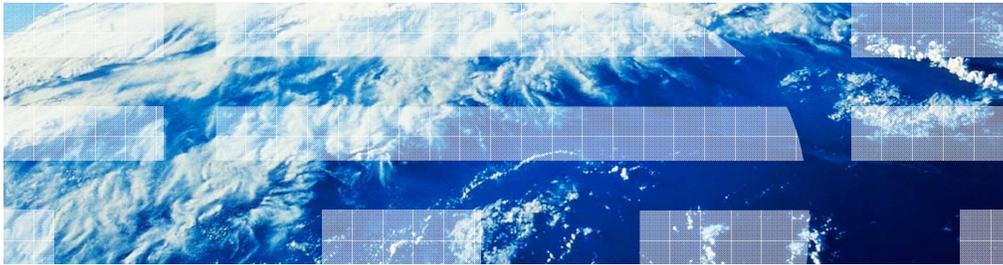


WebSphere Process Server for z/OS V7.0 WebSphere Enterprise Service Bus for z/OS V7.0

z/OS installation and configuration overview



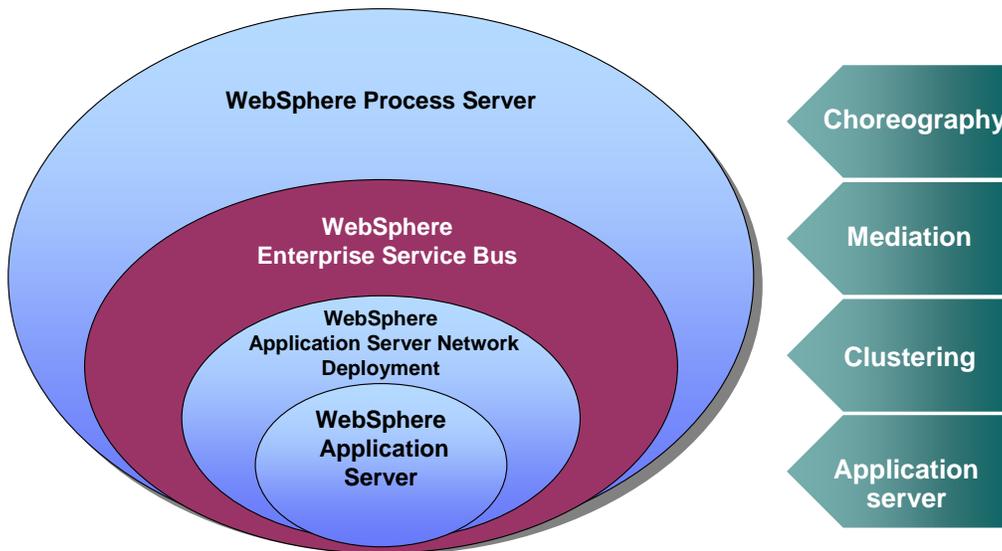
This presentation will cover the installation and configuration of WebSphere® Process Server for z/OS V7.0 and WebSphere Enterprise Service Bus for z/OS V7.0

Goals

- Describe prerequisites and product packaging
- Describe WebSphere Process Server for z/OS V7.0 configuration process

The goals of this presentation are to look at the prerequisites and packaging of the products and then look at the configuration of the products at a high level. Once you understand the high-level process, you can look at the more detailed presentations that talk about the various configurations.

WebSphere Application Server, ESB, and Process Server



3

z/OS installation and configuration overview

© 2010 IBM Corporation

This slide is meant to show where the WebSphere Process Server and the WebSphere Enterprise Service Bus fit in the product stack. Notice that the WebSphere Enterprise Service Bus is built on top of the WebSphere Application Server which provides the Java™ 2 Enterprise Edition framework for the stack products. The WebSphere Enterprise Service Bus adds mediation capabilities to the picture, allowing mediation of message flows between service requestors and providers. WebSphere Process Server is built on top of that, which means that the WebSphere Process Server includes the mediation functions found in the WebSphere Enterprise Service Bus. The WebSphere Process Server also adds choreography capabilities for business process management applications.

Prerequisites and product packaging

This next section will look briefly at the prerequisites for the products and how the products are packaged.

Prerequisites (derived from base WebSphere)

- Hardware requirements
 - Any hardware that supports z/OS and z/OS.e V1.7, or later
- Software requirements
 - z/OS 1.7 or higher or z/OSe 1.7 or higher with several features installed, enabled and configured. They are:
 - z/OS Communications Server (TCP/IP) or equivalent
 - z/OS UNIX® System Services and hierarchical file system (HFS) or zSeries file system (zFS) support
 - SecureWay™ Security Server (RACF®) or equivalent security management product
 - System logger
 - System SSL security required when using SSL
 - Workload management in goal mode
 - Resource recovery services
- Requirements officially documented here:
 - <http://www.ibm.com/support/docview.wss?rs=2307&uid=swg27016269>

The requirements for WebSphere Process Server for z/OS V7.0 and WebSphere Enterprise Service Bus for z/OS V7.0 come from the base WebSphere Application Server. WebSphere Process Server or the WebSphere Enterprise Service Bus is installed on top of the base WebSphere Application Server. Notice that z/OS 1.7 is the minimum z/OS level with WebSphere Process Server V7.0 and WebSphere Enterprise Service Bus V7.0. For an official list of requirements, you can refer to the Web site shown on the slide.

Implementation options (optional)

- DB2® Universal Database™ Server for z/OS, Version 8 or higher
 - Need stored procedure builder enabled (DSNTPSMP/WLM Environment) if using Relationships
- CICS® TS for z/OS V2.3 and above
- Information Management System, IMS™, V9 or later
- WebSphere MQSeries® for z/OS V6.0 and higher
- WebSphere Integration Developer 7.0

Many of the implementation options shown here, such as CICS and IMS, are determined by the applications that are run on the server. They are optional. In the case of DB2, if you plan to implement a Network Deployment solution with WebSphere Process Server or WebSphere Enterprise Service Bus, DB2 becomes a requirement. WebSphere Process Server and WebSphere Enterprise Service Bus require many databases as you will see during configuration of the product. The Stored Procedure Builder (DSNTPSMP) in DB2 also needs to be enabled if using Relationships.

WebSphere Integration Developer V7 is the tool that should be used to build the applications to be run in a WebSphere Process Server environment.



Prerequisites: Base WebSphere Application Server for z/OS

- Minimum WebSphere base application server level:

WebSphere Application Server for z/OS V7.0.0.9

-OR-

WebSphere Application Server for z/OS V7.0.0.7 with ++APAR AK99267

- This ++APAR also includes the V7.0.0.8 fixpack so no need to install 7.0.0.8 when available

- Minimum optional materials levels:

WebSphere Application Server for z/OS V7.0.0 Optional Materials are required

- SCA 1.0.1 (APAR PM00924)
- XML 1.0 (APAR PM00740)
- SDO 2.1.1 (APAR PM00925)

7

z/OS installation and configuration overview

© 2010 IBM Corporation

In order to use WebSphere Process Server for z/OS and WebSphere Enterprise Service Bus for z/OS, you must be running WebSphere Application Server for z/OS V7.0.0.7 or later. At the V7.0.0.7 level, you are required to apply ++APAR PK99267. This includes the function contained in V7.0.0.8, however, so there is no need to apply 7.0.0.8. Once V7.0.0.9 is available, that will become the minimum level.

You are also required to install optional materials SDO 1.0.1, XML 1.0 and SDO 2.1.1, as shown on the slide. The corresponding APAR numbers for these feature packs are listed.



Prerequisites: WebSphere Process Server for z/OS, WebSphere Enterprise Service Bus for z/OS and feature packs

- WebSphere Process Server for z/OS V7.0.0.1 or WebSphere Enterprise Service Bus for z/OS V7.0.0.1:
- Feature pack usermods (needed for SCA runtime problem) – need to request these from support
 - PM03252 for the Feature Pack for SCA V1.0.1.
 - PM03254 for the SDO 2.1.1 Feature of the Feature Pack for SCA V1.0.1.
 - PM03255 for the Feature Pack for XML V1.0.0

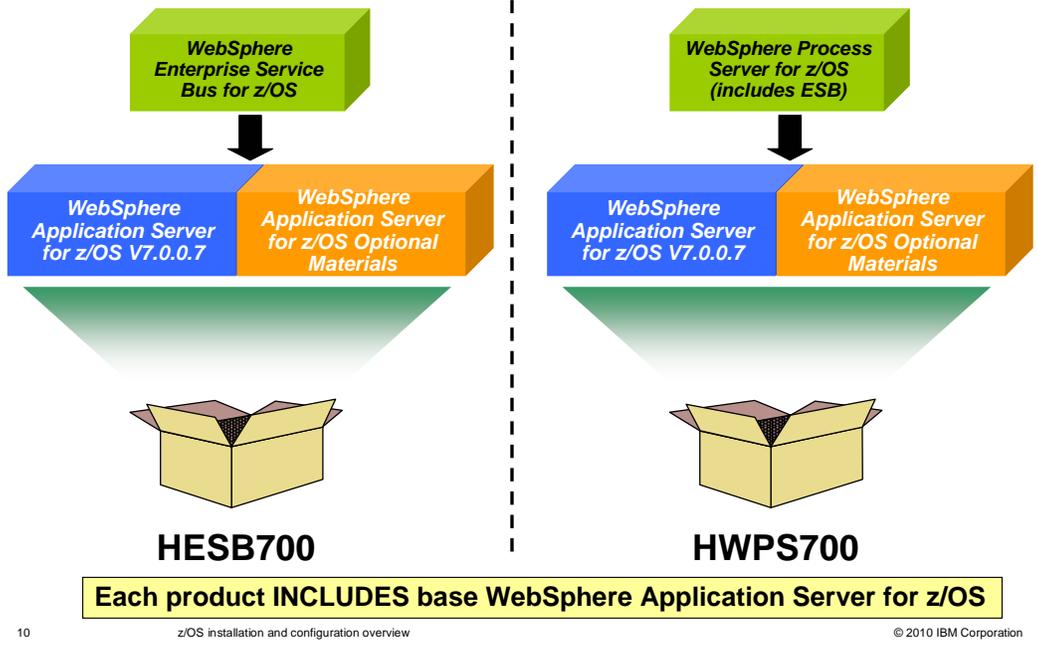
WebSphere Process Server for z/OS and WebSphere Enterprise Service Bus for z/OS V7.0.0.1 is the minimum required level for full function of the product. It became available in January 2010 and should be the minimum level for a successful configuration and running of the products. You should also ensure that you have the APARS shown for the required feature packs. They are not in the base levels shown on the previous slide and will need to be requested from support until they become generally available.

Important URLs

- Recommended interim fixes: <http://www.ibm.com/support/docview.wss?uid=swg21414253>
 - Includes APAR numbers
 - ++APAR AK99267, required for WebSphere Application Server for z/OS V7.0.0.7 found here for download
- Known issues: <http://www.ibm.com/support/docview.wss?uid=swg27017572>
 - Documents known issues and their circumvention
 - z/OS only

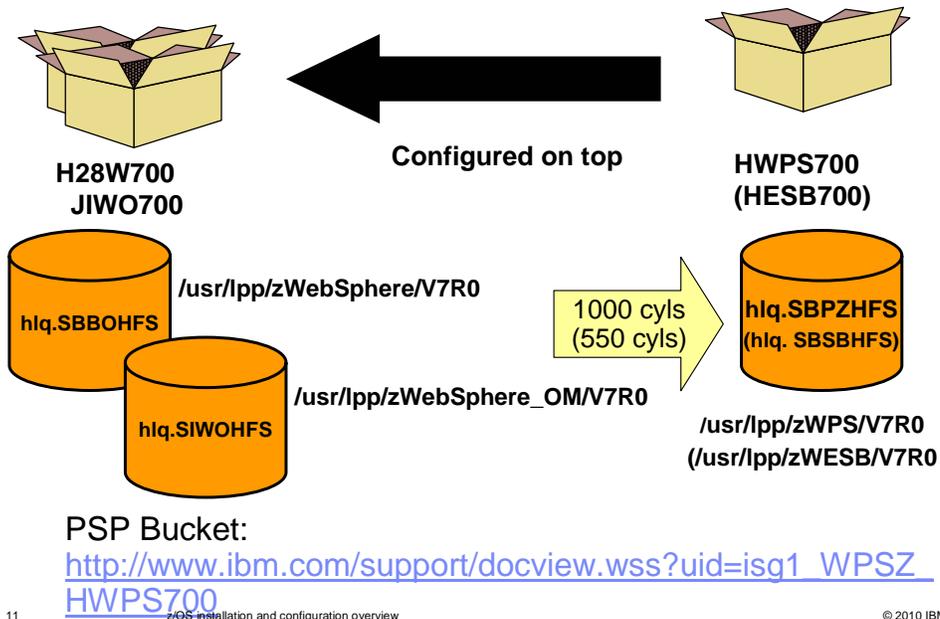
Shown here on the slide are some important URLs. The first one lists known problems for WebSphere Process Server V7 and WebSphere Enterprise Service Bus V7. Here is where you will find a link to the required ++APAR that is needed for WebSphere Application Server for z/OS V7.0.0.7. The second URL is z/OS-specific and lists known issues with circumventions. This is a handy reference if you see any problems.

Packaging



This slide shows the packaging of the products. WebSphere Process Server for z/OS V7.0 and WebSphere Enterprise Service Bus for z/OS V7.0 are built on top of WebSphere Application Server for z/OS V7.0. This includes some feature packs that are shipped as PTFs on the Optional Materials FMID. When you order either product, you will receive a copy of the base WebSphere Application Server for z/OS at the latest PTF level and the code for the Optional Materials FMID. You should note that V7.0.0.7 is the minimum required PTF level. Until V7.0.0.9 is available, the ++APAR AK99267 noted on a previous slide is also required. You should also note that the WebSphere Process Server product INCLUDES the WebSphere Enterprise Service Bus product so the WebSphere Enterprise Service Bus product is really a subset of the WebSphere Process Server product.

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



WebSphere Process Server for z/OS and WebSphere Enterprise Service Bus for z/OS are configured on top of WebSphere Application Server for z/OS and the WebSphere Application Server for z/OS Optional Materials FMID, as seen on the slide. Starting with V7, all products involved in the configuration are completely contained within its HFS. When WebSphere Process Server for z/OS or WebSphere Enterprise Service Bus for z/OS are completely configured, you will point to a minimum of three product HFSes. WebSphere Application Server for z/OS, WebSphere Application Server for z/OS Optional Materials and WebSphere Process Server for z/OS (or WebSphere Enterprise Service Bus for z/OS) each SMP/E install into their own HFS. You should note that while the Program Directory specifies 774 cylinders for the WebSphere Process Server HFS and 440 cylinders for WebSphere Enterprise Service Bus HFS, you will actually use more than that. WebSphere Process Server uses 1000 cylinders and WebSphere Enterprise Service Bus uses 550 cylinders.

Configuration process overview

The next section will look at an overview of the configuration of WebSphere Process Server for z/OS V7.0 and WebSphere Enterprise Service Bus for z/OS V7.0.

Configuration options

- Stand-alone environment
 - Limited to one server
 - Derby – highly automated!
 - DB2
- Network deployment environment
 - Multiple servers, clustering available
 - DB2 only!
 - Stand-alone node OR managed (custom) node
 - Manual tasks needed

Before starting the configuration of WebSphere Process Server or WebSphere Enterprise Service Bus, you should have an idea of where you are going. Will you need a network deployment environment with clustering or are you just starting out and are looking for an easy environment to set up? To get a look at the various pieces that make up the WebSphere Process Server or WebSphere Enterprise Service Bus environment, a highly automated option using Derby is available. You'll see that this is the quickest configuration and can be a good place to start if you are new to the product. The stand-alone configuration with DB2 can also be highly automated but you will need to get your DB2 administrator involved to configure that environment. If you will be using DB2, you should review the **z/OS DB2 configuration** presentation. As you move into the network deployment environment, not only is DB2 your only database option, you add some manual tasks to configure the various pieces of the WebSphere Process Server or WebSphere Enterprise Service Bus environment. With the exception of the DB2 configuration, these tasks can be completed in the administrative console but they are additional steps that are needed to complete the configuration. On the next few slides, you will look at the configuration at a very high level. Other presentations are available to look at the various configuration options in more detail.

Installation task overview

1. Configure WebSphere base application server with required feature packs (SCA/XML/SDO)
2. 'Install' WebSphere Process Server or WebSphere Enterprise Service Bus function into node profiles (zWPSInstall.sh/zWESBInstall.sh)
3. 'Augment' profiles with WebSphere Process Server or WebSphere Enterprise Service Bus function (zWPSConfig.sh)
4. Complete post-configuration tasks, if needed

To configure WebSphere Process Server or WebSphere Enterprise Service Bus, there are four general tasks that you need to complete. To start with, you need to configure a WebSphere Base Application Server that will host the WebSphere Process Server or WebSphere Enterprise Service Bus function. This application server also needs to be augmented with the SCA, XML and SDO feature packs. Next, a couple of scripts need to be run against each node that you are configuring. The first script, zWPSInstall or zWESBInstall, will 'install' the WebSphere Process Server or WebSphere Enterprise Service Bus function into the node's profile, creating links to the product code. The second script, zWPSConfig, will augment the node with WebSphere Process Server or WebSphere Enterprise Service Bus function, configuring the various pieces needed to run applications that exploit the function. Finally, there are some post-configuration tasks that you will need to complete depending on whether you are configuring a stand-alone or a Network Deployment environment.

1. Configure WebSphere base application server with required feature packs (SCA/XML/SDO)

- Configure WebSphere base application server with SCA, XML and SDO feature packs
 - Stand-alone application server cell
 - Network deployment cell
 - Deployment manager node and empty node (managed (custom) node)
 - Deployment manager node and stand-alone node

- WebSphere Customization Tools (WCT) is required for configuration

- Download site:

<http://www.ibm.com/support/docview.wss?rs=180&uid=swg24020368>

- Need to install some WebSphere Customization Tool (WCT) extensions that are shipped with various product code

```
WPS: -PathPrefix- /usr/lpp/zWPS/V7R0/util/WCT/zWBI.wct
WESB: -PathPrefix- /usr/lpp/zWESB/V7R0/util/WCT/zWBI.wct
SCA: /usr/lpp/zWebSphere_OM/V7R0/FPSCA/util/WCT/sdo.wct
XML: /usr/lpp/zWebSphere_OM/V7R0/FPXML/util/WCT/xml.wct
SDO: /usr/lpp/zWebSphere_OM/V7R0/FPXML/util/WCT/xml.wct
```

The first thing you need to do when configuring WebSphere Process Server for z/OS or WebSphere Enterprise Service Bus for z/OS is configure a WebSphere base application server with the SCA, XML and SDO feature packs. Depending on the environment planned, you need to create a stand-alone application server cell or a full network deployment cell. The stand-alone application server cell is a nice place to start and can be highly automated for the WebSphere Process Server or WebSphere Enterprise Service Bus configuration as noted earlier. If creating a network deployment cell, you need to configure a deployment manager node AND either an empty node OR a stand-alone node. The empty node is labeled as a 'managed (custom)' node in the zPMT tool. However, do not federate either until later.

In order to configure an environment for WebSphere Process Server for z/OS or WebSphere Enterprise Service Bus for z/OS, you'll need to use the WebSphere Customization Tools (WCT) which the zPMT is part of. In the gray box, you'll find the download site along with a list of extensions that are needed. These extensions include required feature packs and, optionally, WebSphere Process Server for z/OS or WebSphere Enterprise Service Bus for z/OS. For more detailed instructions on how to install the extensions, see the presentation titled '**IBM WebSphere Customization Tools extension installation**'.

1. Configure WebSphere...using updated WCT

- Create... WebSphere base application server
 - Start with either SCA, XML or 'vanilla' server
 - 'Cell' is not supported

Profile Management Tool 7.0
Environment Selection

Select the specific type of environment to create.

Environments:

- WebSphere Application Server Feature Pack for SCA Version 1.0
 - Cell with Feature Pack for SCA Version 1.0
 - Management with Feature Pack for SCA Version 1.0
 - Application server with Feature Pack for SCA Version 1.0
 - Managed (custom) node with Feature Pack for SCA Version 1.0
- WebSphere Application Server Feature Pack for XML Version 1.0
 - Cell with Feature Pack for XML Version 1.0
 - Management with Feature Pack for XML Version 1.0
 - Application server with Feature Pack for XML Version 1.0
 - Managed (custom) node with Feature Pack for XML Version 1.0
- WebSphere Application Server for z/OS
 - Cell (deployment manager and an application server)
 - Management
 - Application server
 - Managed (custom) node
 - Federate an application server

SCA

XML

'vanilla'

...then Augment

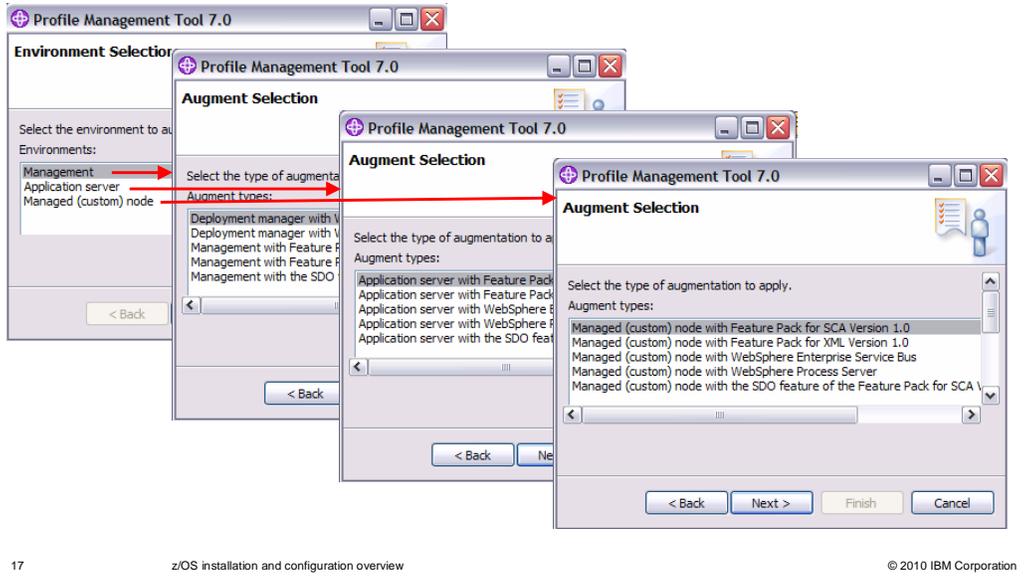
Augment... Create the response file and instructions for augmenting a WebSphere for z/OS runtime environment.

16 z/OS installation and configuration overview © 2010 IBM Corporation

After updating the WCT with the extensions needed, you will create a WebSphere base application server configuration. You can start with a 'vanilla' server which has none of the feature packs included, or a server that includes SCA or XML as shown on the slide. Starting with an SCA or XML configuration is recommended because it will reduce the number of steps needed to configure the environment. Select the environments needed for the final configuration planned. Your choices are 'Management', 'Application Server' or 'Managed (custom)'. 'Management' will give you a deployment manager environment, 'Application Server' will give you a stand-alone application server, and 'Managed (custom)' will give you an empty node. You will eventually add the empty node to your deployment manager environment. Note that 'Cell' is not a supported environment. More detailed presentations on the configuration of a base application server are found under 'WebSphere Application Server'. This presentation assumes you know the steps needed to do that. After finishing the configuration on your z/OS mainframe, you will need to augment your configurations with the feature packs. You will see that on the next slides.

1. Configure WebSphere...using updated WCT

- 'Augment' each node with SCA, XML and SDO



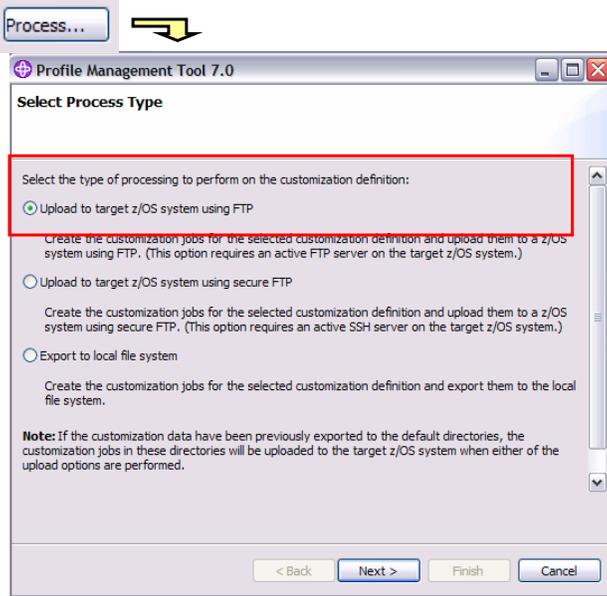
17

z/OS installation and configuration overview

© 2010 IBM Corporation

Depending on what type of configuration option you started with, you will have to augment with up to three different feature packs. For instance, if you started with a configuration that included SCA, you will need to augment with just XML and SDO. If you started with a 'vanilla' server, however, you will need to augment with all three. You see that each of the feature packs are available for all three configuration options: Management, Application server and Managed (custom) node. You MUST augment each piece of the configuration you have planned. For instance, if you planned on a network deployment environment, then you need to augment both the Deployment Manager node and the Managed (custom) nodes that are federated into the environment.

1. Configure WebSphere...using updated WCT



- Upload and run jobs for SCA, XML and SDO:
 - IWODAUGx - SCA
 - IWODBRAK - SCA
 - IWOJAUGx - XML
 - IWOKAUGMx - SDO

- Where:
 - x=A for application server augmentation
 - x=N for managed node augmentation
 - x=M for deployment manager augmentation

Augment XML before SDO!

This slide shows the 'Process' step which will upload the jobs that need to be run. Be aware that you must augment with XML before SDO. The job names that are created for the augmentation are shown on the slide.

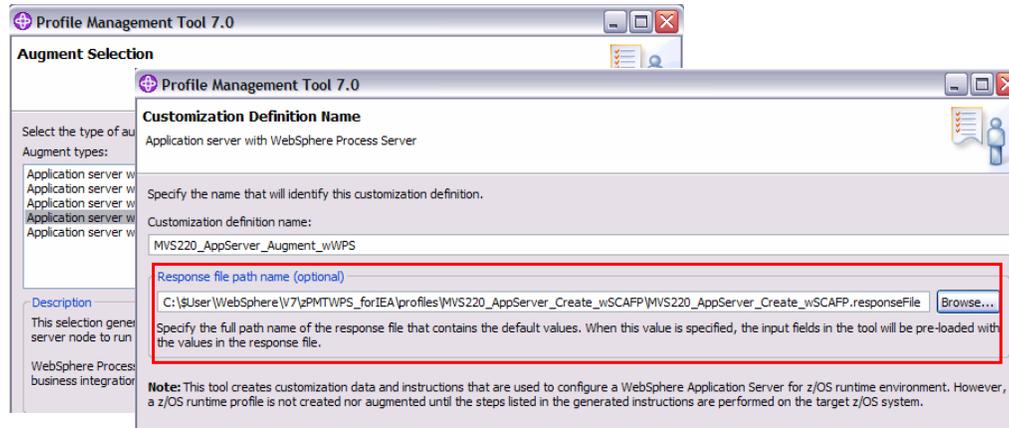
2. 'Install' WebSphere Process Server or WebSphere Enterprise Service Bus

- Much cleaner configuration using the WCT than V6.2
 - Preferred way starting with Version 7
- Product still ships with sample response files:
 - Alternatively, can still update these manually
 - -prefix-/usr/lpp/zWPS/V7R0/zos.config

```
DmgrDB2.rsp
ManagedDB2.rsp
standAloneProfile.rsp
standAloneProfileDB2.rsp
```

Configuring WebSphere Process Server for z/OS and WebSphere Enterprise Service Bus for z/OS using the WebSphere Customization Tools was introduced in V6.2. In Version 7, it becomes the preferred way to configure with WebSphere Process Server for z/OS and WebSphere Enterprise Service Bus for z/OS. Sample response files that you can update manually are still shipped with the product but the augmentation process in the WCT should provide you with updated response files that are less subject to typos and finger-checks. The WCT is also being enhanced so that eventually you will have JCL jobs that can be run to configure the system, automating the process even further.

2. 'Install' WebSphere Process Server or WebSphere Enterprise Service Bus... (1 of 5)



- Augment each node with WebSphere Process Server in the WCT
 - Specify the response file for the node you created

Augment...

Now that you have your nodes augmented with the required feature packs, you need to install WebSphere Process Server and WebSphere Enterprise Service Bus into each WebSphere Application Server node that you have created for your environment. To do this, use the WCT to 'Augment' each node with WebSphere Process Server. When you originally created the node you are augmenting, a response file was created. Specify that here now to populate the WCT panels with the correct values to correspond with the node already created.

2. 'Install' WebSphere Process Server or WebSphere Enterprise Service Bus... (2 of 5)

Profile Management Tool 7.0
Base File Systems
 Deployment manager with WebSphere Process Server

Configuration file system
 Mount point: /etc/wasv7config/s7cell/s7dmnode
 Directory path name relative to mount point: DeploymentManager

WebSphere Application Server product file system
 Product file system directory (or path name of intermediate symbolic link): /etc/wasv7config/s7cell/s7dmnode_wassmpel

Profile Management Tool 7.0
Database Design
 Deployment manager with WebSphere Process Server

You can use a design file that is generated from the database design tool (DDT) to configure the database.

Use a database design file for database configuration
 Name (fully qualified) of the database design file: /u/wuser/wpswork/wps.nd.topology.dbDesign

Delay execution of database scripts (must select if using a remote database).

- Update to specify intermediate symbolic link, is using
- Specify a file name for database design
- Upload generated jobs and data
 - hlq.CNTL(BPZDOLNK)
 - hlq.DATA(BPZRSPx)

Process...

As you go through the augment in the WCT, most information is filled out from your response file if you specified one. Two screens that you should pay special attention to are shown on the slide. In the first one, you will need to change the base file system path name to its intermediate symbolic link if you are using one. It will default to the absolute path from the response file. The second screen shows the 'Database Design' input. If you are using DB2, you need to specify a database design file. You have not actually created the database design file yet, so take note of the name you fill in here. You will need this later when you run the DbDesignGenerator tool. For more information on this see the presentations that document the type of environment you are creating. Once you have filled out the screens in the WCT, specify 'Process' in the WCT to upload the data to your z/OS system. There are two members you are interested in, BPZDOLNK and BPZRSPx. You will see where to use these in later slides.

2. 'Install' WebSphere Process Server or WebSphere Enterprise Service Bus... (3 of 5)

- If using symbolic links, run the BPZDOLNK job
- Run zWPSInstall.sh or zWESBInstall.sh script
 - Tentatively starting with 7.0.0.2, JCL jobs will be also generated from the zPMT to run the zWPSInstall/zWESBInstall scripts for augmentation
 - ...in the meantime...



You will use BPZDOLNK right away. The next step in the configuration process is to run either the zWPSInstall or the zWESBInstall shell script. If you plan on using symbolic links, you will want to specify the symbolic link that points to the WebSphere Process Server or WebSphere Enterprise Service Bus products when running the script. It needs to exist first. Eventually, a JCL job will be created from the zPMT to run the zWPSInstall and zWESBInstall scripts. Until that is available, however, the scripts need to be run manually or you have to create the JCL yourself. You will see that on the next few slides.

2. 'Install' WebSphere Process Server or WebSphere Enterprise Service Bus... (4 of 5)

Run zWPSInstall.sh or zWESBInstall.sh script

Name change from previous release!

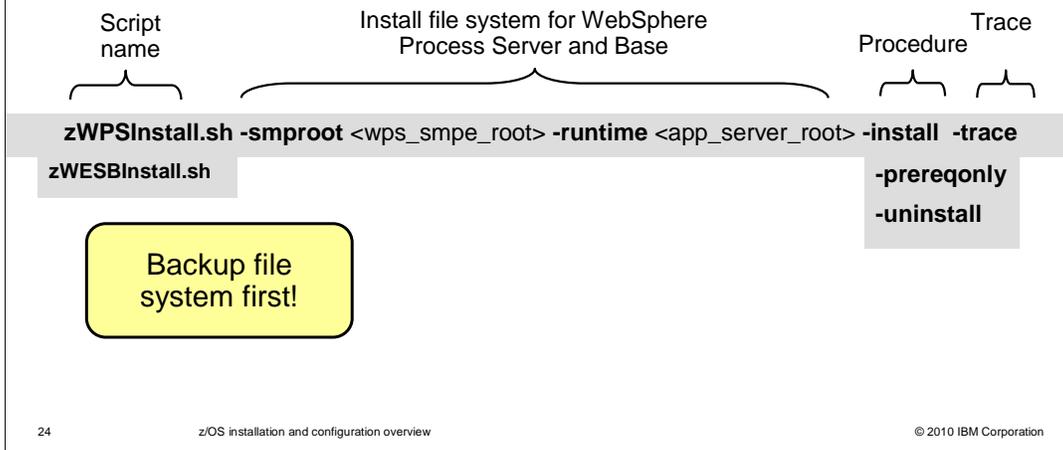
- Found in:
 - <pathPrefix>/usr/lpp/zWPS/V7R0/zos.config/bin
 - <pathPrefix>/usr/lpp/zWESB/V7R0/zos.config/bin
- Run against each node in your configuration
 - 'Installs' WebSphere Process Server or WebSphere Enterprise Service Bus into your profile using many ant scripts
 - Creates symLinks in <app_server_root> for <wps_smpe_root> directories
 - Updates the administration console for WebSphere Process Server or WebSphere Enterprise Service Bus
- Log files written to <app_server_root>/logs/wbi directory
 - <app_server_root>/logs/wbi/zWPSInstall.log (or zWESBInstall)
 - <app_server_root>/logs/wbi/zWPSInstall.trace
 - <app_server_root>/logs/wbi/install/installconfig.log

The zWPSInstall or zWESBInstall shell scripts need to be run against EACH NODE in your configuration. Note that the name has changed from the previous release. This means that if you are doing a network deployment configuration, the script needs to be run against the deployment manager node and the managed (custom) node or stand-alone application server node. The zWPSInstall script will run a lot of ant scripts that, among other things, will create symLinks to the WebSphere Process Server or WebSphere Enterprise Service Bus product code. The script will also update the administration console with plug-ins that are needed to configure the WebSphere Process Server or WebSphere Enterprise Service Bus functions. As shown on the slide, log files are written to the logs/wbi directory. The installconfig.log found in the installation directory is more verbose than the others and is a good place to look for errors.

2. 'Install' WebSphere Process Server or WebSphere Enterprise Service Bus... (5 of 5)

Command line structure

Installing WebSphere Process Server for z/OS Definitions



This slide shows the syntax for the `zWPSInstall` and `zWESBInstall` script commands. You need to only supply values for the **smproot** parameter and the **runtime** parameter. The `smproot` parameter tells the script where the WebSphere Process Server or WebSphere Enterprise Service Bus product code was SMP/E installed. The `runtime` parameter tells the script what profile you plan to add WebSphere Process Server or WebSphere Enterprise Service Bus functionality to. The 'procedure' parameter will normally be **install**. The `prereqonly` parameter verifies arguments and the environment. When specifying `install`, the code will automatically validate the arguments and environment, or in other words, perform the function of the `prereqonly` parameter anyway. The `install` parameter will create *symbolic links* from the WebSphere Application Server for z/OS `/lib` and `/bin` directories to the WebSphere Process Server or WebSphere Enterprise Service Bus read-only HFS directories. It will also enable WebSphere Process Server or WebSphere Enterprise Service Bus features by running configuration manager scripted actions. This will create any new administrative console plug-in extensions needed. A `trace` parameter is also available for debug. Before running this command, be sure to backup your file system first.

2. Run zWPSInstall.sh script...options

-prereqonly

Verify command arguments and environment.

-install

Validates prerequisites (see -prereqonly)

Creates *symlinks* from the read-only file system directories to the **/lib** and **/bin** directories, installing the definitions.

Enables features by running Configuration Manager scripted actions, thus creating new administrative console plug-in extensions.

Creates post install file

Updates code base permissions

-uninstall

Disables features by running Configuration Manager scripted actions and removes administrative console plug-in extensions...

This slide spells out the various procedure options and talks in more detail about what each of them does when specified. As noted on the previous slide, you should always save or backup the WebSphere Application Server configuration root before configuring WebSphere Process Server or WebSphere Enterprise Service Bus in the WebSphere Application Server environment.

2. Run zWPSInstall.sh script...JCL example

```

//INSTV70 JOB (ACCTNO,ROOM),'HONKEN',CLASS=A,REGION=0M,
// NOTIFY=HONKEN,TIME=NOLIMIT
//*****
//* zWPSInstall.sh
//*****
//INSTO EXEC PGM=IKJEFT01,REGION=0M
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
BPXBATCH SH +
/etc/WAS60C/usr/lpp/zWPS/V7R0/zos.config+
/bin/zWPSInstall.sh +
-smproot /etc/wasv7config/s7basea/s7nodea_wpssmpe +
-runtime /etc/wasv7config/s7basea/s7nodea/AppServer +
-trace '*=all-enabled' +
-install +
1> /tmp/installonly_84821.out +
2> /tmp/installonly_84821.err
/*
//*****
//* STEP Copy - Copy script output back to joblog
//*****
//MCFGC EXEC PGM=IKJEFT01,REGION=0M
//SYSEXEC DD DISP=SHR,DSN=WAS60A.SBB0EXEC
//SYSTSIN DD *
BBOHFSWR '/tmp/installonly_84821.err'
BBOHFSWR '/tmp/installonly_84821.out'
//SYSTSPRT DD SYSOUT=*
/*

```

- JCL example of running zWPSInstall
- Note that a symbolic link has been specified for smproot

This is an example of running the zWPSInstall shell script from JCL. If you are using symbolic links for your product code, be sure to specify that here for the smproot parameter. This example also shows an example of using the trace parameter.

3. 'Augment' profiles with WebSphere Process Server or WebSphere Enterprise Service Bus

Run zWPSConfig.sh or zWESBConfig.sh

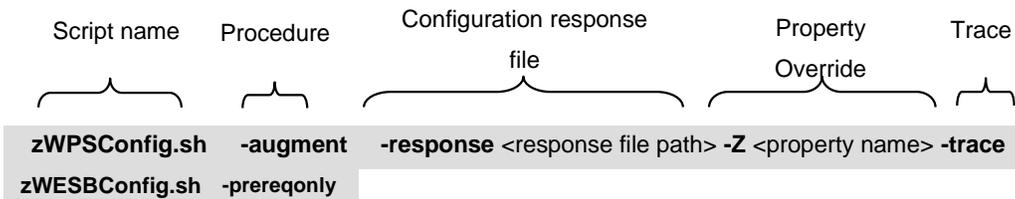
- Found in:
 - <app_server_root>/bin/zWPSConfig.sh
 - <app_server_root>/bin/zWESBConfig.sh
- Run against each node in your configuration
 - 'Augments' profile with WebSphere Process Server or WebSphere Enterprise Service Bus function using many ant scripts
 - Create resource definitions
 - Create resources (databases, buses, queues)
 - Deploy needed applications
 - Log files written to <app_server_root>/logs/ directory
 - <app_server_root>/logs/wbi/zWPSConfig.log
 - <app_server_root>/logs/wbi/zWPSConfig.trace
 - <app_server_root>/logs/manageprofiles/default_augment.log

In the third step, you will run another script, zWPSConfig or zWESBConfig, against each node in your configuration. If you are creating a network deployment cell, the managed (custom) or stand-alone node should not yet be federated. These scripts will again call many ant scripts which will augment the node profiles with needed resources and functions necessary for the WebSphere Process Server or WebSphere Enterprise Service Bus products. As listed on the slide, the augmentation will create needed resource definitions, create the actual resources such as databases, buses and queues and deploy needed applications. Other presentations go into more detail on what these resources and applications are. Log files for this script are written to the logs/manageprofiles directory. The default_augment.log is the best place to look for errors as it is more verbose than the others.

3. 'Augment' profiles with WebSphere Process Server or WebSphere Enterprise Service Bus...

Command line structure

Configure WebSphere Process Server for z/OS



- -Z parameter can override any values in the response file (useful for user ID/password)
- -trace '*=all=enabled'

Response file required

The zWPSConfig and zWESBConfig scripts require that you provide a response file to provide information to the configuration process. Sample response files are found in the product HFS; those are shown on a later slide. A response file has also already been populated for you in the BPZRSPx member of the DATA PDS if you used the zPMT to augment your nodes. Using the one generated for you will help to prevent errors during the augmentation process.

The **augment** and **response** parameters are the only required parameters when running the zWPSconfig or zWESBConfig scripts. The **Z**-parameter is used to override any of the properties specified in the response file. An example usage of this parameter is to specify user IDs and passwords on the command line so that they are not specified in clear text in the response file. You can also specify a trace string with the **trace** parameter if needed. To specify the trace string, put it in single quotation marks as shown on the slide.

Both scripts are available with the WebSphere Process Server for z/OS product. When dealing with the WebSphere Process Server for z/OS product, it is possible to configure an Application Server with the WebSphere Process Server function OR the WebSphere Enterprise Service Bus function only. Remember that WebSphere Process Server INCLUDES the WebSphere Enterprise Service Bus function. If you have the WebSphere Enterprise Service Bus for z/OS product, only the zWESBConfig.sh script is available.

3. Run zWPS/zWESBConfig.sh script...options

-prereqonly

Validates that zWPSInstall.sh has successfully created the product definitions for WebSphere Process Server

-augment

Validates prerequisites

Verifies arguments

Enable profile augmentation using scripted actions

Mutually exclusive actions

This slide again shows the various procedure options and talks in more detail about what each of them does when specified. They are mutually exclusive and you can only specify one.

3. Run zWPS/zWESBConfig.sh script...response files

- Needed by the zWPSConfig.sh and zWESBConfig.sh scripts
- Samples found in: <pathPrefix>/usr/lpp/zWPS/V6R1/zos.config
 - <pathPrefix>/usr/lpp/zWESB/V6R1/zos.config
 - Samples provided:
 - standAloneProfile.rsp – Derby only
 - standAloneProfileDB2.rsp
 - DmgrDB2.rsp
 - ManagedDB2.rsp
- Populated response file found in 'hlq.DATA(BPZRSPx)'
 - where:
 - x=A for application server augmentation
 - x=N for managed node augmentation
 - x=M for deployment manager augmentation
 - wbidbDesign is a parameter needed for DB2 configurations
 - wbidbDesign=/u/wsuser/wpswork/wps.nd.topology.dbDesign

Now, let's look at the response files needed by the configuration scripts. Again, the response files supply values needed for the configuration. Sample response files are found in the zos.config directory in the SMP/E install root. Four sample response files are provided. "stand-aloneProfile.rsp" is the response file used for the simplest configuration and uses Derby databases. It allows for an automated configuration of a stand-alone application server environment. To configure a stand-alone application server with WebSphere Process Server or WebSphere Enterprise Service Bus function using DB2, you will start with the standAloneProfileDB2.rsp file. That configuration can also be highly automated if you are able to configure the databases during augmentation.

When you move to the network deployment configuration, DB2 is the only option for the databases and there are two response files for that configuration: DmgrDB2.rsp and ManagedDB2.rsp. You will first use the DmgrDB2.rsp file to augment the deployment manager node with WebSphere Process Server or WebSphere Enterprise Service Bus function. You then augment an empty node using the ManagedDB2.rsp file before federating it into the Network Deployment Cell. As noted earlier, you can also start with a stand-alone node in the network deployment configuration. In that case, you use the standAloneProfileDB2.rsp file to augment your stand-alone node before federation.

Starting with Version 7, the zPMT augment function for WebSphere Process Server will populate a response file for you. When you 'Process' your augmented node to upload customization jobs to your z/OS system, a populated response file is uploaded. It is found in the BPZRSPx member of the DATA PDS where the 'x' is dependent on the type of node as shown on the slide. This is the recommended option as it should cut down on errors in the configuration process. You must copy this member to the HFS. You will see this on the next slide.

Note that when you 'augmented' using the WCT, you specified a database design file name if DB2 was in use. This became a needed parameter, wbidbDesign, in your response file. To run the augment, it needs to exist so you need to run the DbDesignGenerator before running the augment if you are using DB2. You can find more information on dbDesignGenerator in the [z/OS DB2 configuration](#) presentation.

3. Run zWPS/zWESBConfig.sh script...USS example

- Run zWPSConfig.sh or zWESBConfig.sh

- Copy response file into UNIX System Services (USS) from TSO

- oput 'HLQ.DATA(BPZRSPA)' '/u/s7admin/standAloneProfile.rsp`

- **OR** Copy response file from USS

- cp "'HLQ.DATA(BPZRSPA)'" /u/s7admin/standAloneProfile.rsp

- Run shell script

- cd /etc/wasv7cfg/s7basea/s7nodea_wpssmpe/bin

- ./zWPSConfig.sh**

- response** /u/s7admin/standAloneProfile.rsp

- augment**

- 1> /tmp/zWPSConfig_40135.out +

- 2> /tmp/zWPSConfig_40135.err

An example of running the zWPSConfig shell script command from UNIX Systems Services is shown here. You can copy the response file from TSO using the oput command as shown or an example using the cp command from USS is also shown.

3. Run zWPS/zWESBConfig.sh script...JCL example

```

//AUGWPS70 JOB (ACCTNO,ROOM),'HONKEN',CLASS=A,REGION=0M,
//  NOTIFY=HONKEN,TIME=NOLIMIT
//*****
//* Copy response file to HFS
//*****
//COPY EXEC PGM=IKJEFT01,REGION=0M
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
oput 'HONKEN.S7BASEA.DATA(BPZRSPA)' +
     '/u/honken/wpswork/s7basea/standAloneProfile.rsp'
/*
//*****
//* zWPSConfig.sh
//*****
//AUGMT EXEC PGM=IKJEFT01,REGION=0M
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
BPXBATCH SH +
cd /etc/wasv7config/s7basea/s7nodea/+
/AppServer+
/bin; +
./zWPSConfig.sh +
-response /u/honken/wpswork/s7basea/standAloneProfile.rsp +
-augment +
1> /tmp/zWPSConfig_40135.out +
2> /tmp/zWPSConfig_40135.err
/*
//*****
//* STEP Copy - Copy script output back to joblog
//*****
//MCFGC EXEC PGM=IKJEFT01,REGION=0M
//SYSEXEC DD DISP=SHR,DSN=WAS60A.SBBOEXEC
//SYSTSIN DD *
BBOHFSWR '/tmp/zWPSConfig_40135.out'
BBOHFSWR '/tmp/zWPSConfig_40135.err'
//SYSTSPRT DD SYSOUT=*
//

```

- JCL example of running zWPSConfig

32

z/OS installation and configuration overview

© 2010 IBM Corporation

This is an example of running the zWPSConfig shell script from JCL. Notice the first thing you should do is copy the response file to the HFS. This example shows the copy being done using OPUT. You can use the 'cp' command in the BPXBATCH step instead. The copied response file is then used as a parameter to the zWPSConfig command.

4. Complete post-configuration tasks, if needed

- Stand-alone application server cell (with Derby)
 - No post-configuration tasks!!
- Stand-alone application server cell (with DB2)
 - Create DB2 databases and tables
- Network deployment cell
 - Federate managed (custom)/stand-alone node
 - Create DB2 databases and tables
 - Configure WebSphere Process Server and WebSphere Enterprise Service Bus components

If you are configuring a stand-alone application server cell using Derby as the database, you are done at this point! You can start your server and are able to exploit the WebSphere Process Server or WebSphere Enterprise Service Bus function right away. If configuring with DB2, there are most likely some post-configuration tasks that are needed. If configuring a stand-alone application server cell with DB2, you will need to talk to your DB2 administrator and have some SQL run to create databases and tables before having a fully functional environment. For more information on the DB2 requirements, you should look at the **z/OS DB2 configuration** presentation. If configuring a Network Deployment Cell, you need to federate the empty/stand-alone node into your network deployment cell and have the DB2 database and tables created. Depending on whether you decide to start with an empty node or a stand-alone node will determine the other post-configuration steps needed. If you are starting with an empty node, you will have to actually create a cluster or server in the environment before continuing configuration and configure the Service Component Architecture environment. If you are starting with a stand-alone node, you will have a server but you might need to configure CEI and the Business Process and Human Task containers. This depends on how much you allowed the zWPSCConfig script to do for you. Some of the tasks that might be needed for the network deployment cell in either case are configuring the Business Process and Human Task containers and CEI.

Administrative console – after configuration

Business Integration

- [Business Integration Configuration](#)
- [Business Space Configuration](#)
- [REST services](#)
- [Service Component Architecture](#)
- ▣ Common Event Infrastructure
 - [Common Event Infrastructure Destination](#)
 - [Common Event Infrastructure Server](#)
- ▣ Business Process Choreographer
 - [Business Process Choreographer Containers](#)
 - [Business Flow Manager](#)
 - [Human Task Manager](#)
 - [Business Process Choreographer Explorer](#)
 - [Business Process Choreographer Event Collector](#)
 - [People Assignment Service](#)
- ▣ Business Rules
 - [Business rules](#)
 - [Business Rules and Selectors Auditing](#)
 - [Business Rules Manager Configuration](#)
- ▣ Service Monitor
- ▣ Selectors
 - [WebSphere Business Integration Adapter Service](#)
 - [Application Scheduler](#)
 - [Extended Messaging Service](#)



<input type="checkbox"/>	BPCECollector_s7nodea_s7sr01a
<input type="checkbox"/>	BPCEExplorer_s7nodea_s7sr01a
<input type="checkbox"/>	BPCEContainer_s7nodea_s7sr01a
<input type="checkbox"/>	BPMAAdministrationWidgets_s7nodea_s7sr01a
<input type="checkbox"/>	BSPACEFAR_s7nodea_s7sr01a
<input type="checkbox"/>	BSPACEWebformsEnabler_s7nodea_s7sr01a
<input type="checkbox"/>	BusinessRulesManager
<input type="checkbox"/>	BusinessRules_s7nodea_s7sr01a
<input type="checkbox"/>	BusinessSpaceHelpFAR_s7nodea_s7sr01a
<input type="checkbox"/>	DefaultApplication
<input type="checkbox"/>	ESBSamplesGallery
<input type="checkbox"/>	HTM_PredefinedTaskMsg_V700_s7nodea_s7sr01a
<input type="checkbox"/>	HTM_PredefinedTasks_V700_s7nodea_s7sr01a
<input type="checkbox"/>	HumanTaskManagementWidgets_s7nodea_s7sr01a

Looking at the administrative console after the configuration is complete; you should see a new 'Business Integration' section. There you will see configuration information for the various components that make up WebSphere Process Server, including Business Process Choreographer, SCA and CEI. You will also see many applications that were installed into your server. The applications include the business process choreographer explorer which allows you to start and stop business processes and claim human tasks. You also see the business process container, human task manager applications and applications for business rules and business space. Note that these were all deployed for you automatically during the augmentation or during the post configuration task.

New resources after configuration

Buses

A service integration bus supports applications using message-based and service-oriented architectures. Applications engines associated with its bus members.

Preferences

New Delete

Select	Name	Description
<input type="checkbox"/>	BPC.s7basea.Bus	Messaging bus for Process Choreographer
<input type="checkbox"/>	CEI.s7basea.BUS	CommonEventInfrastructure Bus
<input type="checkbox"/>	SCA.APPLICATION.s7basea.Bus	Messaging bus for Service
<input type="checkbox"/>	SCA.SYSTEM.s7basea.Bus	Messaging bus for Service

Total 4

Data sources

Use this page to edit connections for applications about the topic.

Scope: Cell=s7basea, Node=s7nodea, Server=s7sr01a

Preferences

New Delete Test connection Manage state...

Select	Name	JNDI name
<input type="checkbox"/>	BPEDataSourceDerby	jdbc/BPEDB
<input type="checkbox"/>	Business Process Choreographer ME data source	jdbc/com.ibm.ws.sib/s7nodea.s7sr01a-BPC.s7basea.Bus
<input type="checkbox"/>	Business Space data source	jdbc/mashupDS
<input type="checkbox"/>	CEI ME data source	jdbc/com.ibm.ws.sib/s7nodea.s7sr01a-CEI.s7basea.BUS
<input type="checkbox"/>	SCA Application Bus ME data source	jdbc/com.ibm.ws.sib/s7nodea.s7sr01a-SCA.APPLICATION.s7basea.Bus
<input type="checkbox"/>	SCA System Bus ME data source	jdbc/com.ibm.ws.sib/s7nodea.s7sr01a-SCA.SYSTEM.s7basea.Bus
<input type="checkbox"/>	event	jdbc/cei

Simple configuration,
very automated!

35
z/OS installation and configuration overview
© 2010 IBM Corporation

You will also note that many new resources were defined for you. On the left, you see the service integration buses that were created for you and on the right you see some new data sources that are created during configuration. There are many databases needed to run WebSphere Enterprise Service Bus and WebSphere Process Server. Again, these are detailed in the [z/OS DB2 configuration](#) presentation.



EJBROLE profiles for WebSphere Process Server

Roles	Default permission	Notes
BPESystemAdministrator	Group name entered during the installation	Access to all business processes and all operations.
BPESystemMonitor	All authenticated users.	Access to read operations.
BPEAPIUser	All authenticated users.	Access the Business Process Choreographer APIs
TaskSystemAdministrator	Group name entered during the installation.	Access to all human tasks.
TaskSystemMonitor	All authenticated users.	Access to read operations.
TaskAPIUser	All authenticated users.	Access the Human Task APIs
WebClientUser	All authenticated users.	Access the Business Process Choreographer Explorer.
WBIOperator	Everyone	Access to Failed Event Manager
Businessspaceusers	All authenticated users	Access to business spaces
Administrator	All authenticated users	Access to Business Space
WebFormUsers	All authenticated users	Access to business space web forms
BusinessRuleUsers	All authenticated users	Access to business rules API
AnyOne	Everyone	Access to business rules
NoOne	None	Access to resources that should not be accessed directly
RestServicesUser	All authenticated users	Access to Rest services

Regardless of what type of cell you configure, there are some security roles that you need to set up for various components of WebSphere Process Server. These roles are shown here on the slide. The 'Default permission' column shows the permissions that are defined in the applications that use the roles by default.



EJBROLE profiles for Common Event Infrastructure

Roles	Default permission	Notes
eventAdministrator	All authenticated users.	Access to query, update, and delete events stored in the event database
eventConsumer	All authenticated users	Access to query events stored in the event database
eventUpdater	All authenticated users	Access to update events stored in the event database
eventCreator	All authenticated users	Access to submit events to an emitter using synchronous EJB calls
catalogAdministrator	All authenticated users	Access to create, update, delete, or retrieve event definitions in the event catalog. This role provides access to all methods of the EventCatalog interface and all functions of the eventcatalog.jacl script
catalogReader	All authenticated users	Access to retrieve event definitions from the event catalog

Some additional security roles are needed for the Common Event Infrastructure component. Again, the 'Default permission' is the permission defined with the application that uses the role when it is installed. Since you will likely be using RACF or an SAF equivalent, these security roles need to be defined as EJBROLES. The sample commands needed to reflect these permissions are shown on the next slide.

Sample EJBROLE profiles commands

- To mimic 'Group name entered during the installation':


```
RDEFINE EJBROLE (optionalSecurityDomain).BPESystemAdministrator
UACC(NONE)
PERMIT (optionalSecurityDomain).BPESystemAdministrator
CLASS(EJBROLE) ID(WSCFG) ACCESS(READ)
-or particular users only-
PERMIT (optionalSecurityDomain).BPESystemAdministrator
CLASS(EJBROLE) ID(WSADMIN) ACCESS(READ)
```
- To mimic 'All authenticated users':


```
RDEFINE EJBROLE (optionalSecurityDomain).BPESystemMonitor
UACC(READ)
```
- To mimic 'Everyone':


```
RDEFINE EJBROLE (optionalSecurityDomain).WBIOperator UACC(READ)
PERMIT (optionalSecurityDomain).WBIOperator CLASS(EJBROLE)
ID(WSGUEST) ACCESS(READ)
```

No need to match
the 'Default permission'!

Chances are you will want to do your security a little different than what the 'Default permissions' have provided. Since you are likely using a SAF-based product, your EJBROLE definitions can reflect your own preferences for security. If you want to restrict access to a particular group or just a few users, you can define the EJBROLE with UACC of NONE and then PERMIT the users or groups that you want to allow. If you want to permit anyone who has been successfully authenticated, you can define the EJBROLE with UACC of READ. This will not allow users that have been defined with the RESTRICTED option to gain access however. By default, the 'unauthenticated user ID' defined during WebSphere configuration is defined with the RESTRICTED option. By default, this userid is WSGUEST and by giving the equivalent user ID READ access to the EJBROLE, you can mimic 'Everyone'.



RunAs roles for business processes

RunAs roles associated with business processes

`<domain>.JMSAPIUser`

Used by the Business Flow Manager JMS API MDB in
`bpecontainer.ear`.

`<domain>.EscalationUser`

Used by the `task.ear` MDB.

```
RDEFINE EJBROLE JMSApiUser UACC(NONE) APPLDATA(xxADMIN)
RDEFINE EJBROLE EscalationUser UACC(NONE) APPLDATA(xxADMIN)
```

Finally, there are RunAs roles that are needed for the business process choreographer. These are used for the JMS API within the business flow manager and the human task container for escalations. In order to create a RunAs role, you need to specify a user ID on the APPLDATA keyword for the EJBROLE. An example is shown on the slide.

Summary

- WebSphere Process Server for z/OS V7 and WebSphere Enterprise Service Bus for z/OS V7 built on top of WebSphere for z/OS V7
- WebSphere Process Server for z/OS V7 and WebSphere Enterprise Service Bus for z/OS V7 configuration in all environments has common tasks
 - Stand-alone environment can be highly automated
 - Network deployment environment has additional tasks

In summary, the WebSphere Process Server or WebSphere Enterprise Service Bus products are configured on top of WebSphere Application Server V7; which is where they get most of their prerequisites from. DB2 becomes a mandatory prerequisite when configuring in a network deployment environment.

The configuration of a stand-alone application server with WebSphere Process Server for z/OS or WebSphere Enterprise Service Bus for z/OS is highly automated, particularly if you use Derby as a starting point. This presentation looked at the configuration of all environments at a high-level. Each configuration has common tasks as seen here. To get a more detailed description of the various configurations, additional presentations are available.



Feedback

Your feedback is valuable

You can help improve the quality of IBM Education Assistant content to better meet your needs by providing feedback.

- Did you find this module useful?
- Did it help you solve a problem or answer a question?
- Do you have suggestions for improvements?

Click to send e-mail feedback:

mailto:iea@us.ibm.com?subject=Feedback_about_WBPMv70_zOSWPSInstallOverview.ppt

This module is also available in PDF format at: [../WBPMv70_zOSWPSInstallOverview.pdf](..../WBPMv70_zOSWPSInstallOverview.pdf)

You can help improve the quality of IBM Education Assistant content by providing feedback.



Trademarks, disclaimer, and copyright information

IBM, the IBM logo, ibm.com, CICS, DB2, DB2 Universal Database, IMS, MQSeries, RACF, SecureWay, and WebSphere are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of other IBM trademarks is available on the Web at "[Copyright and trademark information](http://www.ibm.com/legal/copytrade.shtml)" at <http://www.ibm.com/legal/copytrade.shtml>

THE INFORMATION CONTAINED IN THIS PRESENTATION IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. in the United States, other countries, or both.

UNIX is a trademark of The Open Group in the United States, other countries, or both.

THE INFORMATION CONTAINED IN THIS PRESENTATION IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. WHILE EFFORTS WERE MADE TO VERIFY THE COMPLETENESS AND ACCURACY OF THE INFORMATION CONTAINED IN THIS PRESENTATION, IT IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. IN ADDITION, THIS INFORMATION IS BASED ON IBM'S CURRENT PRODUCT PLANS AND STRATEGY, WHICH ARE SUBJECT TO CHANGE BY IBM WITHOUT NOTICE. IBM SHALL NOT BE RESPONSIBLE FOR ANY DAMAGES ARISING OUT OF THE USE OF, OR OTHERWISE RELATED TO, THIS PRESENTATION OR ANY OTHER DOCUMENTATION. NOTHING CONTAINED IN THIS PRESENTATION IS INTENDED TO, NOR SHALL HAVE THE EFFECT OF, CREATING ANY WARRANTIES OR REPRESENTATIONS FROM IBM (OR ITS SUPPLIERS OR LICENSORS), OR ALTERING THE TERMS AND CONDITIONS OF ANY AGREEMENT OR LICENSE GOVERNING THE USE OF IBM PRODUCTS OR SOFTWARE.

© Copyright International Business Machines Corporation 2010. All rights reserved.