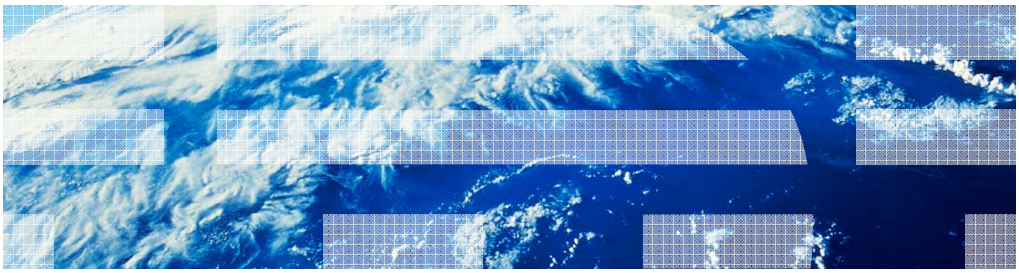
IBM WebSphere Application Server Feature Pack for OSGi Applications and Java Persistence API 2.0

Installation on the z/OS platform



WebSphere software

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This presentation will cover the installation and configuration of the WebSphere® Application Server Feature Pack for OSGi Applications and Java™ Persistence API 2.0 on z/OS.

Table of contents

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The three sections of this presentation will cover the software requirements for the feature pack, how to install it, and how to configure the features shipped in it.

Section

Software requirements

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This section will discuss the software prerequisites for using the feature pack.

Software requirements

- WebSphere Application Server at service level 7.0.0.9.
- If present, the WebSphere Application Server Feature Pack for Service Component Architecture (SCA) must be at service level 1.0.1.5.
- The latest version of the WebSphere customization tools for configuring your servers to use the feature pack. Get it from the WebSphere customization tools download site.
  - http://www-01.ibm.com/support/docview.wss?rs=180&uid=swg24020368

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The WebSphere Application Server Feature Pack for OSGi Applications and Java Persistence API 2.0 requires WebSphere Application Server to have Fix Pack 9 installed. Also, if you are using the WebSphere Application Server Feature Pack for Service Component Architecture (SCA) it must be version 1.0.1 with Fix Pack 5 installed.

You should always use the latest version of the WCT tools. That is, the latest PMT for z/OS and the latest z/MMT.

Section

Installation

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This section will cover installing the feature pack.

Installation

- The Feature Pack is shipped as a PTF on the WebSphere Optional Materials FMID
  - FMID(JIWO700)
    - ++PTF (UK56838)
  - Available at
    - http://www-01.ibm.com/support/docview.wss?rs=404&uid=swg27009131
- Follow the directions in the ++HOLD of the PTF with regard to making directories and potentially allocating an HFS. The path for the feature pack is
  -PathPrefix-/usr/lpp/zWebSphere_OM/V7R0/FPAJ
- The two individual features will be in subdirectories
  -PathPrefix-/usr/lpp/zWebSphere_OM/V7R0/FPAJ/Aries
  -PathPrefix-/usr/lpp/zWebSphere_OM/V7R0/FPAJ/JPA

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All feature packs on WebSphere Application Server Version 7 for z/OS are shipped as PTFs on the WebSphere Application Server Optional Materials FMID. Instructions for installing the PTFs such as making directories or creating file systems are included in the ++HOLD of the PTFs. The install uses standardized directory paths shown here.

This feature pack contains two features the OSGi Applications feature and the Java Persistence API 2.0 feature. They are placed in subdirectories under the standard install directory. On distributed platforms the decision is made at install time which features to install. On z/OS both are SMP/E installed and at configuration time you will choose which features you will configure into your servers.

Section

Configuration

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This section will cover configuring your servers to use the feature pack.

Configuration

- Extend the WebSphere customization tools to contain the feature pack
  - Download the extensions you require from the SMP/E install
  - Create an extension location
  - Install the extension
  - Restart the WebSphere customization tools
- Create or augment servers with one of the features
  - Repeat as required with the other feature

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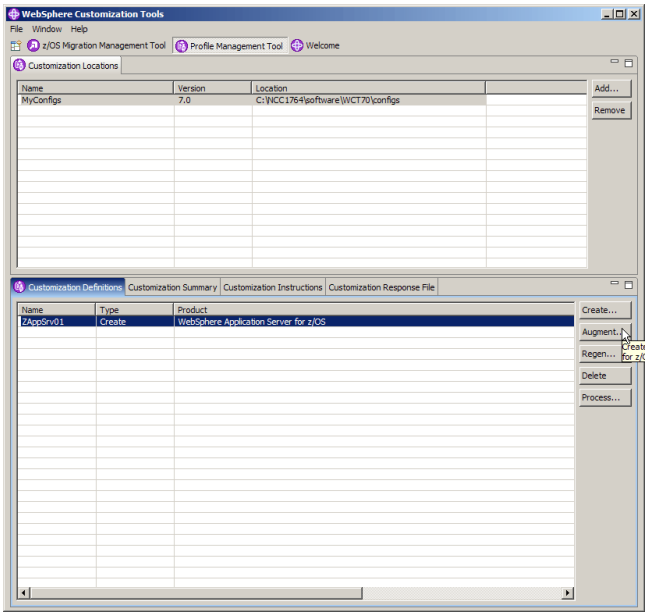
In order to configure your servers to run with the feature pack you need to create augment jobs using the PMT for z/OS which is part of the WebSphere customization tools workbench. The first step to that end is to extend the WebSphere customization tools with the capability of augmenting your servers with the features shipped in the feature pack. The steps are listed here but the detail is not presented because these steps are plainly documented in the Information Center for the feature pack in the section, **Installing and configuring the feature pack on z/OS systems**.

The remaining slides in this presentation will cover the topic of augmenting a server to use the features of this feature pack.

Case 1: Augmenting an existing server (1 of 10)



Using the PMT, Select the configuration definition for the server you want to augment to use the feature pack and click **Augment**

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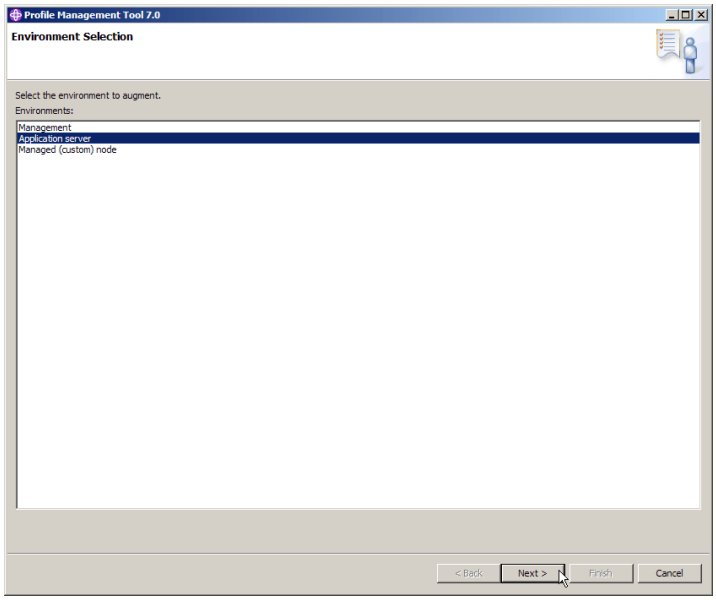
You will look at two cases for configuring the features of the feature pack for OSGi Applications and Java Persistence API 2.0. The first case is augmenting an existing server with the new feature. To begin this case start the WebSphere customization tools, navigate to an existing configuration definitions for a profile previously created.

Select the customization definition to which you want to add the new feature and click the **Augment** button.

Case 1: Augmenting an existing server (2 of 10)



Select the kind of profile you are augmenting and click **Next**

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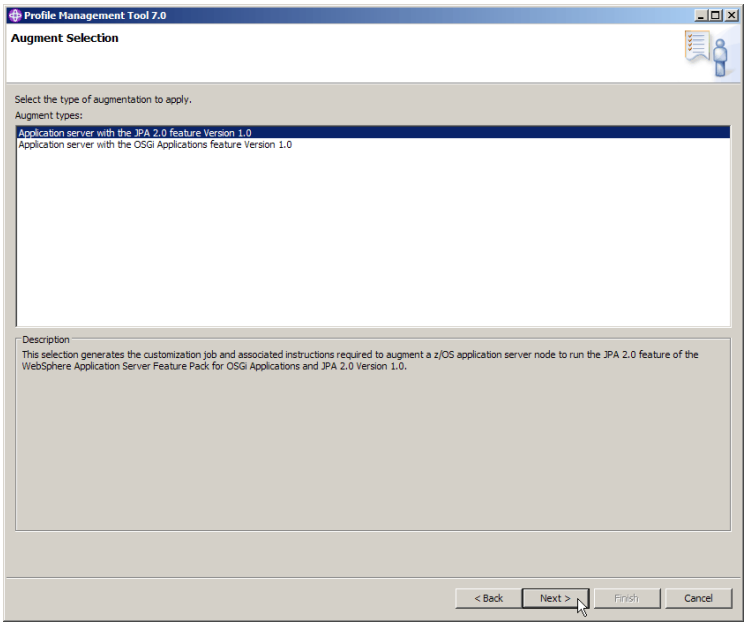
On the Environment Selection panel, select the type of profile you want to augment and click the **Next** button.

Case 1: Augmenting an existing server (3 of 10)



Select the feature with which you are going to augment your profile and click **Next**

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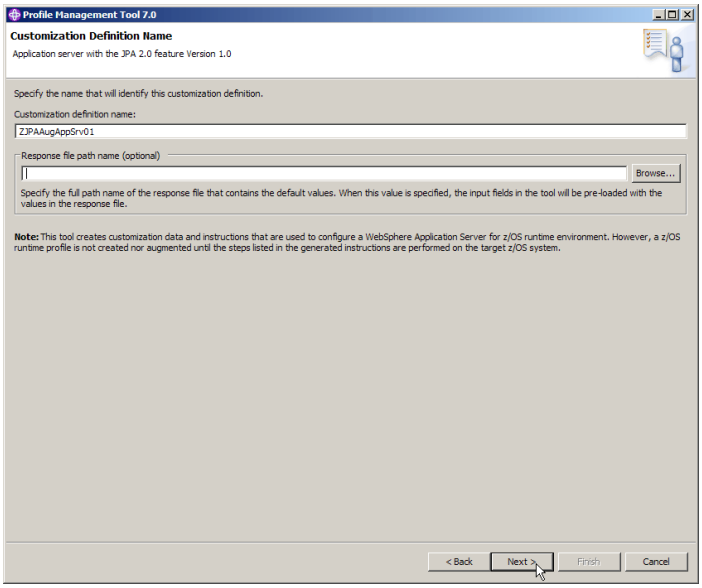
On the next panel is a list of features and products for which you can do an augment. On this panel select one of the features from the WebSphere Application Server Feature Pack for OSGi Applications and Java Persistence API 2.0. You can only do one of the features at a time so you will have to augment again for the second feature if you want to use them both.

Case 1: Augmenting an existing server (4 of 10)



If you want to generate a response file enter the target path here.

Click **Next**

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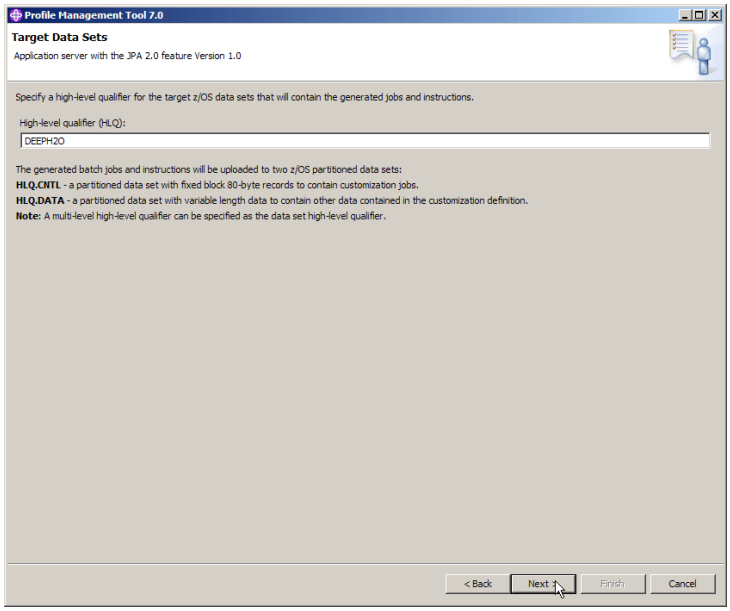
On the Customization Definition Name panel you can select the name of the new customization definition you are about to create. Here, the default is taken but normally you would want to have a convention for your definitions. Here also you can choose to use input from a portable response file from a previously generated configuration. For more about portable response files, see the WebSphere Application Server V7 Information Center.

Case 1: Augmenting an existing server (5 of 10)



Enter the high level qualifier for the .CNTL and .DATA datasets on your z/OS system to which you will transfer the jobs generated by the PMT.

Click **Next**

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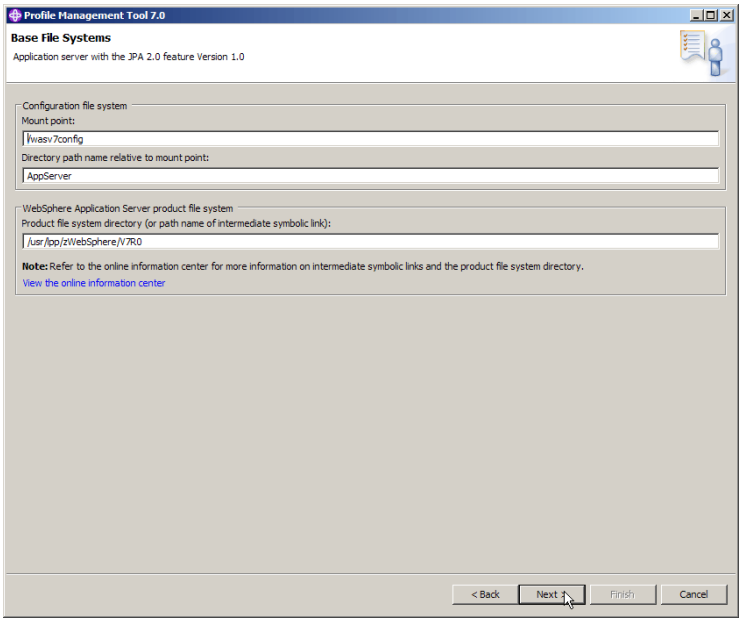
Eventually you will transfer JOBs to your z/OS system in order to run them. On this panel you provide the high level for the .CNTL and .DATA data sets which will be transferred. You can have more than one level if you like. For example in this example the qualifier is DEEPH2O but it could have been DEEPH2O.OSGIJPA.

Case 1: Augmenting an existing server (6 of 10)



On this panel verify that the mount point is where the configuration file system for the server you want to configure is mounted. Combining the Mount Point with the Directory path should be your WAS_HOME directory. The product file system is where you SMP/E installed WebSphere Application Server.

Click **Next**

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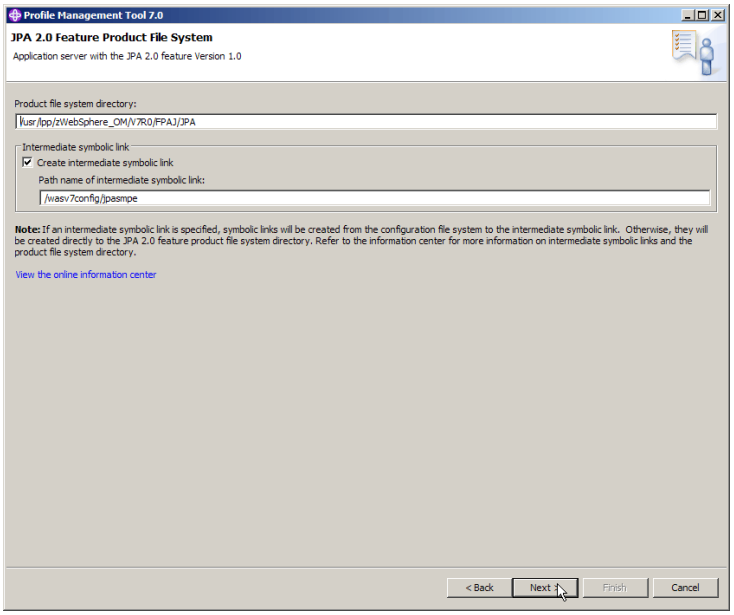
On this panel you specify the mount point of your configured server and the path under that mount point which together make up your WAS_HOME path. In this example WAS_HOME is /wasv7confg/AppServer. The product file system on this panel is that of WebSphere Application Server Version 7. A later panel will ask for the feature pack's installation directory.

Case 1: Augmenting an existing server (7 of 10)



On this panel verify the product file system where the feature pack was SMP/E installed and if you are using intermediate symbolic links (highly recommended) verify the path to be used.

Click **Next**

On the next screen modify your model JCL as required by site policies. And click **Next**

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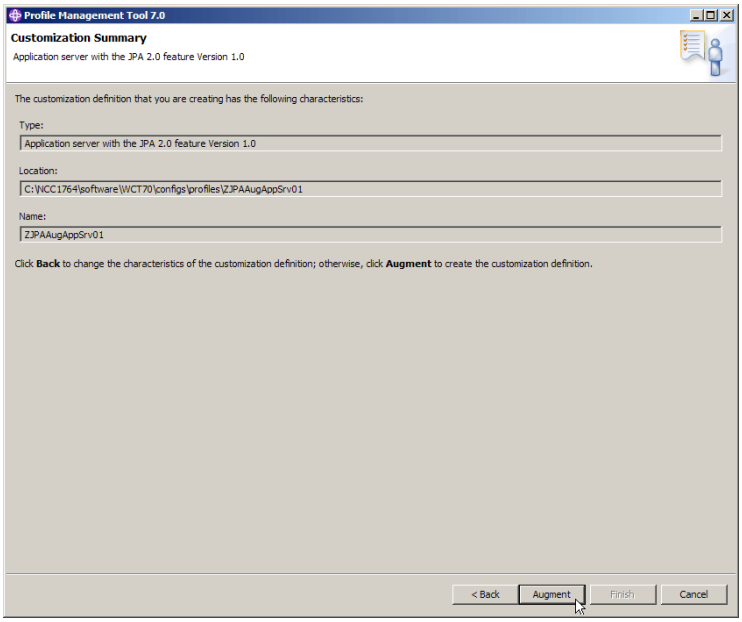
Here is where the feature pack installation directory is required. There is also the option to use an intermediate symbolic link so you can more easily switch between maintenance levels. Intermediate symbolic links make it much easier to make such changes. Note that this must be a different symbolic link than the one you use for WebSphere Application Server because the feature pack resides at a different install path from the application server.

Case 1: Augmenting an existing server (8 of 10)



On the Customization Summary panel verify the values you entered and if you are satisfied click **Augment**.

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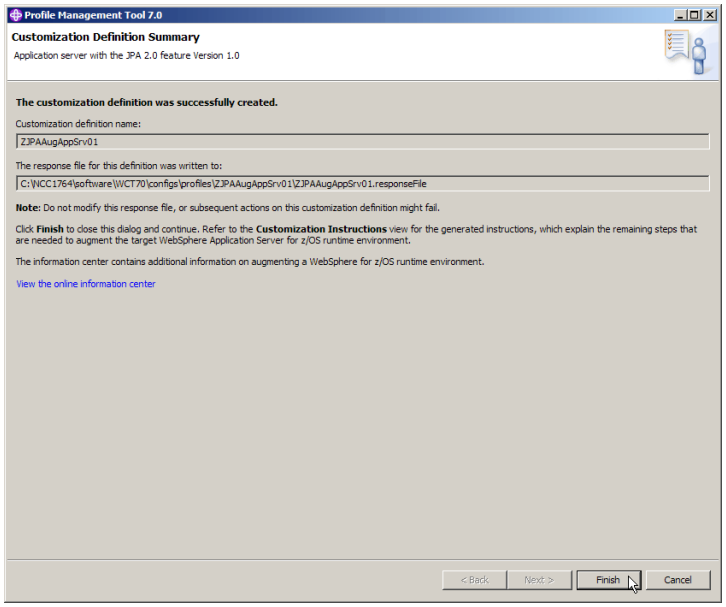
Once you verify that the values are correct click the **Augment** button to generate the necessary files to perform the augment.

Case 1: Augmenting an existing server (9 of 10)



You should then be presented with the Customization Definition Summary panel.

Click **Finish** to return to the Customization Definitions panel.

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Finally the summary panel will indicated a successfully generated definition and show you where the response file was written.

Case 1: Augmenting an existing server (10 of 10)

- That completes the step of creating the files needed to augment for one of the features.
- Duplicate the same steps for the other feature if you want to use them both.
- There are no new security values, IDs or custom properties needed to configure these features

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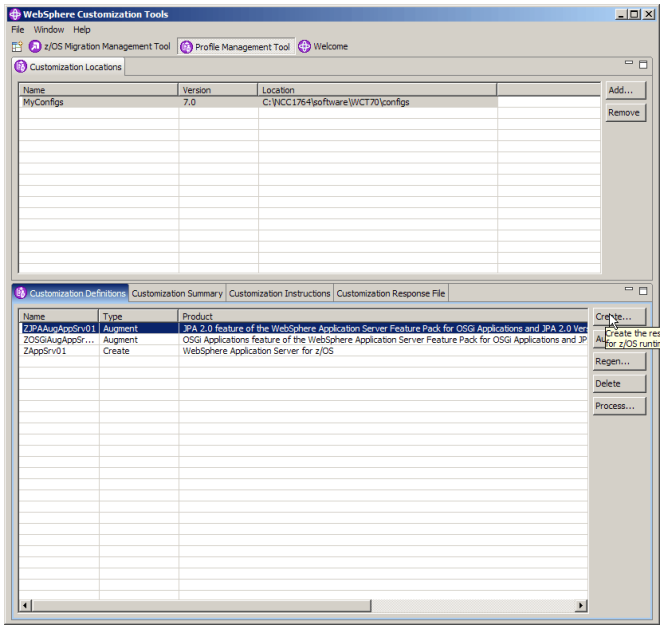
That completes the generation of the JCL and data files needed to augment the server you selected with the feature you selected. This feature pack contains two independent features. If you want both features you have to do separate actions for each of them. For example if configuring an existing server you augment for using one of the features and then augment again for using the other. If you are creating a new server you can select the environment of one of the features then augment with the other feature. Creating a new server with one of the features is Case 2.

Case 2: Creating a new server containing the feature pack (1 of 3)



From the Customization Definitions tab click **Create**.

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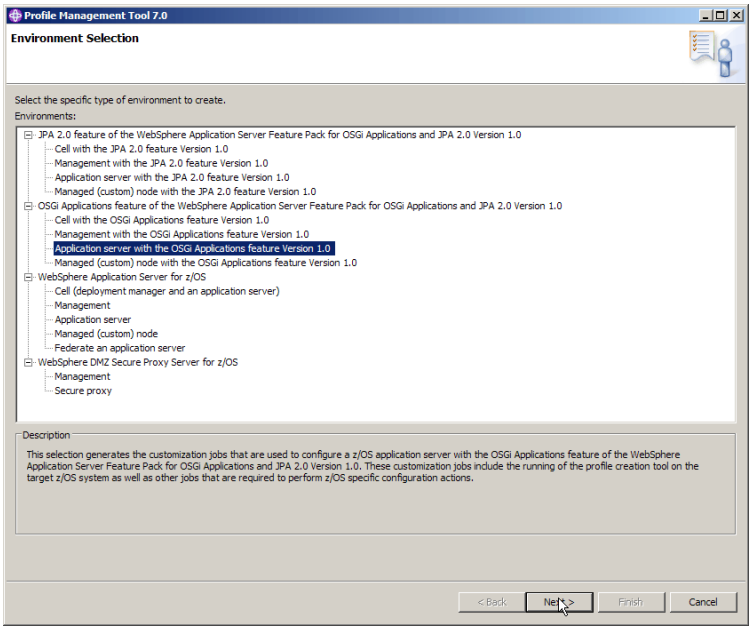
Case 2. Creating a new server containing one of the features. You can choose to create a new server with one or both of the features shipped in the Feature Pack for OSGi Applications and Java Persistence API 2.0. To do that you must create a new customization definition so from the **Customization Definitions** tab of the PMT click the **Create** button.

Case 2: Creating a new server containing the feature pack (2 of 3)



The dialogue will start and present you with an Environment Selection panel

Select the kind of profile you want to create under the feature pack environment you want to configure

click **Next**

The remaining panels in the dialogue are the same panels for configuring a server without the feature pack except for one so this presentation will skip to that panel

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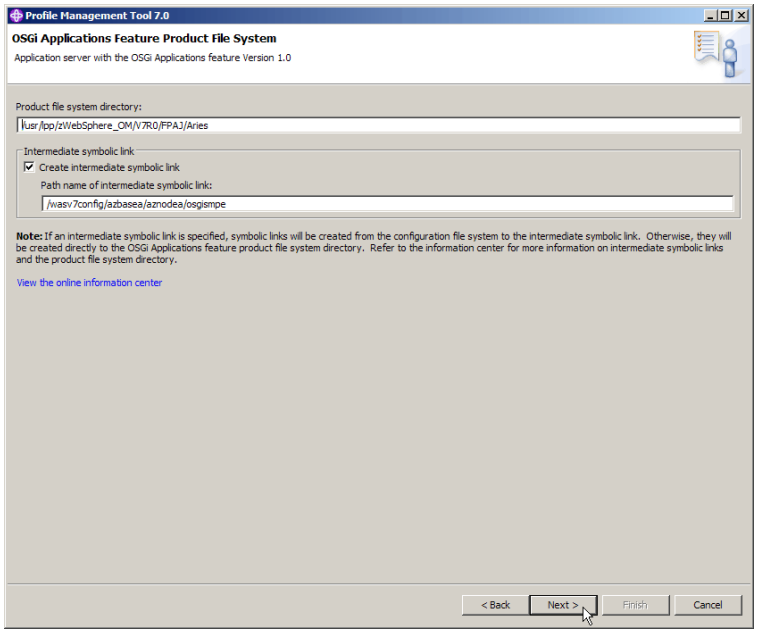
The dialogue will start with the Environment Selection panel. When feature packs are installed one can choose to create a server with the feature already installed. Since the Feature Pack for OSGi Applications and Java Persistence API 2.0 delivers two features and both of their extensions have both been installed into the WebSphere customization tools used in this example both of their environments are listed. The point is that from this screen it is obvious that creating a server with both of the features is a two step process.

Other panels which follow this one are the same as for defining a server without the feature, so for this presentation they will be skipped.

Case 2: Creating a new server containing the feature pack (3 of 3)



This panel asks you to verify the location of the product file system (the SMP/E installed file system) and the intermediate symbolic link to be used for the feature pack

click **Next**

The remaining panels in the dialogue are the same panels for configuring a server without the feature pack except for one so they are not presented here

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Here is the next panel which is specific to the server containing the selected feature. Here the installation file system of the feature should be verified.

After this panel, all of the others are exactly the same as if they did not have the feature so they are not shown here.

Case 2: Creating a new server containing the feature pack

- Following these instructions created a new server with one of the features configured in it.
- To configure the other feature follow the augment instructions from Case 1

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So as mentioned earlier, to get both features from this feature pack in the same server requires one of two paths. Either create a new server with one of the features configured and then augment it to add the other or start with an existing server and augment twice, once with each feature. Of course one can always only configure one of the features.

Uploading and following instructions

- Whichever of the previous cases you use you will then need to transfer the generated JCL and data to your z/OS system.
- Once that is done you will need to follow the instructions generated for running the JOBs

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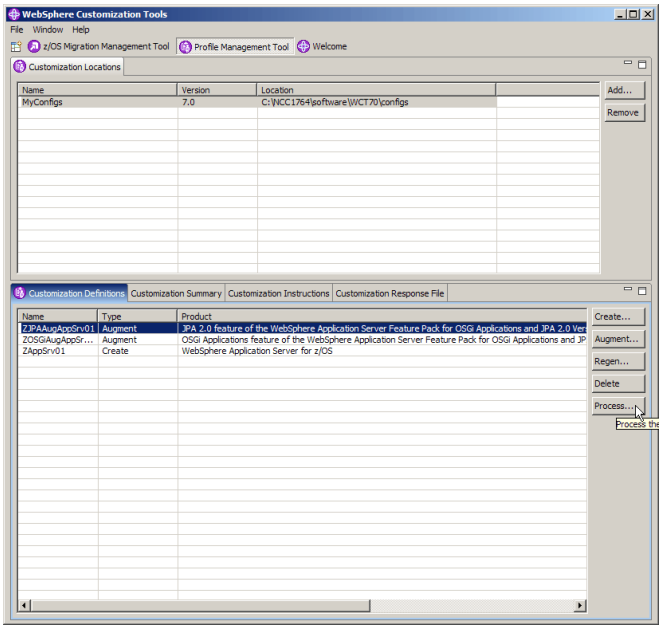
For z/OS the PMT generates the JCL and data files needed to perform customization of your WebSphere Application Server Version 7 environment but to actually perform the configuration actions you must get the files onto your z/OS system and run them. There is a very good set of instructions, much like a checklist, generated with each configuration definition. Once the files are uploaded to your z/OS system that instruction file is your guide to completion.

Uploading your generated JCL (1 of 3)



To make use of what has been generated in one of your configuration definitions, highlight the configuration definition and click the **Process** button. You will have to do a separate upload for generated output from each configuration definition.

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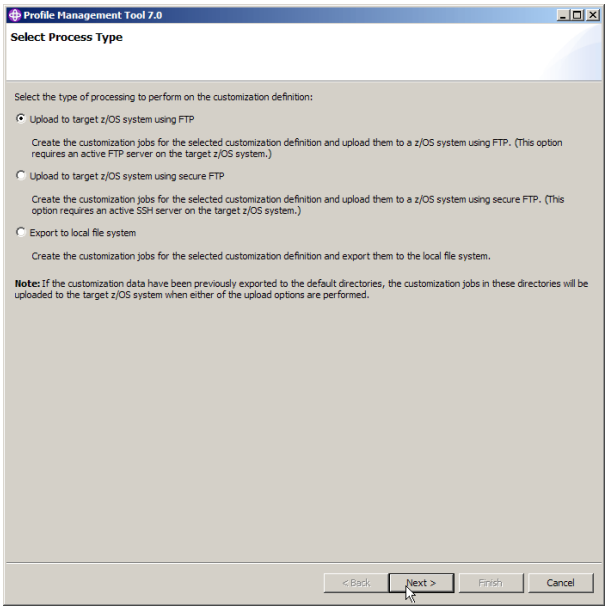
To transfer the files for a configuration definition to z/OS, select the configuration definition of interest and click the **Process** button.

Uploading your generated JCL (2 of 3)



You are offered three ways to process your customization definition. You can use simple FTP, secure FTP if you have it configured or you can export the files to a local file system and transfer by other means. This example uses simple FTP.

Click **Next**.

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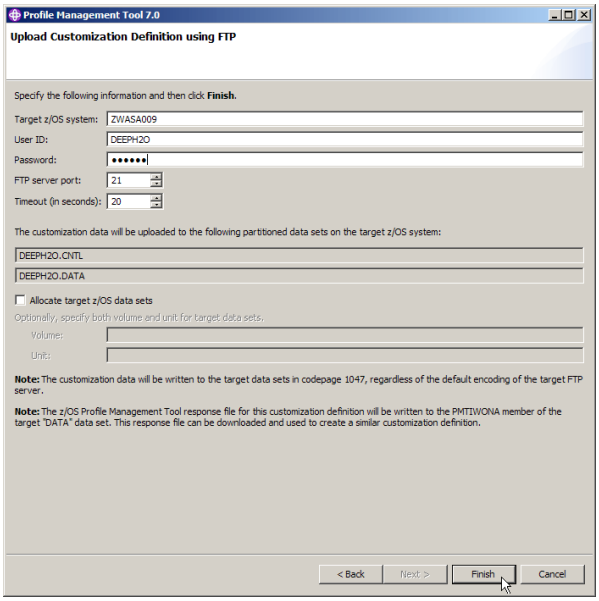
There are three options for processing the artifacts generated by the PMT. This example selects to upload the files to a z/OS system using FTP.

Uploading your generated JCL (3 of 3)



On this screen you need to enter the things FTP needs to know, the TCP/IP node name or IP address of the Target z/OS system, your user ID and password on that system and the ports FTP uses. If you want to put the data sets on a specific volume check the **Allocate target z/OS data sets** check box and fill in the fields.

Click **Finish**.

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On this screen you must enter all of the information needed to make the transfer, the system's TCP/IP node name or IP address, your user ID and password on that system and the ports FTP expects. When you click the Finish button the transfer will begin and if successful you will get a pop-up indicating success.

Again, note that since there are two features and only one configuration definition that can be selected at once, you will have to perform these steps twice if you intend to use both features of the feature pack.

Following instructions to complete the task

- The PCT generates instructions for completing the configuration task and uploads them with the JCL and data files.
- Look in your uploaded <high level>.CNTL data set for these files
  - For an OSGi augment, member IWONINSA
  - For a JPA 2.0 augment, member IWOMINSA
  - For creating new servers the normal names for these files are used. Check the WebSphere Applications Server Information Center for the type of profile you are trying to create on z/OS to see what the name of the instructions file will be.
  - If you do multiple augments or a create and augment you must complete the steps in both instruction files.
- Follow those instructions to complete the task

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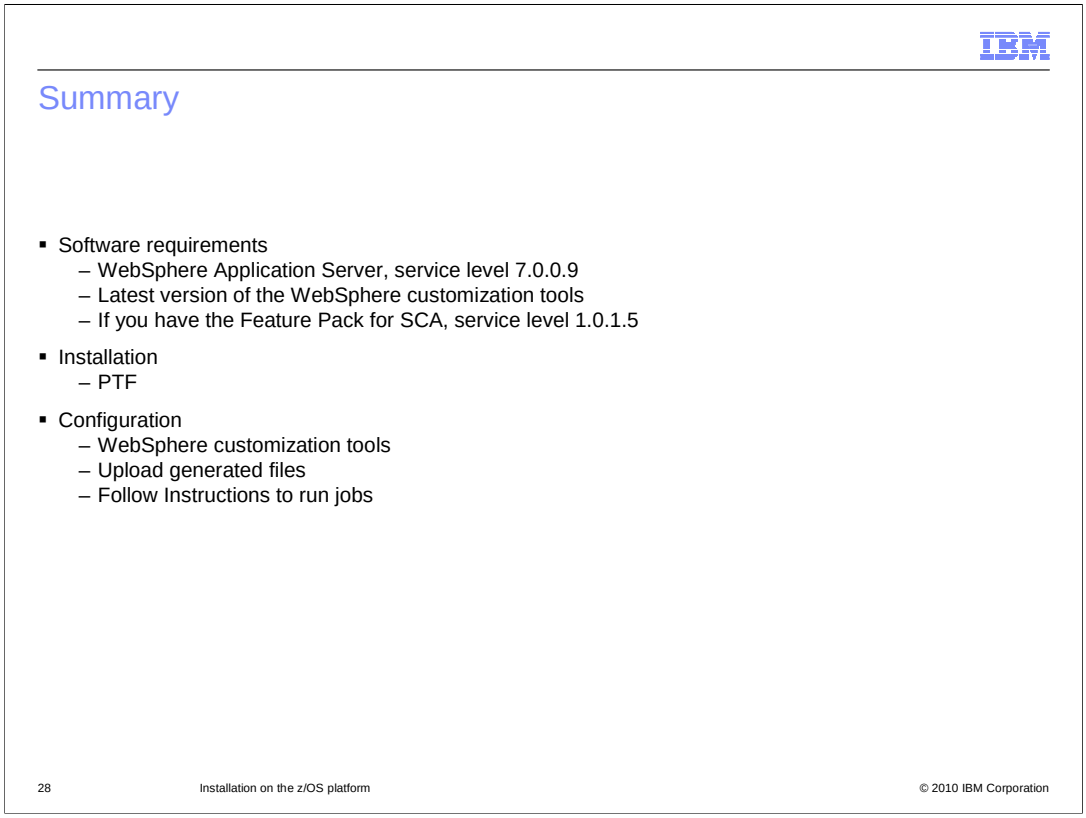
Among the files just transferred are the instructions for the configuration definition you are transferring. Those customized instructions should be followed to complete the task. The instruction file is in the control data set, that is the one that has .CNTL as the low level qualifier. There is a convention for different configuration definitions and the names the instruction files will have. On this slide are listed the names of the instruction files associated with augmenting an existing server with these features.



In summary.

The IBM WebSphere Application Server Feature Pack for OSGi Applications and Java Persistence API 2.0 in installable on WebSphere Application Server version 7 on z/OS at service level 7.0.0.9. The latest version of the WebSphere customization tools is suggested and if you have the Feature Pack for SCA you must have version 1.0.1 with Fix Pack 5 installed.

Installation occurs by doing an SMP/E install of a PTF shipped on FMID JIWO700 and instructions are in the ++HOLD of the PTF to tell any specifics.

Once installed it is necessary to configure any runtime environment you want to use the feature packs. If you want both you have to configure each one separately because they are separate features, just delivered in one feature pack.

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