info" maxFileSize="200" maxFiles="10" />
</server>
```

**Note:** A container server is started automatically when an `objectgrid.xml` file and a `deployment.xml` file are located in the `grids` folder.

For more information about other supported features, see [Data caching and the Liberty profile](#). The Liberty profile dynamically detects and applies the changes that you made to the `server.xml` file. Monitoring for changes and dynamic updates are advantages of running eXtreme Scale applications in the Liberty profile.

4. Verify that the server started. Browse the `wlp_install/usr/servers/server1/logs/messages.log` ASCII file, which contains the following message, if the server started successfully:

```
The server server1 has been launched.
:
TCP .. is now listening for requests on host localhost (IPv4: 127.0.0.1) port 9080.
Monitoring dropins for applications.
Feature update completed in n.nnn seconds.
The server server1 is ready to run a smarter planet.
Starting server configuration update.
The server configuration was successfully updated in n.nn seconds.
TCP .. stopped listening for requests on host localhost (IPv4: 127.0.0.1) port 9080.
TCP .. started and is now listening for requests on host * (IPv4) port 9080.
```

## What to do next

To begin running eXtreme Scale in the Liberty profile, you must start container and catalog servers for the data grid. For more information, see [Starting and stopping secure servers in the Liberty profile](#).

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