

IBM Business Process Manager for z/OS
Version 7.5.0

*IBM Business Process Manager for
z/OS Installation Guide*



PDF books and the information center

PDF books are provided as a convenience for printing and offline reading. For the latest information, see the online information center.

As a set, the PDF books contain the same content as the information center. Some links within the PDF books have been tailored for use in the information centers and may not work properly.

The PDF documentation is available within a quarter after a major release of the information center, such as Version 7.0 or Version 7.5.

The PDF documentation is updated less frequently than the information center, but more frequently than the Redbooks®. In general, PDF books are updated when enough changes are accumulated for the book.

Contents

PDF books and the information center iii

Chapter 1. Task overview of the installation and configuration process for a stand-alone server 1

Chapter 2. Task overview of the installation and configuration process for a network deployment environment 5

Chapter 3. Installing IBM Business Process Manager 11

Preparing to install IBM Business Process Manager for z/OS 11

- Overview of the installation process 12
- Determining your skill needs 13
- Considerations for a stand-alone configuration 14
- Considerations for a network deployment configuration 15
- Collating customization information for configuring your environment 15

Installing WebSphere Customization Toolbox 16

Installing WebSphere Application Server. 17

Loading the product code from the installation media to the z/OS system 18

- Using an IBM SystemPac or ServerPac 19
- Using an IBM CBPDO. 20
- Planning for product data sets 20
- IBM Business Process Manager file system directories 21

Downloading the extension files and sample customization definition response files 22

Installing IBM Business Process Manager for z/OS (stacked installation using zPMT) 23

- Installing the feature-pack and product extensions for the z/OS Profile Management Tool (zPMT). 24

- Creating a customization definition for a fully-customized profile 25
- Processing a customization definition for a fully-customized profile 29
- Running the installation job for a fully-customized profile 30

Installing IBM Business Process Manager for z/OS (incremental installation using zPMT) 31

- Installing the feature-pack and product extensions for the z/OS Profile Management Tool (zPMT). 32
- Creating a customization definition for augmenting a profile 33
- Processing a customization definition for augmenting a profile 37
- Running the installation job using zPMT-generated JCL 38

Installing IBM Business Process Manager for z/OS (incremental installation without using zPMT). 39

- Running the installation script from USS 40

Chapter 4. Installation reference information 43

Differences between stand-alone and network deployment configurations 43

IBM Business Process Manager for z/OS installation media contents 43

Product version information. 45

Augmentation response file values 46

Sample customization definition response files 54

IBM Business Process Manager – Client 56

- Installing IBM Business Process Manager – Client interactively 56
- Installing IBM Business Process Manager – Client silently 58

Chapter 1. Task overview of the installation and configuration process for a stand-alone server

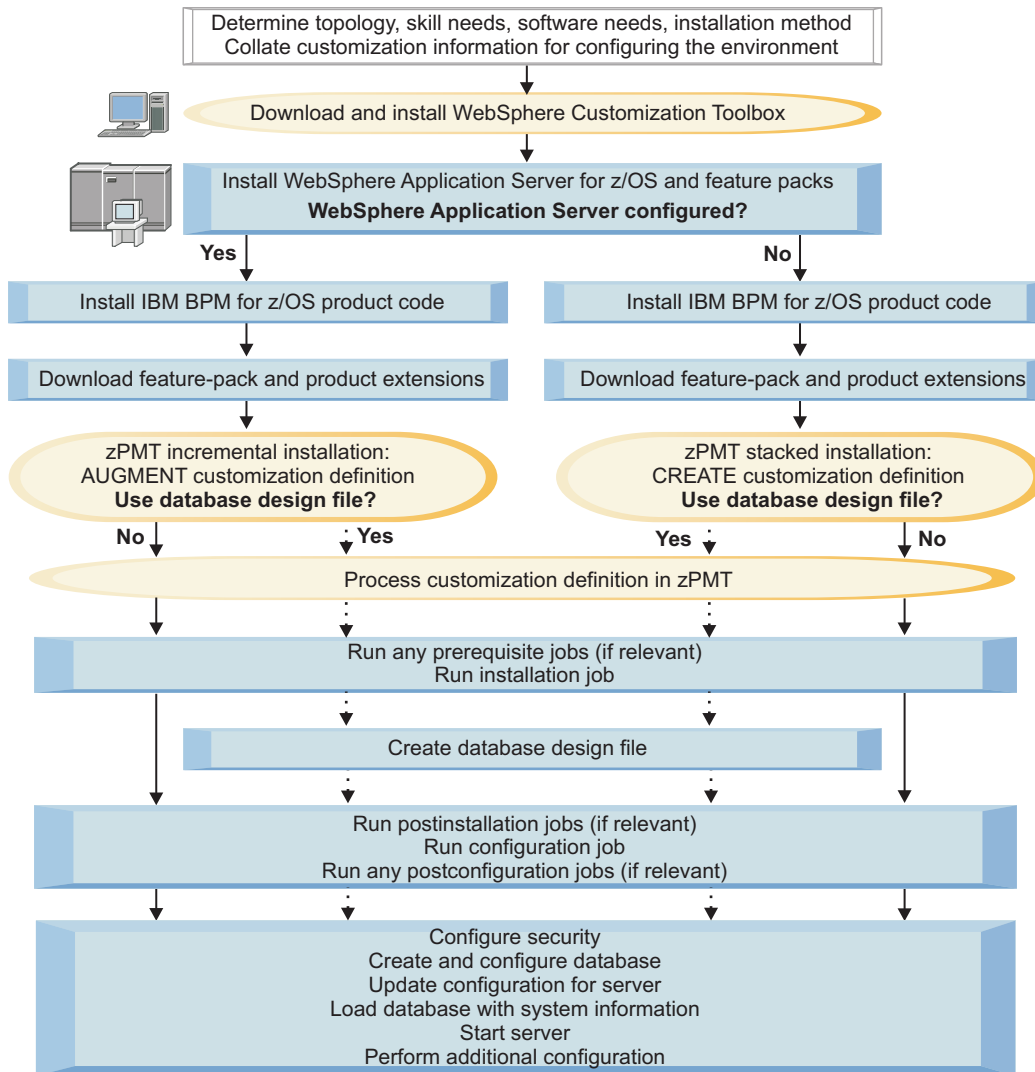
A stand-alone configuration consists of a single node running an application server and one daemon server in a single z/OS® system or logical partition (LPAR). Before installing and configuring a stand-alone server, it is useful to understand the task flow for the process.

The IBM® Business Process Manager for z/OS installation and configuration is integrated with, and dependent on, the installation and configuration of WebSphere® Application Server for z/OS. The task is a multiphase process that can span multiple roles, including system programmer, product administrator, and database administrator.

To create the IBM Business Process Manager for z/OS stand-alone server environment, the default profile, which is created when WebSphere Application Server for z/OS is installed, must be augmented into a profile for IBM Business Process Manager for z/OS. This process adds IBM Business Process Manager for z/OS functions to the existing WebSphere Application Server for z/OS functions.

This task overview outlines the steps that are required to start an instance of the IBM Business Process Manager for z/OS server. The details include preinstallation steps, steps for installing IBM Business Process Manager for z/OS, and initial configuration steps to enable the server to be started. The steps described here apply only to an installation and configuration that are facilitated by the use of the WebSphere Customization Toolbox application and the z/OS Profile Management Tool (zPMT).

The following diagram illustrates the high-level flow of tasks that you need to perform to create and start a complete, customized stand-alone server. Because the process can span multiple roles, it is possible for some of these tasks to be done in parallel.



1. Review the planning information to determine which topology best suits your requirements, identify your software needs, and establish whether you need to perform incremental or stacked installations. More information: *Planning for IBM Business Process Manager*

Also collate the information required for configuring your stand-alone server. This information needs to be specified when you create the customization definition in zPMT. You can use the configuration planning spreadsheet, which is supplied, to identify the customization parameters and record your values.

More information: “Collating customization information for configuring your environment” on page 15

2. If not already installed, download and install WebSphere Customization Toolbox (WCT) V8.0 on a Windows or Linux workstation.

You can use WCT to install the required WebSphere Application Server for z/OS feature-pack extensions and the IBM Business Process Manager for z/OS extension. These extension files provide the customization parameters that you need to configure these products. You can also use zPMT, which runs under WCT, to specify the customization values and generate customized JCL batch jobs and other files for configuring the IBM Business Process Manager for z/OS environment.

More information: “Installing WebSphere Customization Toolbox” on page 16

3. On the z/OS file system, use System Modification Program/Extended (SMP/E) to install the WebSphere Application Server for z/OS product code, the Feature Pack for Service Component Architecture (SCA), and the Feature Pack for XML.

After the product code is installed, the WebSphere Application Server for z/OS environment can either be configured immediately, or at a later stage:

- If the WebSphere Application Server for z/OS environment is configured immediately after installing the product code, you can later perform an incremental installation to augment the WebSphere Application Server for z/OS environment with IBM Business Process Manager for z/OS functions.
- If the WebSphere Application Server for z/OS environment is not configured at this point, you can later perform a stacked installation to configure both WebSphere Application Server for z/OS and IBM Business Process Manager for z/OS.

More information: “Installing WebSphere Application Server” on page 17

4. Use SMP/E to install the IBM Business Process Manager for z/OS product code on the z/OS system. More information: “Loading the product code from the installation media to the z/OS system” on page 18
5. Download the feature-pack extensions and the IBM Business Process Manager for z/OS extension from the z/OS system to a directory on the WCT workstation. These extensions provide supplementary customization parameters. More information: “Downloading the extension files and sample customization definition response files” on page 22
6. Use zPMT to define the customization values for the stand-alone server. The main points to consider are as follows:
 - If the WebSphere Application Server for z/OS environment is already configured, perform an incremental installation, specifying the additional parameters that are required for configuring IBM Business Process Manager for z/OS. More information: “Installing IBM Business Process Manager for z/OS (incremental installation using zPMT)” on page 31
 - If the WebSphere Application Server for z/OS environment is not yet configured, perform a stacked installation in a single pass through zPMT, specifying the customization values for WebSphere Application Server for z/OS, the feature packs, and IBM Business Process Manager for z/OS. More information: “Installing IBM Business Process Manager for z/OS (stacked installation using zPMT)” on page 23
 - Determine whether you want to define your database configuration in zPMT, or whether you want to use a design file to define the database configuration. A database design file provides more flexibility for defining the configuration settings for individual database components, and can be generated by running the database design tool in the z/OS system. More information: Generating a design file and DDL files for the database tables

zPMT records your customization settings in a customization definition response file and also generates instructions that you can use to configure the target z/OS system.

7. Using zPMT, process the customization definition to generate an augmentation response file, customized JCL jobs, and other data files, and to upload them to your target z/OS system. More information: “Installing IBM Business Process Manager for z/OS (incremental installation using zPMT)” on page 31 and “Installing IBM Business Process Manager for z/OS (stacked installation using zPMT)” on page 23
8. For a stacked installation, use the instructions generated in zPMT to perform manual configuration updates, and to run the prerequisite jobs to create and configure the WebSphere Application Server for z/OS profile. Then run the IBM Business Process Manager for z/OS installation job to enable the product for use.

For an incremental installation, run the installation job to enable IBM BPM for z/OS for use.

More information: “Installing IBM Business Process Manager for z/OS (incremental installation using zPMT)” on page 31 and “Installing IBM Business Process Manager for z/OS (stacked installation using zPMT)” on page 23

9. If you did not define the database configuration in zPMT, use the database design tool to generate the database design file in the z/OS system. This tool also generates Data Definition Language (DDL) scripts, which you can later use to create the DB2[®] database objects for the various IBM Business Process Manager for z/OS components.
More information: Generating a design file and DDL files for the database tables
10. Follow the instructions generated in zPMT to run the configuration job to augment WebSphere Application Server for z/OS with IBM Business Process Manager for z/OS functions.
The configuration job requires input from the augmentation response file that is automatically generated when you process a customization definition in zPMT.
More information: Configuring a stand-alone application serving environment using zPMT-generated jobs
11. Complete your security configuration by updating the default federated repositories configuration to include the RACF user registry bridge. You can do this by running a script that is supplied with the product code.
More information: Configuring security
12. Create the database and populate it with objects by using the DDL that was created earlier.
More information: Creating and configuring the databases
13. Customize properties, such as port numbers, for the server. You can do this by running another script that is supplied with the product code.
More information: Updating the configuration values for cluster members or stand-alone servers
14. Run the bootstrap utility to load the database with system information.
More information: Loading the database with system information
15. Start the stand-alone server, as documented in the customization instructions.
More information: Starting the server and verifying the installation

When the initial configuration of IBM Business Process Manager for z/OS is complete, you can perform additional tasks to configure the components and administer the system.

Chapter 2. Task overview of the installation and configuration process for a network deployment environment

A network deployment configuration contains a deployment manager server in one node, and one or more managed nodes in which application servers can be created. The managed nodes must be federated into the deployment manager cell, to allow the application servers to be created and administered by the deployment manager.

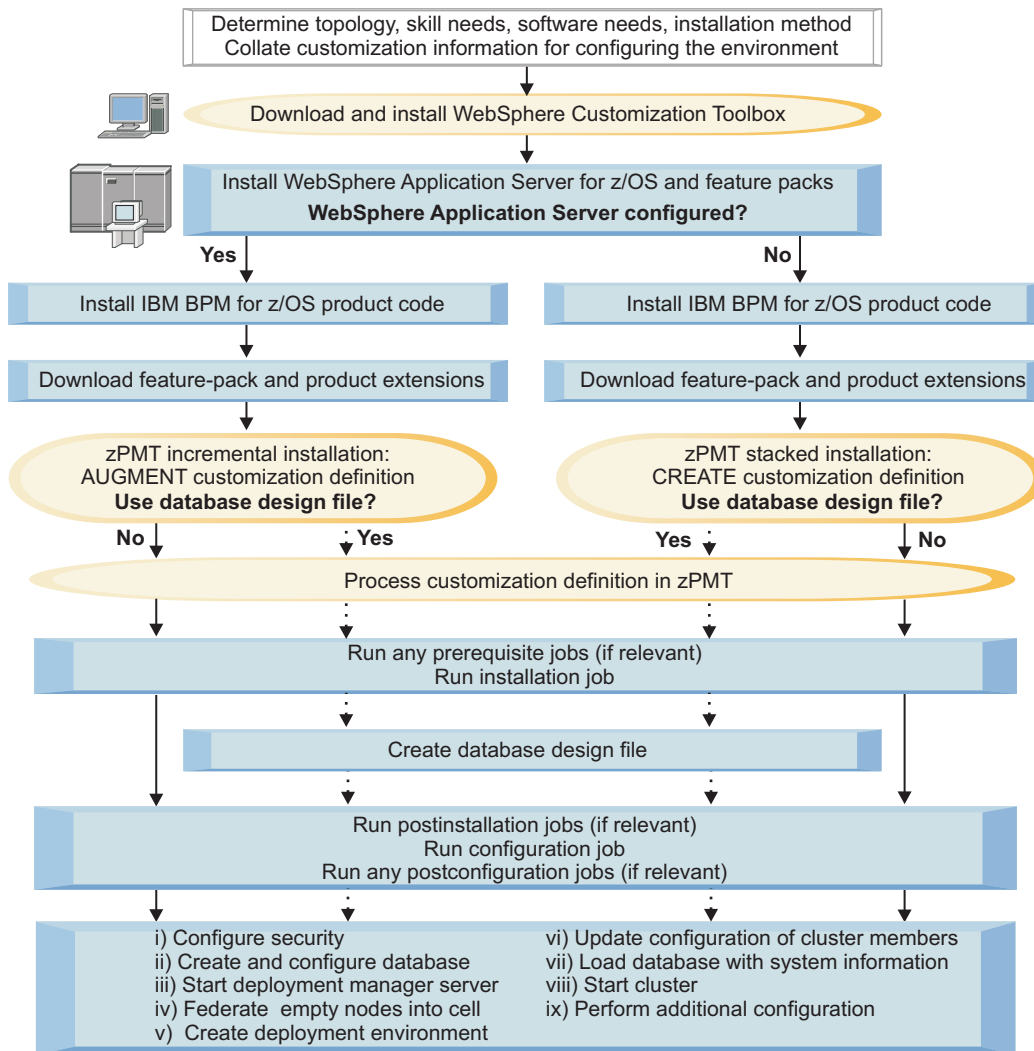
Before installing and configuring a network deployment environment, it is useful to understand the task flow for the process.

The IBM Business Process Manager for z/OS installation and configuration is integrated with, and dependent on, the installation and configuration of WebSphere Application Server for z/OS. The task is a multiphase process that can span multiple roles, including system programmer, product administrator, and database administrator.

To create the IBM Business Process Manager for z/OS network deployment environment, the default deployment manager profile, which is created when WebSphere Application Server for z/OS is installed, must be augmented into a profile for IBM Business Process Manager for z/OS. This process adds IBM Business Process Manager for z/OS functions to the existing WebSphere Application Server for z/OS functions. The default WebSphere Application Server for z/OS profile for each unmanaged node in the network deployment environment must also be augmented into a profile for IBM Business Process Manager for z/OS.

This task overview outlines the steps that are required to set up a single cluster topology. The details include preinstallation steps, and steps for installing and configuring IBM Business Process Manager for z/OS, creating and configuring the database, and setting up the deployment environment. The steps described here apply to an installation and configuration that are facilitated by the use of the WebSphere Customization Toolbox application and the z/OS Profile Management Tool (zPMT).

The following diagram illustrates the high-level flow of tasks that you need to perform to create and start a cluster in a network deployment environment. Because the process can span multiple roles, it is possible for some of these tasks to be done in parallel.



1. Review the planning information to determine which topology best suits your requirements, identify your software needs, and establish whether you need to perform incremental or stacked installations. More information: Planning for IBM Business Process Manager

Also collate the information required for configuring your deployment manager server and empty managed nodes. This information needs to be specified when you create the customization definition in zPMT. You can use the configuration planning spreadsheet, which is supplied, to identify the customization parameters and record your values.

More information: “Collating customization information for configuring your environment” on page 15

2. If not already installed, download and install WebSphere Customization Toolbox (WCT) V8.0 on a Windows or Linux workstation.

You can use WCT to install the required WebSphere Application Server for z/OS feature-pack extensions and the IBM Business Process Manager for z/OS extension. These extension files provide the customization parameters that you need to configure these products. You can also use zPMT, which runs under WCT, to specify the customization values and generate customized JCL batch jobs and other files for configuring the IBM Business Process Manager for z/OS environment.

More information: “Installing WebSphere Customization Toolbox” on page 16

3. On the z/OS file system, use System Modification Program/Extended (SMP/E) to install the WebSphere Application Server for z/OS product code, the Feature Pack for Service Component Architecture (SCA), and the Feature Pack for XML.

After the product code is installed, the WebSphere Application Server for z/OS environment can either be configured immediately, or at a later stage:

- If the WebSphere Application Server for z/OS environment is configured immediately after installing the product code, you can later perform an incremental installation to augment the WebSphere Application Server for z/OS environment with IBM Business Process Manager for z/OS functions.
- If the WebSphere Application Server for z/OS environment is not configured at this point, you can later perform a stacked installation to configure both WebSphere Application Server for z/OS and IBM Business Process Manager for z/OS.

More information: “Installing WebSphere Application Server” on page 17

4. Use SMP/E to install the IBM Business Process Manager for z/OS product code on the z/OS system. More information: “Loading the product code from the installation media to the z/OS system” on page 18
5. Download the feature-pack extensions and the IBM Business Process Manager for z/OS extension from the z/OS system to a directory on the WCT workstation. These extensions provide supplementary customization parameters. More information: “Downloading the extension files and sample customization definition response files” on page 22
6. To create and configure the deployment manager server, complete the following steps:
 - a. Use zPMT to define the customization values for the deployment manager. The main points to consider are as follows:
 - If the WebSphere Application Server for z/OS environment is already configured, perform an incremental installation, specifying the additional parameters that are required for configuring IBM Business Process Manager for z/OS. More information: “Installing IBM Business Process Manager for z/OS (incremental installation using zPMT)” on page 31
 - If the WebSphere Application Server for z/OS environment is not yet configured, perform a stacked installation in a single pass through zPMT, specifying the customization values for WebSphere Application Server for z/OS, the feature packs, and IBM Business Process Manager for z/OS. More information: “Installing IBM Business Process Manager for z/OS (stacked installation using zPMT)” on page 23
 - Determine whether you want to define your database configuration in zPMT, or whether you want to use a design file to define the database configuration. A database design file provides more flexibility for defining the configuration settings of the individual database components. Note, however, that generating a database design file will involve running the database design tool in the z/OS system, and performing manual configuration steps for each database component. More information: Generating a design file and DDL files for the database tables
 - b. zPMT records your customization settings in a customization definition response file and also generates instructions that you can use to configure the target z/OS system.
 - b. Using zPMT, process the customization definition to generate an augmentation response file, customized JCL jobs, and other data files, and to upload them to your target z/OS system. More information: “Installing IBM Business Process Manager for z/OS (incremental installation using zPMT)” on page 31 and “Installing IBM Business Process Manager for z/OS (stacked installation using zPMT)” on page 23
 - c. For a stacked installation, use the instructions generated in zPMT to perform manual configuration updates, and to run the prerequisite jobs to create and configure the WebSphere Application Server for z/OS profile. Then run the IBM Business Process Manager for z/OS installation job to enable the product for use.

For an incremental installation, run the installation job to enable IBM Business Process Manager for z/OS for use.

More information: “Installing IBM Business Process Manager for z/OS (incremental installation using zPMT)” on page 31 and “Installing IBM Business Process Manager for z/OS (stacked installation using zPMT)” on page 23

- d. Optional: If you did not define the database configuration in zPMT, use the database design tool to generate the database design file in the z/OS system. This tool also generates Data Definition Language (DDL) scripts, which you can later use to create the DB2 database objects for the various IBM Business Process Manager for z/OS components.

Note: This is a manual step that you must run either in UNIX System Services (USS), or by using a UNIX-based terminal emulator.

More information: Generating a design file and DDL files for the database tables

- e. Follow the instructions generated in zPMT to run the configuration job to augment WebSphere Application Server for z/OS with IBM Business Process Manager for z/OS functions.

The configuration job requires input from the augmentation response file that is automatically generated when you process a customization definition in zPMT.

More information: Configuring a network deployment environment using zPMT-generated jobs

7. To create and configure the required empty managed nodes, complete the following steps for each node:

- a. Use zPMT to define the customization values for the node. The main points to consider are as follows:

- If the WebSphere Application Server for z/OS environment is already configured, perform an incremental installation, specifying the additional parameters that are required for configuring IBM Business Process Manager for z/OS.

More information: “Installing IBM Business Process Manager for z/OS (incremental installation using zPMT)” on page 31

- If the WebSphere Application Server for z/OS environment is not yet configured, perform a stacked installation in a single pass through zPMT, specifying the customization values for WebSphere Application Server for z/OS, the feature packs, and IBM Business Process Manager for z/OS.

More information: “Installing IBM Business Process Manager for z/OS (stacked installation using zPMT)” on page 23

zPMT records your customization settings in a customization definition response file and also generates instructions that you can use to configure the target z/OS system.

- b. Using zPMT, process the customization definition to generate an augmentation response file, customized JCL jobs, and other data files, and to upload them to your target z/OS system.
More information: “Installing IBM Business Process Manager for z/OS (incremental installation using zPMT)” on page 31 and “Installing IBM Business Process Manager for z/OS (stacked installation using zPMT)” on page 23

- c. For a stacked installation, use the instructions generated in zPMT to perform manual configuration updates, and to run the prerequisite jobs to create and configure the WebSphere Application Server for z/OS profile. Then run the IBM Business Process Manager for z/OS installation job to enable the product for use.

For an incremental installation, run the installation job to enable IBM Business Process Manager for z/OS for use.

More information: “Installing IBM Business Process Manager for z/OS (incremental installation using zPMT)” on page 31 and “Installing IBM Business Process Manager for z/OS (stacked installation using zPMT)” on page 23

- d. Follow the instructions generated in zPMT to run the configuration job to augment the WebSphere Application Server for z/OS profile.

The configuration job requires input from the augmentation response file that is automatically generated when you process a customization definition in zPMT.

More information: Configuring a network deployment environment using zPMT-generated jobs

8. Complete your security configuration by updating the default federated repositories configuration to include the RACF user registry bridge. You can do this by running a script that is supplied with the product code.
More information: [Configuring security](#)
9. Create the database for the deployment manager and populate the database with objects by using the DDL that was created earlier.
More information: [Creating and configuring the databases](#)
10. Start the deployment manager server, as documented in the customization instructions.
More information: [Starting the deployment manager](#)
11. Federate each of the empty nodes into the deployment manager cell so that you can use the deployment manager to administer the nodes.
More information: [Federating the empty node into the deployment manager cell](#)
12. Create the deployment environment for the single cluster topology by using the Deployment Environment wizard in the administrative console. You can import a design file to populate the panels and specify the database design file that you want to use. After validating the configuration in the panels, generate the cluster.
More information: [Configuring servers, server clusters, and product components](#)
13. Customize properties, such as port numbers, for the cluster members. You can do this by running another script that is supplied with the product code.
More information: [Updating the configuration values for cluster members or stand-alone servers](#)
14. Run the bootstrap utility to load the database with system information.
More information: [Loading the database with system information](#)
15. Start the cluster from the administrative console.
More information: [Starting the cluster and verifying the installation](#)

When the initial configuration of IBM Business Process Manager for z/OS is complete, you can perform additional tasks to configure the components and administer the system.

Chapter 3. Installing IBM Business Process Manager

It is useful to understand how the installation process works, and to establish the required skills and configuration data before you begin to install IBM Business Process Manager for z/OS.

IBM Business Process Manager documentation (in PDF format)

Related information:

 PDF documentation

IBM Business Process Manager documentation (in PDF format)

 Information roadmaps

Business process management (BPM) information roadmaps on IBM developerWorks organize information about WebSphere Business Process Manager, WebSphere ESB, and the other products in the portfolio.

 IBM Education Assistant

Multimedia educational modules about IBM Business Process Manager, provided by IBM Education Assistant.

 Technotes

IBM Business Process Manager Support > Install. Have questions about installing your IBM Business Process Manager product? These resources can help lead you through your product installation and setup.

 Overview

Overview tab, on product library Web page. Use this page to access announcements, data sheets, and other general library documents related to WebSphere ESB.

Preparing to install IBM Business Process Manager for z/OS

The IBM Business Process Manager for z/OS installation and configuration includes planning activities for IBM Business Process Manager for z/OS and for WebSphere Application Server for z/OS.

The following table outlines the planning activities that you need to complete, and provides references to the documentation resources that can help you install and configure IBM Business Process Manager.

Task description	Information center resource
Determine the system requirements.	See the System requirements web page for IBM Business Process Manager. IBM Business Process Manager for z/OS installs on top of WebSphere Application Server for z/OS. For a list of system requirements, see Hardware and software requirements in the WebSphere Application Server for z/OS Information Center.
Understand security options and prepare for securing your system.	Security options are set in WebSphere Application Server for z/OS. See Security planning overview information in the WebSphere Application Server for z/OS Information Center.
Plan for your performance and monitoring systems.	See Monitoring end user response time in the WebSphere Application Server for z/OS Information Center.
Plan and define your problem diagnosis procedures.	See Problem diagnostic plan strategy in the WebSphere Application Server for z/OS Information Center.

Task description	Information center resource
Consider automatic restart management before you install WebSphere Application Server for z/OS.	See Automatic restart management in the WebSphere Application Server for z/OS Information Center.
Perform planning tasks in preparation for loading the program materials from the installation media onto z/OS.	For information about planning tasks associated with unloading the WebSphere Application Server for z/OS installation media, see Planning for installation in the WebSphere Application Server for z/OS Information Center.

In addition to these planning activities, it is also important to understand the z/OS skill sets required for installing IBM Business Process Manager, the differences between the stand-alone and network deployment configuration types that you can use to deploy and run the product, and the available installation methods.

Overview of the installation process

The installation of IBM Business Process Manager for z/OS is a two-phase process, which, at the simplest level, involves loading the product code to the z/OS file system, and running the installation script to install the WebSphere product definitions that enable the product for use.

As a prerequisite, WebSphere Application Server must be installed on the z/OS system.

The two-phase installation process can be summarized as follows:

Phase 1: Loading the product code from the installation media

The contents of the installation media are loaded on to the z/OS system by using System Modification Program/Extended (SMP/E).

This first phase is the responsibility of a system programmer who plans, maintains, and controls the use of the operating system to improve the overall productivity of an installation.

The result of completing the first phase of the installation is a read-only installation file system, which can be a z-Series File System (zFS) or Hierarchical File Structure (HFS).

Phase 2: Running the installation script to enable the product for use

The `zBPMPInstall.sh` installation script modifies a WebSphere Application Server configuration to enable the product for use. You can run the script manually from UNIX System Services (USS). You can also run the script as a JCL job, which is generated when you use the WebSphere Customization Toolbox application to create and process a customization definition for a stand-alone server, deployment manager, or empty managed node.

When the installation script runs, it extends the IBM Business Process Manager for z/OS features (which were loaded into the installation file system created by SMP/E) into the WebSphere Application Server configuration file system. The configuration file system is a writable file system that holds customized configuration files for the configured stack of WebSphere products. By default, the configuration file system is mounted at `/WebSphere/V7R0`, and contains the application server root directories (`/WebSphere/V7R0/AppServer` or `/WebSphere/V7R0/DeploymentManager`).

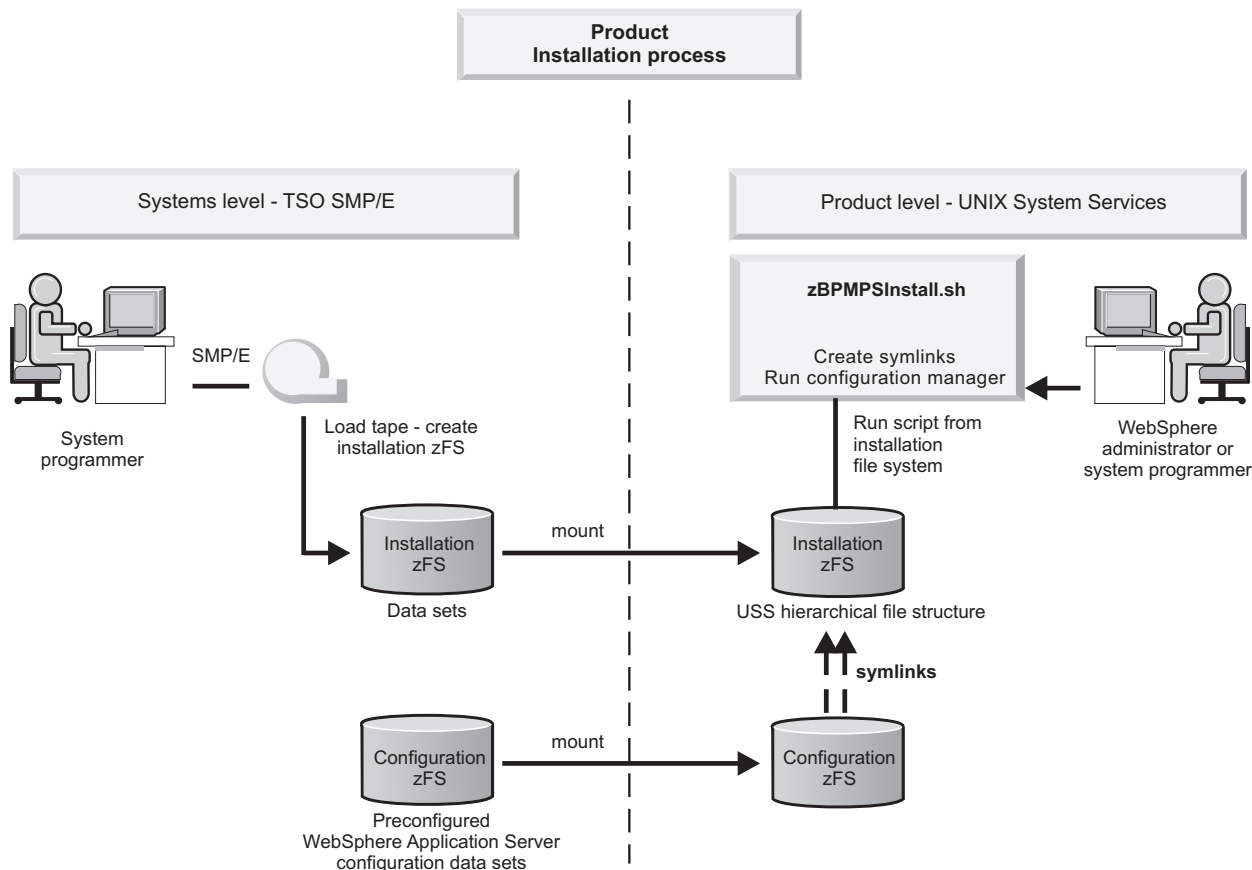
The second phase of the installation is the responsibility of a product administrator.

This phase customizes the file system as follows:

- Symbolic links are created from the WebSphere Application Server for z/OS configuration file system to the IBM Business Process Manager for z/OS installation file system (by default, mounted at path `/usr/lpp/zBPMP/V7R5`). The symbolic links point to read-only files in the installation file system, such as JAR files and shell scripts.

- Apache Ant script actions are invoked to update the WebSphere Application Server administrative console with the IBM Business Process Manager for z/OS function.

The following diagram illustrates the installation phases and the roles played by the system programmer and the product administrator during each phase.



The product installation is complete only after both phases are performed successfully.

After completing the product installation, the WebSphere administrator can begin to configure the product for use.

Determining your skill needs

When you assemble your project team, consider the skills you require to implement WebSphere Application Server for z/OS and IBM Business Process Manager for z/OS. Different skill sets are required to support basic configurations and production environments.

Documentation to support the z/OS skills described here can be found at this website: [z/OS Internet Library](#).

Skill set for supporting basic configurations:

The following skills are necessary to support a basic configuration:

- z/OS UNIX System Services and the z-Series File System (zFS) to set up a functional zFS and UNIX environment
- eNetwork Communications Server (TCP/IP) or equivalent to configure connectivity for WebSphere Application Server for z/OS clients and servers

- Resource recovery services (RRS) to implement resource recovery services and to support two-phase commit transactions
- Security Server (RACF®), or the security product you use to authenticate WebSphere Application Server for z/OS clients and servers, and authorize access to resources
- Secure Sockets Layer (SSL) to enable security if required
- SMP/E and JCL
- System logger to set up log streams for RRS and the WebSphere Application Server for z/OS error log
- Webserver to support HTTP clients if required
- Workload management (WLM)
- Java™ and WebSphere Application Server tooling to support application development and deployment

Depending on the applications you deploy, you might also need skills to configure the resource managers that your applications require; for example, CICS®, DB2, IMS™, and MQ skills.

Skill set for supporting production environments:

As you move your system toward a production environment, you must have working knowledge of the following systems:

- Application Response Measurement (ARM)
- System Automation, if you have it installed, or whichever automation you prefer to use
- Sysplex, if you plan to use WebSphere Application Server for z/OS in a cell that spans systems
- Sysplex Distributor (part of eNetwork Communications Server), if you plan to create a high availability environment
- RMF™ or other performance measurement systems

Considerations for a stand-alone configuration

Choose a stand-alone configuration to evaluate the product or to support development of applications and services.

You must have the following configuration in place before you can create a stand-alone configuration:

- WebSphere Customization Toolbox must be installed with the required product and feature pack extensions.
- WebSphere Application Server for z/OS must be installed as the stand-alone server.
- Your UNIX user ID must have permission to access the UNIX shell to run the installation and configuration scripts from inside the shell. Gaining permission to access the shell involves making modifications to your RACF profile and creating a home directory in the UNIX shell. The home directory is where you begin a UNIX session, and where you store environment variable files that are required to run programs. You can also use the home directory as the main directory for storing data.
- The IBM Business Process Manager for z/OS product code must be loaded onto the system from tape, so that you can use it to install the code definitions and to configure IBM Business Process Manager for z/OS.

You can start with a stand-alone server and then to include it into a network deployment environment by federating the application server into a deployment manager cell. You can do so only if no other nodes have been federated to that cell.

Related concepts:

“Considerations for a network deployment configuration”

Choose a network deployment configuration when your production environment needs features such as capacity, availability, scalability, and failover support.

Considerations for a network deployment configuration

Choose a network deployment configuration when your production environment needs features such as capacity, availability, scalability, and failover support.

You must have the following configuration in place before you can create a network deployment topology:

- WebSphere Customization Toolbox must be installed with the required product and feature pack extensions.
- WebSphere Application Server for z/OS must be configured on the server with a deployment manager node and an empty managed node that has not been federated to the deployment manager. It is important that the empty managed node is not federated before you run the installation script. You must federate the node after you have augmented it to contain IBM Business Process Manager for z/OS configuration data.
- Your UNIX user ID must have permission to access the UNIX shell because this is where you run the installation and configuration scripts. Providing access involves making modifications to your RACF (security) profile and creating a home directory within the UNIX shell. The home directory is where you begin a UNIX session, and where you store environmental variable files that are required to run programs. You can also use the home directory as the main directory for keeping your work data.
- The IBM Business Process Manager for z/OS product code must be loaded onto the system from tape, so that you can install the code definitions to enable the product for use and configure the product.

When configuring a deployment manager node, the following consideration applies when allocating target data sets to hold the configuration JCL. It is possible, though not recommended, to use the same target data sets that you might have used for a stand-alone application server node. The job names for each configuration are very similar to one another, so if you use the same target data sets, it might be difficult to keep the two sets of jobs separate. Therefore, create a new set of target data sets for the deployment manager node and keep the two sets of jobs separate from one another.

It is very important that you plan your IBM Business Process Manager for z/OS configuration before you start, especially when configuring a network deployment cell. There are many choices and you must understand the factors that influence these choices to make the correct decisions during the installation process.

Related concepts:

“Considerations for a stand-alone configuration” on page 14

Choose a stand-alone configuration to evaluate the product or to support development of applications and services.

Collating customization information for configuring your environment

After you have determined your topology, collect the information that you will need to configure your application serving environment. As part of the installation and configuration, you must specify customization variables for WebSphere Application Server for z/OS, its feature packs, and IBM Business Process Manager for z/OS.

A configuration planning spreadsheet is supplied, which you can use to identify the variables required for creating and configuring the profile. This spreadsheet can be downloaded for use, as detailed in Techdoc WP101953.

The configuration planning spreadsheet consists of a number of worksheets, which are color-coded, and which include comments, to assist with data entry. The spreadsheet also includes macros that can be used to generate the following artifacts:

- Response files

You can import these files into the z/OS Profile Management Tool (zPMT) in order to generate customization definitions, JCL batch jobs, and augmentation response files that you can use to create and augment IBM Business Process Manager runtime environments on remote z/OS systems.

- A database design file

You can use this file to generate database scripts, which you can then run to create the DB2 database objects for the IBM Business Process Manager components. When creating your deployment environment, you can also choose to import the database design file into the Deployment Environment wizard in the administrative console in order to populate the fields with your database configuration values.

- A deployment environment design file

When creating your deployment environment, you can import this file into the Deployment Environment wizard to populate the fields with definitions for the deployment environment that you want to create.

If you intend to complete the zPMT windows without the benefit of an imported response file, the configuration planning spreadsheet can serve as a useful reference for the data you need to collate before you begin to create your customization definition for the IBM Business Process Manager for z/OS runtime environment. The data required can span multiple roles, such as system programmer, product administrator, and database administrator.

Related tasks:

“Creating a customization definition for a fully-customized profile” on page 25

You can define the customization parameters for WebSphere Application Server for z/OS, its feature packs, and IBM Business Process Manager for z/OS in a single pass through zPMT. This customization definition can then be used to create a fully-customized IBM Business Process Manager stand-alone server, deployment manager, or empty managed node.

Installing WebSphere Customization Toolbox

You require WebSphere Customization Toolbox V8.0 to install the required feature-pack and product extension files, and to create the response files and customized JCL jobs that can be used to tailor your IBM Business Process Manager installation.

WebSphere Customization Toolbox (including the required profile and migration management tools) is supported on Windows and Linux operating systems, so you require a Windows or Linux workstation on which to download and install the toolbox.

To obtain access to the WebSphere Customization Toolbox V8.0 installation packages, you require an IBM ID and password. If you do not already have an ID and a password, go to <http://www.ibm.com> and click **Register** to complete the IBM registration process.

IBM Installation Manager is also required for installing WebSphere Customization Toolbox. Installation Manager is a tool that you can use to install and maintain IBM software packages. If Installation Manager is not yet installed on the Windows or Linux workstation, you can download the latest version of the installation package from the Installation Manager downloads page. For more information about installing and running Installation Manager, see the IBM Installation Manager Information Center.

1. Start Installation Manager.
2. Click **File > Preferences**.

3. From the Preferences window, use the **Add Repository** button to configure a repository connection to one of the following download sites where the WebSphere Customization Toolbox installation packages are stored. To connect to these download sites, you must authenticate using your IBM ID and password.
 - <http://www.ibm.com/software/repositorymanager/com.ibm.websphere.WCT.v80>: Connect to this repository to download the WebSphere Customization Toolbox version that is available with a WebSphere Application Server for z/OS V8.0 license.
 - <http://www.ibm.com/software/repositorymanager/V8WASSupplementsILAN>: Connect to this repository to download the WebSphere Customization Toolbox (ILAN) version. The ILAN version is freely available and is identical to the licensed WebSphere Customization Toolbox, but is a no-charge, non-supported, and non-warranted version.

Tip: IBM Business Process Manager for z/OS V7.5 is compatible with WebSphere Application Server for z/OS V7.0, but can be customized only by using WebSphere Customization Toolbox V8.0. If you do not require and have not purchased a WebSphere Application Server for z/OS V8.0 license, connect to the WebSphere Customization Toolbox (ILAN) repository to use the ILAN version of the toolbox.

4. Click **OK** to close the Preferences window.
5. Click **Install** to install the relevant WebSphere Customization Toolbox version. At a minimum, select the z/OS profile and migration management tools for installation with the toolbox.

For more information about installing WebSphere Customization Toolbox, go to the WebSphere Application Server for z/OS V8.0 Information Center, and search for *WebSphere Customization Toolbox*.

After you install WebSphere Customization Toolbox, you can use the z/OS Profile Management Tool to customize your installation of IBM Business Process Manager.

Installing WebSphere Application Server

Before you can install IBM Business Process Manager for z/OS, you must install and optionally configure WebSphere Application Server for z/OS.

The procedure for installing WebSphere Application Server differs depending on the topology that you choose.

Stand-alone server

Creating a WebSphere Application Server stand-alone server provides you with the default profile that you can augment with IBM Business Process Manager configuration data.

Network deployment environment

In the network deployment cell, creating a WebSphere Application Server deployment manager creates the default WebSphere Application Server profile that you can augment with IBM Business Process Manager functions.

One or more new empty WebSphere Application Server nodes are also required on which to install IBM Business Process Manager. After configuring the deployment manager and empty nodes to support IBM Business Process Manager, you can then federate the nodes into the cell.

1. Install WebSphere Application Server for z/OS. For further details, see the information about installing the product and additional software on z/OS, and the preparatory and planning activities in the WebSphere Application Server Version 7.0 Information Center.
2. Install the following WebSphere Application Server feature packs:
 - The Feature Pack for XML. For more information, see the Feature Pack for XML documentation.
 - The Feature Pack for Service Component Architecture (SCA), including the Service Data Objects (SDO) feature, which is mandatory for IBM Business Process Manager. For more information, see the Feature pack for SCA documentation.

Configure WebSphere Application Server for z/OS application serving environments for your z/OS target systems. For further details, see the information about configuring the WebSphere Application Server for z/OS product after installation, in the WebSphere Application Server Version 7.0 Information Center.

Next, install the IBM Business Process Manager product code into the configured WebSphere Application Server environments.

Note: It is not mandatory for the WebSphere Application Server for z/OS environment to be configured before you install the IBM Business Process Manager product code. The following installation options are available for IBM Business Process Manager:

- If the WebSphere Application Server environment is configured before you install the IBM Business Process Manager product code, you can use the incremental installation method to augment the WebSphere Application Server profile with IBM Business Process Manager functions.
- If the WebSphere Application Server environment is not configured before you install the IBM Business Process Manager product code, you can use the stacked installation method to configure WebSphere Application Server and the feature packs, and to augment the WebSphere Application Server profile with IBM Business Process Manager functions.

Related tasks:

“Loading the product code from the installation media to the z/OS system”

The product code for IBM Business Process Manager for z/OS is installed using either an IBM SystemPac or ServerPac, or an IBM Custom-Built Product Delivery Option (CBPDO).

“Installing IBM Business Process Manager for z/OS (incremental installation using zPMT)” on page 31
The incremental installation method enables you to define and process the WebSphere Application Server configuration, feature-pack configurations, and IBM Business Process Manager configuration separately in zPMT. Use this installation method if the WebSphere Application Server environment is already configured and you want to augment the default profile with IBM Business Process Manager functions.

“Installing IBM Business Process Manager for z/OS (stacked installation using zPMT)” on page 23
Use the stacked installation method to collectively define and process customization parameters for WebSphere Application Server, the feature packs, and IBM Business Process Manager in a single pass through the z/OS Profile Management Tool (zPMT). A single set of instructions and a single set of jobs are generated to create the fully-customized IBM Business Process Manager application server, deployment manager, or empty managed node profile.

“Installing IBM Business Process Manager for z/OS (incremental installation without using zPMT)” on page 39

The ability to perform an incremental installation without using WebSphere Customization Toolbox and zPMT is retained in this version of IBM Business Process Manager for z/OS. You can use this installation method if the WebSphere Application Server environment is already configured and you want to augment the default profile with IBM Business Process Manager functions.

Loading the product code from the installation media to the z/OS system

The product code for IBM Business Process Manager for z/OS is installed using either an IBM SystemPac or ServerPac, or an IBM Custom-Built Product Delivery Option (CBPDO).

In a z/OS environment, loading the product code from the installation media on to the system is usually the responsibility of a system programmer.

- Using an IBM SystemPac or ServerPac. An IBM SystemPac or ServerPac consists of loadable product libraries and corresponding SMP/E data sets. The instructions for how to load the product code using a SystemPac or ServerPac are supplied with the SystemPac or ServerPac.
- Using an IBM CBPDO. A CBPDO contains SMP/E relative files and maintenance for one or more products. The instructions for how to load the product code using a CBPDO are supplied in the IBM Business Process Manager Program Directory.

After the product code is loaded from the installation media and the product data sets are defined on the system, the product administrator can perform the second phase of the installation process, which enables the product for use. The second phase includes creating one or more customization definitions, generating customized JCL jobs, and running the installation script.

Related tasks:

“Downloading the extension files and sample customization definition response files” on page 22

After loading the product code to the target z/OS system, assemble all the component files that you will need to complete the installation process for IBM Business Process Manager for z/OS.

“Installing IBM Business Process Manager for z/OS (incremental installation using zPMT)” on page 31

The incremental installation method enables you to define and process the WebSphere Application Server configuration, feature-pack configurations, and IBM Business Process Manager configuration separately in zPMT. Use this installation method if the WebSphere Application Server environment is already configured and you want to augment the default profile with IBM Business Process Manager functions.

“Installing IBM Business Process Manager for z/OS (stacked installation using zPMT)” on page 23

Use the stacked installation method to collectively define and process customization parameters for WebSphere Application Server, the feature packs, and IBM Business Process Manager in a single pass through the z/OS Profile Management Tool (zPMT). A single set of instructions and a single set of jobs are generated to create the fully-customized IBM Business Process Manager application server, deployment manager, or empty managed node profile.

“Installing IBM Business Process Manager for z/OS (incremental installation without using zPMT)” on page 39

The ability to perform an incremental installation without using WebSphere Customization Toolbox and zPMT is retained in this version of IBM Business Process Manager for z/OS. You can use this installation method if the WebSphere Application Server environment is already configured and you want to augment the default profile with IBM Business Process Manager functions.

Using an IBM SystemPac or ServerPac

An IBM CustomPac (SystemPac, ServerPac or ProductPac[®]) is a set of preinstalled product data sets bundled with an IBM installation dialog that is used to load the data sets to disk and perform initial customization.

In general, SMP/E work is not required during installation of a CustomPac offering. Instead, SMP/E data sets that correspond to the CustomPac service level are loaded onto the disk along with the product data sets. You can still use SMP/E to install preventive and corrective service after CustomPac installation.

If you use an IBM SystemPac or ServerPac, follow the instructions in the copy of *ServerPac: Installing your Order* that is distributed with your SystemPac or ServerPac.

For information about installing a SystemPac or ServerPac, see *ServerPac: Using the Installation Dialog (SA22-7815)*.

For further information, see the following information sources:

- Support overview (WebSphere Application Server for z/OS)
- Preventive Service Planning buckets
- IBM Software Support Center

Use the following guidelines when installing from an IBM SystemPac or ServerPac:

- Choose a product data set naming convention that allows you to keep and maintain at least two copies of product libraries for maintenance purposes. For more information, see “Planning for product data sets” on page 20.
- If you are installing from a driving system, make sure that the maintenance level of the target system meets requirements for IBM Business Process Manager for z/OS.

- When the installation is complete, make sure that the product data sets are available to your z/OS target systems. Also ensure that the IBM Business Process Manager installation file system is mounted at /usr/lpp/zBPMP5/V7R5 or a similar mount point of your choice on each target system.

Using an IBM CBPDO

An IBM Custom-Built Product Delivery Option (CBPDO) is a set of product tapes for one or more IBM software products that is bundled with cumulative service. Install the products and service on your system using SMP/E.

If you use CBPDO, follow the instructions in the copy of *IBM Business Process Manager Advanced for z/OS - Process Server: Program Directory*, GI13-0553-02, which is supplied with the product.

You can download the Program Directory in PDF format from the IBM Business Process Manager for z/OS download page at <http://www.ibm.com/software/integration/business-process-manager/library/documentation/>.

The Program Directory includes instructions about how to load the product code from the installation media to your z/OS system. The Program Directory also provides instructions about how to set up the installation file system (using zFS or HFS) so that you can run the IBM Business Process Manager installation script.

For further information, see the following information sources:

- Support overview (WebSphere Application Server for z/OS)
- Preventive Service Planning buckets
- IBM Software Support Center

Use the following guidelines when installing from an IBM CBPDO:

- Choose a product data set naming convention that allows you to keep and maintain at least two copies of product libraries for maintenance purposes. For more information, see “Planning for product data sets.”
- If you are installing from a driving system, make sure that the maintenance level of the target system meets requirements for IBM Business Process Manager for z/OS.
- When the installation is complete, make sure that the product data sets are available to your z/OS target systems. Also ensure that the IBM Business Process Manager installation file system is mounted at /usr/lpp/zBPMP5/V7R5 or a similar mount point of your choice on each target system.

Planning for product data sets

The IBM Business Process Manager for z/OS product code resides in a UNIX System Services file system, and in partitioned data sets that contain installation JCL and executable files. The default high-level qualifier for the product data sets is BPZ.

Partitioned data set contents

The IBM Business Process Manager product data sets are divided into target data sets, which are used when you customize and run the product, and distribution data sets, which are used to undo maintenance and revert to an earlier level (if necessary). In the following information, *bpm_hlq* is used to represent the high-level data set name qualifier for a particular set of IBM Business Process Manager for z/OS product data sets.

IBM Business Process Manager has the following target data set:

bpm_hlq.SBPZJCL
JCL for installation jobs

IBM Business Process Manager has the following distribution data sets:

bpm_hlq.**ABPZANT**

Installation file system files (ASCII)

bpm_hlq.**ABPZEBCD**

Installation file system files (EBCDIC)

bpm_hlq.**ABPZJCL**

JCL for installation jobs

See the IBM Business Process Manager for z/OS Program Directory (GI13-0553-02) for allocation information about each target data set and distribution data set. Updates to this information are included in the Preventive Service Planning (PSP) bucket for each release of IBM Business Process Manager for z/OS. You can find the PSP bucket at <http://www14.software.ibm.com/webapp/set2/psp/srchBroker>.

Product data set naming convention

To continue to run IBM Business Process Manager for z/OS while applying maintenance, you must have at least two copies of the product data sets: one for the running application execution environment and one to which service is applied.

Choose a middle-level qualifier for each separate release and maintenance level of IBM Business Process Manager for z/OS. This middle-level qualifier can reflect a very simple production or test distinction; for example "BPZ.V7PROD.*" or "BPZ.V7TEST.*". Alternatively, the middle-level qualifier can include specific service level information; for example "BPZ.B750FP1.*" or "BPZ.B750FP2.*".

There are several places where you must specify the product data set names, so, to avoid confusion, use the simplest data set naming scheme that accomplishes your maintenance goals.

IBM Business Process Manager file system directories

The IBM Business Process Manager for z/OS product and installation code is stored in z/OS partitioned data sets (the product data sets) and z/OS USS file system directories.

IBM Business Process Manager installation file system

All IBM Business Process Manager for z/OS product files are stored in the installation file system directory and its subdirectories. The installation file system for IBM Business Process Manager is defined when you unload the product code from the installation media and install using SMP/E (phase 1 of the installation process). The installation file system is typically mounted read-only.

The default location of the IBM Business Process Manager installation file system is `/usr/lpp/zBPMP5/V7R5`.

The location of the IBM Business Process Manager installation file system is different from the location of the WebSphere Application Server installation file system. The default location of the WebSphere Application Server installation file system is `/usr/lpp/zWebSphere/V7R0`.

The product directory and all of its subdirectories must reside in the same zSeries file system (zFS) data set. The installation jobs and program directory assume that a data set is allocated to be used for IBM Business Process Manager, separate from the z/OS root or version data set. The sample job to create a zFS file system is supplied in `hlq.SBPZJCL`, member `BPZFAZFS`. This job is run during installation by your system programmer.

Configuration file system

Each IBM Business Process Manager for z/OS application serving environment (stand-alone application server node or network deployment cell) has configuration files in one or more WebSphere Application Server configuration directories. These configuration directories contain symbolic links to files in the installation product directory.

The default location of the configuration directories varies by node type, and can be denoted by the `WAS_HOME` variable, where `WAS_HOME` is the top directory for the WebSphere Application Server node.

`WAS_HOME` represents the *configuration_root/nodetype_directory* location, where:

- *configuration_root* refers to the mount point for the configuration file system in WebSphere Application Server. For example, `/wasv7config/cell_name/node_name`, for a read/write file system that was created at `/wasv7config`.
- *nodetype_directory* refers to a unique directory for the application server, deployment manager, or unmanaged node in the configuration file system. For example, `DeploymentManager` for the deployment manager, or `AppServer` for each stand-alone application server or unmanaged server node.

Sample values for the `WAS_HOME` variable are as follows:

- `/wasv7config/bbobase/bbonode/AppServer`
- `/wasv7config/bbocell/bbodmgr/DeploymentManager`
- `/WebSphere/V7T3Z1/AppServer`
- `/WebSphere/V7T8DM/DeploymentManager`

Related information:

 [z/OS basic skills information center](#)

Downloading the extension files and sample customization definition response files

After loading the product code to the target z/OS system, assemble all the component files that you will need to complete the installation process for IBM Business Process Manager for z/OS.

You need to download the required files from the z/OS file system:

- The extension files for the Feature Pack for Service Component Architecture (SCA), the Feature Pack for XML, and the Service Data Objects (SDO) feature. These files extend zPMT to include the customization parameters for the feature packs, and to enable customization instructions and jobs to be generated for augmenting the WebSphere Application Server profile.

You must download these files.

- The extension file for IBM Business Process Manager for z/OS. This file extends zPMT to include the customization parameters, and the ability to generate customization instructions and jobs for augmenting the WebSphere Application Server profile with IBM Business Process Manager for z/OS features.

You must download this file.

- The sample customization definition response files for configuring IBM Business Process Manager for z/OS profiles. These files contain name-value parameters for configuring stand-alone server or deployment manager profiles for both incremental and stacked installations. These files can be imported into zPMT, and provide a good starting point for the configuration because they populate the zPMT configuration windows with standard settings, which you can then amend as required.

Use of the sample files is optional. You can download any number of these files, as required.

1. On the workstation where the WebSphere Customization Toolbox application is installed, create a directory to receive the files to be downloaded.
2. Check that an FTP server is running on the z/OS system.
3. Use FTP to download the required extension files and sample response files from the z/OS file system to the directory that you created on the WebSphere Customization Toolbox workstation.

You must download the files in binary format from the z/OS product directory where the WebSphere Application Server for z/OS Optional Materials files are installed, and from the IBM Business Process Manager installation file system. The default locations of these files are shown in the following table.

File type	File location and name
Feature-pack extension for SCA	/usr/lpp/zWebSphere_0M/V7R0/FPSCA/util/WCT/sca.wct
Feature-pack extension for XML	/usr/lpp/zWebSphere_0M/V7R0/FPXML/util/WCT/xml.wct
Feature-pack extension for SDO	/usr/lpp/zWebSphere_0M/V7R0/FPSCA/util/WCT/sdo.wct
Extension for IBM Business Process Manager for z/OS	/usr/lpp/zBPMPMS/V7R5/util/WCT/zWBI.wct
Sample customization definition response file for a stand-alone DB2 incremental configuration	/usr/lpp/zBPMPMS/V7R5/zos.config/ZBPMPSSandaloneDB2.WCT.responseFile
Sample customization definition response file for a deployment manager DB2 incremental configuration	/usr/lpp/zBPMPMS/V7R5/zos.config/ZBPMPSDMgrDB2.WCT.responseFile
Sample customization definition response file for a stand-alone DB2 stacked configuration	/usr/lpp/zBPMPMS/V7R5/zos.config/ZBPMPSSandaloneDB2Stacked.WCT.responseFile
Sample customization definition response file for a deployment manager DB2 stacked configuration	/usr/lpp/zBPMPMS/V7R5/zos.config/ZBPMPSDMgrDB2Stacked.WCT.responseFile

You can now install or import the files into zPMT, and use them to define the configuration for your runtime environment.

Related reference:

“Sample customization definition response files” on page 54

When using the z/OS Profile Management Tool (zPMT) to create a customization definition for the IBM Business Process Manager for z/OS runtime environment, you can import a sample customization definition response file in order to populate the zPMT windows with standard configuration values. You can then amend these values as you progress through the windows.

Installing IBM Business Process Manager for z/OS (stacked installation using zPMT)

Use the stacked installation method to collectively define and process customization parameters for WebSphere Application Server, the feature packs, and IBM Business Process Manager in a single pass through the z/OS Profile Management Tool (zPMT). A single set of instructions and a single set of jobs are generated to create the fully-customized IBM Business Process Manager application server, deployment manager, or empty managed node profile.

The prerequisites for a stacked installation are that SMP/E installations of the WebSphere Application Server product code, the feature packs, and the IBM Business Process Manager for z/OS product code

must exist in the z/OS system. Before you can create the customization definitions for your environment, you must also install the required product and feature-pack extensions in WebSphere Customization Toolbox.

If you want to deploy and run applications on a stand-alone application server cell, create a customization definition for the stand-alone server in zPMT. Then process the customization definition to generate and upload JCL jobs and data files that you can use to perform customization tasks in the z/OS system. Finally, run the jobs on the target z/OS system.

If you want to deploy and run applications on a network deployment cell, you must go through a multiphase process:

- Create a customization definition for the deployment manager in zPMT. Process the customization definition to generate and upload JCL jobs and data files that you can use to perform customization tasks in the z/OS system. Then run the jobs on the target z/OS system.
- Next, create a customization definition for a new managed node in zPMT. Process the customization definition to generate and upload JCL jobs and data files that you can use to perform customization tasks in the z/OS system. Then run the jobs on the target z/OS system. Repeat this process for each empty managed node that you want to add to the cell. (When the installation and initial configuration tasks are complete, you can federate the application servers into your network deployment cell.)

Installing the feature-pack and product extensions for the z/OS Profile Management Tool (zPMT)

To extend zPMT with supplementary features for creating the IBM Business Process Manager for z/OS profile, you must install the WebSphere Application Server feature-pack extensions and the IBM Business Process Manager for z/OS extension in WebSphere Customization Toolbox.

- Install WebSphere Customization Toolbox.
 - Use SMP/E to install the WebSphere Application Server for z/OS product code, the Feature Pack for SCA, and the Feature Pack for XML on the target z/OS system. The WebSphere Application Server environment does not need to be configured at this stage.
 - Use SMP/E to install the IBM Business Process Manager for z/OS product code on the z/OS system.
 - Download the feature-pack and product extension files from the z/OS file system to the workstation where the WebSphere Customization Toolbox application is installed.
1. Start zPMT from WebSphere Customization Toolbox:
 - **On Linux.** Use the menus that are used to start your programs. For example, click *Linux_operating_system_menus* > **IBM WebSphere** > **WebSphere Customization Toolbox V8.0**.
 - **On Windows.** Click **Start** > **All Programs** > **IBM WebSphere** > **WebSphere Customization Toolbox V8.0** > **Tools** > **Profile Management Tool for z/OS**.
 2. Click **Help** > **Software Updates** > **Manage Extensions**.
 3. In the WebSphere Customization Toolbox Extensions window, install the SCA feature-pack extension as follows:
 - a. Click **Install**.
 - b. In the Source Archive File window, click **Browse**, and navigate to the location where you downloaded the .wct extension files.
 - c. Select the sca.wct file, and click **Open**.
 - d. Click **Next** to proceed.
 - e. In the Extension Summary window, click **Next** to install the extension, and then click **Finish**.
 4. Repeat step 2 and step 3 to install the remaining extensions in the following order, substituting sca.wct with the relevant file name:
 - a. XML feature-pack extension (xml.wct)
 - b. SDO feature-pack extension (sdo.wct)

- c. IBM Business Process Manager extension (zWBI.wct)
- 5. In the WebSphere Customization Toolbox Extensions window, click **Finish**. WebSphere Customization Toolbox now needs to be restarted to complete the updates.
- 6. When prompted to restart WebSphere Customization Toolbox, click **OK**.
- 7. After the application restarts, verify that the extension files were installed successfully by accessing the **Welcome** perspective. Under **List of provided tools**, select **Profile Management Tool (z/OS only)**. In the **Welcome information for selected tool** area, you should see the following list of products and components for which customization definitions can be created:
 - WebSphere Application Server for z/OS
 - WebSphere Application Server Feature Pack for XML Version 1.0
 - WebSphere Application Server Feature Pack for SCA Version 1.0 SDO Feature
 - WebSphere Application Server Feature Pack for SCA Version 1.0
 - WebSphere Enterprise Service Bus for z/OS v7.5
 - IBM Business Process Manager Advanced: Process Server v7.5

You can now use zPMT to create the customization definition for the IBM Business Process Manager for z/OS stand-alone server node, deployment manager node, or empty managed node.

Related tasks:

“Installing WebSphere Customization Toolbox” on page 16

You require WebSphere Customization Toolbox V8.0 to install the required feature-pack and product extension files, and to create the response files and customized JCL jobs that can be used to tailor your IBM Business Process Manager installation.

“Installing WebSphere Application Server” on page 17

Before you can install IBM Business Process Manager for z/OS, you must install and optionally configure WebSphere Application Server for z/OS.

“Loading the product code from the installation media to the z/OS system” on page 18

The product code for IBM Business Process Manager for z/OS is installed using either an IBM SystemPac or ServerPac, or an IBM Custom-Built Product Delivery Option (CBPDO).

“Downloading the extension files and sample customization definition response files” on page 22

After loading the product code to the target z/OS system, assemble all the component files that you will need to complete the installation process for IBM Business Process Manager for z/OS.

“Creating a customization definition for a fully-customized profile”

You can define the customization parameters for WebSphere Application Server for z/OS, its feature packs, and IBM Business Process Manager for z/OS in a single pass through zPMT. This customization definition can then be used to create a fully-customized IBM Business Process Manager stand-alone server, deployment manager, or empty managed node.

Creating a customization definition for a fully-customized profile

You can define the customization parameters for WebSphere Application Server for z/OS, its feature packs, and IBM Business Process Manager for z/OS in a single pass through zPMT. This customization definition can then be used to create a fully-customized IBM Business Process Manager stand-alone server, deployment manager, or empty managed node.

- Determine your topology and collate the customization information that you need for your stand-alone configuration or network deployment configuration.
- Install WebSphere Customization Toolbox.
- Use SMP/E to install the WebSphere Application Server for z/OS product code, the Feature Pack for SCA, and the Feature Pack for XML on the target z/OS system.

Remember: The stacked installation method operates on the premise that the WebSphere Application Server environment has not been configured after the initial SMP/E installation.

- Use SMP/E to install the IBM Business Process Manager for z/OS product code on the z/OS system.

- Download the WebSphere Application Server feature-pack and IBM Business Process Manager for z/OS extensions to the WebSphere Customization Toolbox workstation. Optionally download the sample customization definition response files.
- Install the extensions into WebSphere Customization Toolbox.

When you create the customization definition for any IBM Business Process Manager for z/OS profile, the customization values that you specify in the zPMT windows are saved in a set of files on the workstation. Before you begin to define the values, you must identify a customization location (or parent directory) in which to store the files. You can save multiple customization definitions in the same customization location, or you can use more than one customization location if you want to separate your customization definitions into logical groupings.

A customization definition response file is written whenever you create a customization definition. This file contains name-value pairs of the settings that you specify in zPMT. When creating a customization definition, you can use one of the supplied sample customization definition response files, or another existing response file, as a shortcut, to populate the zPMT windows with similar values to those you want to define. For maximum benefit, use a response file with a customization-definition type that matches the definition you want to create; for example, a stacked installation of a stand-alone server.

When defining the customization values for a stand-alone server or deployment manager, you can indicate whether you want to use a database design file to define the configuration for the database components, or whether you want to define the database configuration in the zPMT windows:

- If you want to use a database design file, you must specify a fully qualified UNIX-style path for this file in the z/OS system; for example, `/WebSphere/V7T8DM/DeploymentManager/util/dbUtils/bpm.advanced.nd.topology.dbDesign`. If the file does not yet exist, you can specify the fully qualified file name (with a `.dbDesign` file extension) and then create the file later in the z/OS system by using the database design tool. This tool provides flexibility for the database design because you can use it to specify different configuration values for the various database components.

Tip: Make a note of the file name and file location because you will need to specify them when you create the database design file in the z/OS system.

If you are using a remote database, also select the option to delay the execution of the database scripts that create the database tables. You will perform this task later.

- If you choose not to use a database design file, you must specify the database configuration properties in the zPMT windows. With this option, you are constrained to specifying the same set of configuration values for all the database components. If you are using a remote database, also select the option to delay the execution of the database scripts that create the database tables. You will perform this task later.

If you intend to connect to a Process Center repository that is installed and configured on Linux, Windows, or UNIX, you can also use zPMT to specify the web address for accessing the Process Center; for example, `http://host_name:port/ProcessCenter`. The Process Center serves as a central repository for all processes, services, and other assets that are created in the IBM Business Process Manager authoring environments (Process Designer and Integration Designer). For more information about installing, configuring, and managing the Process Center repository, see *The Process Center repository, Installing and configuring IBM Business Process Manager Advanced, and Authoring with IBM Business Process Manager*.

1. Start zPMT in the WebSphere Customization Toolbox application (if not already started):
 - **On Linux.** Use the menus that are used to start your programs. For example, click `Linux_operating_system_menus > IBM WebSphere > WebSphere Customization Toolbox V8.0`. Then click **Profile Management Tool** to open the Profile Management Tool perspective.
 - **On Windows.** Click `Start > All Programs > IBM WebSphere > WebSphere Customization Toolbox V8.0 > Tools > Profile Management Tool for z/OS`.

You must now specify a new or existing customization location in which to save your customization definition files. The customization location directory can be on a local or network drive, and the operating system must recognize the drive and have access to it.

2. In the **Customization Locations** view, click **Add**.
3. In the Add Customization Location window, choose either of the following options:
 - **Add an existing customization location.** Specify the directory path if you want to add an existing customization location to the list of locations you can access in zPMT. This option is useful for sharing customization locations across installations of WebSphere Customization Toolbox, and enables you to reuse or modify previously-created customization definitions. You can also use this option for backup purposes.
 - **Create a new customization location.** Complete the fields as follows:
 - Name** Enter meaningful text that you can use to identify the generated customization definition response file and instructions in the customization location.
 - Version**
Select **7.0** as the version of WebSphere Application Server for z/OS that will be customized by the definitions contained in this location. The **7.0** value is the only valid entry for this field.
 - Location**
Specify the full directory path in which to store the customization definition files. This directory can either be an empty directory that already exists, or a new directory to be created.
4. Click **Finish** to add the customization location to your working set in zPMT. You must now define the customization values for creating and configuring the runtime environment.
5. In the **Customization Locations** view, ensure that the location to which you want to save the customization definition is selected. In the **Customization Definitions** view, click **Create**.
6. In the Environment Selection window, locate **IBM Business Process Manager Advanced: Process Server**, and select the type of environment that you want to create:
 - **Deployment manager with IBM Business Process Manager: Process Server 7.5**
 - **Application server with IBM Business Process Manager: Process Server 7.5**
 - **Managed (custom) node with IBM Business Process Manager: Process Server 7.5**
7. Click **Next**.
8. In the Customization Definition Name window, complete the fields as follows:

Customization definition name

Accept the default value or specify a unique meaningful name that you can use to identify the customization definition in zPMT. Use alphanumeric characters for the name.

Tip: This value is also used to construct a subdirectory name in the customization location, and is used as the stem of the response file name that is created in the customization location.

Response file path name (optional)

To populate the subsequent zPMT windows with a set of preconfigured values, you can specify the full path to a customization definition response file (of a matching or similar profile type) that was created earlier. You can also specify one of the downloaded sample customization definition response files:

Table 1. Sample customization definition response files for a stacked installation

Operating system	Sample file
Linux	<ul style="list-style-type: none"> • Sample file for a stand-alone DB2 stacked configuration: <i>full_dir_path/ZBPMPSSandaloneDB2Stacked.WCT.responseFile</i> • Sample file for a deployment manager DB2 stacked configuration: <i>full_dir_path/ZBPMPSDMgrDB2Stacked.WCT.responseFile</i>
Windows	<ul style="list-style-type: none"> • Sample file for a stand-alone DB2 stacked configuration: <i>full_dir_path\ZBPMPSSandaloneDB2Stacked.WCT.responseFile</i> • Sample file for a deployment manager DB2 stacked configuration: <i>full_dir_path\ZBPMPSDMgrDB2Stacked.WCT.responseFile</i>

Server runtime performance tuning setting

This field is available only if you are creating a stand-alone application server environment. Specify the performance-tuning setting that most closely matches the type of environment in which the application server will run:

- Select **Standard** as the performance setting for general-purpose usage.
- Select **Production** as the performance setting for a production environment where application changes are rare and optimal runtime performance is important. The WebSphere Application Server installation on the target z/OS system must, at a minimum, be at the 7.0.0.11 service level.

9. Click **Next**.
10. Complete the rest of the windows to set up the customization definition, using the **Back** and **Next** buttons as necessary.

Tip: To help you complete the required entries in each window, detailed help information is included within the body of text in the windows, or as hover help when you move the cursor over a field. If you completed the configuration worksheet earlier, you can also use it as a reference.

11. When you get to the Customization Summary window, review the details and click **Create** to create the customization definition response file and HTML instructions that can be used to create and configure the IBM Business Process Manager for z/OS stand-alone server node, deployment manager node, or empty managed node.

These files are created in a profiles subdirectory in the specified customization location.

12. In the Customization Definition Summary window, click **Finish** to close the window. In the Profile Management Tool perspective, the following details are displayed in the tab views:
 - **Customization Definitions:** Displays an entry for the customization definition that was created.
 - **Customization Summary:** Displays details about the customization definition name, the configured environment type, the customization location path, and the file names for the response file and instructions. Also displays the z/OS target data sets to which generated jobs and other customization data will be uploaded. Notice that the customization definition response file name has the format *name.responseFile*, where *name* is the customization definition name that you specified earlier.
 - **Customization Instructions:** Displays instructions for generating the customized JCL jobs. Describes manual configuration updates that might be required on the z/OS system before you run the jobs. Identifies the requirements of the ID under which the jobs run. Also describes the sequence for submitting the jobs to configure WebSphere Application Server for z/OS, the Feature Packs for SCA, SDO, and XML, and IBM Business Process Manager for z/OS.
 - **Customization Response File:** Displays the configuration information that you specified in the zPMT windows, as a set of name-value pairs.

You can now process the customization definition to generate customized JCL jobs and data files for the profile, and to upload the jobs and files to the z/OS file system.

Related tasks:

“Installing WebSphere Customization Toolbox” on page 16

You require WebSphere Customization Toolbox V8.0 to install the required feature-pack and product extension files, and to create the response files and customized JCL jobs that can be used to tailor your IBM Business Process Manager installation.

“Installing WebSphere Application Server” on page 17

Before you can install IBM Business Process Manager for z/OS, you must install and optionally configure WebSphere Application Server for z/OS.

“Loading the product code from the installation media to the z/OS system” on page 18

The product code for IBM Business Process Manager for z/OS is installed using either an IBM SystemPac or ServerPac, or an IBM Custom-Built Product Delivery Option (CBPDO).

“Downloading the extension files and sample customization definition response files” on page 22

After loading the product code to the target z/OS system, assemble all the component files that you will need to complete the installation process for IBM Business Process Manager for z/OS.

“Installing the feature-pack and product extensions for the z/OS Profile Management Tool (zPMT)” on page 24

To extend zPMT with supplementary features for creating the IBM Business Process Manager for z/OS profile, you must install the WebSphere Application Server feature-pack extensions and the IBM Business Process Manager for z/OS extension in WebSphere Customization Toolbox.

“Processing a customization definition for a fully-customized profile”

After you create the customization definition for a fully-customized profile, you can process the customization definition in zPMT. This action generates customized JCL jobs and other files, and uploads the jobs and files to target data sets on the z/OS system.

Related reference:

“Collating customization information for configuring your environment” on page 15

After you have determined your topology, collect the information that you will need to configure your application serving environment. As part of the installation and configuration, you must specify customization variables for WebSphere Application Server for z/OS, its feature packs, and IBM Business Process Manager for z/OS.

“Sample customization definition response files” on page 54

When using the z/OS Profile Management Tool (zPMT) to create a customization definition for the IBM Business Process Manager for z/OS runtime environment, you can import a sample customization definition response file in order to populate the zPMT windows with standard configuration values. You can then amend these values as you progress through the windows.

Processing a customization definition for a fully-customized profile

After you create the customization definition for a fully-customized profile, you can process the customization definition in zPMT. This action generates customized JCL jobs and other files, and uploads the jobs and files to target data sets on the z/OS system.

- Use zPMT to create the customization definition for a stand-alone application server, deployment manager, or empty managed node for IBM Business Process Manager for z/OS.
1. Start zPMT in the WebSphere Customization Toolbox application (if not already started):
 - **On Linux.** Use the menus that are used to start your programs. For example, click *Linux_operating_system_menus* > **IBM WebSphere** > **WebSphere Customization Toolbox V8.0**. Then click **Profile Management Tool** to open the Profile Management Tool perspective.
 - **On Windows.** Click **Start** > **All Programs** > **IBM WebSphere** > **WebSphere Customization Toolbox V8.0** > **Tools** > **Profile Management Tool for z/OS**.
 2. In the **Customization Locations** view, select the location of the customization definition that you want to process.
 3. In the **Customization Definitions** view, select the customization definition to be processed. The Type column should have an entry of **Create**.

4. Click **Process**.
5. In the Select Process Type window, select the **Upload to target z/OS system** option for your preferred FTP method.
6. Click **Next**.
7. In the Upload Customization Definition window, enter information that is relevant for the selected FTP method:
 - Specify authentication details for accessing the target z/OS system.
 - Specify the target work directory into which the customization data will be uploaded initially, if using secure FTP.
 - Specify the FTP or SSH server port.
 - Specify a timeout period for the upload process.
 - Indicate whether you want to allocate the target z/OS data sets, and enter the volume and unit for the target data sets. The target data sets might already exist on your z/OS system, or you can use the Profile Management Tool to allocate them.

The fields containing the names of the partitioned data sets in which the customization jobs and data files will be stored are disabled because these values must always be the same as the target data sets specified in the configuration. To edit these locations, you must regenerate the customization definition.

Tip: To help you complete the entries in this window, hover help information is available when you move the cursor over a field.

8. Click **Finish**.
9. When the Upload successful message is displayed, click **OK**.

The customized jobs, an augmentation response file, and other data files are generated, and the jobs and files are uploaded to your z/OS system, and stored in the specified CNTL and DATA target data sets. The augmentation response file, which is required for configuring the profile, follows the naming format **BPZRSP x** where x can be:

- **A** for a stand alone application server node
- **D** for a deployment manager node
- **N** for a managed node

You can now follow the instructions in the **Customization Instructions** view to complete the installation and configuration of IBM Business Process Manager for z/OS.

Related tasks:

“Creating a customization definition for a fully-customized profile” on page 25

You can define the customization parameters for WebSphere Application Server for z/OS, its feature packs, and IBM Business Process Manager for z/OS in a single pass through zPMT. This customization definition can then be used to create a fully-customized IBM Business Process Manager stand-alone server, deployment manager, or empty managed node.

Running the installation job for a fully-customized profile

The **zBPMPsInstall.sh** script completes the second phase of the IBM Business Process Manager for z/OS installation by generating symbolic links within the configuration file system, to the installation file system. You can run the script in MVS™ by submitting the installation job that was generated for your customization definition.

- Create a configuration definition using zPMT and use the Process action to generate customized JCL batch jobs and to upload the jobs and other data files to the z/OS system.
- Ensure that you have administrator authority on the system so that you can run the installation job.

For your selected profile, follow the instructions that are available in the **Customization Instructions** view in the Profile Management Tool perspective, in the relevant HTML file in the customization location, or in the CNTL data set. Before you begin, read through the customization instructions to familiarize yourself with the required steps.

1. Complete the documented manual configuration steps in the z/OS system, to update configuration data for your base operating system or existing subsystems.
2. Begin to submit the jobs in the order listed in the customization instructions. You must first submit the jobs that are required to configure WebSphere Application Server for z/OS and the feature packs on the target node.

As you progress, verify that each job runs without error by browsing the job output.

3. When you get to the step to invoke the installation executable, submit the BPZINST job. This job runs the **zBPMPInstall.sh** installation script.
4. Review the BPZINST job output to verify that the job ran without error.

If any error conditions occurred, you can also review the installation log file from USS. This file is stored in `WAS_HOME/logs/bmpms/zBPMPInstall.log`.

The WebSphere Application Server configuration now contains symbolic links to the IBM Business Process Manager installation. The WebSphere Application Server administrative console is updated so that you can use it to administer IBM Business Process Manager.

After verifying that the installation job ran successfully, you can move on to the configuration process. If you chose to use a database design file in zPMT and you do not already have an existing file, you must first use the database design tool to design your DB2 database configuration before you configure IBM Business Process Manager for z/OS.

Related tasks:

“Creating a customization definition for a fully-customized profile” on page 25

You can define the customization parameters for WebSphere Application Server for z/OS, its feature packs, and IBM Business Process Manager for z/OS in a single pass through zPMT. This customization definition can then be used to create a fully-customized IBM Business Process Manager stand-alone server, deployment manager, or empty managed node.

“Processing a customization definition for a fully-customized profile” on page 29

After you create the customization definition for a fully-customized profile, you can process the customization definition in zPMT. This action generates customized JCL jobs and other files, and uploads the jobs and files to target data sets on the z/OS system.

Installing IBM Business Process Manager for z/OS (incremental installation using zPMT)

The incremental installation method enables you to define and process the WebSphere Application Server configuration, feature-pack configurations, and IBM Business Process Manager configuration separately in zPMT. Use this installation method if the WebSphere Application Server environment is already configured and you want to augment the default profile with IBM Business Process Manager functions.

A separate set of instructions and jobs is generated for each customization definition that is created for the WebSphere Application Server profile, each feature pack, and IBM Business Process Manager.

The prerequisites for an incremental installation are that SMP/E installations of the WebSphere Application Server product code, the feature packs, and the IBM Business Process Manager for z/OS product code must exist in the z/OS system.

In this documentation, it is assumed that the WebSphere Application Server profile for a stand-alone server, deployment manager, or empty managed node is already configured. Therefore, the only remaining configuration required is to set up the customization definition for augmenting the profile. To

set up this customization definition, the IBM Business Process Manager for z/OS extension must be installed in WebSphere Customization Toolbox. Instructions for creating and configuring WebSphere Application Server are available in the WebSphere Application Server for z/OS Information Center.

Note: If you want to deploy and run applications on a network deployment cell, you must augment the deployment manager and each empty managed node that you want to add to the cell. The nodes must not have been federated into the cell prior to augmentation. (When the installation and initial configuration tasks are complete, you can federate the application servers into your network deployment cell.)

Installing the feature-pack and product extensions for the z/OS Profile Management Tool (zPMT)

To extend zPMT with supplementary features for augmenting a WebSphere Application Server profile with IBM Business Process Manager for z/OS functions, you must install the WebSphere Application Server feature-pack extensions and the IBM Business Process Manager for z/OS extension in WebSphere Customization Toolbox.

- Install WebSphere Customization Toolbox.
 - Use SMP/E to install the WebSphere Application Server for z/OS product code, the Feature Pack for SCA, and the Feature Pack for XML on the target z/OS system. Configure the WebSphere Application Server environment by using the Create, Augment and Process actions in zPMT.
 - Use SMP/E to install the IBM Business Process Manager for z/OS product code on the z/OS system.
 - Download the feature-pack and product extension files from the z/OS file system to the workstation where the WebSphere Customization Toolbox application is installed.
1. Start zPMT from WebSphere Customization Toolbox:
 - **On Linux.** Use the menus that are used to start your programs. For example, click *Linux_operating_system_menus* > **IBM WebSphere** > **WebSphere Customization Toolbox V8.0**.
 - **On Windows.** Click **Start** > **All Programs** > **IBM WebSphere** > **WebSphere Customization Toolbox V8.0** > **Tools** > **Profile Management Tool for z/OS**.
 2. Click **Help** > **Software Updates** > **Manage Extensions**.
 3. In the WebSphere Customization Toolbox Extensions window, install the SCA feature-pack extension as follows:
 - a. Click **Install**.
 - b. In the Source Archive File window, click **Browse**, and navigate to the location where you downloaded the .wct extension files.
 - c. Select the sca.wct file, and click **Open**.
 - d. Click **Next** to proceed.
 - e. In the Extension Summary window, click **Next** to install the extension, and then click **Finish**.
 4. Repeat step 2 and step 3 to install the remaining extensions in the following order, substituting sca.wct with the relevant file name:
 - a. XML feature-pack extension (xml.wct)
 - b. SDO feature-pack extension (sdo.wct)
 - c. IBM Business Process Manager extension (zWBI.wct)
 5. In the WebSphere Customization Toolbox Extensions window, click **Finish**. WebSphere Customization Toolbox must now be restarted to complete the updates.
 6. When prompted to restart WebSphere Customization Toolbox, click **OK**.
 7. After the application restarts, verify that the extension files were installed successfully by accessing the **Welcome** perspective. Under **List of provided tools**, select **Profile Management Tool (z/OS only)**. In the **Welcome information for selected tool** area, you should see the following list of products and components for which customization definitions can be created:
 - WebSphere Application Server for z/OS

- WebSphere Application Server Feature Pack for XML Version 1.0
- WebSphere Application Server Feature Pack for SCA Version 1.0 SDO Feature
- WebSphere Application Server Feature Pack for SCA Version 1.0
- WebSphere Enterprise Service Bus for z/OS v7.5
- IBM Business Process Manager: Process Server v7.5

You can now use zPMT to configure the WebSphere Application Server stand-alone server node, deployment manager node, or empty managed node with IBM Business Process Manager functions.

Related tasks:

“Installing WebSphere Customization Toolbox” on page 16

You require WebSphere Customization Toolbox V8.0 to install the required feature-pack and product extension files, and to create the response files and customized JCL jobs that can be used to tailor your IBM Business Process Manager installation.

“Installing WebSphere Application Server” on page 17

Before you can install IBM Business Process Manager for z/OS, you must install and optionally configure WebSphere Application Server for z/OS.

“Loading the product code from the installation media to the z/OS system” on page 18

The product code for IBM Business Process Manager for z/OS is installed using either an IBM SystemPac or ServerPac, or an IBM Custom-Built Product Delivery Option (CBPDO).

“Downloading the extension files and sample customization definition response files” on page 22

After loading the product code to the target z/OS system, assemble all the component files that you will need to complete the installation process for IBM Business Process Manager for z/OS.

“Creating a customization definition for augmenting a profile”

You can use zPMT to customize a WebSphere Application Server stand-alone server, deployment manager, or empty managed node with support for IBM Business Process Manager for z/OS.

Creating a customization definition for augmenting a profile

You can use zPMT to customize a WebSphere Application Server stand-alone server, deployment manager, or empty managed node with support for IBM Business Process Manager for z/OS.

- Determine your topology and collate the customization information that you need for your stand-alone configuration or network deployment configuration.
- Install WebSphere Customization Toolbox.
- Install WebSphere Application Server, which is used as a base for your IBM Business Process Manager for z/OS configuration. Also install the Feature Packs for SCA and XML.
- Download the feature-pack extensions to the WebSphere Customization Toolbox workstation. Then configure the WebSphere Application Server environment by using WebSphere Customization Toolbox to create the WebSphere Application Server profile, and to augment it with the feature-pack extensions.
- Use SMP/E to install the IBM Business Process Manager for z/OS product code on the z/OS system.
- Download the IBM Business Process Manager for z/OS extension to the WebSphere Customization Toolbox workstation. Optionally download the sample customization definition response files.
- Install the extension into WebSphere Customization Toolbox.

When you create the customization definition for augmenting the WebSphere Application Server profile, the customization values that you specify in the zPMT windows are saved in a set of files on the workstation. Before you begin to define the values, you must identify a customization location (or parent directory) in which to store the files. You can save multiple customization definitions in the same customization location, or you can use more than one customization location if you want to separate your customization definitions into logical groupings.

A customization definition response file is written whenever you create a customization definition. This file contains name-value pairs of the settings that you specify in zPMT. When creating a customization

definition, you can use one of the supplied sample customization definition response files, or another existing response file, as a shortcut, to populate the zPMT windows with similar values to those you want to define. For maximum benefit, use a response file with a customization-definition type that matches the definition you want to create; for example, an incremental installation of a stand-alone server.

When defining the customization values for a stand-alone server or deployment manager, you can indicate whether you want to use a database design file to define the configuration for the database components, or whether you want to define the database configuration in the zPMT windows:

- If you want to use a database design file, you must specify a fully qualified UNIX-style path for this file in the z/OS system; for example, `/WebSphere/V7T8DM/DeploymentManager/util/dbUtils/bpm.advanced.nd.topology.dbDesign`. If the file does not yet exist, you can specify the fully qualified file name (with a `.dbDesign` file extension) and then create the file later in the z/OS system by using the database design tool. This tool provides flexibility for the database design because you can use it to specify different configuration values for the various database components.

Tip: Make a note of the file name and file location because you will need to specify them when you create the database design file in the z/OS system.

If you are using a remote database, also select the option to delay the execution of the database scripts that create the database tables. You will complete this task later.

- If you choose not to use a database design file, you must specify the database configuration properties in the zPMT windows. With this option, you are constrained to specifying the same set of configuration values for all the database components. If you are using a remote database, also select the option to delay the execution of the database scripts that create the database tables. You will complete this task later.

If you intend to connect to a Process Center repository that is installed and configured on Linux, Windows, or UNIX, you can also use zPMT to specify the web address for accessing the Process Center; for example, `http://host_name:port/ProcessCenter`. The Process Center serves as a central repository for all processes, services, and other assets that are created in the IBM Business Process Manager authoring environments (Process Designer and Integration Designer). For more information about installing, configuring, and managing the Process Center repository, see *The Process Center repository*, *Installing and configuring IBM Business Process Manager Advanced*, and *Authoring with IBM Business Process Manager*.

1. Start zPMT in the WebSphere Customization Toolbox application (if not already started):
 - **On Linux.** Use the menus that are used to start your programs. For example, click *Linux operating system menus* > **IBM WebSphere** > **WebSphere Customization Toolbox V8.0**. Then click **Profile Management Tool** to open the Profile Management Tool perspective.
 - **On Windows.** Click **Start** > **All Programs** > **IBM WebSphere** > **WebSphere Customization Toolbox V8.0** > **Tools** > **Profile Management Tool for z/OS**.

You must now specify a new or existing customization location in which to save your customization definition files. The customization location directory can be on a local or network drive, and the operating system must recognize the drive and have access to it.

2. In the **Customization Locations** view, click **Add**.
3. In the Add Customization Location window, choose either of the following options:
 - **Add an existing customization location.** Specify the directory path if you want to add an existing customization location to the list of locations you can access in zPMT. This option is useful for sharing customization locations across installations of WebSphere Customization Toolbox, and enables you to reuse or modify previously-created customization definitions. You can also use this option for backup purposes.
 - **Create a new customization location.** Complete the fields as follows:

Name Enter meaningful text that you can use to identify the generated customization definition response file and instructions in the customization location.

Version

Select **7.0** as the version of WebSphere Application Server for z/OS that will be customized by the definitions contained in this location. The **7.0** value is the only valid entry for this field.

Location

Specify the full directory path in which to store the customization definition files. This directory can either be an empty directory that already exists, or a new directory to be created.

4. Click **Finish** to add the customization location to your working set in zPMT. You must now define the customization values for configuring the runtime environment.
5. In the **Customization Locations** view, ensure that the location to which you want to save the customization definition is selected. In the **Customization Definitions** view, click **Augment**.
6. In the Environment Selection window, select the type of environment that you want to augment:
 - **Management**
 - **Application server**
 - **Managed (custom) node**
7. Click **Next**.
8. In the Augment Selection window, select the **IBM Business Process Manager: Process Server** option and click **Next**.
9. In the Customization Definition Name window, complete the fields as follows:

Customization definition name

Accept the default value or specify a unique meaningful name that you can use to identify the customization definition in zPMT. Use alphanumeric characters for the name.

Tip: This value is also used to construct a subdirectory name in the customization location, and is used as the stem of the response file name that is created in the customization location.

Value Pre-loading

To populate the subsequent zPMT windows with a set of preconfigured values, specify the source for the values. You can also specify a previously-created response file, or one of the sample customization definition response files of a matching or similar profile type:

Table 2. Sample customization definition response files for an incremental installation

Operating system	Sample file
Linux	<ul style="list-style-type: none">• Sample file for a stand-alone DB2 incremental configuration: <i>full_dir_path/ZBPMPSSandaloneDB2.WCT.responseFile</i>• Sample file for a deployment manager DB2 incremental configuration: <i>full_dir_path/ZBPMPSDMgrDB2.WCT.responseFile</i>
Windows	<ul style="list-style-type: none">• Sample file for a stand-alone DB2 incremental configuration: <i>full_dir_path\ZBPMPSSandaloneDB2.WCT.responseFile</i>• Sample file for a deployment manager DB2 incremental configuration: <i>full_dir_path\ZBPMPSDMgrDB2.WCT.responseFile</i>

10. Click **Next**.
11. Complete the rest of the windows to set up the customization definition, using the **Back** and **Next** buttons as necessary.

Tip: To help you complete the required entries in each window, detailed help information is included within the body of text in the windows, or as hover help when you move the cursor over a field. If you completed the configuration worksheet earlier, you can also use it as a reference.

12. When you get to the Customization Summary window, review the details and click **Augment** to create the customization definition response file and HTML instructions for augmenting the WebSphere Application Server for z/OS stand-alone server node, deployment manager node, or empty managed node.

These files are created in a `profiles` subdirectory in the specified customization location.

13. In the Customization Definition Summary window, click **Finish** to close the window. In the Profile Management Tool perspective, the following details are displayed in the tab views:
 - **Customization Definitions:** Displays an entry for the customization definition that was created.
 - **Customization Summary:** Displays details about the customization definition name, the configured environment type, the customization location path, and the file names for the response file and instructions. Also displays the z/OS target data sets to which generated jobs and other customization data will be uploaded. Notice that the customization definition response file name has the format `name.responseFile`, where *name* is the customization definition name that you specified earlier.
 - **Customization Instructions:** Displays instructions for generating and running the customized JCL job. Identifies the requirements of the ID under which the job runs.
 - **Customization Response File:** Displays the configuration information that you specified in the zPMT windows, as a set of name-value pairs.

You can now process the customization definition to generate the customized JCL jobs and data files for the profile, and to upload the jobs and files to the z/OS file system.

Related tasks:

“Installing WebSphere Customization Toolbox” on page 16

You require WebSphere Customization Toolbox V8.0 to install the required feature-pack and product extension files, and to create the response files and customized JCL jobs that can be used to tailor your IBM Business Process Manager installation.

“Installing WebSphere Application Server” on page 17

Before you can install IBM Business Process Manager for z/OS, you must install and optionally configure WebSphere Application Server for z/OS.

“Loading the product code from the installation media to the z/OS system” on page 18

The product code for IBM Business Process Manager for z/OS is installed using either an IBM SystemPac or ServerPac, or an IBM Custom-Built Product Delivery Option (CBPDO).

“Downloading the extension files and sample customization definition response files” on page 22

After loading the product code to the target z/OS system, assemble all the component files that you will need to complete the installation process for IBM Business Process Manager for z/OS.

“Installing the feature-pack and product extensions for the z/OS Profile Management Tool (zPMT)” on page 32

To extend zPMT with supplementary features for augmenting a WebSphere Application Server profile with IBM Business Process Manager for z/OS functions, you must install the WebSphere Application Server feature-pack extensions and the IBM Business Process Manager for z/OS extension in WebSphere Customization Toolbox.

“Processing a customization definition for augmenting a profile”

After you create the customization definition to augment a WebSphere Application Server for z/OS profile, you can process the customization definition in zPMT. This action generates customized JCL jobs and other files, and uploads the jobs and files to target data sets on the z/OS system.

Related reference:

“Sample customization definition response files” on page 54

When using the z/OS Profile Management Tool (zPMT) to create a customization definition for the IBM Business Process Manager for z/OS runtime environment, you can import a sample customization definition response file in order to populate the zPMT windows with standard configuration values. You can then amend these values as you progress through the windows.

Processing a customization definition for augmenting a profile

After you create the customization definition to augment a WebSphere Application Server for z/OS profile, you can process the customization definition in zPMT. This action generates customized JCL jobs and other files, and uploads the jobs and files to target data sets on the z/OS system.

- Use zPMT to create the customization definition for augmenting a WebSphere Application Server stand-alone application server, deployment manager, or empty managed node with IBM Business Process Manager functions.
1. Start zPMT in the WebSphere Customization Toolbox application (if not already started):
 - **On Linux.** Use the menus that are used to start your programs. For example, click *Linux_operating_system_menus* > **IBM WebSphere** > **WebSphere Customization Toolbox V8.0**. Then click **Profile Management Tool** to open the Profile Management Tool perspective.
 - **On Windows.** Click **Start** > **All Programs** > **IBM WebSphere** > **WebSphere Customization Toolbox V8.0** > **Tools** > **Profile Management Tool for z/OS**.
 2. In the **Customization Locations** view, select the location of the customization definition that you want to process.
 3. In the **Customization Definitions** view, select the customization definition to be processed. The Type column should have an entry of **Augment**.
 4. Click **Process**.
 5. In the Select Process Type window, select the **Upload to target z/OS system** option for your preferred FTP method.

6. Click **Next**.
7. In the Upload Customization Definition window, enter information that is relevant for the selected FTP method:
 - Specify authentication details for accessing the target z/OS system.
 - Specify the target work directory into which the customization data will be uploaded initially, if using secure FTP.
 - Specify the FTP or SSH server port.
 - Specify a timeout period for the upload process.
 - Indicate whether you want to allocate the target z/OS data sets, and enter the volume and unit for the target data sets. The target data sets might already exist on your z/OS system, or you can use the Profile Management Tool to allocate them.

The fields containing the names of the partitioned data sets in which the customization jobs and data files will be stored are disabled because these values must always be the same as the target data sets specified in the configuration. To edit these locations, you must regenerate the customization definition.

Tip: To help you complete the entries in this window, hover help information is available when you move the cursor over a field.

8. Click **Finish**.
9. When the Upload successful message is displayed, click **OK**.

The customized jobs, an augmentation response file, and other data files are generated, and the jobs and files are uploaded to your z/OS system, and stored in the specified CNTL and DATA target data sets. The augmentation response file, which is required for configuring the profile, follows the naming format **BPZRSP x** where x can be:

- **A** for a stand alone application server node
- **D** for a deployment manager node
- **N** for a managed node

You can now follow the instructions in the **Customization Instructions** view to complete the configuration of IBM Business Process Manager for z/OS.

Related tasks:

“Creating a customization definition for augmenting a profile” on page 33

You can use zPMT to customize a WebSphere Application Server stand-alone server, deployment manager, or empty managed node with support for IBM Business Process Manager for z/OS.

Running the installation job using zPMT-generated JCL

The **zBPMPSInstall.sh** script completes the second phase of the IBM Business Process Manager for z/OS installation by generating symbolic links within the configuration file system, to the installation file system. You can run the script in MVS by submitting the augmentation job that was generated for your customization definition.

- Install the WebSphere Application Server product code and the Feature Packs for SCA and XML.
- Configure the WebSphere Application Server environment by creating the WebSphere Application Server profile and augmenting it with the feature-pack extensions.
- Install the IBM Business Process Manager for z/OS product code on the z/OS system and install the product extension into WebSphere Customization Toolbox.
- Use zPMT to create and process the customization definition for augmenting the WebSphere Application Server profile with IBM Business Process Manager functions.
- Ensure that you have administrator authority on the system so that you can run the installation job.

For your selected profile, you can follow the instructions that are available in the **Customization Instructions** view in the Profile Management Tool perspective, in the relevant HTML file in the customization location, or in the CNTL data set. Before you begin, read through the customization instructions to familiarize yourself with the required steps.

1. Complete the documented preinstallation steps.
2. When you get to the step to invoke the installation executable, submit the BPZINST job. This job runs the **zBPMPInstall.sh** installation script.
3. Review the BPZINST job output to verify that the job ran without error.
If any error conditions occurred, you can also review the installation log file from USS. This file is stored in `WAS_HOME/logs/bpmps/zBPMPInstall.log`.

The WebSphere Application Server configuration now contains symbolic links to the IBM Business Process Manager installation. The WebSphere Application Server administrative console is updated so that you can use it to administer IBM Business Process Manager.

After verifying that the installation job ran successfully, you can move on to the configuration process. If you chose to use a database design file in zPMT and you do not already have an existing file, you must first use the database design tool to design your DB2 database configuration before you configure IBM Business Process Manager for z/OS.

Related tasks:

“Installing WebSphere Application Server” on page 17

Before you can install IBM Business Process Manager for z/OS, you must install and optionally configure WebSphere Application Server for z/OS.

“Creating a customization definition for augmenting a profile” on page 33

You can use zPMT to customize a WebSphere Application Server stand-alone server, deployment manager, or empty managed node with support for IBM Business Process Manager for z/OS.

“Processing a customization definition for augmenting a profile” on page 37

After you create the customization definition to augment a WebSphere Application Server for z/OS profile, you can process the customization definition in zPMT. This action generates customized JCL jobs and other files, and uploads the jobs and files to target data sets on the z/OS system.

Installing IBM Business Process Manager for z/OS (incremental installation without using zPMT)

The ability to perform an incremental installation without using WebSphere Customization Toolbox and zPMT is retained in this version of IBM Business Process Manager for z/OS. You can use this installation method if the WebSphere Application Server environment is already configured and you want to augment the default profile with IBM Business Process Manager functions.

The prerequisites for an incremental installation without using zPMT are that SMP/E installations of the WebSphere Application Server product code, the feature packs, and the IBM Business Process Manager for z/OS product code must exist in the z/OS system.

In this documentation, it is assumed that the WebSphere Application Server profile for a stand-alone server, deployment manager, or empty managed node is already configured and augmented with the feature packs for SCA, SDO, and XML.

Note: If you want to deploy and run applications on a network deployment cell, you must augment the deployment manager and each empty managed node that you want to add to the cell. The nodes must not have been federated into the cell, prior to augmentation. (When the installation and initial configuration tasks are complete, you can federate the application servers into your network deployment cell.)

To complete an incremental installation without using WebSphere Customization Toolbox and zPMT:

1. Install and configure the WebSphere Application Server for z/OS environment. For further information, see “Installing WebSphere Application Server” on page 17.
2. Install the IBM Business Process Manager for z/OS product code. For further information, see “Loading the product code from the installation media to the z/OS system” on page 18.
3. Run the **zBPMPInstall.sh** installation script from USS to create the code definitions needed to run IBM Business Process Manager for z/OS on a WebSphere Application Server for z/OS server. For further information, see “Running the installation script from USS.”

Running the installation script from USS

The **zBPMPInstall.sh** script completes the second phase of the IBM Business Process Manager for z/OS installation by creating the code definitions needed to run IBM Business Process Manager for z/OS on a WebSphere Application Server for z/OS server. You can run the **zBPMPInstall.sh** script manually from UNIX System Services (USS).

Important: If you are creating a network deployment configuration, you must run the installation script on each of the nodes that will belong to the network deployment cell.

- Use SMP/E to install the WebSphere Application Server product code and the Feature Packs for SCA and XML.
- Configure the WebSphere Application Server environment by creating a default profile and augmenting it with the feature-pack extensions.
- Use SMP/E to install the IBM Business Process Manager for z/OS product code on the z/OS system.
- If you are running the installation script from TSO OMVS, ensure that the region size for the TSO user ID is large enough to run Java (typically 150M).
- Ensure that the OMVS time limit is large enough to allow the product installation and configuration scripts time to complete. To increase the OMVS time limit so the session will not time out, enter the following system command:

```
SETOMVS MAXCPUPTIME=86400
```

- Ensure that you have administrator authority on the system so that you can run the installation script.

1. Stop the target application server if running.
2. Back up the configuration file system on the server, so that you can restore it if necessary. For more information, see Backing up the WebSphere Application Server for z/OS system.
3. In OMVS, switch to the administrator user ID. For example:

```
su wsadmin
```

4. Change to the directory in which you want to run the installation script. For example:

```
cd /usr/lpp/zBPMP/V7R5/zos.config/bin
```

5. Add the current directory to your PATH so that you can run the installation script:

```
export PATH=.:$PATH
```

6. From the command prompt, run the installation script. For example:

```
zBPMPInstall.sh -smprot /usr/lpp/zBPMP/V7R5 -runtime /usr/lpp/zWebSphere/V7R0/AppServer  
-install
```

You can optionally redirect the standard out messages to a file instead of displaying them in the console; however, this procedure assumes that you are viewing the standard out messages while the script runs.

Review the messages that are displayed in the console, checking that no error messages are displayed. When the installation script has finished running, the following messages (or similar) are displayed before you are returned to the shell prompt:

```
CWPIZ0256I: set up configuration complete  
CWPIZ0257I: creating the symbolic links...  
CWPIZ0259I: creation of symbolic links complete
```

```
CWPIZ0260I: doing post install file updates...
CWPIZ0262I: post install updates complete
CWPIZ0263I: running Configuration Manager update...
Oct 19, 2007 4:28:16 PM com.ibm.ws390.installer.WPSInstaller
INFO: BBZWI218
Oct 19, 2007 4:38:16 PM com.ibm.ws390.installer.WPSInstaller
WARNING: BBZWI221
CWPIZ0264I: Configuration Manager update complete
```

If any error conditions occurred, you can also review the installation log file from USS. This file is stored in `WAS_HOME/logs/bpmps/zBPMPInstall.log`.

The WebSphere Application Server configuration now contains symbolic links to the IBM Business Process Manager installation. The WebSphere Application Server administrative console is updated so that you can use it to administer IBM Business Process Manager.

After verifying that the installation script ran successfully, use the database design tool to define your database configuration, manually create an augmentation response file, and then run the IBM Business Process Manager for z/OS configuration script.

Chapter 4. Installation reference information

This reference section contains subtasks and supporting conceptual and reference information related to installing IBM Business Process Manager for z/OS.

Differences between stand-alone and network deployment configurations

A stand-alone application server cell, also known as a base application server node, is the simplest configuration you can use to deploy and run IBM Business Process Manager for z/OS applications. A stand-alone configuration provides a framework for a quick start or development environment, and if you are configuring for a small environment you might find that a single server topology is all you need to meet your requirements. However, you are probably more likely to use a network deployment configuration because it can administer application servers that can be dispersed among multiple sysplexes in a network environment. A network deployment configuration is intended to support multiple application servers, which can be clustered to provide high availability and reliability.

The main differences between a stand-alone and a network deployment configuration are as follows:

Stand-alone configuration	Network deployment configuration
<p>A minimum of four address spaces are allocated for the following processes:</p> <ul style="list-style-type: none">• Location service daemon• Controller• Servant• Control region adjunct <p>The maximum amount of address spaces is limited only by resources.</p>	<p>A minimum of seven address spaces are allocated for the following processes:</p> <ul style="list-style-type: none">• Location service daemon• Application server controller• Application server servant• Application server control region adjunct• Deployment manager controller• Deployment manager servant• Node agent <p>The maximum amount of address spaces is limited only by resources.</p>
Each server node is in a separate administrative domain.	All nodes are in the same administrative domain.
You can start and stop servers independently. Each server has an independent, unshared JNDI namespace.	You can start and stop servers independently, however the JNDI namespace is shared among all servers in the cell.
Multiple servants are allowed.	Multiple servants are allowed.
Clustering is not available.	Clustering is available.

IBM Business Process Manager for z/OS installation media contents

The IBM Business Process Manager for z/OS components that are to be installed on z/OS systems are supplied on a single tape or as a download package; components that are to be installed on non-z/OS systems are supplied on DVDs.

Software supplied with IBM Business Process Manager for z/OS

The IBM Business Process Manager for z/OS package contains all the software that you need to install and configure IBM Business Process Manager for z/OS, and to assemble and deploy applications.

The tape, or download package, includes WebSphere Application Server for z/OS, which needs to be installed before installing IBM Business Process Manager for z/OS. The following table lists the software that is supplied on the tape or in the download package.

Software	Description
IBM Business Process Manager for z/OS	Provides the main IBM Business Process Manager for z/OS software.
WebSphere Application Server for z/OS	Provides the WebSphere Application Server for z/OS software that you must install before you install the IBM Business Process Manager for z/OS software.
WebSphere Application Server Application Clients	Provides a stand-alone client runtime environment for your client applications so that you do not need to install a full instance of WebSphere Application Server for z/OS. The application client module is a Java Archive (JAR) file that contains a client for accessing a Java application.

The DVDs contain optional supplemental software that provides tool support for your production and development environments. The following table lists the software that is supplied on the DVDs.

Software	Description
IBM Business Process Manager Clients	Provides the WebSphere Application Server for z/OS configuration with SOA Core and Business Process Choreographer functionality without needing a full IBM Business Process Manager installation. <ul style="list-style-type: none"> • IBM Business Process Manager 7.5 Client for Windows • IBM Business Process Manager 7.5 Client for AIX® • IBM Business Process Manager 7.5 Client for Solaris on SPARC • IBM Business Process Manager 7.5 Client for Linux on x86 32/64-bit • IBM Business Process Manager 7.5 Client for Linux on System z® 31-bit • IBM Business Process Manager 7.5 Client for Linux on System z 64-bit
IBM Message Service Clients	Provides messaging and Web services capabilities in non-Java environments. Extends interaction between applications and IBM Business Process Manager by using the provided clients: <ul style="list-style-type: none"> • IBM Message Service Client for C/C++ extends the JMS model for messaging to C and C++ applications. • IBM Message Service Client for .NET enables .NET applications to participate in JMS-based information flows.
WebSphere Application Server Edge Components	Provides load balancing, caching, and centralized security. See the WebSphere Application Server Edge Components web page for more information.
WebSphere Application Server Network Deployment V7.0 Supplements	Provides WebSphere Application Server Network Deployment functions, licensed for use with IBM Business Process Manager.
IBM Tivoli® Access Manager Servers	Provides authentication and authorization APIs and integration to help you to secure access to business-critical applications and data that is spread across the extended enterprise. See IBM Tivoli Access Manager for e-business for more information.

Software	Description
Rational® Agent Controller	The Rational Agent Controller provides a technology for problem determination. The Rational Agent Controller is an enhancement to the Agent Controller from the Autonomic Computing Toolkit. Install the Rational Agent Controller on one of the supported z/OS system environments. Another z/OS system (perhaps an administrator workstation) can use the Log and Trace Analyzer to establish communication with the agent on the remote z/OS system. The Analyzer can request a specific log file from the Rational Agent Controller. The agent uses the appropriate log file parser to normalize the native log to a Common Base Event format and transfers the log file to the Log and Trace Analyzer. Create log file parsers for the Rational Agent Controller with the Common Base Event model builder, which is included in the Autonomic Computing Toolkit.

How to acquire IBM Business Process Manager for z/OS

You can obtain the product code in any of the following ways:

- IBM Custom-Built Product Delivery Option (CBPDO): The system programmer uses SMP/E to unload the product code onto the z/OS system.
- IBM SystemPac or ServerPac: The system programmer copies SMP/E data sets that correspond to the CustomPac service level onto the z/OS system.

To buy the software, contact your IBM representative or IBM reseller, or visit the IBM Business Process Manager home page at <http://www.ibm.com/software/integration/business-process-manager/> and select the *How to buy* link.

Product version information

The properties/version directory in the IBM Business Process Manager for z/OS installation file system contains important data about the product and its installed components, such as the build version and build date.

Product information files

This information is included in `WBI.product` and `[component].component` files.

Run the **historyInfo** command to create a report about installed maintenance packages. The **historyInfo** command creates a report on the console and also creates tracking files in the `config_root/properties/version/history` directory.

Time-stamped, detailed logs record each update process in the `properties/version/log` directory of the *configuration_root*.

This article describes the XML data files that store product version information for IBM Business Process Manager for z/OS Version 6.0.x. By default, the document type declarations (DTDs) for these files are in the `properties/version/dtd` folder of the root of the installation file system, or the server root directory. See the **Directory locations** section of this topic for more information.

XML files in the properties/version directory that store version information:

platform.websphere

The existence of this file indicates that a WebSphere Application Server product is installed. An example of the file follows:

```
<?xml version="1.0" encoding="UTF-8">
<!DOCTYPE webspere PUBLIC "websphereId" "websphere.dtd"
<websphere name="IBM WebSphere Application Server" version="6.0"/>
```

The following XML files in the properties/version directory represent installed items and installation events such as product edition, version, component, and build information.

WAS.product

The existence of this file indicates the particular WebSphere Application Server product that is installed. The type of product installed is indicated by the **<id>** tag. Data in the file indicates the version, build date, and build level

For example, **<id>ND</id>** product indicates that the installed product is WebSphere Application Server Network Deployment. An example of the file follows:

```
<?xml version="1.0" encoding="UTF-8">
<!DOCTYPE webspere PUBLIC "productId" "product.dtd"
<product name name="IBM WebSphere Application Server - ND">
<id>ND</id>
<version>6.0.0</version>
<build-info date="02/03/05" level="s0461.18"/>
</product>
```

WBI.product

The existence of this file indicates the particular IBM Business Process Manager for z/OS product that is installed. The type of product installed is indicated by the **<id>** tag. Data in the file indicates the version, build date, and build level

An example of the file follows:

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE product SYSTEM "product.dtd">
<product name="IBM WebSphere Business Process Manager">
<id>WBI</id>
<version>6.2.0.0</version>
<build-info date="11/15/08" level="o0845.22"/>
</product>
```

Reports

After completing the installation, the WebSphere Application Server for z/OS reports will reflect the installed IBM Business Process Manager for z/OS product. Refer to the product version information topic in the WebSphere Application Server for z/OS information center for details.

Augmentation response file values

When you run the installation job or script that installs the IBM Business Process Manager for z/OS product definitions, sample augmentation response files are installed in the installation file system. Copy and edit these response files according to the configuration that you want to achieve, and pass in the response file when you run the configuration script.

Note: The sample augmentation response files are deprecated. The preferred approach for creating an augmentation response file is to install the supplied WebSphere Application Server feature-pack extensions and the IBM Business Process Manager extension in WebSphere Customization Toolbox, and then use the z/OS Profile Management Tool (zPMT) to generate the response file. Sample customization definition response files are provided for use in zPMT. You can use these files to populate the zPMT windows with standard customization values and then modify the values as required. For further information, see About WebSphere Customization Toolbox and the z/OS Profile Management Tool and Chapter 3, "Installing IBM Business Process Manager," on page 11.

Purpose

Augmentation response files contain keywords that you can use to configure IBM Business Process Manager. Take a copy of the response file and make the file writeable before you start tailoring it to match the needs of the configuration you are creating. When you have finished, save your changes.

Use the following rules and guidelines when you are working with augmentation response files:

- Do not leave any extra unreadable characters at the end of the keywords.
- Use TSO oedit or vi to edit the response file.
- Start comments on a new line. Do not start the comments to the right of the keyword.
- Start comments with a number sign (#) in column 1.
- The response file must be in EBCDIC format. If you prefer to edit the file using your workstation, use the text format during the FTP download and upload.

There are global variables at the beginning of the response file that are referenced by other variables in the file with the dollar sign (\$). The **serverName** variable is an example of a variable that references a global variable.

The following table lists the names of the sample augmentation response files that you can use to create different IBM Business Process Manager for z/OS configurations.

Table 3. Sample augmentation response files

standAloneProfileDB2.rsp	Use this file to create a stand-alone configuration using a DB2 database. A stand-alone configuration has a single node running an application server and one daemon server in a single z/OS system or LPAR. Use a DB2 database for a production system.
DmgrDB2.rsp	Use this file to create a deployment manager server with a network deployment configuration using a DB2 database. A basic network deployment configuration contains a deployment manager server in one node, and an application server in another node. The application server is then federated into the deployment manager cell which allows the application server to be managed by the deployment manager. In a network deployment configuration, both nodes are augmented with IBM Business Process Manager functions.
ManagedDB2.rsp	Use this file to create a node with a network deployment configuration using a DB2 database. A basic network deployment configuration contains a deployment manager server in one node, and an application server in another node. The application server is then federated into the deployment manager cell which allows the application server to be managed by the deployment manager. In a network deployment configuration, both nodes are augmented with IBM Business Process Manager functions.

The following table lists the default augmentation response file keywords that you can use to create your IBM Business Process Manager for z/OS configuration. Many of these keywords default to appropriate values if not set by a response file, and you do not need include all of these keywords in a response file to produce a working installation of IBM Business Process Manager for z/OS.

Table 4. Alphabetic list of keywords in IBM Business Process Manager for z/OS response files

-adminPassword	The password for the administrative security user ID specified with the -adminUserName keyword. This keyword is required when augmenting an existing profile that has administrative security enabled.
-adminUserName	The user ID that is used for administrative security. This keyword is required when augmenting an existing profile that has administrative security enabled.
-augment	The augment parameter uses an augmentation template to configure a node with IBM Business Process Manager for z/OS functions.
-bpcDbConnectionLocation	The database location for the configuration of the Business Process Choreographer. This value is used in place of the database name on the IBM Business Process Manager data source definition. For example with a stand-alone configuration DB2=LOC1.
-bpcDbHostName	The database server host name or IP address for the configuration of the Business Process Choreographer database.
-bpcDbJDBCClasspath	The location of JDBC driver files.
-bpcDbName	The database name for the configuration of the Business Process Choreographer database.
-bpcDbProduct	The database location for the configuration of the Business Process Choreographer. For example, with a stand-alone configuration DB2=DB2UDBOS390. Possible values for this keyword are: <ul style="list-style-type: none"> • DB2_DATASERVER • DB2_UNIVERSAL • DB2UDBOS390
-bpcDbPassword	The password for authenticating the JDBC resources for the Business Process Choreographer.
-bpcDbSqlId	The DB2 Schema qualifier used by the Business Process Choreographer. This value is substituted in the install produced ddl/sql.
-bpcDbUser	The DB2 user ID that has privileges to create and drop the Business Process Choreographer databases.
-bpcDbServerPort	The port number of the Business Process Choreographer database.
-bpcDbStorageGroup	The DB2 schema qualifier used by the Business Process Choreographer. This value is substituted in the ddl/sql that is produced when installing. For example, with a stand-alone configuration DB2=BPEDBSTO.
-bpcmqPassword	The password for authenticating the MQ resources for the Business Process Choreographer.
-bpcmqUser	The user name for the configuration of resources for the Business Process Choreographer which uses IBM Business Process Manager MQ.
-bspaceAlreadyConfigured	A Boolean keyword used to specify if Business Space has already been configured for the profile.
-bspaceAlreadyDeployed	A Boolean keyword used to specify if Business Space has already been deployed to the server.
-bspaceSchemaName	The DB2 Schema qualifier used for the Business Space tables. This keyword is substituted in the install produced ddl/sql.
-cbeServerName	The name of the server where the Common Base Event Browser is configured to run.

Table 4. Alphabetic list of keywords in IBM Business Process Manager for z/OS response files (continued)

-cdbSchemaName	The schema name of the Common Data Base. This parameter valid for all dbTypes except for Oracle/MSSQLSERVER_DataDirect/MSSQLSERVER_MICROSOFT. Do not use this keyword for dbTypes DB2UDBOS390 if dbSchemaName is set. The following are the default schema values for the databases: <ul style="list-style-type: none"> • DB2_UNIVERSAL or DB2_DATASERVER is “dbUserId” • DB2UDBOS390 is “dbUserId” Note: You can specify a different schema for supported databases, but Recovery table is always created using the default schema if dbType is DB2_UNIVERSAL or DB2_DATASERVER.
-ceiAlreadyDeployed	A Boolean keyword used to specify if the Common Event Infrastructure has already been deployed to the server.
-ceiBufferPool4k	The name of the 4K buffer pool for the Common Event Infrastructure. This buffer pool must be active before the database DDL scripts can be run. This parameter is required.
-ceiBufferPool8k	The name of the 8K buffer pool for the Common Event Infrastructure. This buffer pool must be active before the database DDL scripts can be run. This parameter is required.
-ceiBufferPool16k	The name of the 16K buffer pool for the Common Event Infrastructure. This buffer pool must be active before the database DDL scripts can be run. This parameter is required.
-ceiCacheSizeInMB	The size of the cache in MB that will be used for transaction logs.
-ceiCreateLogin	An optional parameter, which if set to true results in the creation of the login user ID that will own the Event Service Sybase tables for the Common Event Infrastructure.
-ceiDbInstallDir	The directory where the database is installed for the Common Event Infrastructure.
-ceiDbName	The DB2 name for the Common Event Infrastructure.
-ceiDiskSizeInMB	The database size in MB to be created for the Event Service. For DB2 for z/OS, the default value is 10. If you want to specify another value it must be greater than or equal to 10.
-ceiEventCatalogDBName	The name of the event catalog database.
-ceiInstancePrefix	The prefix used for the CEI instance.
-ceiFindDeviceNumber	The event database creates six devices for the Common Event Infrastructure. This keyword identifies the value of the first device number that should be assigned to the new devices. The default value is 10 if not specified.
-ceiOverrideDataSource	The keyword that indicates whether or not to remove any existing Common Event Infrastructure service data source at the specified scope before creating a new one. When this keyword is set to true , the command removes any existing Common Event Infrastructure service data source at the specified scope before creating a new one. When this keyword is set to false , the command does not create an event service data source at the specified scope if another event service data source is found at the same scope. The default value is false if not specified.
-ceiOracleHome	(Deprecated) The directory of the ORACLE_HOME.
-ceiSaUser	The Microsoft SQL Server ID that has privileges to create tables, devices, and caches for the Common Event Infrastructure.
-ceiSaPassword	The password for the Microsoft SQL Server ID that has privileges to create tables, devices, and caches for the Common Event Infrastructure. This keyword is required if you specify a value for the -ceiSaUser keyword, unless the sa user ID does not have a password.

Table 4. Alphabetic list of keywords in IBM Business Process Manager for z/OS response files (continued)

-cellName	The cell name of the profile. This value must match the LONGNAME of the cell for the WebSphere Application Server profile that you want to augment. The value for this keyword must not contain spaces, commas or any characters that are not valid such as the following: /, \, *, :, ;, =, +, ?, , <, >, &, %, ', " ,]>, #, \$, ^, {, or }. A period (.) is not valid if it is the first character.
-configureBPC	The keyword that determines whether the Business Process Choreographer sample configuration is created. If you set this keyword to true , the -dbType keyword must be set to DB2_UNIVERSAL or DB2_DATASERVER. The default for this keyword is true if dbType is either DB2_UNIVERSAL or DB2_DATASERVER. Otherwise, the default is false . Note: The Business Process Choreographer sample configuration uses its own schema named BPEDB in the Common Database (CMNDB). The Common Database must have been created with a page size of at least 8 K.
-configureBRM	The keyword that determines whether or not to configure the business rules manager. The default value is false .
-configureBSpace	The keyword that determines whether or not to configure the Business Space. The default value is false .
-createDefaultProfileForMigration	A Boolean keyword used to specify that the server will be the target of a version to version migration. Set this value to true when you are augmenting a standalone server to be used as a migration target. This keyword will prevent the creation of a duplicate CEI messaging engine.
-dbAlreadyConfigured	A Boolean keyword used to specify if the database has already been configured.
-dbAppMeUserId	The user ID required for authentication if messaging engines use the common DB.
-dbAppMePassword	The password required for authentication if messaging engines use the common DB.
-dbBPCMeUserId	The user ID required for Business Process Choreographer Messaging Engine object creation. This keyword is only valid if -configureBPC is set to true .
-dbBPCMePassword	The password required for Business Process Choreographer Messaging Engine object creation. This keyword is only valid if -configureBPC is set to true .
-dbCeiMeUserId	The user ID required for authentication if the CEI messaging engines use the common DB.
-dbCeiMePassword	The password required for authentication if CEI messaging engines use the common DB.
-dbCommonForME	The keyword that indicates whether to use the common database for the messaging engine tables. The default value is false . If you set this keyword to true the common database is used for the messaging engine tables which must be manually created in the common database. See Creating the messaging engine data stores for more information.
-dbConnectionLocation	The location of the DB2 for z/OS database.
-dbCeiUserId	The user ID required for authentication of the CEI database.
-dbCommonUserId	The user ID required for authentication of the common database.
-dbCeiPassword	The password required for authentication of the CEI database.
-dbCommonPassword	The password required for authentication of the common database.
-dbCreateNew	A Boolean flag to indicate whether to create a new database in which to store the Common DB, or whether to use an existing database.

Table 4. Alphabetic list of keywords in IBM Business Process Manager for z/OS response files (continued)

-dbDelayConfig	The keyword that indicates whether to postpone table creation until after the profile is created. Valid values are true or false . This keyword is set to false by default. Whether you set this keyword to true or false depends on your configuration. If you have all the necessary databases set up and ready you can set -dbDelayConfig to true . If you do not have all the necessary databases set up and ready you can set -dbDelayConfig to false and set up the databases after augment.
-dbDriverType	The database driver type. For Oracle databases, valid values are THIN or OCI. For DB2 databases, valid values are 2 or 4.
-dbHostName	The database server host name or IP address. The default value is localhost .
-dbJDBCClasspath	The JDBC class path required for the common DB.
-dbLocation	The location of the database server (database product installation root).
-dbName	The name of the IBM Business Process Manager database. The default value is CMNDB .
-dbOutputScriptDir	The directory location of the output script.
-dbPassword	The password required for database authentication. This keyword is required for all databases.
-dbSchemaName	The name of the database schema. This keyword is valid for dbTypes DB2UDBOS39 and is deprecated in version 7, use the cdbSchemaName keyword instead.
-dbServerPort	The database server port number. Depending on the database you are using, you can specify a different port number instead of the default port number which is 446.
-dbStorageGroup	The name of the storage group for the DB2 for z/OS databases.
-dbSysMeUserId	The database system messaging engine user ID.
-dbSysMePassword	The database system messaging engine password.
-dbSysUserId	The user ID to gain access to the database.
-dbSysPassword	The password to gain access to the database.
-dbType	The database type. For a DB2 for z/OS database, set the value to DB2UDBOS390.
-dbUserId	The user ID that is required for database authentication. This keyword is required for all databases.
-dmgrAdminPassword	The password that gains the user administration access rights to the system in which the deployment manager is running.
-dmgrAdminUserName	The user name that gains the user administration access rights to the system in which the deployment manager is running.

Table 4. Alphabetic list of keywords in IBM Business Process Manager for z/OS response files (continued)

-dmgrHost	<p>The keyword that identifies the system in which the deployment manager is running. Specify this keyword with the -dmgrPort keyword to federate an empty node when it is created. The host name can be the long or short DNS name or the IP address of the deployment manager system. Specifying this optional keyword directs the configuration process to attempt to federate the empty node into the deployment manager cell when it creates the empty node.</p> <p>This keyword is ignored when creating a deployment manager or an application server. If you federate an empty node when the deployment manager is not running or is not available because of security being enabled or for other reasons, the installation indicator in the logs is INSTCONFFAIL to indicate a complete failure. The resulting empty node is unusable. You must move the profile directory of the empty node out of the profile repository (the profiles installation root directory) before creating another empty node with the same name.</p> <p>If you have enabled security or changed the default JMX connector type, you cannot federate during the configuration process. Use the addNode command instead. The default value for this keyword is localhost. The value for this keyword must be a properly formed host name and must not contain spaces or characters that are not valid such as the following: *, ?, ", \, <, >, , /, \, , A connection to the deployment manager must also be available in conjunction with the -dmgrPort keyword. For example dmgr_host_name.</p>
-dmgrPort	<p>The keyword that identifies the SOAP port of the deployment manager. Specify this keyword with the -dmgrHost keyword to federate an empty node when it is created. The deployment manager must be running and accessible. If you have enabled security or changed the default JMX connector type, you cannot federate during the configuration process. Use the addNode command instead. The default value for this keyword is 8879. The port that you indicate must be a positive integer and a connection to the deployment manager must be available in conjunction with the -dmgrHost keyword. For example dmgr_port_number.</p>
-enableAdminSecurity	<p>The keyword that enables administrative security during the installation process. Possible values are:</p> <ul style="list-style-type: none"> • True - when -enableAdminSecurity is set to true you must also specify the keywords -adminUserName and -adminPassword along with the values for these keywords. • False - when -enableAdminSecurity is set to false, you do not have to set any keywords. <p>The default value is false.</p>
-fileStoreForME	<p>The location of the file store for messaging engines. This keyword applies to stand-alone server configurations only. Default value is false, cannot be set to true when -dbCommonForME is also set to true.</p>
-isDeveloperServer	<p>Specifies whether the server is intended for development purposes only.</p>
-portsFile	<p>An optional keyword that specifies the path to a file that defines port settings for the new profile.</p>
-profileName	<p>The keyword used to augment a profile. In z/OS, there is always one and only one profile, and that profile is always named "default" in each of the configurations. The profile referred to here is the default profile installed and configured during the WebSphere Application Server for z/OS installation. The profile must not have already been federated. When augmenting the profile, the server must not be running.</p>

Table 4. Alphabetic list of keywords in IBM Business Process Manager for z/OS response files (continued)

-profilePath	The default profile root directory for WebSphere Application Server for z/OS. This keyword is mandatory. The server configuration for WebSphere Application Server for z/OS resides in a directory structure under a profiles directory. The profile path contains the files that define the runtime environment, such as commands, configuration files, and log files. Specify the full path to avoid an Apache Ant scripting limitation, which can cause a failure when federating the profile into a cell. If not specified, the augment procedure looks up the path where the profile resides in the WebSphere Application Server for z/OS configuration, for example: <ul style="list-style-type: none"> • Stand-alone DB2: /WebSphere/V7R0/AppServer/profiles/default • Network Deployment: /WebSphere/V7R0/DeploymentManager/profiles/default • Managed node in Network Deployment: /WebSphere/V7R0/AppServer/profiles/default
-serverNameplatform	The name of the platform in which the server is running.
-serverType	The keyword that specifies the type of management profile. Specify DMGR for a management profile. This keyword is required when you create a management profile.
-soaCoreAugmentType	The keyword that specifies the type of SOA core augment information.
-topologyPattern	The keyword that determines the topology patterns for your deployment manager: none (default value), CondensedSync , CondensedAsync or Reference .
-topologyRole	The keyword that indicates the function the profile will play in the deployment environment, when you are federating a profile that has been created. Valid values are ADT for a deployment target, Messaging for host messaging or Support for supporting services. You can indicate one value or more than one value, each separated by a space, for example ADT Messaging Support or Messaging or ADT Support .
-wbidbDesign	The keyword that is used to specify a single design file for all of the components during profile creation. You must specify the fully qualified path to the design_file .

Using augmentation response files

- Be careful when you add comments to an augmentation response file.

If you put comments in the response file, and that comment resides on the same line as a property value, even if you precede the comment with a cross hatch character (#), the Ant script attempts to read the comment as part of the keyword value, causing unpredictable results. For example, do not enter comments as shown in this example:

```
#####
# DB2 Properties
#####
dbJBCClasspath=/shared/db2810/jcc/classes      # DB2 ClassPath Location
dbJDBCProperties=/u/hutch/wpswork/            # DB2JccConfiguration.properties
```

The correct way to add comments shown in the sample above would be as follows:

```
#####
# DB2 Properties
#####
# DB2 ClassPath Location
dbJBCClasspath=/shared/db2810/jcc/classes
# DB2JccConfiguration.properties
dbJDBCProperties=/u/hutch/wpswork/
```

Global properties

The start of the augmentation response file contains a section named **GLOBAL Properties**. Here is an example:

```
#####  
# GLOBAL Properties  
#####  
JMSUSER=ibmuser  
JMSPASS=ibmuser  
DBUSER=wsadmin  
DBPASS=wsadmin  
CONFIGSERVER=server1  
DBLOCATION=LOC1  
  
#####
```

The **GLOBAL Properties** section provides a central location for common values. Common values are displayed in multiple places in the response file because they are used by multiple components. The **GLOBAL Properties** section provides a central location for these common values to help you editing these values. For example, you can use a global property to set all the server property instances to **server1** instead of searching the response file for all instances of the property that you want to change.

Use the GLOBAL property by specifying the global keyword prefixed with the \$ symbol as the value for the subsequent property. For example, `serverName=$CONFIGSERVER`.

Global properties must physically appear in the response file before they are referenced by the \$ symbol.

When a global property is used, it must constitute the whole value of a property. The following example is NOT allowed:

```
templatePath=/usr/$USERPATH/dir
```

Global properties simplify the use of the override argument (-Z) in the product configuration command by reducing the amount of syntax on the command line.

Comments for a property display above the property, the property name and the default value are displayed in bold text. The following is an example of a property:

```
#####  
#  
# Profile name  
#  
# On z/OS, there is always one and only one profile and that profile is named  
# default in each of the configurations.  
#  
# The profile referred to here is the default profile installed and  
# and configured during the WebSphere Application Server for z/OS install.  
#  
profileName=default
```

Sample customization definition response files

When using the z/OS Profile Management Tool (zPMT) to create a customization definition for the IBM Business Process Manager for z/OS runtime environment, you can import a sample customization definition response file in order to populate the zPMT windows with standard configuration values. You can then amend these values as you progress through the windows.

The sample customization definition response files contain parameter values that you can use to configure a stand-alone server or deployment manager server. Sample files are not supplied for a managed node because the values that you need to configure for the node will be specific to your z/OS environment.

Different sets of sample customization definition files are provided for an incremental installation and for a stacked installation:

- The sample files for an incremental installation are for configurations where each augmentation of a product or feature pack is performed separately. Use these sample files only for augmenting a configured WebSphere Application Server server with IBM Business Process Manager for z/OS functions.
- The sample files for a stacked installation are for configurations where all the augmentations are performed in one pass through zPMT. Use these sample files for augmenting the base WebSphere Application Server server with the feature-pack and IBM Business Process Manager for z/OS functions.

The sample customization definition response files are available in the IBM Business Process Manager for z/OS installation file system. To use these files, you must first download them in binary format to a directory on the workstation where the WebSphere Customization Toolbox application is installed. You can then import the relevant sample file in zPMT, and amend the default configuration values as necessary for your runtime environment.

The database configuration in the samples files is for a DB2 for z/OS database.

The default z/OS locations of these files are shown in the following table.

Table 5. Sample customization definition response files for a DB2 for z/OS database

File description	File location and name
Response file for a stand-alone application server - incremental configuration	/usr/lpp/zBPMP5/V7R5/zos.config/ ZBPMP5StandaloneDB2.WCT.responseFile
Response file for a deployment manager server - incremental configuration	/usr/lpp/zBPMP5/V7R5/zos.config/ ZBPMP5MgrDB2.WCT.responseFile
Response file for a stand-alone application server - stacked configuration	/usr/lpp/zBPMP5/V7R5/zos.config/ ZBPMP5StandaloneDB2Stacked.WCT.responseFile
Response file for a deployment manager server - stacked configuration	/usr/lpp/zBPMP5/V7R5/zos.config/ ZBPMP5MgrDB2Stacked.WCT.responseFile

Related tasks:

“Downloading the extension files and sample customization definition response files” on page 22
After loading the product code to the target z/OS system, assemble all the component files that you will need to complete the installation process for IBM Business Process Manager for z/OS.

“Creating a customization definition for a fully-customized profile” on page 25

You can define the customization parameters for WebSphere Application Server for z/OS, its feature packs, and IBM Business Process Manager for z/OS in a single pass through zPMT. This customization definition can then be used to create a fully-customized IBM Business Process Manager stand-alone server, deployment manager, or empty managed node.

“Creating a customization definition for augmenting a profile” on page 33

You can use zPMT to customize a WebSphere Application Server stand-alone server, deployment manager, or empty managed node with support for IBM Business Process Manager for z/OS.

IBM Business Process Manager – Client

IBM Business Process Manager Advanced for z/OS is packaged with CD-ROMs that allow you to install a IBM Business Process Manager Advanced Client on a Linux, UNIX, or Windows machine for use in a IBM Business Process Manager Advanced for z/OS environment. A Client installation provides the IBM Business Process Manager Advanced for z/OS configuration with SOA Core and Business Process Choreographer functionality without the need for a full IBM Business Process Manager Advanced installation.

Installing IBM Business Process Manager – Client interactively

You can install IBM Business Process Manager – Client interactively using the launchpad, either for a new installation or over an existing installation of WebSphere Application Server Network Deployment.

This procedure assumes that you are starting the installation process from the launchpad application. It also assumes that even if you are installing over an existing installation WebSphere Application Server Network Deployment, the prerequisite base products necessary for IBM Business Process Manager – Client installation are not installed. These include WebSphere Application Server Feature Pack for XML, and WebSphere Application Server Feature Pack for Service Component Architecture (SCA) with the Service Data Objects (SDO) feature.

When you start the installation process using the launchpad application and are installing the product for the first time, the launchpad installs IBM Installation Manager (if it is not already installed), WebSphere Application Server Network Deployment, WebSphere Application Server Feature Pack for XML, WebSphere Application Server Feature Pack for Service Component Architecture (SCA) with the Service Data Objects (SDO) feature, and IBM Business Process Manager – Client.

If you are installing the product over an existing installation of WebSphere Application Server Network Deployment, the launchpad installs IBM Installation Manager and updates the repository to include that previous installation. It then installs WebSphere Application Server Feature Pack for XML, WebSphere Application Server Feature Pack for Service Component Architecture (SCA) with the Service Data Objects (SDO) feature, and IBM Business Process Manager – Client

1. Start the launchpad application by navigating into the directory where you extracted the image and entering the following command:
 - **On Linux and UNIX platforms:** `extract_directory/launchpad.sh`
 - **On Windows platforms (from a command line):** `extract_directory\launchpad.exe`
2. Perform one of the following tasks:
 - If you are installing the IBM Business Process Manager – Client for the first time, perform step a.
 - If you are installing the IBM Business Process Manager – Client over an existing installation of WebSphere Application Server Network Deployment, then perform step b.

a. Click one of the following entries in the left pane of the launchpad, depending on whether you are a root/Administrator or nonroot/nonadministrative user:

- 1) If you are a root or an Administrator user, click **New installation**.
- 2) If you are a nonroot or a nonadministrative user, click **Nonadministrative or nonroot installation**.
- 3) If you already have IBM Installation Manager installed, ensure that it is *not* running.
- 4) In the right pane of the launchpad, in step 1, specify the location for the WebSphere Application Server Network Deployment installation and click **Install WebSphere Application Server**.

The launchpad application performs the following tasks:

- Installs WebSphere Application Server Network Deployment into the directory you specify.
- Installs IBM Installation Manager to its default installation location, if it is not already installed. If IBM Installation Manager is not at the required level, the launchpad application updates it to the correct level.
- Imports WebSphere Application Server into Installation Manager automatically.

Important: This process occurs silently and can take several minutes. Do *not* proceed until a message indicates a successful installation and import into Installation Manager. Instead of a success message, you might receive one of the following messages:

- **WebSphere Application Server installation failed.** In this case, review the following log file to identify the cause:

- **On Linux and UNIX platforms:** `was_home/logs/install/log.txt`
- **On Windows platforms:** `was_home\logs\install\log.txt`

If the logs directory does not exist on your system, the installation failed early in the process. In this case, review the following log file:

- **On Linux and UNIX platforms:** `user_home/waslogs/log.txt`
- **On Windows platforms:** `user_home\waslogs\log.txt`

- **WebSphere Application Server installation was successful, but there were errors importing into Installation Manager.** In this case, review the following log file to identify the cause:

- **On Linux and UNIX platforms:** `was_home/logs/launchpad_import.txt`
- **On Windows platforms:** `was_home\logs\launchpad_import.txt`

b. Click **Installation on existing WebSphere Application Server** in the left pane of the launchpad.

3. In the right pane of the launchpad, in step 2, click **Install IBM Business Process Manager – Client**. The launchpad application starts Installation Manager and its Install Packages wizard.
4. On the Install page of the Install Packages wizard, all recommended packages, including WebSphere Application Server Feature Pack for XML, WebSphere Application Server Feature Pack for Service Component Architecture (SCA) with the Service Data Objects (SDO) feature, and IBM Business Process Manager – Client are preselected for installation. Click **Next**.
5. On the Install Packages wizard Licenses page, read through the license agreements and then select **I accept the terms in the license agreements**. Click **Next**. The licenses for the feature packs are also displayed in the panel. You accept for all the licenses.
6. On the Install Packages wizard Location page, **IBM WebSphere Application Server - ND_xxxx** (where **xxxx** is the date timestamp) and the **Use the existing package group** radio button are selected by default. Leave those selections as they are and click **Next**.

Note: The Install Packages wizard displays a message if it detects any running processes. If you see this message, click **Cancel**, shut down the running processes, and begin the installation again.

7. The Install Packages wizard checks your operating system to make sure that it meets the prerequisites for installing IBM Business Process Manager – Client. The action you take depends on the results of the prerequisite check:
 - If the prerequisite check is successful (that is, a supported operating system is found), no message is displayed. The installation continues on to the Install Packages wizard Features page. Proceed to step 8.
 - If the prerequisite check is not successful (for example, a supported operating system is not at the minimum supported level), you see an error message and the installation stops. You must address the problem described in the message before you can install IBM Business Process Manager – Client.
 - If you are at a higher major release of a supported operating system, or the operating system itself is not on the supported list, you might encounter a warning. You can continue with the installation, but the installation or product operation might not succeed until you apply maintenance.
If you see such a warning, go to the product support Web pages and obtain the latest maintenance packages to apply after installation. Refer to the documentation for non-IBM prerequisite and corequisite products to learn how to migrate to their supported versions.
8. On the Install Packages wizard Features page, accept the default selections and click **Next**.
9. Review the summary information. If the summary information is incorrect, click **Back** to change your selections.
10. Click **Install**. When the installation is complete, a page displays the status of the installation and which packages have been successfully installed.

Important: This process can take several minutes. Do *not* proceed until this page appears.

11. To launch the Profile Management Tool, leave the **Profile Management Tool** radio button selected. Otherwise, select the radio button for **None**.
12. Click **Finish**.
13. Close Installation Manager.

IBM Business Process Manager – Client is installed.

You must define a stand-alone server profile or a deployment manager in the Profile Management Tool or using the **manageprofiles** command. Only profiles created with the Profile Management Tool or **manageprofiles** command can be used in production.

Installing IBM Business Process Manager – Client silently

You can install the IBM Business Process Manager – Client product package in silent installation mode. When you install in silent mode, the user interface is not available. Instead, you use a response file to input the commands that are required to install the product package. This procedure assumes that you might or might not have existing installations of the prerequisite base products necessary for IBM Business Process Manager – Client installation. These prerequisite products include WebSphere Application Server Network Deployment, Installation Manager, WebSphere Application Server Feature Pack for XML, and WebSphere Application Server Feature Pack for Service Component Architecture (SCA) with the Service Data Objects (SDO) feature.

Before you can install IBM Business Process Manager – Client, you must review the list of prerequisites for installing the product.

You start the installation process by running the `or` script, which you edit. The script performs some or all the following tasks:

- Installs WebSphere Application Server Network Deployment.

- Installs IBM Installation Manager if it is not already installed or updates it to the appropriate level if it is.
- Imports WebSphere Application Server Network Deployment into Installation Manager.
- Installs the required base products and IBM Business Process Manager – Client using a response file that you create.
- Automatically configures the installation with the location of the repository that contains the product packages.

1. Locate default response file that you will use to install the required base products and IBM Business Process Manager – Client.

The response file name and directory are listed here:

- **On Linux and UNIX platforms:** *DVD_root* or *extract_root/responsefiles/wbi/template_response.xml*
 - **On Windows platforms:** *DVD_root* or *extract_root\responsefiles\wbi\template_response.xml*
2. Edit the response file. Modify parameters as directed in the text of the response file template.
 3. The script file is located in the same directory as the response file:
 - **On Linux and UNIX platforms:** *DVD_root* or *extract_root/responsefiles/wbi/run_templates*
 - **On Windows platforms:** *DVD_root* or *extract_root\responsefiles\wbi\run_template.bat*
 4. Edit the script, modifying parameters as directed in the text of the script. Comment out any parameters not needed for your installation. For example, comment out the parameter to install WebSphere Application Server Network Deployment if you already have it installed on your system and intend to install IBM Business Process Manager – Client on top of it.
 5. Run the **run_templates** script.

The **run_templates** script reads the response file, installs any required prerequisites and IBM Business Process Manager – Client writes a log file to the directory you specified. See Installation and profile creation log files.

You must define a stand-alone server profile or a deployment manager in the Profile Management Tool or using the **manageprofiles** command. Only profiles created with the Profile Management Tool or **manageprofiles** command can be used in production.

