

Oracle® WebCenter Sites

Installing on IBM WebSphere Application Server

11g Release 1 (11.1.1) Bundled Patch 1

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Oracle® WebCenter Sites Installing on IBM WebSphere Application Server, 11g Release 1 (11.1.1) Bundled Patch 1

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Table of

Contents

About This Guide	5
Audience	5
Related Documents	5
Graphics in This Guide	6
Conventions	6
Third-Party Libraries	6
1 Introduction	7
How This Guide Is Organized	8
Before You Install Oracle WebCenter Sites	8
Installation Quick Reference	9
Acronyms and Variables Used in This Guide	11
Paths and Directories Used in This Guide	12

Part 1. Database

2 Setting Up a Database	15
--------------------------------------	-----------

Part 2. Application Server

3 Installing and Configuring WebSphere Application Server	19
Start/Stop Commands	20
Deployment Manager	20
Node Agent	20
Application Server	21
Installing WebSphere Application Server	22
A. Installing IBM Installation Manager	22

B. Installing WebSphere Application Server Using IBM IM	25
C. Updating WebSphere Application Server	36
Creating a WAS Instance Using the Command Line	39
Configuring the WAS Instance	42
A. Configuring the Application Server's Generic JVM Arguments	42
B. Configuring the Web Container	44
C. Configuring the WAS Instance for Database Communications	46
D. Configuring WAS Instances for CAS	59
Deploying the WebCenter Sites Application	61
Restarting the WebCenter Sites Application	71

Part 3. Web Server

4 Setting Up a Web Server	75
Installing IBM HTTP Server	76
Installing the Apache 2.2.x Web Server	82
Integrating WAS with a Supported Web Server	82

Part 4. Oracle WebCenter Sites

5 Installing and Configuring Oracle WebCenter Sites	91
Installing WebCenter Sites	92
Installation Options	92
Post-Installation Steps	97
A. Setting File Permissions (Unix Only)	97
B. Loading the XML Parser	97
C. Adding the WebCenter Sites Binaries Directory to the Library Path Variable ..	98
D. Verifying the Installation	99
E. Integrating Oracle Access Manager (OAM) with WebCenter Sites (Optional) ..	102
F. Integrating with LDAP (Optional)	103
G. Setting Up a WebCenter Sites Cluster (Optional)	103
H. Setting Up a CAS Cluster (Optional)	104
I. Redeploying CAS (Optional)	105
J. Setting Up WebCenter Sites for Its Business Purpose	105

About This Guide

This guide describes the process for installing Oracle WebCenter Sites on IBM WebSphere Application Server 8 Network Deployment, connecting to the supported database of your choice. This includes instructions for installing WebCenter Sites in single-member and vertically clustered environments.

Applications discussed in this guide are former FatWire products. Naming conventions are the following:

- *Oracle WebCenter Sites* is the current name of the application previously known as *FatWire Content Server*. In this guide, *Oracle WebCenter Sites* is also called *WebCenter Sites*.
- *Oracle WebCenter Sites: Web Experience Management Framework* is the current name of the environment previously known as *FatWire Web Experience Management Framework*. In this guide, *Oracle WebCenter Sites: Web Experience Management Framework* is also called *Web Experience Management Framework*, or *WEM Framework*.

Audience

This guide is for installation engineers and anyone else who has experience installing and configuring databases, web servers, and application servers.

Related Documents

For more information, see the following documents:

- *Oracle WebCenter Sites: Configuring Supporting Software*
- *Oracle WebCenter Sites: Integrating with LDAP*
- *Oracle WebCenter Sites Administrator's Guide for the WEM Framework*
- *Oracle WebCenter Sites Administrator's Guide*
- *Oracle WebCenter Sites Developer's Guide*

Graphics in This Guide

Many steps in this guide include screen captures of dialog boxes and similar windows that you interact with in order to complete the steps. The screen captures are presented to help you follow the installation process. They are not intended to be sources of specific information, such as parameter values, options to select, or product version number.

Conventions

The following text conventions are used in this guide:

- **Boldface** type indicates graphical user interface elements that you select.
- *Italic* type indicates book titles, emphasis, or variables for which you supply particular values.
- `Monospace` type indicates file names, URLs, sample code, or text that appears on the screen.
- **Monospace bold** type indicates a command.

Third-Party Libraries

Oracle WebCenter Sites and its applications include third-party libraries. For additional information, see *Oracle WebCenter Sites 11gR1 Bundled Patch 1: Third-Party Licenses*.

Chapter 1

Introduction

This chapter provides information that will help you prepare for the WebCenter Sites installation. It contains the following sections:

- [How This Guide Is Organized](#)
- [Before You Install Oracle WebCenter Sites](#)
- [Installation Quick Reference](#)
- [Acronyms and Variables Used in This Guide](#)
- [Paths and Directories Used in This Guide](#)

How This Guide Is Organized

This guide provides instructions for installing WebCenter Sites in single-member and vertically clustered environments. This guide also describes the installation and configuration of IBM WebSphere Application Server 8 Network Deployment (referred to throughout this guide as WebSphere Application Server and WAS), as required to support WebCenter Sites. This includes configuration of one or more WAS instances, backend databases, and integrating WAS with IBM HTTP Server and the Apache web server.

The content of this guide is organized by function rather than the order in which installation steps are completed. For example, a function such as application deployment is associated with the application server. It is presented in Part II (which covers the application server), even though it is performed, later, when WebCenter Sites is installed (Part IV). Each major component of the WebCenter Sites installation is covered in its own part. A summary of the installation steps in the required order is given at the end of this chapter (see “[Installation Quick Reference](#),” on page 9).

Before You Install Oracle WebCenter Sites

- Refer to the *Oracle WebCenter Sites Certification Matrix* to ensure that you are installing currently supported third-party products.
- Only selected information regarding the configuration of third-party products is given in this guide. For detailed information and to obtain the latest e-fixes, patches, and service packs, refer to third-party product vendors’ documentation and release notes.
- You can install and deploy WebCenter Sites by running the supplied installer either in GUI or silent install mode. When you run the GUI installer, a graphical interface guides you through the installation process, prompting you to enter information and select options as required. It also provides access to extensive online help. When you install silently, you enter your installation settings into one of the sample `omi.ini` files provided, using comments in the file for guidance. The installer then uses the file to install WebCenter Sites.
- You will run the WebCenter Sites installer on all systems in your environment. There are two system types: content management/development and delivery. Content management systems and development systems run in the same mode but are used for different purposes.

Note

- The system type cannot be changed once you select the type and click **Next** (GUI installation) or start running the silent installer.
- **The installation process does not install user interfaces on delivery systems**, except for a limited version of the WebCenter Sites Admin interface to enable the management of select features.
- The names of the systems in your WebCenter Sites environment might differ from the names used in this document. Typically, the content management system is also called “staging,” and the delivery system is also called “production.”

- Remove older versions of the Java Runtime Environment from the CLASSPATH and PATH environment variables.
- All installations of WebCenter Sites and Satellite Server must use the same JVM time zone. We recommend setting the JVM time zone to UTC (GMT) to help standardize the time stamps of distributed data. For example, if content is published from Los Angeles to New York and both servers run on local time, the content publication times differ by three hours. Setting both servers to UTC (GMT) alleviates the ambiguity. Note that log files will report data in UTC (GMT) time.

Installation Quick Reference

After you install and configure the Java EE components that support WebCenter Sites, you will run the WebCenter Sites installer on each development, content management, and delivery system on which you plan to use WebCenter Sites. During the WebCenter Sites installation, you will have the option to install sample sites and sample content.

The steps below summarize the installation and configuration of WebCenter Sites and its supporting software. Keep the steps handy as a quick reference to installation procedures and to chapters that provide detailed instructions.

Complete the steps below for each development, content management, and delivery environment.

I. Set Up the Database

Set up your choice of supported databases by installing the database management system, creating a database for WebCenter Sites, and configuring the database. For instructions, see *Oracle WebCenter Sites: Configuring Supporting Software*.

II. Set Up the Application Server

Install and configure WebSphere Application Server by following the steps described in [Chapter 3, “Installing and Configuring WebSphere Application Server,”](#) and summarized below:

1. Install the WebSphere Application Server software and update your installation to the latest version by following the steps in [“Installing WebSphere Application Server,”](#) on page 22.
2. Create a WAS instance on which you will install WebCenter Sites by following the steps in [“Creating a WAS Instance Using the Command Line,”](#) on page 39.

If you are creating a WebCenter Sites cluster, create a unique WAS instance for each member of the cluster.

3. Configure the WAS instance by doing the following:
 - a. [“Configuring the Application Server’s Generic JVM Arguments,”](#) on page 42.
 - b. [“Configuring the Web Container,”](#) on page 44.
 - c. [“Configuring the WAS Instance for Database Communications,”](#) on page 46. This step requires you to:
 - 1) Create a J2C authentication. For instructions, see [“Creating a J2C Authentication,”](#) on page 46.

- 2) Create a JDBC provider. For instructions, see [“Creating a JDBC Provider,” on page 48.](#)
- 3) Create a JDBC data source. For instructions, see [“Creating a JDBC Data Source,” on page 52.](#)

If you are creating a WebCenter Sites cluster, perform [steps 2](#) and [3](#) for each member of the cluster. Cluster members can share the same J2C authentication.

III. (Optional) Set Up the Web Server

If you plan to integrate WAS with IBM HTTP Server or the Apache web server, follow instructions in [Chapter 4](#), [“Setting Up a Web Server.”](#)

IV. Install and Configure WebCenter Sites

1. Before you run the installer, ensure the following:
 - You have created the directory into which you are installing WebCenter Sites. The directory name and path cannot contain spaces, and the application server must be able to read from and write to the directory.
 - For clustered installations, you have created a shared file system directory that all cluster members can read from and write to; the directory name and path cannot contain spaces.
 - Your system is capable of displaying the WebCenter Sites installer GUI. The installer will not work in text mode.
2. Install WebCenter Sites by running the GUI installer or installing silently. For more information, see [Chapter 5](#), [“Installing and Configuring Oracle WebCenter Sites.”](#)

Half-way through the installation, you will have to deploy the WebCenter Sites application and complete the rest of the steps required to install WebCenter Sites. For instructions, see [“Deploying the WebCenter Sites Application,” on page 61.](#)

3. Complete the WebCenter Sites installation by performing the following steps:
 - a. If you installed WebCenter Sites on Unix, set the permissions for WebCenter Sites binaries by following the steps in [“Setting File Permissions \(Unix Only\),” on page 97.](#)
 - b. WebCenter Sites contains a modified version of the Microsoft XML Parser (`MSXML.jar` in the `WEB-INF/lib` directory). If a different version of the Parser is referenced in the `CLASSPATH` environment variable, you must change the path to refer to the version used by WebCenter Sites; otherwise, WebCenter Sites will fail when parsing XML. For more information, see [“Loading the XML Parser,” on page 97.](#)
 - c. Add the WebCenter Sites binaries directory to your library path variables as explained in [“Adding the WebCenter Sites Binaries Directory to the Library Path Variable,” on page 98.](#)
 - d. Verify the WebCenter Sites installation by logging in to Oracle WebCenter Sites as the general administrator and accessing the WebCenter Sites Admin and Contributor interfaces. For instructions, see [“Verifying the Installation,” on page 99.](#)
 - e. If you wish to replace CAS with Oracle Access Manager (OAM), follow the instructions in *Oracle WebCenter Sites: Configuring Supporting Software.*

- f. If you want to perform LDAP integration, follow the instructions in “[Integrating with LDAP \(Optional\)](#),” on page 103.
- g. If you are creating a clustered system, follow instructions in “[Setting Up a WebCenter Sites Cluster \(Optional\)](#),” on page 103.
- h. If you are clustering CAS, follow the instructions in *Oracle WebCenter Sites: Configuring Supporting Software*.
- i. If you need to redeploy CAS, follow the instructions in *Oracle WebCenter Sites: Configuring Supporting Software*.
- j. Once the entire installation is completed and verified, set up WebCenter Sites for its business purpose. For instructions, see the *WebCenter Sites Administrator’s Guide* and the *WebCenter Sites Developer’s Guide*.

Acronyms and Variables Used in This Guide

Table 1: Acronyms and Variables

Name	Description
WAS	WebSphere Application Server
DM	Deployment Manager
cs	WebCenter Sites
<DM_host>	The host name or IP address of the Deployment Manager host.
<DM_console_port>	The port number on which the Deployment Manager console is listening for connections.
<DM_profile>	The name of the Deployment Manager profile.
<DM_SOAP_port>	The number of the Simple Object Access Protocol port of the Deployment Manager.
<WAS_host>	The host name of the machine running WAS.
<server_name>	The name of the WAS server.
<appserv_profile>	The name of the application server profile.
<appserv_cell>	The name of the application server cell.
<appserv_node>	The name of the application server node.

Paths and Directories Used in This Guide

Table 2: Paths and Directories

Name	Description
<WAS_home>	Path to the directory where WAS is installed. The path includes the name of the directory.
<cs_install_dir>	Path to the directory where WebCenter Sites is installed. The path includes the name of the directory.
<cs_shared_dir>	Path to the WebCenter Sites shared file system directory. The path includes the name of the shared directory.
<apache_home>	Path to the directory where the Apache web server is installed. The path includes the name of the directory.
<ibm_http_home>	Path to the directory where IBM HTTP Server is installed. The path includes the name of the directory.
<plugin_root>	The path to the plug-in directory of the web server. The path includes the name of the directory.
<iim_directory>	The path to the directory where the installation files for the IBM Installation Manager were unzipped.

Part 1

Database

This part contains a short chapter summarizing the databases that WebCenter Sites uses. For instructions on creating and configuring the databases, refer to *Oracle WebCenter Sites: Configuring Supporting Software*.

This part contains the following chapter:

- [Chapter 2, “Setting Up a Database”](#)

Chapter 2

Setting Up a Database

WebCenter Sites requires access to a database that is specifically configured for WebCenter Sites. Refer to the *Oracle WebCenter Sites Certification Matrix* for the list of supported databases (as well as other components).

Before installing any other of WebCenter Sites' supporting software, complete the following steps:

1. Install the database management system.
For instructions, refer to the product vendor's documentation.
2. Create and configure a database for WebCenter Sites.
For instructions, refer to *Oracle WebCenter Sites: Configuring Supporting Software*.
Note that database configuration is identical across different application servers. Refer to the correct chapter to create and configure the database of your choice.

Part 2

Application Server

This part contains information about installing and configuring WebSphere Application Server to support WebCenter Sites.

This part contains the following chapter:

- [Chapter 3, “Installing and Configuring WebSphere Application Server”](#)

Chapter 3

Installing and Configuring WebSphere Application Server

The chapter shows you how to install and configure WebSphere Application Server for WebCenter Sites.

This is not an exhaustive chapter, as it covers the installation of WAS only so far as needed to install and run WebCenter Sites. For more details, see the WAS documentation.

This chapter contains the following sections:

- [Start/Stop Commands](#)
- [Installing WebSphere Application Server](#)
- [Creating a WAS Instance Using the Command Line](#)
- [Configuring the WAS Instance](#)
- [Deploying the WebCenter Sites Application](#)
- [Restarting the WebCenter Sites Application](#)

Start/Stop Commands

This section lists the commands for starting and stopping WAS components.

Deployment Manager

Note

The default Deployment Manager profile name is `Dmgr01`.

To start:

- On Windows:
`<WAS_home>\bin\startManager.bat -profileName <DM_profile>`
- On Unix:
`<WAS_home>/bin/startManager.sh -profileName <DM_profile>`

To stop:

- On Windows:
`<WAS_home>\bin\stopManager.bat -profileName <DM_profile>`
- On Unix:
`<WAS_home>/bin/stopManager.sh -profileName <DM_profile>`

Node Agent

Note

The default name of the first application server profile created is `AppSrv01`.

To start:

- On Windows:
`<WAS_home>\bin\startNode.bat -profileName <appserv_profile>`
- On Unix:
`<WAS_home>/bin/startNode.sh -profileName <appserv_profile>`

To stop:

- On Windows:
`<WAS_home>\bin\stopNode.bat -profileName <appserv_profile>`
- On Unix:
`<WAS_home>/bin/stopNode.sh -profileName <appserv_profile>`

Application Server

Note

The default server name is `server1`.

The default name of the first application server profile created is `AppSrv01`.

To start:

- On Windows:

```
<WAS_home>\bin\startServer.bat <server_name> -profileName  
<appserv_profile>
```

- On Unix:

```
<WAS_home>/bin/startServer.sh <server_name> -profileName  
<appserv_profile>
```

To stop:

- On Windows:

```
<WAS_home>\bin\stopServer.bat <server_name> -profileName  
<appserv_profile>
```

- On Unix:

```
<WAS_home>/bin/stopServer.sh <server_name> -profileName  
<appserv_profile>
```

Installing WebSphere Application Server

This section describes how to install WebSphere Application Server version 8. It contains the following steps:

- A. Installing IBM Installation Manager
- B. Installing WebSphere Application Server Using IBM IM
- C. Updating WebSphere Application Server

A. Installing IBM Installation Manager

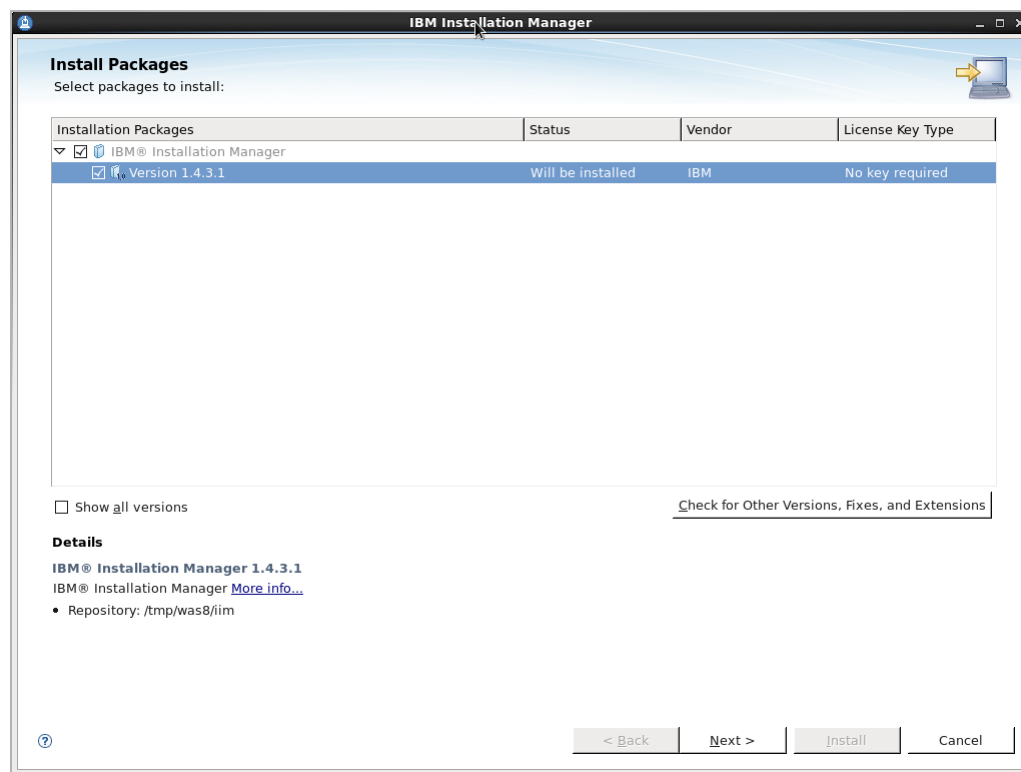
To install the IBM Installation Manager

1. Unzip the IBM Installation Manager to a directory and execute the following command:

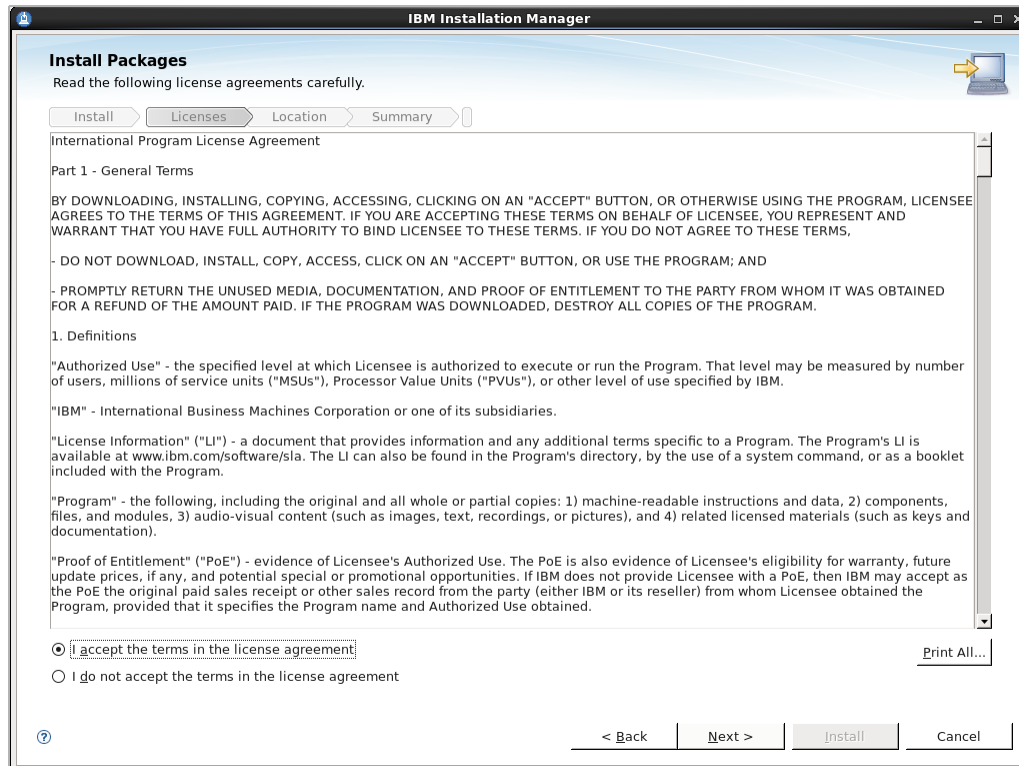
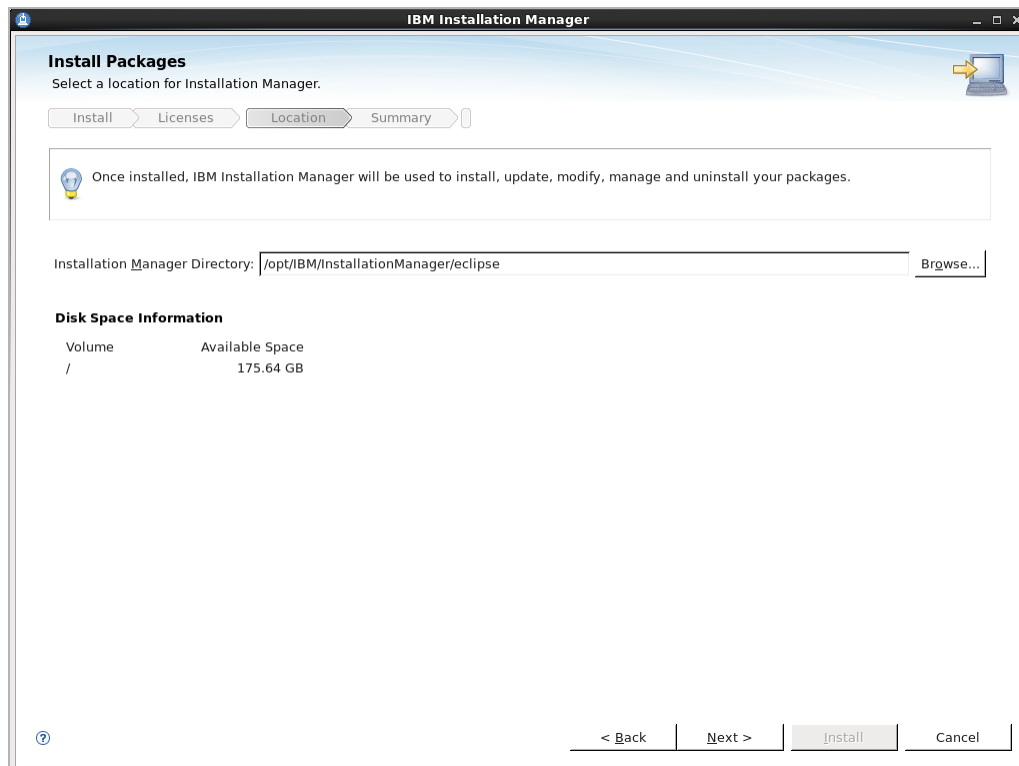
```
cd <iim_directory> (need to add this to dir list)
./install
```

This command starts the installer for the IBM Installation Manager.

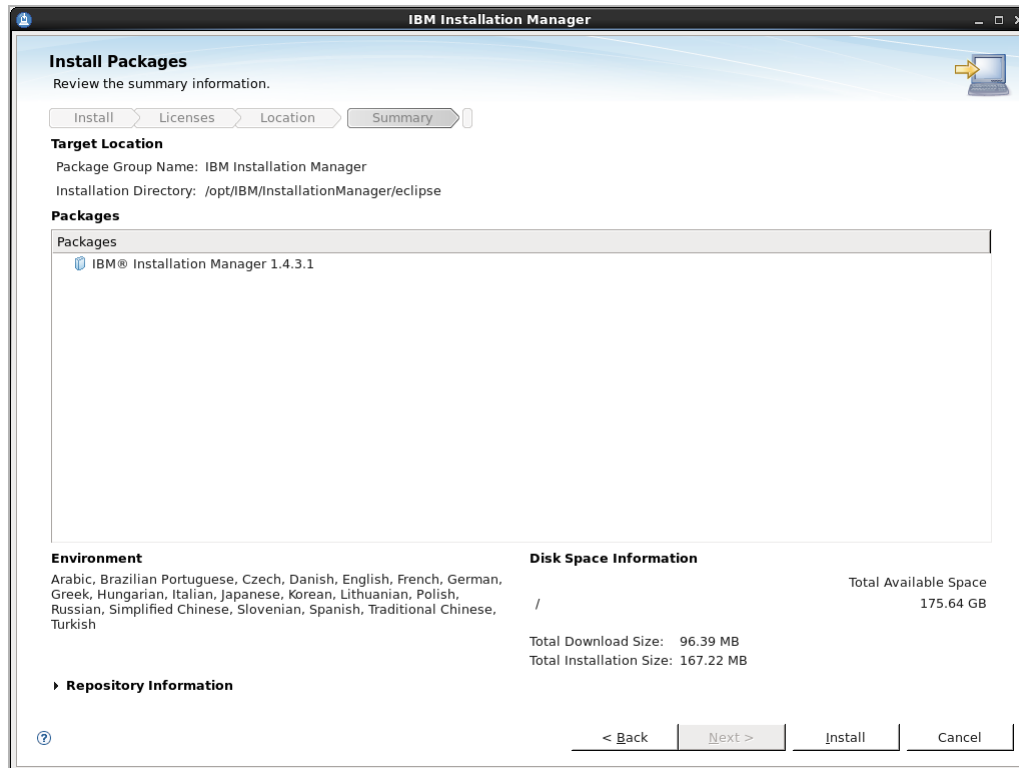
2. In the “Install Packages” screen, select the IBM IM version you wish to install.



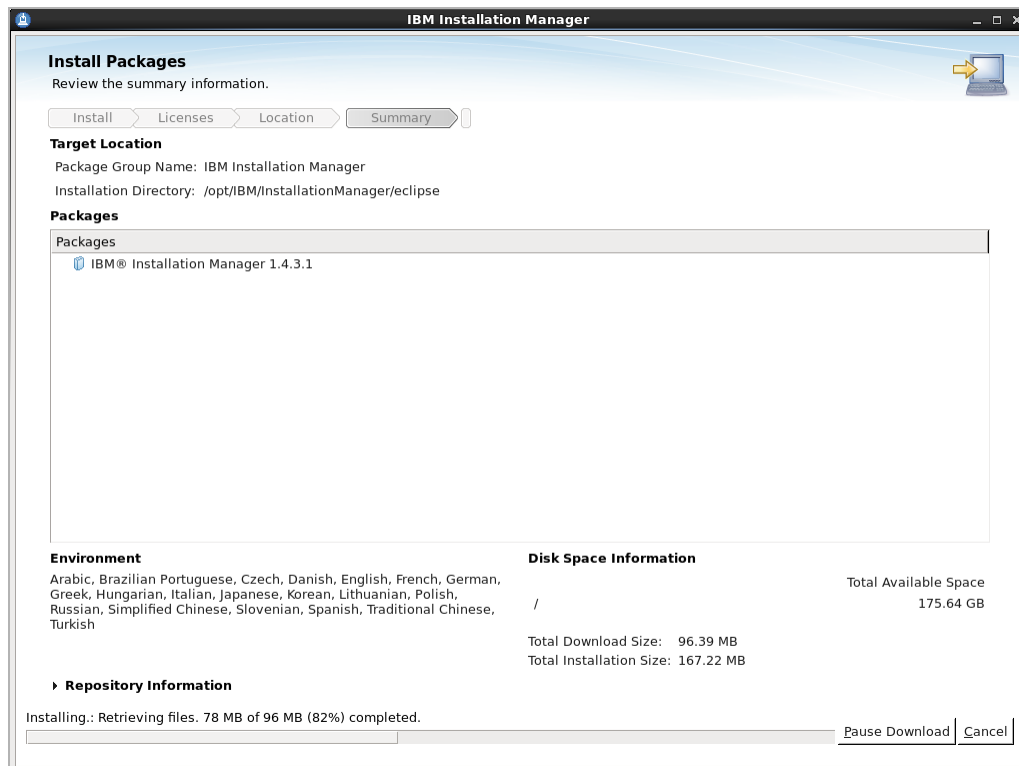
3. Click **Next**.

4. Read and accept the license agreement, then click Next.**5. Enter the path to the Installation Manager Directory and click Next.**

6. Click Install to start the installation process.



The installer retrieves the required installation files:



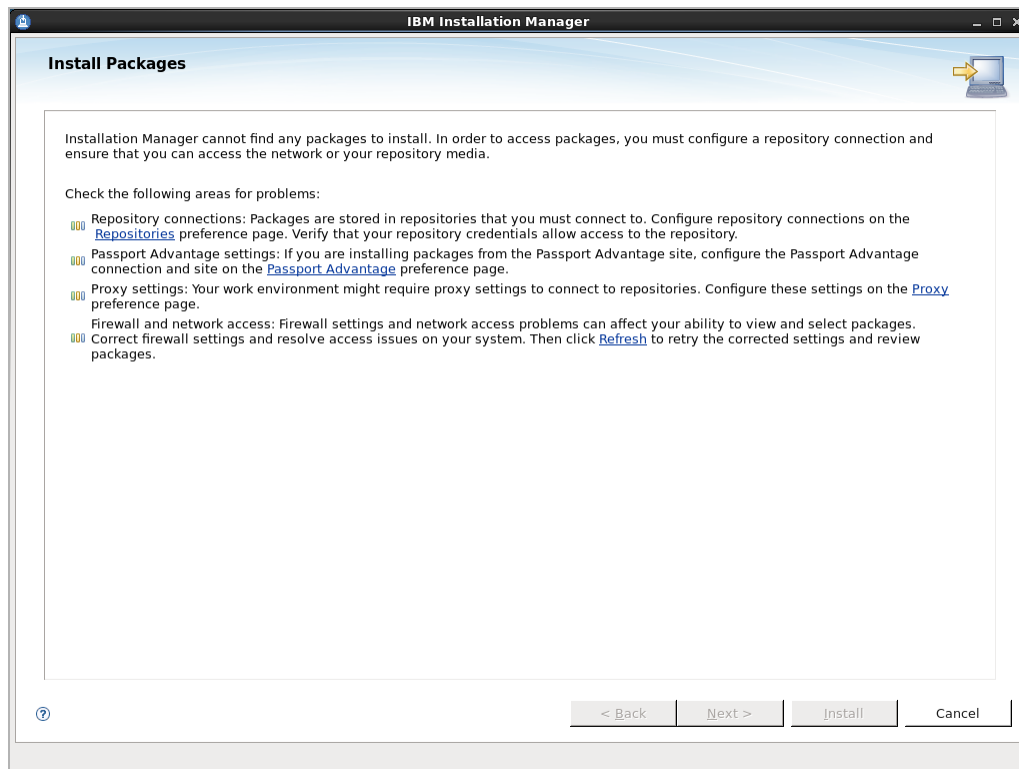
7. When the installation completes, restart the Installation Manager. We will now use the IBM Installation Manager to install WebSphere Application Server.

B. Installing WebSphere Application Server Using IBM IM

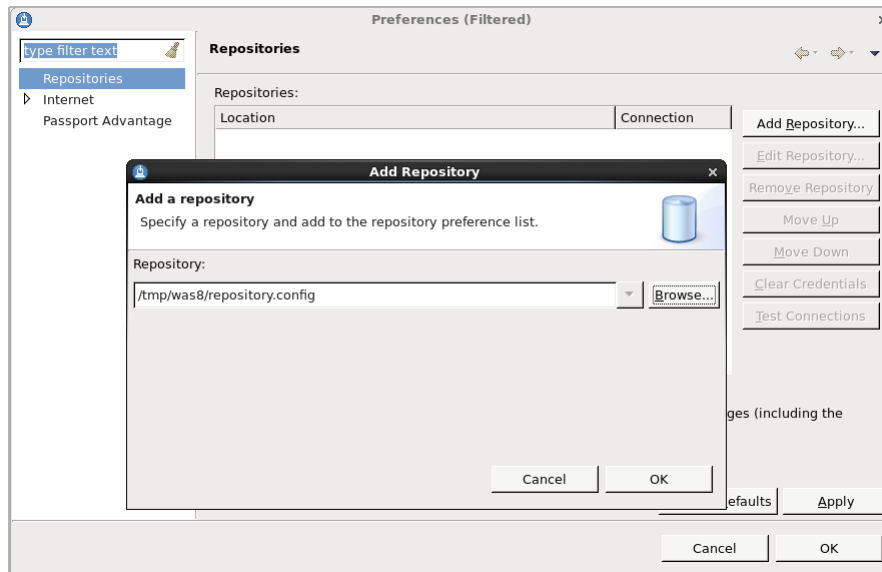
This section assumes you have successfully installed IBM IM.

To install WebSphere Application Server

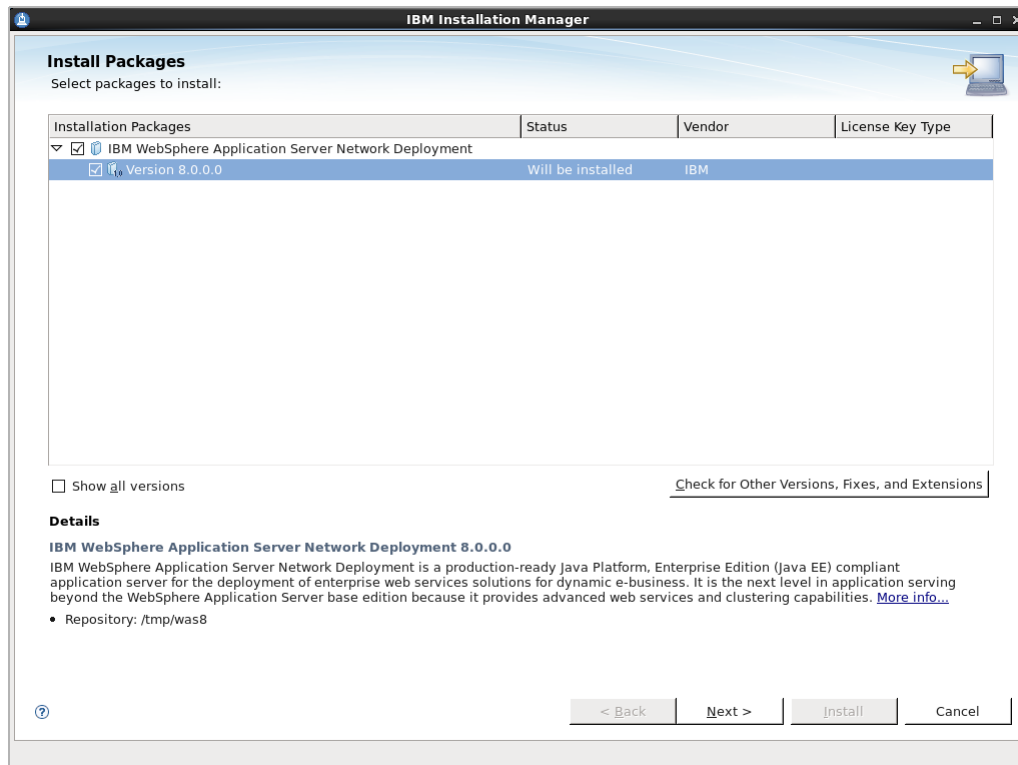
1. Unzip the IBM WAS installation directories to a temporary folder. For example:
/tmp/was8
2. Change to the IBM IM directory and launch the installer. Once the installer is launched, click **Install**.
3. Click the **Repositories** link and configure the repository for installing the WebSphere Application Server.



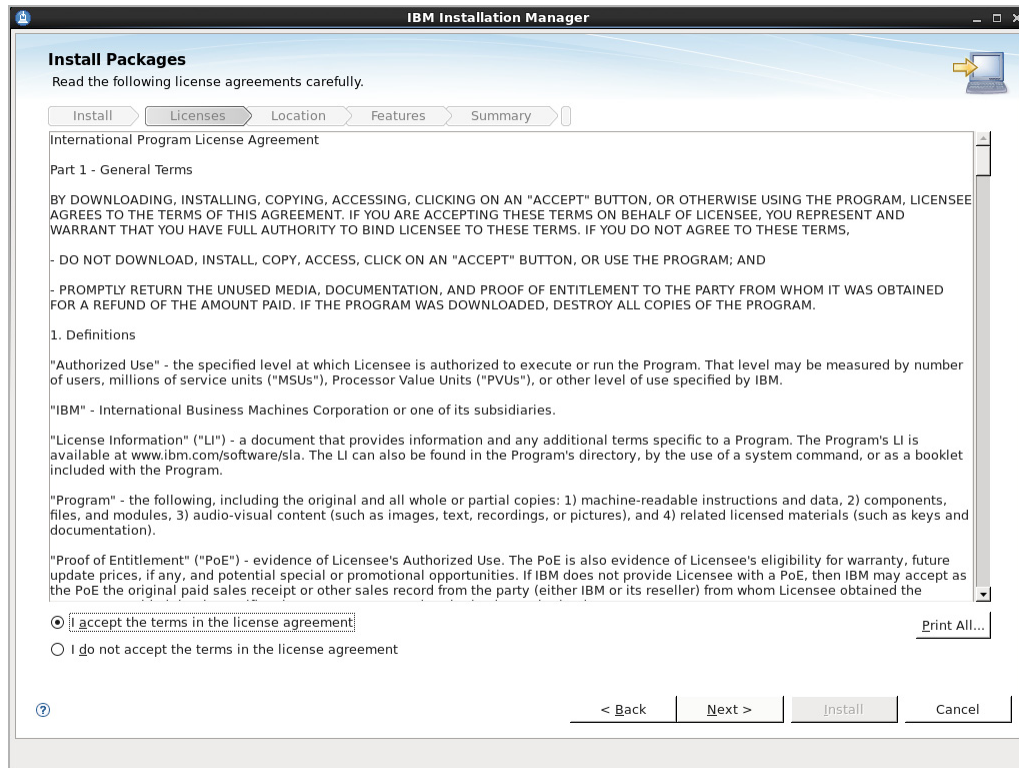
4. Click **Add Repository...** and browse to the temporary directory where you extracted the WAS8 installer files (/tmp/was8) and select the `repositories.config` file.



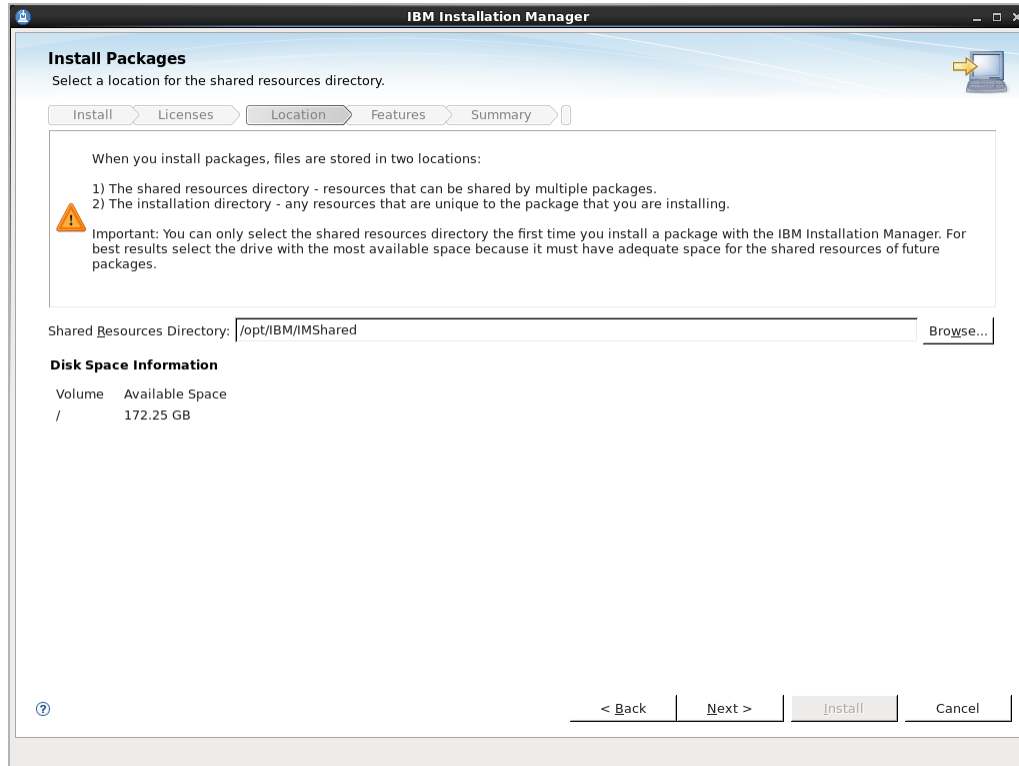
5. Click **OK**.
IBM IM identifies the version to be installed based on your repository.
6. Select the appropriate version and click **Next**.



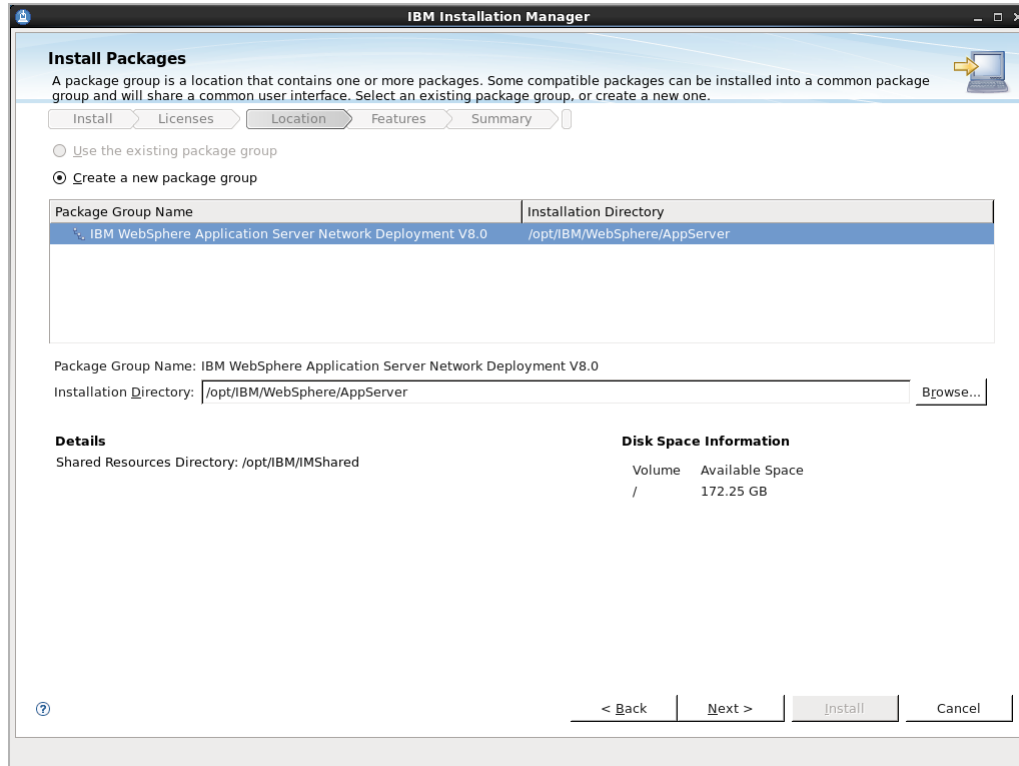
7. Read and then accept the License agreement. Click Next.



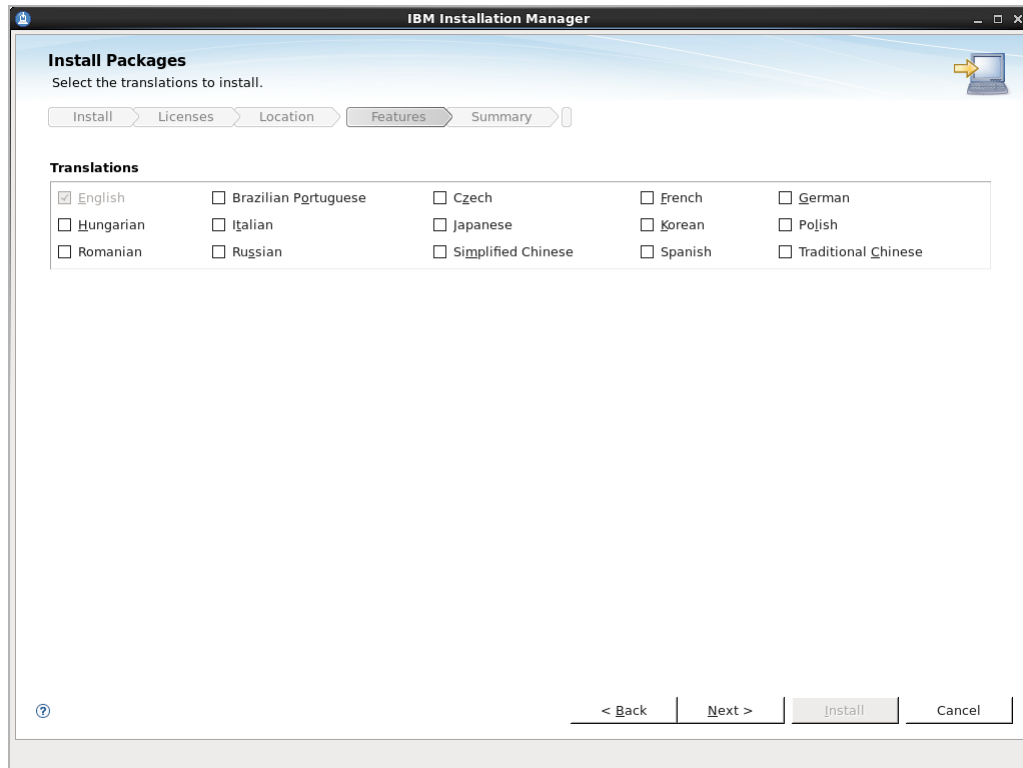
8. In the “Shared Resources Directory” field, click **Browse** and select the directory for shared resources. Then click **Next**.



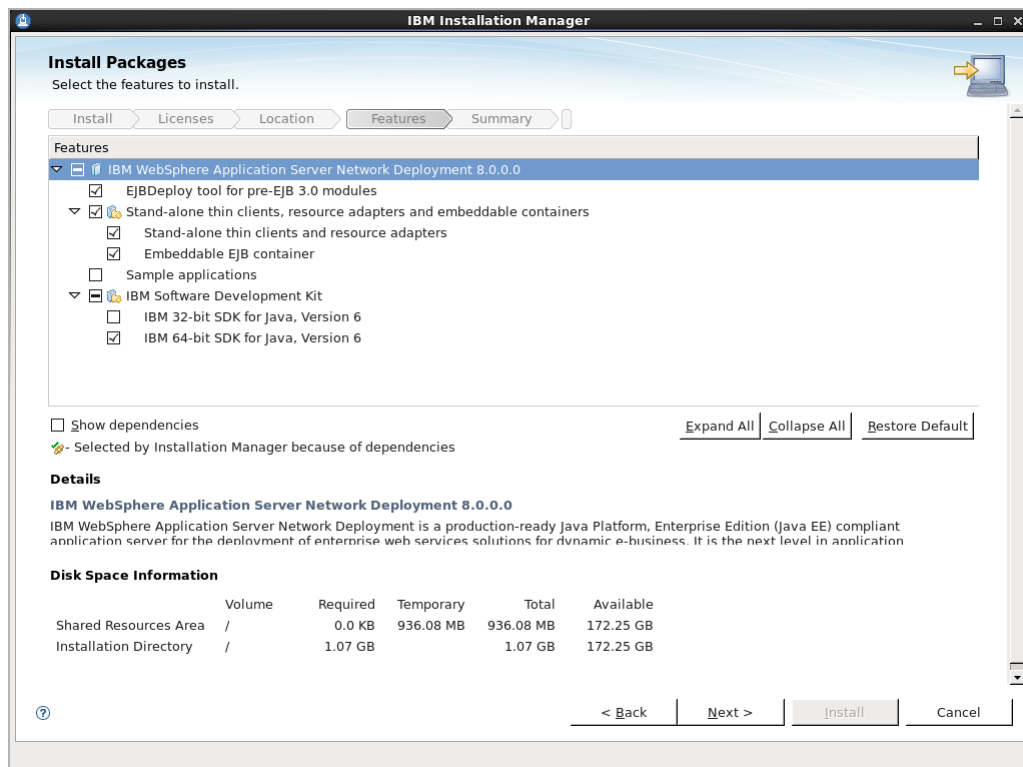
9. In the “Installation Directory” field, click **Browse** and select the WAS8 installation directory. Then click **Next**.

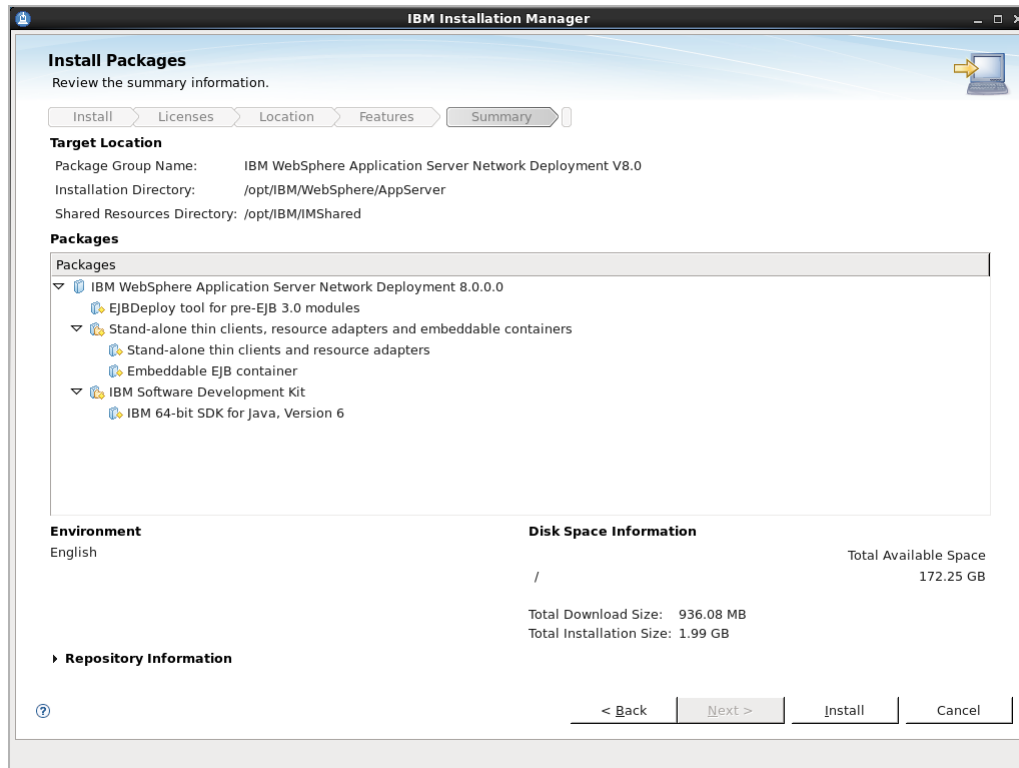


10. Select the translation that you wish to install and then click **Next**.

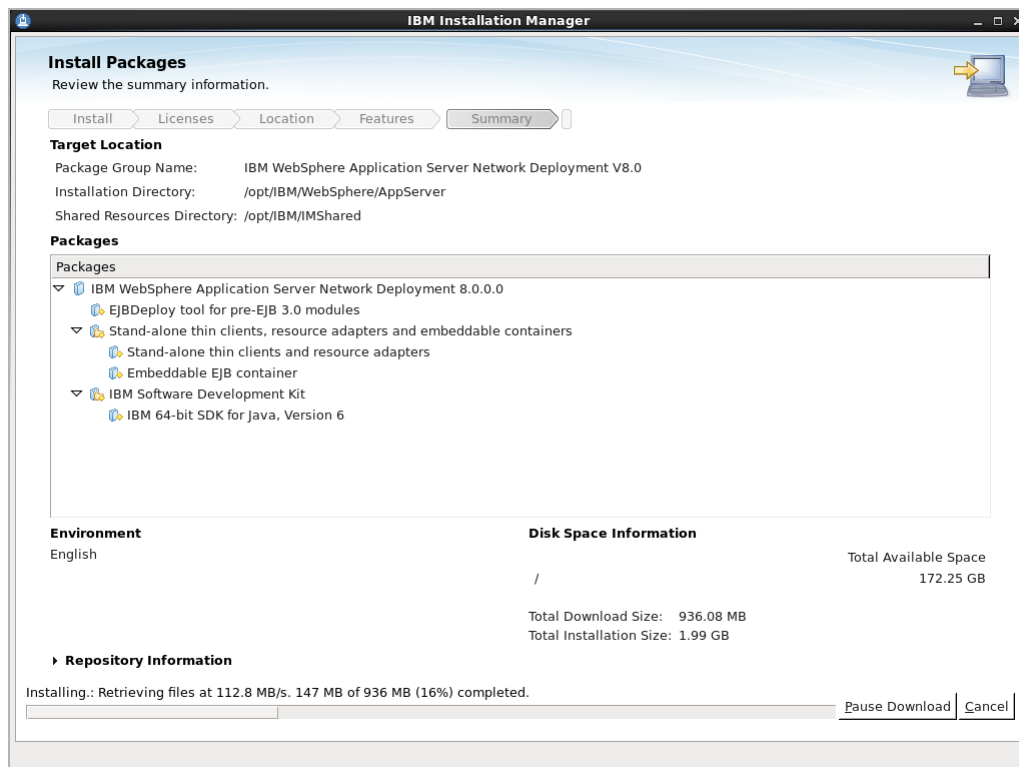


11. Select all applicable packages and then click **Next**.

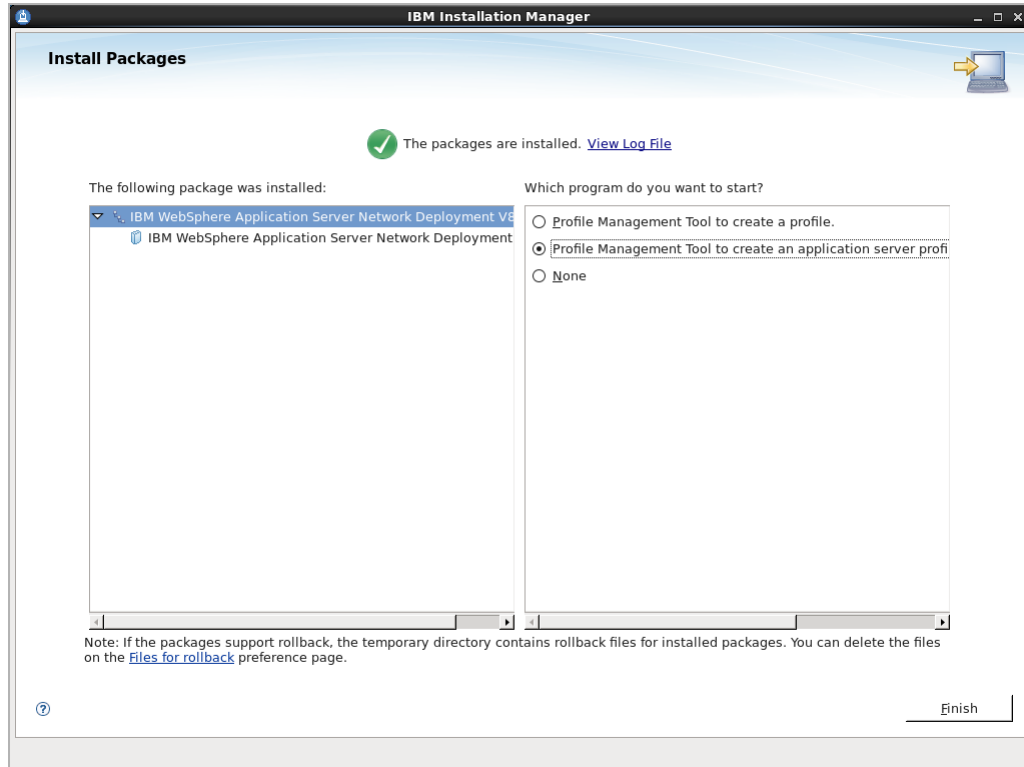


12. Click Next, review your selections, and then click Install.

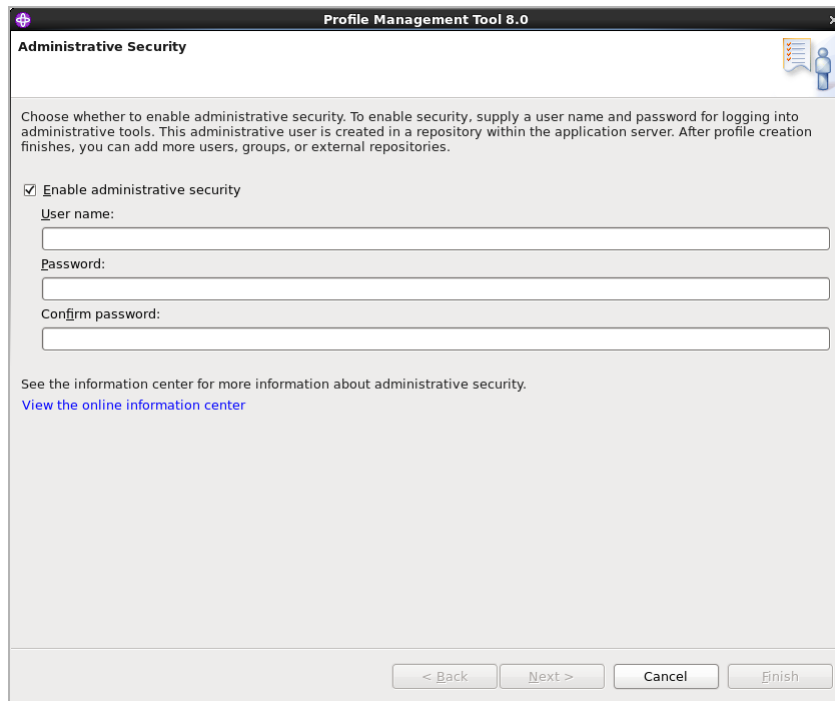
IBM IM starts the installation process.



13. When the installation process completes successfully, you are prompted to start the profile management tool to create profiles. Select **Profile Management Tool to create an application server profile** and click **Finish**.

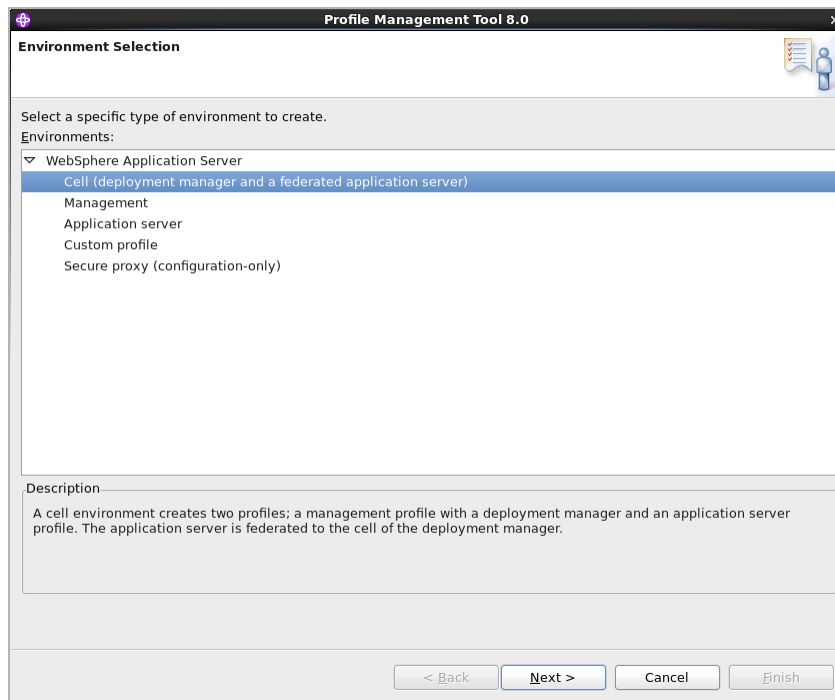


14. Enter the security username and password for the Deployment Manager console and then click **Next**.



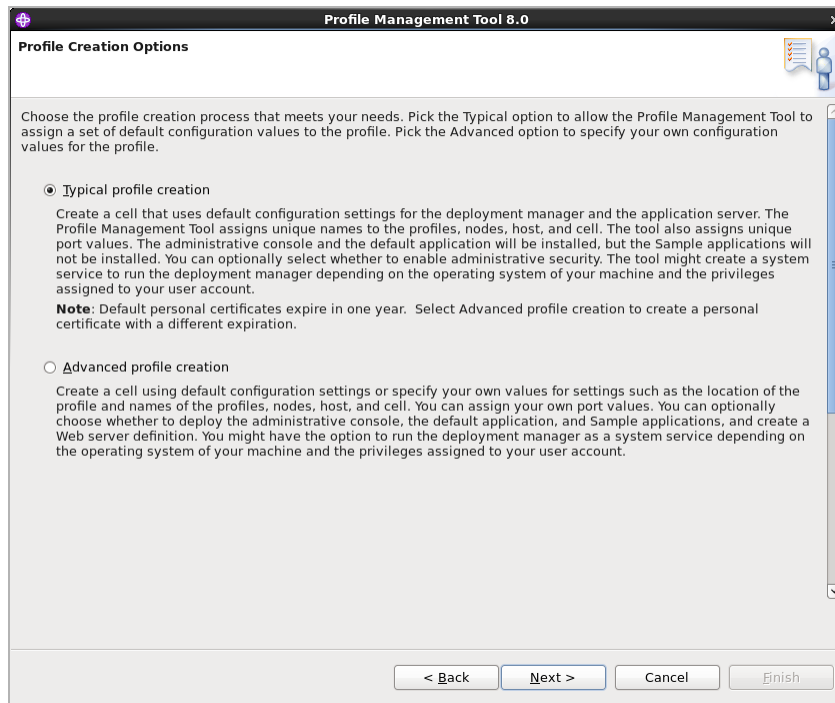
The screenshot shows the "Administrative Security" dialog box in the Profile Management Tool 8.0. The dialog has a title bar with the application name and a close button. Below the title bar, there is a header "Administrative Security" and a help icon. The main content area contains a paragraph of text explaining the purpose of administrative security. Below this text is a checkbox labeled "Enable administrative security" which is checked. Underneath the checkbox are three text input fields: "User name:", "Password:", and "Confirm password:". At the bottom of the dialog, there are four buttons: "< Back", "Next >", "Cancel", and "Finish".

15. Select **Cell (deployment manager and a federated application server)**. The Cell environment creates two profiles – one for the deployment manager and one for the application server. Click **Next**.

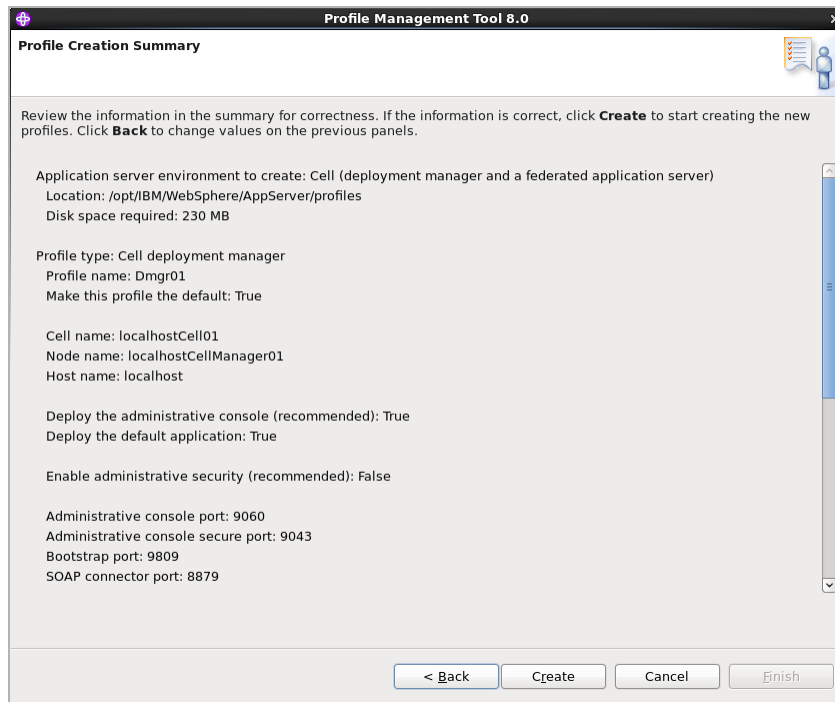


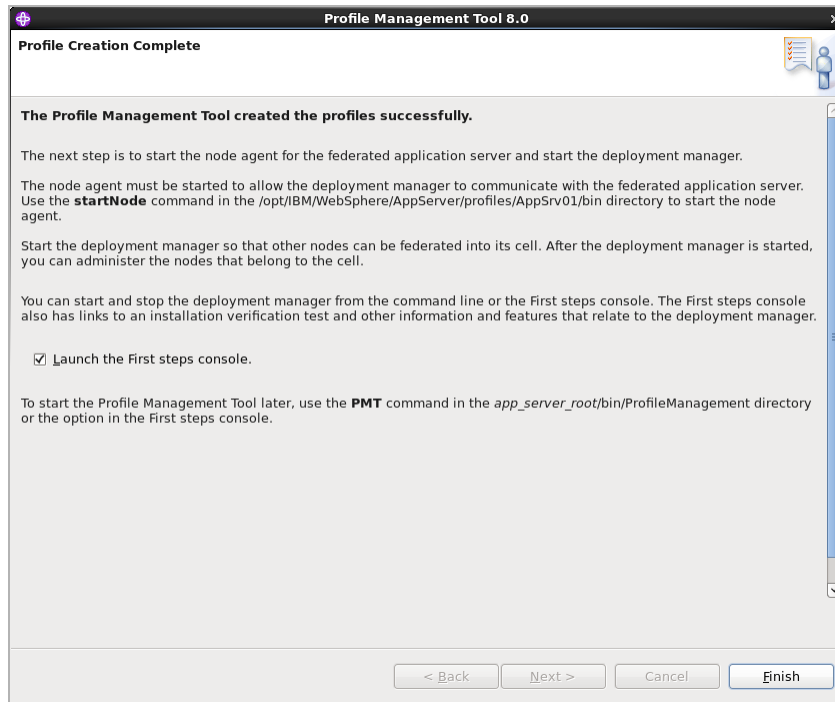
The screenshot shows the "Environment Selection" dialog box in the Profile Management Tool 8.0. The dialog has a title bar with the application name and a close button. Below the title bar, there is a header "Environment Selection" and a help icon. The main content area contains a paragraph of text: "Select a specific type of environment to create." Below this text is a section labeled "Environments:" which contains a tree view. The tree view has a root node "WebSphere Application Server" which is expanded to show four sub-nodes: "Cell (deployment manager and a federated application server)", "Management", "Application server", and "Custom profile". The "Cell (deployment manager and a federated application server)" node is selected and highlighted in blue. Below the tree view is a section labeled "Description:" which contains a text box with the following text: "A cell environment creates two profiles; a management profile with a deployment manager and an application server profile. The application server is federated to the cell of the deployment manager." At the bottom of the dialog, there are four buttons: "< Back", "Next >", "Cancel", and "Finish".

16. In the “Profile Creation Options” screen, select **Typical profile creation** and then click **Next**.



17. Review the information in the “Profile Creation Summary” screen, and then click **Create**.



18. When the profile is created successfully, click **Finish.**

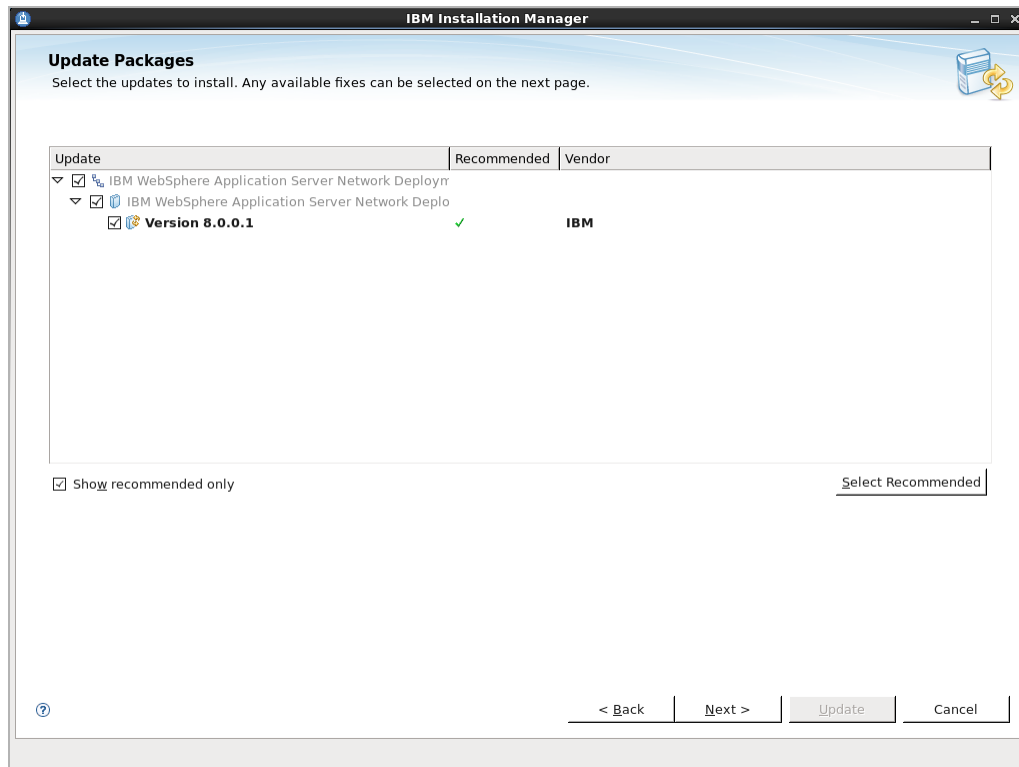
At this point, you have successfully installed WAS8 and created a Cell env profile.

C. Updating WebSphere Application Server

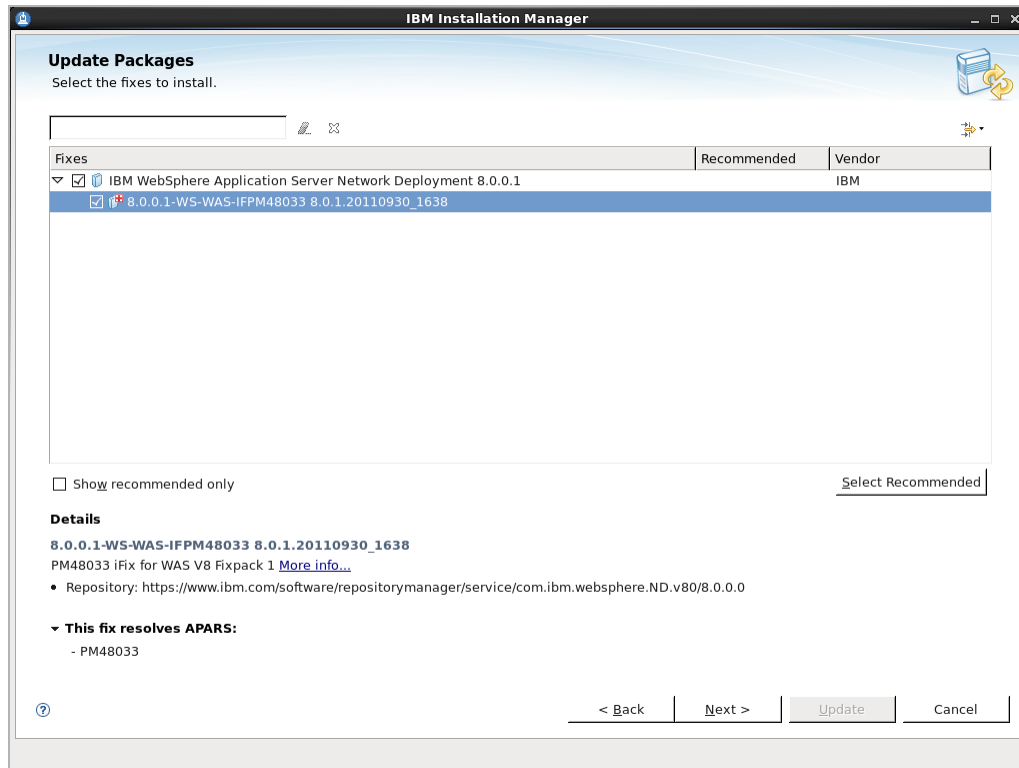
This section assumes you have successfully installed WAS8 and created a Cell env profile. This section provides instructions for updating WAS8.

To update WebSphere application server

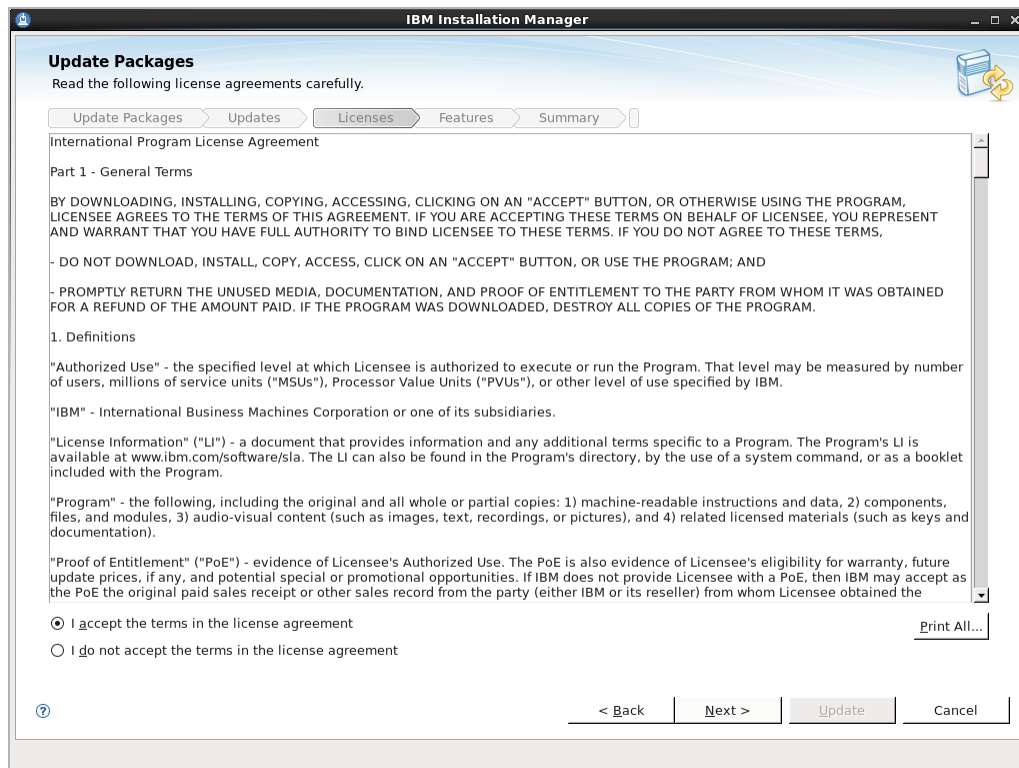
1. Change to the IBM IM directory and launch the installer. Once the installer is launched, click **Update**. Select the supported update and then click **Next**.



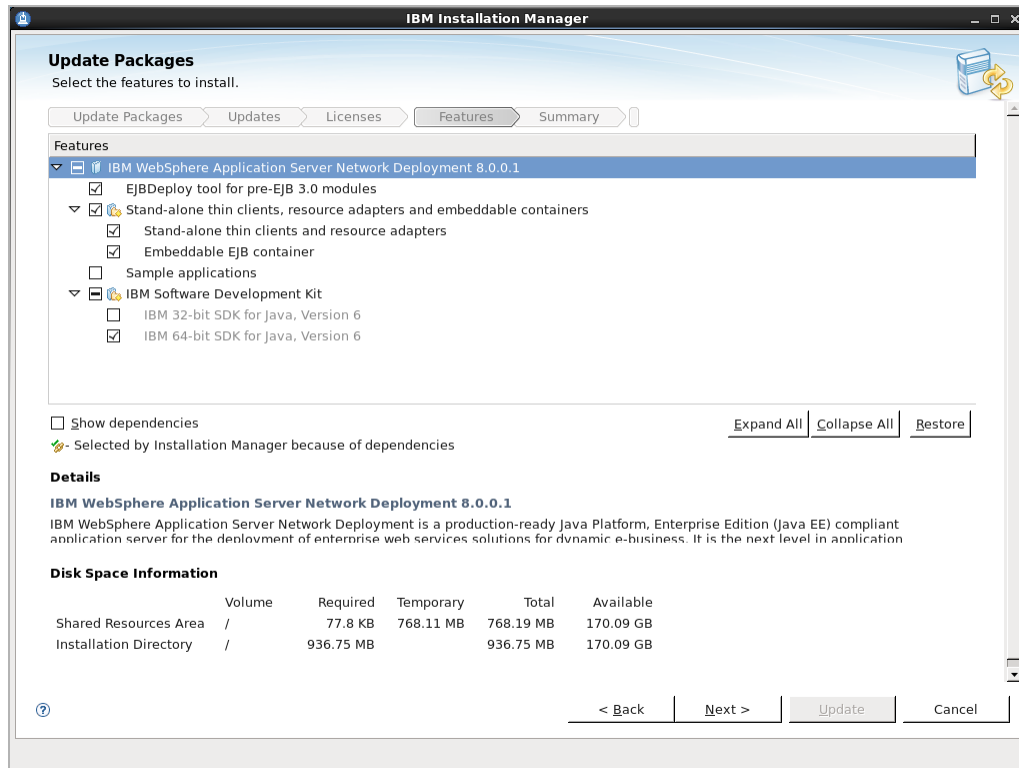
2. Select the fix pack to install and then click **Next**.



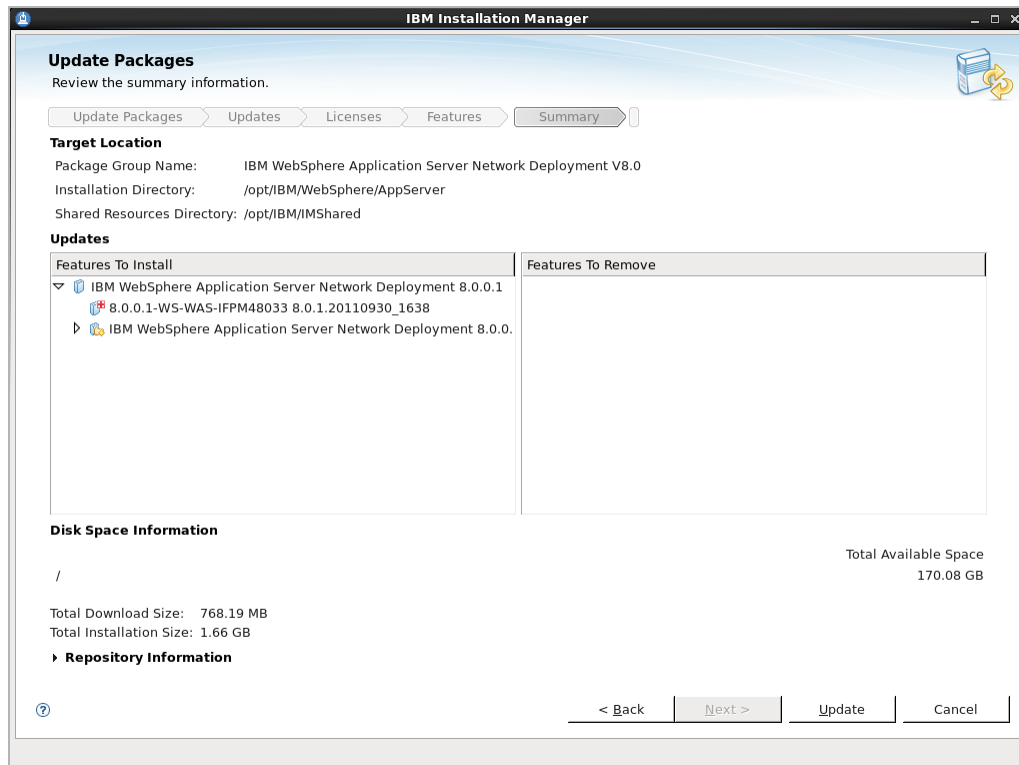
3. Read and accept the License agreement and then click **Next**.



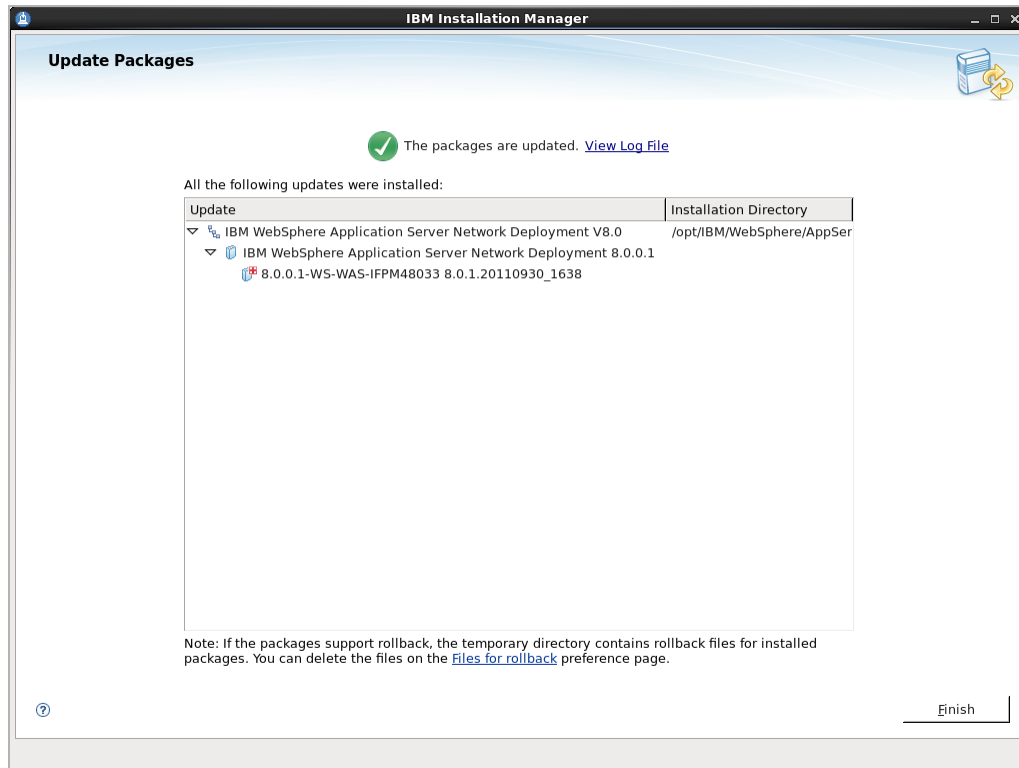
4. Select the features to update and then click **Next**.



5. Click **Update** to start the update process.



6. When the update process completes successfully, click **Finish**.



Creating a WAS Instance Using the Command Line

This section shows you how to create a WAS instance using the command line.

Note

On Windows, the names of the command-line tools used in this section end with `.bat` instead of `.sh`. Remember to make the necessary substitution when executing the commands on a Windows system.

To create a WAS instance using the command line

1. Change to the `<WAS_home>/bin` directory.
2. List existing profiles by executing the following command:

```
./manageprofiles.sh -listProfiles
```

A typical response from this command looks as follows:

```
[Dmgr01]
[AppSvr01]
```

In this example, there are two existing profiles: a Deployment Manager profile named `Dmgr01`, and an application server profile named `AppSvr01`.

3. (Optional) Delete any unwanted profiles. Do the following:

- a. Stop the unwanted server instances (for instructions, see “[Start/Stop Commands](#),” on page 20).
 - b. Delete each unwanted profile by executing the following command:


```
./manageprofiles.sh -delete -profileName <profile_name>
```
 - c. Delete the leftover profile directory, <WAS_home>/<profile_name>.
4. Create a Deployment Manager profile by executing the following command:

Note

The default parameter values for this command are as follows:

- <appserv_cell> is typically <WAS_host>Cell01
- <appserv_node> is typically <WAS_host>managerNode01
- <DM_profile> is typically Dmgr01
- <appserv_profile> is typically AppServ01

Note the parameter values you specify in this step. You must use them when creating the application server profile in the next step.

```
./manageprofiles.sh -create \ -templatePath <WAS_home>/
  profileTemplates/dmgr \ -nodeProfilePath /<WAS_home>/
  profiles/<appserv_profile> \ -profileName <DM_profile> \
  -cellName <appserv_cell> \ -nodeName <appserv_node> \
  -isDefault -defaultPorts -validatePorts
```

5. Create an application server profile by executing the following command:

Note

The default parameter values for this command are as follows:

- <appserv_cell> is typically <WAS_host>Cell01
- <appserv_node> is typically <WAS_host>managerNode01
- <DM_profile> is typically Dmgr01
- <appserv_profile> is typically AppServ01

If you are not using the defaults, ensure you are using the parameter values you specified in [step 4](#).

```
./manageprofiles.sh -create \ -templatePath <WAS_home>/
  profileTemplates/default \ -profileName <appserv_profile> \
  -cellName <appserv_cell> \ -nodeName <appserv_node> \
  -isDefault
```

6. Start the Deployment Manager using the Deployment Manager profile you created (for instructions, see “[Start/Stop Commands](#),” on page 20).
7. Start the new application server instance (for instructions, see “[Start/Stop Commands](#),” on page 20).

8. Federate the WAS instance with the Deployment Manager by executing the following command:

Note

The default Deployment Manager SOAP port is 8879.

```
./addNode.sh <DM host> <DM SOAP port>
```

9. Stop the Application Server (for instructions, see [“Start/Stop Commands,” on page 20](#)).
10. Stop the Node Agent (for instructions, see [“Start/Stop Commands,” on page 20](#)).
11. Stop the Deployment Manager (for instructions, see [“Start/Stop Commands,” on page 20](#)).
12. (Optional) If you are creating a WebCenter Sites cluster, repeat this procedure for each member of the cluster.

Configuring the WAS Instance

Follow the steps in this section to configure the WAS instance you created for WebCenter Sites (see “[Creating a WAS Instance Using the Command Line](#),” on page 39). This section contains the following steps:

- A. [Configuring the Application Server’s Generic JVM Arguments](#)
- B. [Configuring the Web Container](#)
- C. [Configuring the WAS Instance for Database Communications](#)

A. Configuring the Application Server’s Generic JVM Arguments

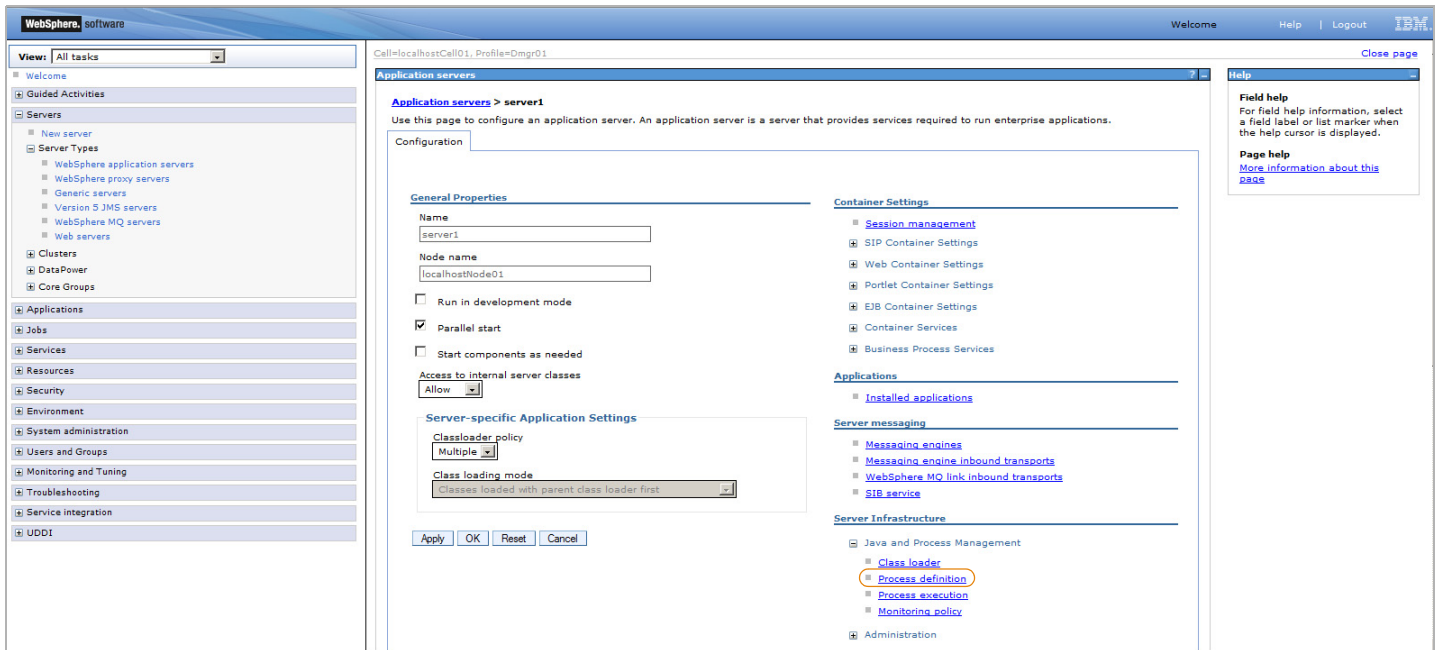
1. Log in to the Deployment Manager console:

Note

The default Deployment Manager console port is 9060.

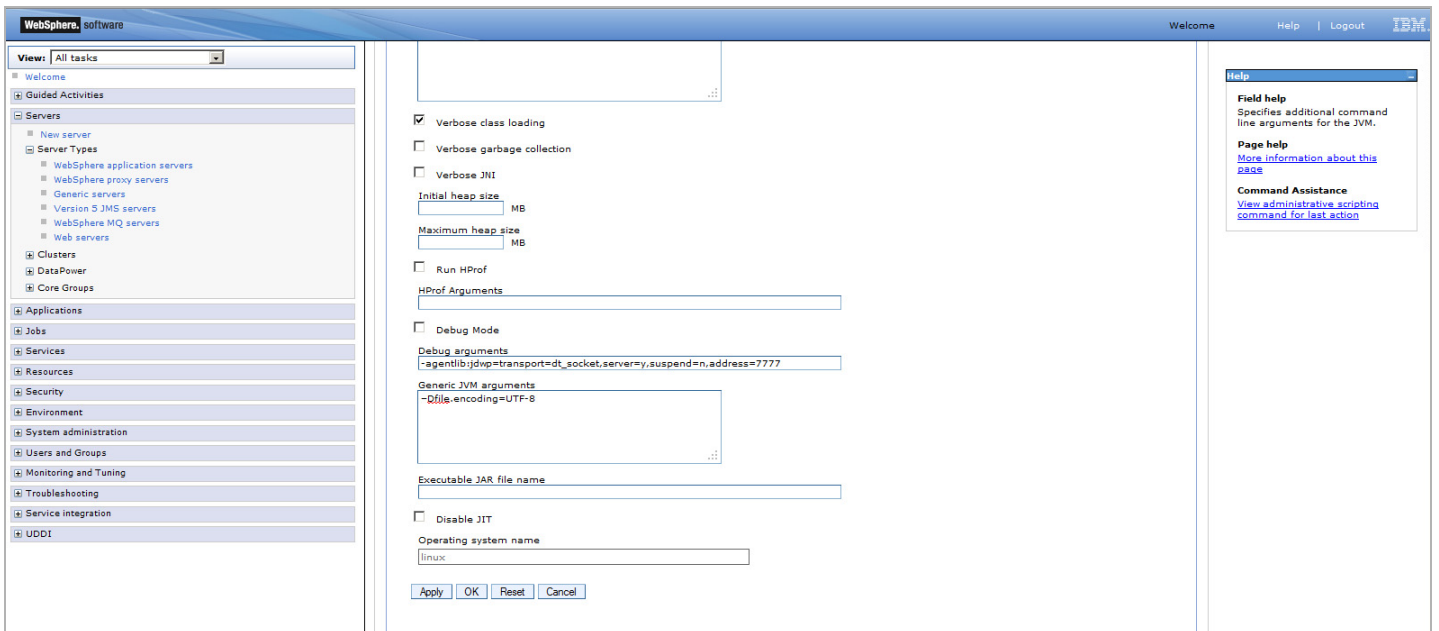
- a. Point your browser to the following URL:
`http://<DM_host>:<DM_console_port>/admin`
 - b. Enter your username and password.
 - c. Click **Log in**.
The Deployment Manager console loads.
2. In the left-hand pane, expand **Servers > Server Types** and click **WebSphere Application Servers**.
A list of configured servers is displayed.
 3. Select the application server instance you created for WebCenter Sites (for example, select `server1`), and expand the **Java and Process Management** node.

4. Underneath the “Java and Process Management” node, click **Process Definition**.



5. Under “Additional Properties,” click **Java Virtual Machine**. In the “Generic JVM arguments” field, enter:

```
-Dfile.encoding=UTF-8 -Djava.io.tmpdir=<AppSrv01>/servers/  
<server_name>/temp -Djava.net.preferIPv4Stack=true  
-Dnet.sf.ehcache.enableShutdownHook=true
```



6. Click **OK** to save your changes and synchronize all nodes.

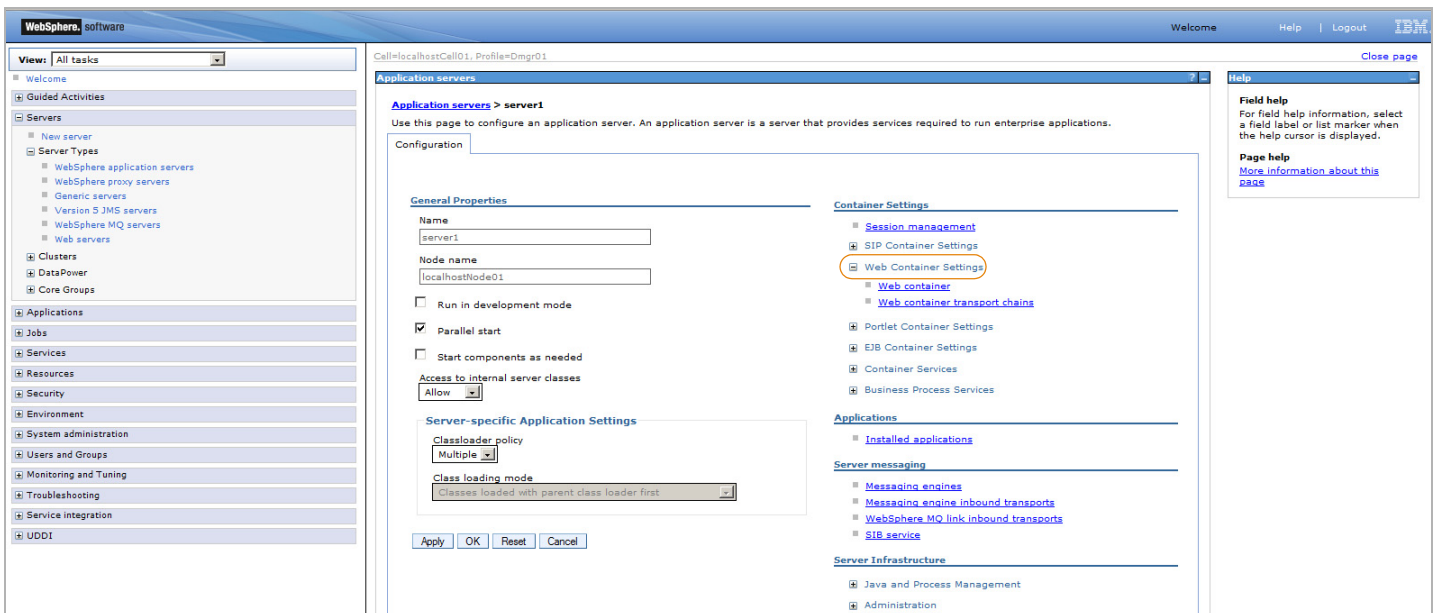
B. Configuring the Web Container

1. Log in to the Deployment Manager console:

Note

The default Deployment Manager console port is 9060.

- a. Point your browser to the following URL:
`http://<DM_host>:<DM_console_port>/admin`
 - b. Enter your username and password.
 - c. Click **Log in**.
- The Deployment Manager console loads.
2. In the left-hand pane, expand **Servers > Server Types** and click **Application Servers**.
A list of configured servers is displayed.
 3. Select the application server instance you created for WebCenter Sites (for example, select `server1`), and expand the **Web Container Settings** node.



4. Underneath the “Web Container Settings” node, click **Web container**.

5. Underneath the “Web container” node, click **Custom Properties** and then click **New**.
 - In the **Name** field, enter `NoAdditionalSessionInfo`.
 - In the **Value** field, enter `true`.

The screenshot shows the IBM WebSphere Administration Console interface. The left-hand navigation pane is expanded to 'Servers' > 'WebSphere application servers' > 'Web container'. The main content area displays the 'Custom properties' configuration page for the selected web container. A 'New...' dialog box is open, allowing the user to define a new configuration property. The 'Name' field contains 'NoAdditionalSessionInfo' and the 'Value' field contains 'true'. The 'Description' field is empty. At the bottom of the dialog are buttons for 'Apply', 'OK', 'Reset', and 'Cancel'. A help panel on the right provides information about field and page help.

6. Click **Save**. The changes synchronize to all nodes.

The screenshot shows the IBM WebSphere Administration Console interface after the custom property has been saved. The left-hand navigation pane remains expanded to 'Servers' > 'WebSphere application servers' > 'Web container'. The main content area displays the 'Custom properties' configuration page. The 'Preferences' section now shows a table with one entry: 'NoAdditionalSessionInfo' with a value of 'true'. The table has columns for 'Name', 'Value', and 'Description'. Below the table, it indicates 'Total 1'. The 'New...' and 'Delete' buttons are visible at the top of the preferences section. The help panel on the right is also present.

Select	Name	Value	Description
<input type="checkbox"/>	NoAdditionalSessionInfo	true	

C. Configuring the WAS Instance for Database Communications

This section explains how to configure the WAS instance you created in the previous section to communicate with the database WebCenter Sites will be using.

This section contains the following steps:

[Step I. Creating a J2C Authentication](#)

[Step II. Creating a JDBC Provider](#)

[Step III. Creating a JDBC Data Source](#)

Note

- Before completing the steps in the rest of this chapter, start the following WAS components, in the order shown. For a list of commands for starting and stopping WAS components, see [“Start/Stop Commands,” on page 20](#).
 1. Deployment Manager
 2. Node Agent
 3. Application Server
- If you are using an Oracle database and require text attributes greater than 2000 characters, you will have to set `cc.bigtext` to `CLOB`. To support `CLOB`, use Oracle database 9.2.0.6 (or a higher supported version). Also use Oracle 10g drivers. (`CLOB` is not supported for lower database versions and for Oracle drivers 9x [thin, type 4].)

You will set `cc.bigtext` to `CLOB` when you run the WebCenter Sites installer (as explained in [“Installation Options,” on page 92](#)).

Step I. Creating a J2C Authentication

The J2C authentication contains the login information that WAS will use to connect to the WebCenter Sites database.

A J2C authentication is the first of the three components required to set up your WAS instance to connect to your database.

If you are creating a WebCenter Sites cluster, the cluster members can share the same J2C authentication.

To create a J2C authentication

1. Log in to the Deployment Manager console:

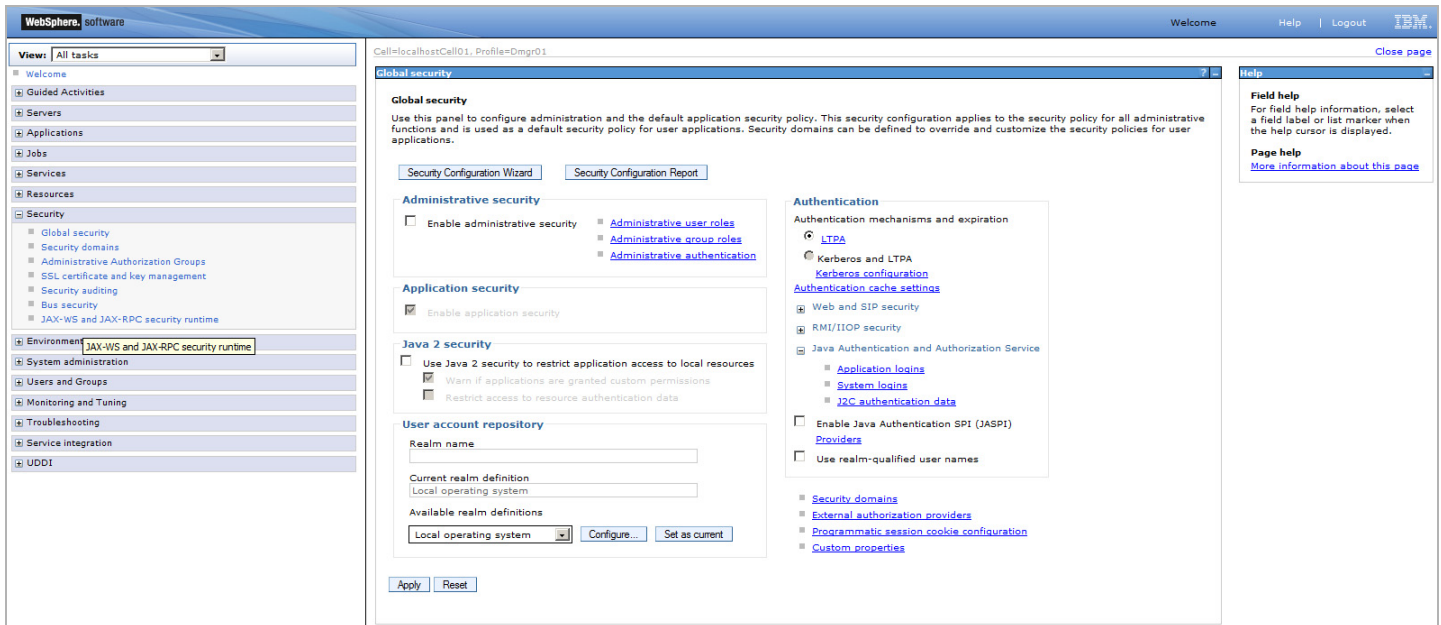
Note

The default Deployment Manager console port is 9060.

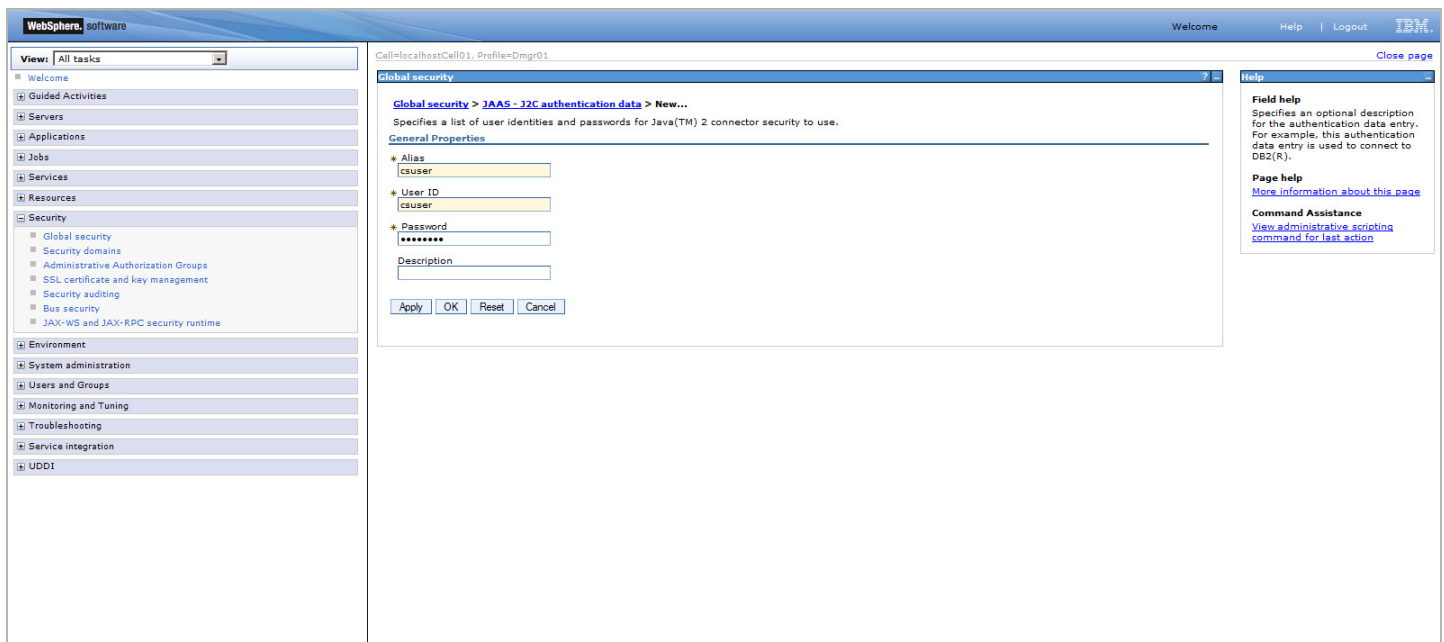
- a. Point your browser to the following URL:
`http://<DM_host>:<DM_console_port>/admin`
- b. Enter your user name and password.
- c. Click **Log in**.

The Deployment Manager console loads.

- In the left-hand pane, expand the **Security** node.



- Under the **Security** node, select **Secure administration, applications, and infrastructure**.
- In the “Authentication” area in the right-hand pane, expand the **Java Authentication and Authorization Service** node and click **J2C authentication data**.
The console displays the “JAAS – J2C authentication data” screen.
- In the “JAAS – J2C authentication data” screen, click **New**. The console displays the “General Properties” screen.



6. In the “General Properties” screen, do the following:
 - a. In the **Alias** field, enter a unique alias for this J2C authentication.
 - b. In the **User ID** and **Password** fields, enter the credentials of the database user account WAS will use to connect to the WebCenter Sites database. (Re-enter the password for verification.)
 - c. When you are finished, click **OK**. The J2C authentication you created appears in the list in the “JAAS – J2C authentication data” screen.
7. In the “Messages” box, click **Save**.
8. In the “Save” screen, do the following:
 - a. Select the **Synchronize changes with nodes** check box.
 - b. Click **Save**.
9. In the “Synchronize changes with nodes” screen, click **OK**.
10. Restart the application server for the changes to take effect. For a list of start and stop commands, see “[Start/Stop Commands](#),” on page 20.

Step II. Creating a JDBC Provider

A JDBC provider encapsulates all data sources that use a vendor-specific JDBC driver implementation.

A JDBC provider is the second of the three components required to set up your WAS instance to connect to your database.

If you are creating a WebCenter Sites cluster, you must create a separate JDBC provider for each cluster member.

To create a JDBC provider

1. If you are using a DB2 or Oracle database, place the following JAR files in the `<WAS_home>/universalDriver/lib` directory:
 - For DB2:
 - `db2jcc.jar`
 - `db2jcc_license_cu.jar`
 - For MS SQL Server:
 - `sqljdbc4.jar`
 - For Oracle:
 - `ojdbc6.jar`
2. Log in to the Deployment Manager console:

Note

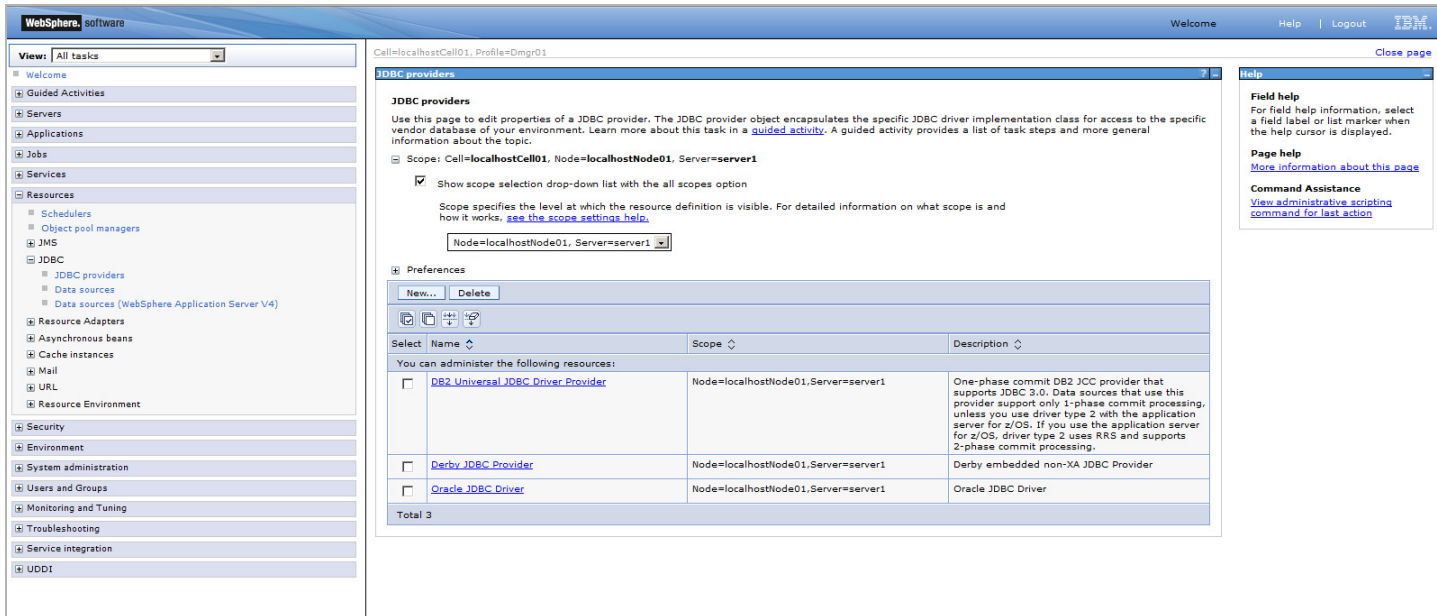
The default Deployment Manager console port is 9060.

- a. Point your browser to the following URL:
`http://<DM_host>:<DM_console_port>/admin`
- b. Enter your user name and password.

c. Click **Log in**.

The Deployment Manager console loads.

3. In the left-hand pane, expand the **Resources** node.
4. Under the **Resources** node, expand the **JDBC** node and click **JDBC Providers**. The console displays the “JDBC providers” screen.



5. In the “Scope” area of the “JDBC providers” screen, select **Node=<appserv_node>**, **Server=<server_name>** from the drop-down list and click **New**.

Note

The default name of the first application server node created is `<WAS_host>Node01`.

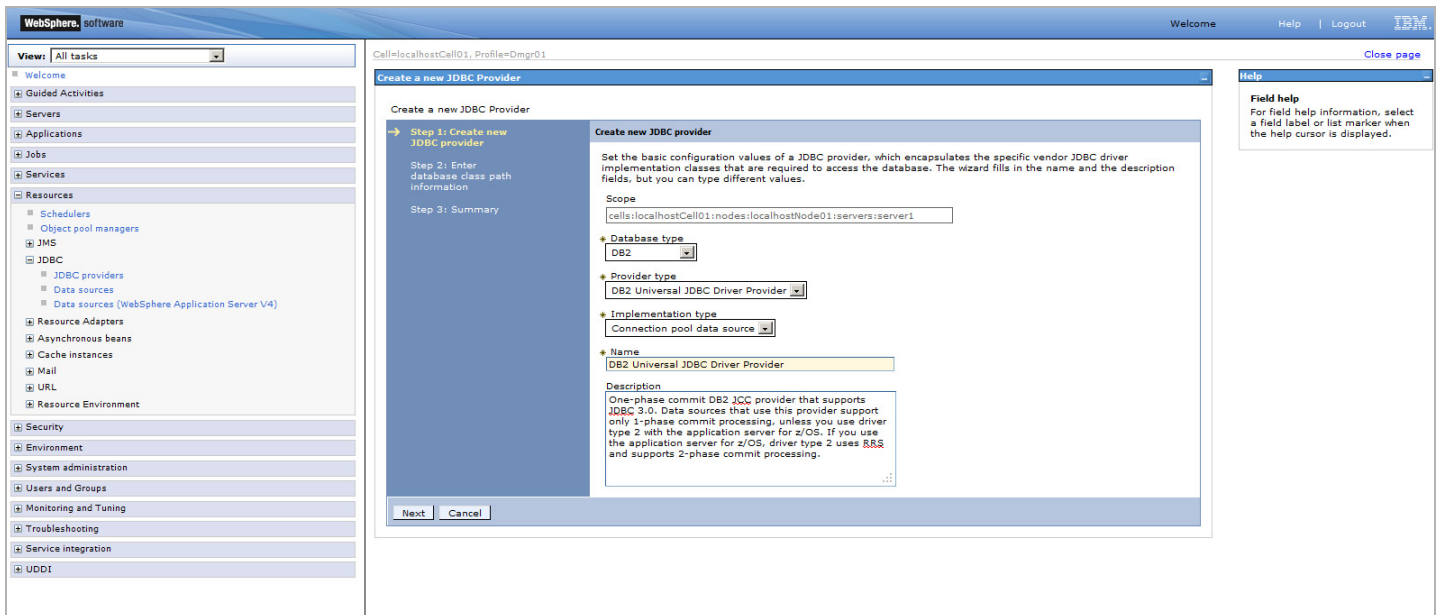
The default server name is `server1`.

6. In the “Create a new JDBC provider” screen, do the following:
 - a. In the “Database type” drop-down list, select the database WebCenter Sites will be using.
 - b. In the “Provider type” drop-down list, select the provider corresponding to the database you selected in [step a](#), as shown in the following table:

Database type	Corresponding provider type
DB2	DB2 Universal JDBC Driver Provider
Oracle	Oracle JDBC Driver

Database type	Corresponding provider type
SQL Server	Microsoft SQL Server JDBC Driver

- c. In the “Implementation type” drop-down list, select **Connection pool data source**.
- d. In the **Name** field, enter a unique name for this JDBC provider.
- e. Click **Next**.

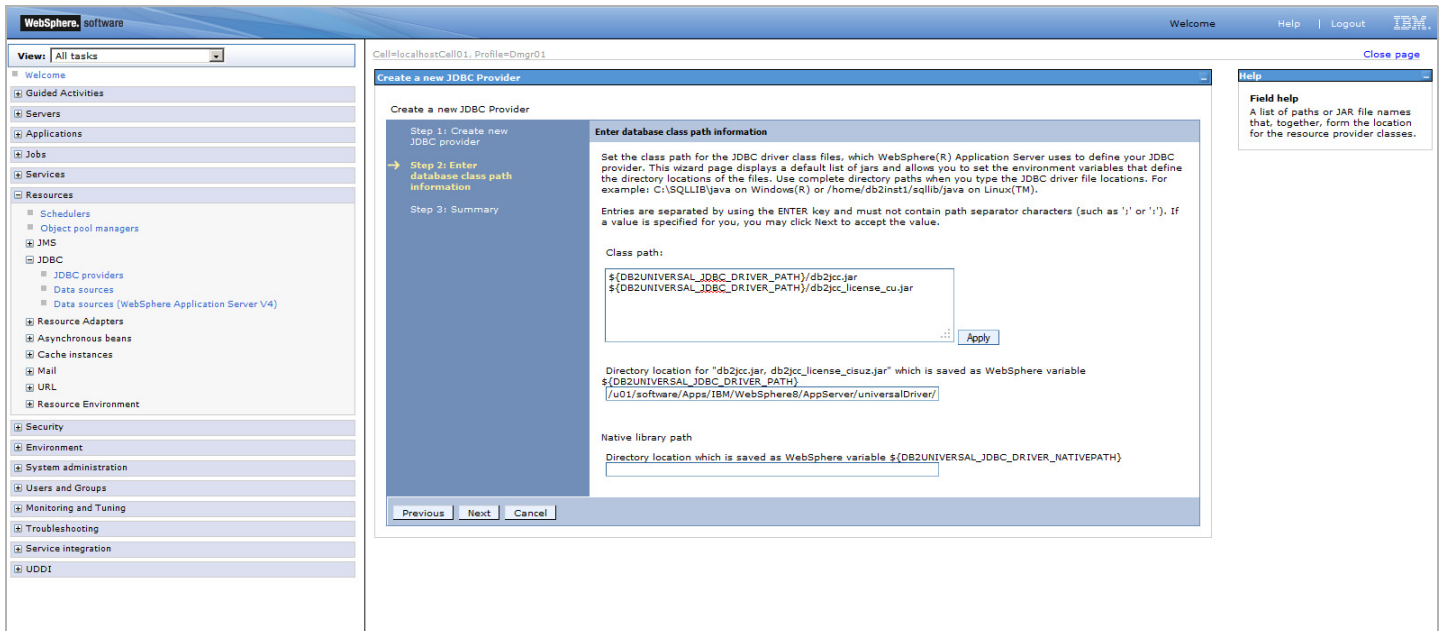


7. In the “Enter database class path information” screen, do one of the following:
 - If you selected **DB2** or **Oracle** in [step 6](#), enter the location containing the database-specific JAR files you copied in [step 1](#), that is:

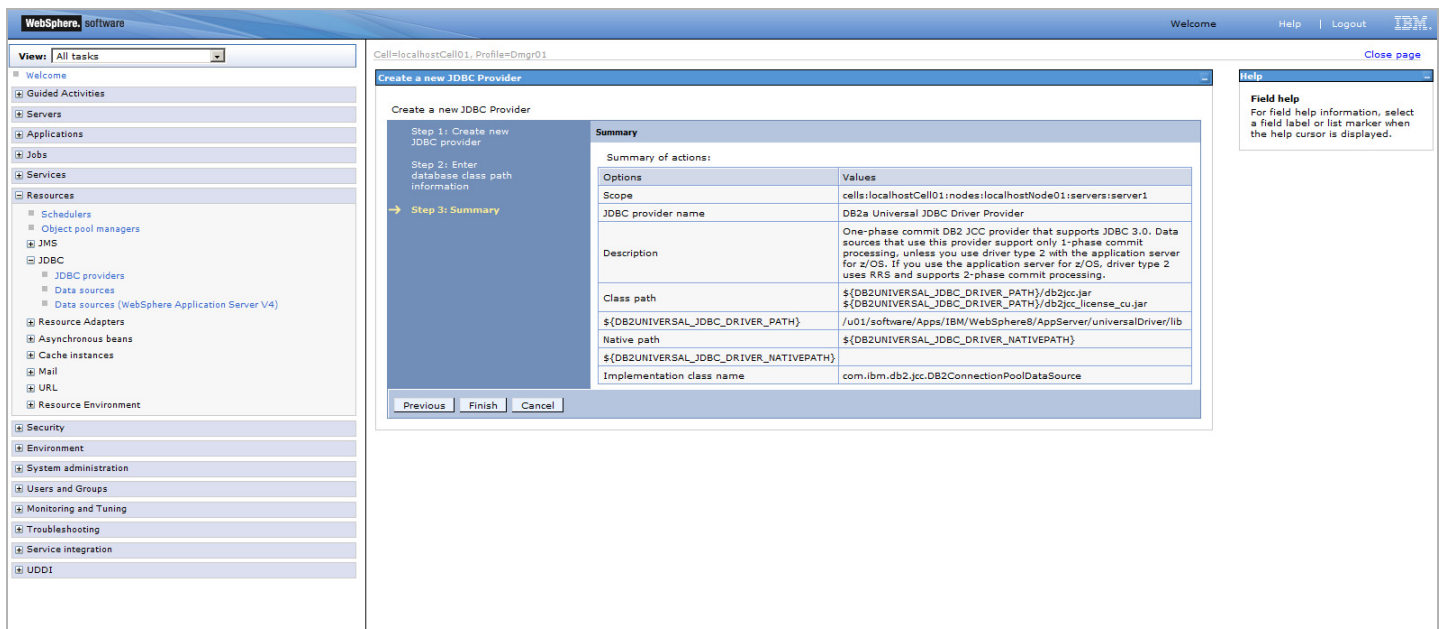

```
<WAS_home>/universalDriver/lib
```

 When you are finished, click **Next**.

- If you selected **SQL Server** in **step 6**, click **Next**.



8. In the "Summary" screen, review the settings you have chosen, then click **Finish**.



9. In the "Messages" box, click **Review**.
10. In the "Save" screen, do the following:
 - a. Select the **Synchronize changes with nodes** check box.
 - b. Click **Save**.

11. In the “Synchronize changes with nodes” screen, click **OK**.

The console redisplay the “JDBC Providers” screen. The new JDBC provider appears in the list of providers in the right-hand pane.

12. If you selected **DB2** in [step 6](#), do the following:

Note

If you selected **Oracle** or **SQL Server** in [step 6](#), skip the steps below and proceed to the next section.

- a. In the list of JDBC providers in the right-hand pane, select the JDBC provider you created earlier in this section.
- b. In the **Class path** field of the “DB2 Universal JDBC driver provider” screen, do the following:
 - 1) Delete the path to the `db2jcc_license_cisuz.jar` file.
 - 2) Change the variable name for the `db2jcc_license_cu.jar` file
from: `${UNIVERSAL_JDBC_DRIVER_PATH}`
to: `${DB2UNIVERSAL_JDBC_DRIVER_PATH}`
- c. Click **OK**.
- d. In the “Messages” box, click **Review**.
- e. In the “Save” screen, do the following:
 - 1) Select the **Synchronize changes with nodes** check box.
 - 2) Click **Save**.
- f. In the “Synchronize changes with nodes” screen, click **OK**.

Step III. Creating a JDBC Data Source

Once you have created the J2C authentication and the JDBC provider, you must create a data source.

A data source is the final component required to set up your WAS instance to connect to your database.

If you are creating a WebCenter Sites cluster, each cluster member data source must use:

- The J2C authentication you created in [step Step I. Creating a J2C Authentication](#).
- The JDBC provider created for the scope of that cluster member.

Note

Before starting this procedure, ensure you have done the following:

1. Created a J2C authentication by following the steps in [Step I. Creating a J2C Authentication](#).
2. Created a JDBC provider by following the steps in [Step II. Creating a JDBC Provider](#).

To create a JDBC data source

1. Log in to the Deployment Manager console:

Note

The default Deployment Manager console port is 9060.

- a. Point your browser to the following URL:
`http://<DM_host>:<DM_console_port>/admin`
- b. Enter your user name and password.
- c. Click **Log in**.
The Deployment Manager console loads.
2. In the left-hand pane, expand the **Resources** node.
3. Under the **Resources** node, expand the **JDBC** node, and click **Data sources**. The console displays the “Data sources” screen.
4. In the “Scope” area of the “Data sources” screen, select **Node**=<appserv_node>, **Server**=<server_name> from the drop-down list and click **New**.

Note

The default name of the first application server node created is <WAS_host>Node01.

The default server name is server1.

5. In the “Enter basic data source information” screen, do the following:
 - a. In the **Data source name** field, enter a unique name for this data source.
 - b. In the **JNDI name** field, enter the JNDI name for this data source.

c. Click Next.

The screenshot shows the WebSphere Administration Console interface. On the left is a navigation tree with categories like Servers, Services, Resources, Security, and Environment. The main content area displays the 'Create a data source' wizard. The current step is 'Step 1: Enter basic data source information'. The wizard includes a 'Scope' field with the value 'cells:localhostCell01:nodes:localhostNode01:servers:server1'. Below this are fields for 'Data source name' (containing 'csDataSource') and 'JNDI name' (containing 'csDataSource'). A 'Next' button is visible at the bottom of the wizard. A 'Field help' box on the right explains that the JNDI name specifies the JNDI name for the new datasource.

d. Select **Select an existing JDBC provider**.e. In the drop-down list, select the JDBC provider you created in step [Step II. Creating a JDBC Provider](#).

f. Click Next.

The screenshot shows the WebSphere Administration Console interface, similar to the previous one. The 'Create a data source' wizard is now at 'Step 2: Select JDBC provider'. The wizard asks to 'Specify a JDBC provider to support the datasource'. There are two radio button options: 'Create new JDBC provider' (which is unselected) and 'Select an existing JDBC provider' (which is selected). Below these options is a drop-down menu showing 'DB2 Universal JDBC Driver Provider'. 'Previous', 'Next', and 'Cancel' buttons are at the bottom. The 'Field help' box on the right explains that for field help information, a field label or list marker should be selected when the help cursor is displayed.

6. In the “Enter database-specific properties for the data source” screen, do one of the following:

- If you selected a DB2 JDBC provider in [step e](#), do the following:

- 1) In the **Database name** field, enter the name of the database WebCenter Sites will be using.
- 2) In the “Driver type” drop-down list, select **4**.
- 3) In the **Server name** field, enter the host name or IP address of the machine running the WebCenter Sites database.
- 4) In the **Port number** field, enter the port number on which the WebCenter Sites database is listening for connections.
- 5) Select the **Use this data source in container managed persistence (CMP)** check box.
- 6) Click **Next**.

The screenshot shows the 'Create a data source' wizard in the WebSphere Administration Console. The wizard is at Step 3: Enter database specific properties for the data source. The 'Driver type' is set to '4'. The 'Database name' is 'contentDB', the 'Server name' is 'db2', and the 'Port number' is '50000'. The 'Use this data source in container managed persistence (CMP)' checkbox is checked. A help box on the right explains the port number property.

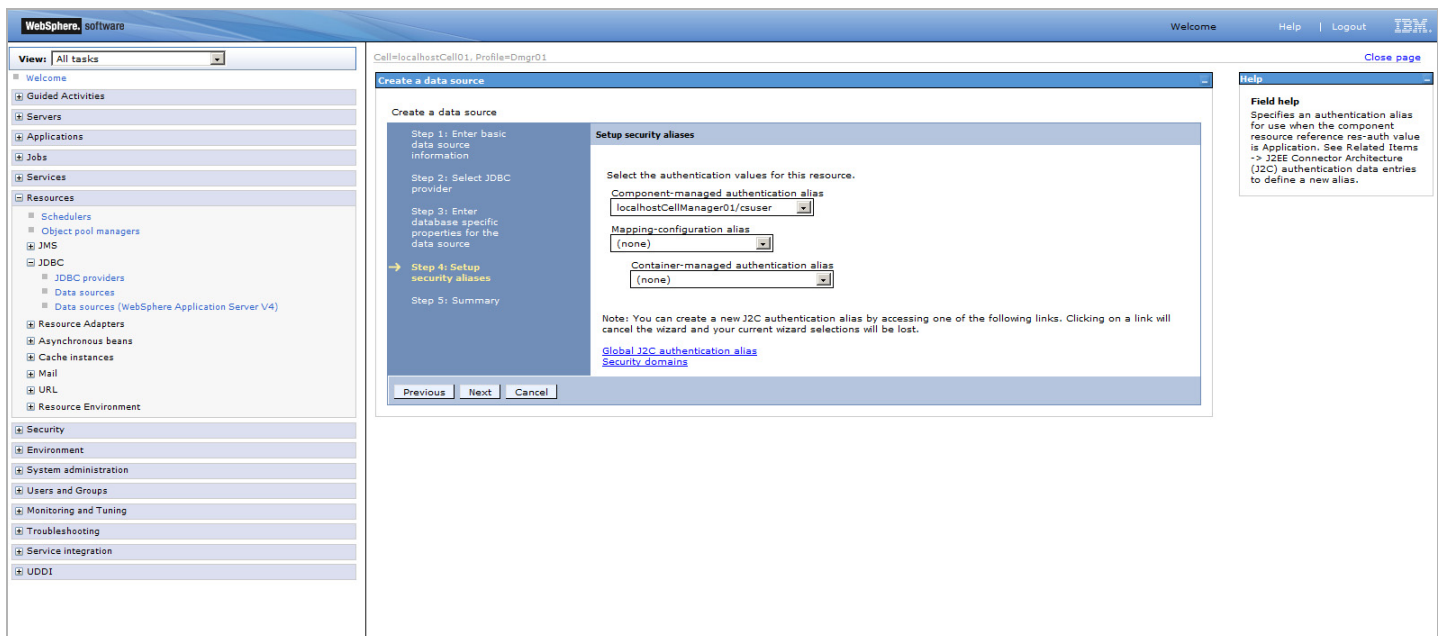
Name	Value
Driver type	4
Database name	contentDB
Server name	db2
Port number	50000

Use this data source in container managed persistence (CMP)

Field help
Specifies the port number on which the database server listens. This property corresponds with the port number property in the datasource class.

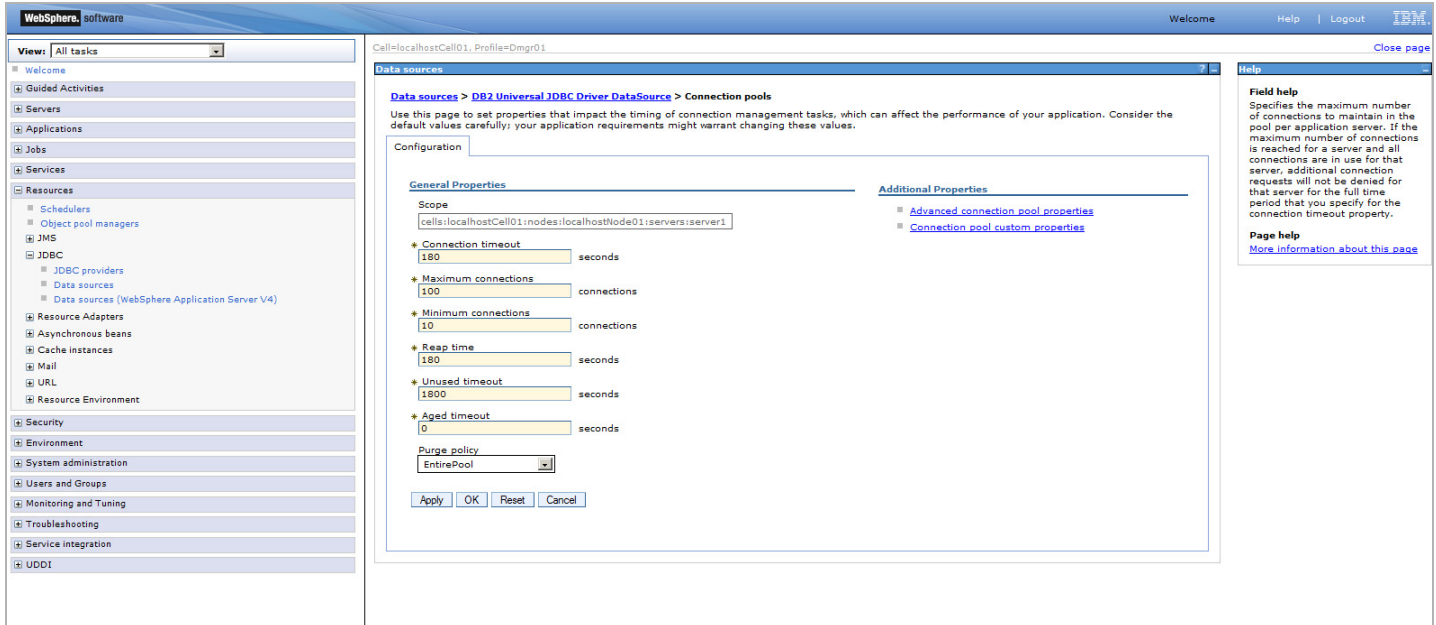
- If you selected an Oracle JDBC provider in [step e](#), do the following:
 - 1) In the **URL** field, enter the URL of the database WebCenter Sites will be using. The URL you enter must be in the following format:
`jdbc:oracle:thin:@//<db_host>:<db_port>/<db_name>`
 where:
 - <db_host> is the host name or IP address of the machine running the WebCenter Sites database.
 - <db_port> is the port number on which the WebCenter Sites database is listening for connections.
 - <db_name> is the name of the WebCenter Sites database.
 - 2) In the “Data store helper class name” drop-down list, select **Oracle11g data store helper**.
 - 3) Select the **Use this data source in container managed persistence (CMP)** check box.
 - 4) Click **Next**.

- If you selected an SQL Server provider in [step e](#), do the following:
 - 1) In the **Database name** field, enter the name of the database WebCenter Sites will be using.
 - 2) In the **Server name** field, enter the host name or IP address of the machine running the WebCenter Sites database.
 - 3) In the **Port number** field, enter the port number on which the WebCenter Sites database is listening for connections.
 - 4) Select the **Use this data source in container managed persistence (CMP)** check box.
 - 5) Click **Next**.
- 7. In the “Component-managed authentication alias” drop-down list, select the J2C authentication you created in [Step I. Creating a J2C Authentication](#), then click **Next**.



8. In the “Summary” screen, review the settings you have chosen, then click **Finish**.
9. In the “Messages” box, click **Review**.
10. In the “Save” screen, do the following:
 - a. Select the **Synchronize changes with nodes** check box.
 - b. Click **Save**.
11. In the “Synchronize changes with nodes” screen, click **OK**. The console redisplay the “Data sources” screen showing the data source you just created.
12. In the list of data sources, select the data source you just created.
13. In the “Additional Properties” area of the “Data source” screen, click **Connection pool properties**.
14. In the “Connection pools” screen, do the following:
 - a. In the **Maximum connections** field, enter 100 (or a value appropriate to your configuration, if known).

- b. In the **Minimum connections** field, enter 10 (or a value appropriate to your configuration, if known).
- c. Click **OK**.



15. In the “Messages” box, click **Review**.
16. In the “Save” screen, do the following:
 - a. Select the **Synchronize changes with nodes** check box.
 - b. Click **Save**.
17. In the “Synchronize changes with nodes” screen, click **OK**.
18. For installations running DB2:
 - a. In the list of data sources, select the data source you just created.
 - b. In the “Additional Properties” area of the “Data source” screen, click **Custom properties**.

- c. In the “Custom properties” screen click on **resultSetHoldability**.

The screenshot shows the WebSphere Administration Console interface. The left-hand navigation pane is expanded to 'Resources' > 'JDBC' > 'Data sources (WebSphere Application Server V4)' > 'Data sources'. The main content area displays the configuration for 'resultSetHoldability' under the 'DB2 Universal JDBC Driver DataSource'. The 'Value' field is set to '1'. The 'Description' field contains the text: 'Determine whether ResultSets are closed or kept open when committing a transaction. The possible values are: 1 (HOLD_CURSORS_OVER_COMMIT), 2 (CLOSE_CURSORS_AT_COMMIT)'. The 'Type' dropdown is set to 'java.lang.Integer'. Buttons for 'Apply', 'OK', 'Reset', and 'Cancel' are visible at the bottom of the configuration area.

- d. In the “Value” field enter **1**, and click **OK**.

The screenshot shows the 'Messages' table in the WebSphere Administration Console. The table lists various properties and their values. The 'resultSetHoldability' property is highlighted in blue, indicating it is selected. The table has columns for a checkbox, the property name, its value, a description, and another checkbox.

<input type="checkbox"/>	traceFileAppend	false	Specifies whether to append to or overwrite the file that is specified by the traceFile property. The default is false, which means that the file that is specified by the traceFile property is overwritten.	false
<input type="checkbox"/>	traceDirectory		Specifies the directory where the trace file will be created.	false
<input type="checkbox"/>	fullyMaterializeLOBData	true	This setting controls whether or not LOB locators are used to fetch LOB data. If enabled, LOB data is not streamed, but is fully materialized with locators when the user requests a stream on the LOB column. The default value is true.	false
<input type="checkbox"/>	resultSetHoldability	1	Determine whether ResultSets are closed or kept open when committing a transaction. The possible values are: 1 (HOLD_CURSORS_OVER_COMMIT), 2 (CLOSE_CURSORS_AT_COMMIT).	false
<input type="checkbox"/>	currentPackageSet		This property is used in conjunction with the DB2Binder - collection option which is given when the JDBC/CLI packageset is bound during installation by the DBA.	false
<input type="checkbox"/>	readOnly	false	This property creates a read only connection. By default this value is false.	false
<input type="checkbox"/>	deferPrepares	true	This property provides a performance directive that affects the internal semantics of the input data type conversion capability of the driver. By default the Universal driver defers 'internal prepare requests'. In this case, the driver works without the benefit of described parameter or result set meta data until execute time. So undescribed input data is sent 'as is' to the server without any data type cross-conversion of the inputs.	false
<input type="checkbox"/>	currentSchema		Identifies the default schema name used to qualify unqualified database object references where applicable in dynamically prepared SQL	false

- e. In the “Messages” box, click **Review**.
- f. In the “Save” screen, do the following:
- 1) Select the **Synchronize changes with nodes** check box.
 - 2) Click **Save**.

19. In the “Synchronize changes with nodes” screen, click **OK**.

20. Navigate to the “Custom properties” screen and create the following properties, setting each property’s value to **1**:
 - allowNextOnExhaustResultSet = 1
 - allowNullResultSetForExecuteQuery = 1
21. If you are creating a WebCenter Sites cluster, repeat [steps 4 – 17](#) of this procedure for each cluster member.

D. Configuring WAS Instances for CAS

This section provides information about the CLASSPATH configuration needed for the CAS web application.

To configure WAS instances for CAS

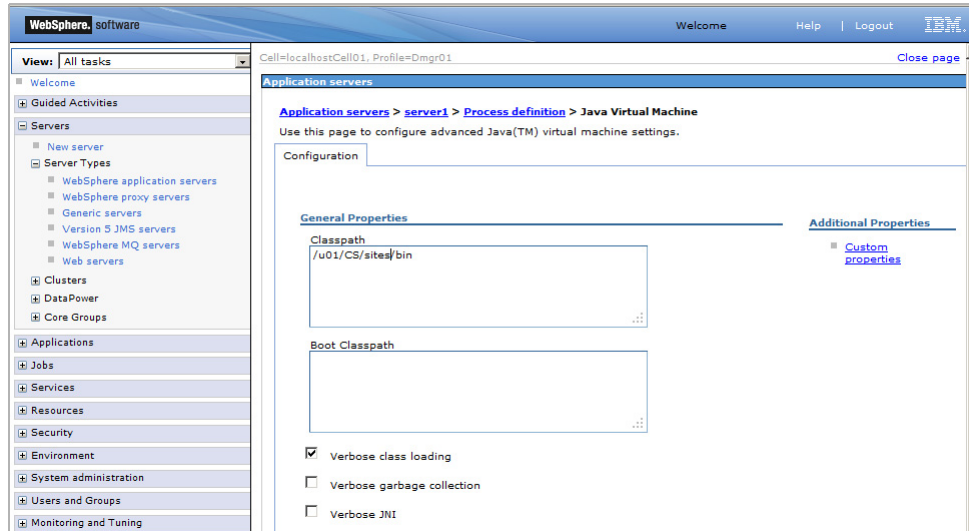
1. Log in to the Deployment Manager console:

Note

The default Deployment Manager console port number is 9060. If the classpath and library path are not set properly, the CAS web application will not start and the **System Tools** node in the **Admin** tab of the WebCenter Sites Admin interface will have reduced functionality.

- a. Point your browser to the following URL:
`http://<DM_host>:<DM_console_port>/admin`
 - b. Enter our username and password.
 - c. Click **Log in**.
The Deployment Manager console loads.
2. In the left-hand pane, expand **Servers > ServerTypes** and then click **Application Servers**.
A list of configured servers is displayed.
 3. Click the application server instance you created for WebCenter Sites (for example, select **server1**).

4. Expand **Java and Process Management** and click **Process definition**. Under “Additional Properties,” click **Java Virtual Machine**. In the “Classpath” text area, enter the location of your WebCenter Sites installation directory.



Deploying the WebCenter Sites Application

Half-way through the WebCenter Sites installation, you will have to deploy the WebCenter Sites application. This section describes how to deploy the WebCenter Sites application on WAS using the Deployment Manager console.

If you are creating a WebCenter Sites cluster, you must install and deploy a separate WebCenter Sites application for each member of the cluster. Each WebCenter Sites application in the cluster must have a unique name.

Note

Before starting this procedure, ensure you have done the following:

1. Created a WAS instance which will run the WebCenter Sites application by following the steps in “[Creating a WAS Instance Using the Command Line](#),” on page 39.
2. Set up the WAS instance for database communications by following the steps in “[Configuring the WAS Instance for Database Communications](#),” on page 46.
3. Completed the first stage of the WebCenter Sites installation process, as described in [Chapter 5](#), “[Installing and Configuring Oracle WebCenter Sites](#).”
4. Ensured that `priority=1` is the first property in the `commons-logging.properties` file in `WEB-INF/classes`.

To deploy the WebCenter Sites application

1. Log in to the Deployment Manager console:

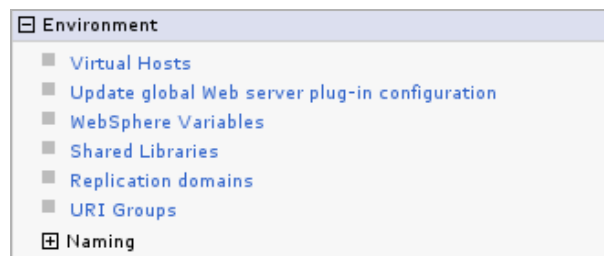
Note

The default Deployment Manager console port is 9060.

- a. Point your browser to the following URL:
`http://<DM_host>:<DM_console_port>/admin`
- b. Enter your user name and password.
- c. Click **Log in**.

The Deployment Manager (DM) console loads.

2. In the left-hand pane, expand the **Environment** node.



3. Under the **Environment** node, click **Shared Libraries**.
4. In the “Shared Libraries” screen, select the appropriate scope from the drop-down list (typically, **server1**).

Shared Libraries

Use this page to define a container-wide shared library that can be used by deployed applications.

Scope: Cell=**realhp00Cell01**, Node=**realhp00Node01**, Server=**server1**

Scope specifies the level at which the resource definition is visible. For detailed information on what scope is and how it works, [see the scope settings help](#)

Node=realhp00Node01, Server=server1

Preferences

New Delete

Select	Name	Description
None		
Total 0		

5. Click **New** and complete the configuration form as follows:
 - a. In the **Name** field, enter **FWbinaries**
 - b. In the **Classpath** field, enter the path, `<cs_install_dir>/bin`
 - c. In the **Native Library Path** field, enter the path, `<cs_install_dir>/bin`
 - d. When you are finished, click **OK**.

Shared Libraries > New

Use this page to define a container-wide shared library that can be used by deployed applications.

Configuration

General Properties

Scope: cells:localhostCell01:nodes:localhostNode01:servers:server1

Name: FWbinaries

Description:

Classpath: /u01/CS/cs_was/bin

Native Library Path: /u01/CS/cs_was/bin

Class Loading

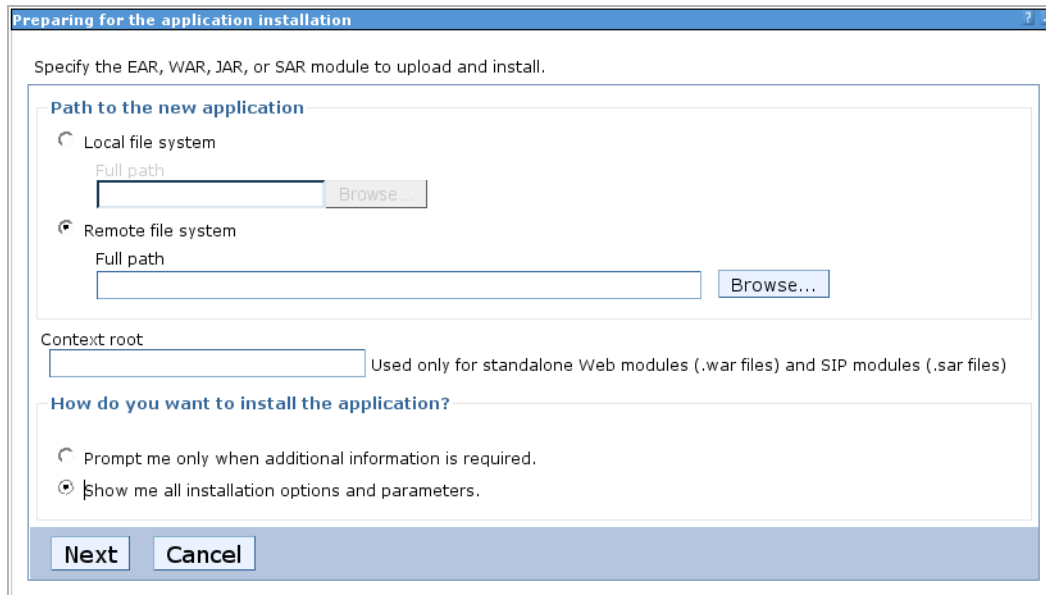
The DM console redisplay the “Shared Libraries” screen showing your changes.

6. In the “Messages” box, click **Save**.

7. In the left-hand pane, expand the **Applications** node.



8. Under the **Applications** node, click **Install New Application**.
9. In the “Preparing for the application installation” screen, do the following:
- Select **Show me all installation options and parameters**.
 - Select **Remote file system** and click **Browse**.



10. In the “Browse Remote Filesystems” screen, do the following:
- Select the application server node on which you are deploying the WebCenter Sites application.
 - Browse to the `<cs_install_dir>/ominstallinfo/app` directory.
 - Select the `ContentServer.ear` file.
 - Click **OK**.

The DM console redisplay the “Preparing for the application installation” screen showing the path to the WebCenter Sites application file you selected.

- Click **Next**.
11. In the “Choose to generate mappings and bindings” screen, click **Next**.
12. In the “Application Security Warnings” screen, click **Continue**.

13. In the “Select installation options” screen, select **Precompile JavaServer Pages files** and click **Next**.

The screenshot shows the "Select installation options" screen. On the left, a vertical sidebar lists seven steps: Step 1 (selected), Step 2, Step 3, Step 4, Step 5, Step 6, and Step 7. The main area is titled "Select installation options" and contains the following elements:

- Instruction: "Specify the various options that are available to prepare and install your application."
- Checkbox: Precompile JavaServer Pages files (highlighted with an orange box and pointed to by an orange arrow).
- Text: "Directory to install application" with an empty text box.
- Checkbox: Distribute application
- Checkbox: Use Binary Configuration
- Checkbox: Deploy enterprise beans
- Text: "Application name" with a text box containing "ContentServer".
- Checkbox: Create MBeans for resources
- Checkbox: Enable class reloading
- Text: "Reload interval in seconds" with an empty text box.
- Checkbox: Deploy Web services
- Text: "Validate Input off/warn/fail" with a dropdown menu set to "warn".
- Checkbox: Process embedded configuration
- Section: "File Permission" with a list of permissions: "Allow all files to be read but not written to", "Allow executables to execute", and "Allow HTML and image files to be read by everyone". Below this is a "Set file permissions" button and a text box containing the permissions string: ".*\,dll=755#.*\,so=755#.*\,a=755#.*\,sl=755".
- Text: "Application Build ID" with a text box containing "Unknown".
- Checkbox: Allow dispatching includes to remote resources
- Checkbox: Allow servicing includes from remote resources

At the bottom of the screen are "Next" and "Cancel" buttons.

14. In the “Map modules to servers” screen, do the following:
 - a. Select the check box for the **cs.war** module.
 - b. Select the appropriate server in the **Server** column.
 - c. Click **Apply**.

Step 1 Select installation options

→ Step 2: Map modules to servers

Step 3 Provide options to compile JSPs

Step 4 Provide JSP reloading options for Web modules

Step 5 Map shared libraries

Step 6 Map virtual hosts for Web modules

Step 7 Map context roots for Web modules

Step 8 Summary

Map modules to servers

Specify targets such as application servers or clusters of application servers where you want to install the modules that are contained in your application. Modules can be installed on the same application server or dispersed among several application servers. Also, specify the Web servers as targets that serve as routers for requests to this application. The plug-in configuration file (plugin-cfg.xml) for each Web server is generated, based on the applications that are routed through.

Clusters and Servers:

Select	Module	URI	Server
<input checked="" type="checkbox"/>	cs.war	cs.war,WEB-INF/web.xml	WebSphere:cell=realhp00Cell01,node=realhp00Node01,server=server1

15. In the “Provide options to compile JSPs” screen, change the value of the **JDK Source Level** field to 16, then click **Next**.

Step 1 Select installation options

Step 2 Map modules to servers

→ Step 3: Provide options to compile JSPs

Step 4 Provide JSP reloading options for Web modules

Step 5 Map shared libraries

Step 6 Map shared library relationships

Step 7 Initialize parameters for servlets

★ Step 8: Map virtual hosts for Web modules

Step 9 Map context roots for Web modules

Step 10 Map JASPI provider

Step 11 Display module build Ids

Step 12 Summary

Provide options to compile JSPs

Specify the options for JSP precompiler.

Apply Multiple Mappings

Select	Web module	URI	JSP Class Path	Use Full Package Names	JDK Source Level	Disable JSP Runtime Compilation
<input type="checkbox"/>	cs.war	cs.war,WEB-INF/web.xml	<input type="text"/>	<input checked="" type="checkbox"/>	16	<input type="checkbox"/>

16. In the “Provide JSP reloading options for Web modules” screen, click **Next**.
17. In the “Map shared libraries” screen, do the following:
 - a. Select the **cs.war** module check box.
 - b. Click **Reference shared libraries**.

Map shared libraries

Specify shared libraries that the application or individual modules reference. These libraries must be defined in the configuration at the appropriate scope.

Reference shared libraries			
Select	Application	URI	Shared Libraries
<input type="checkbox"/>	ContentServer	META-INF/application.xml	
Select	Module	URI	Shared Libraries
<input checked="" type="checkbox"/>	cs.war	cs.war,WEB-INF/web.xml	

Previous Next Cancel

18. In the “Enterprise Applications” screen, do the following:
 - a. In the **Available** field, select the **FWbinaries** path variable you created in [step 5](#) and click the **Add (>>)** button.
 - b. Click **OK**.

Enterprise Applications

Map shared libraries to an entire application or to one or more modules.

Map libraries to the application or module listed

cs.war

Select the library in the Available list. Move it to the Selected list by clicking >>.

Available: Selected: FWbinaries

OK Cancel

The DM console redisplay the “Map shared libraries” screen showing your changes. Click **Next**.

19. In the “Map virtual hosts for Web modules” screen, click **Next**.

20. In the “Map context roots for Web modules” screen, click **Next**.

Caution

Do not change the context root displayed in this screen. Doing so will render your WebCenter Sites installation inoperable.

21. In the “Summary” screen, review the options you have chosen and click **Finish**.

<p>Step 1 Select installation options</p> <p>Step 2 Map modules to servers</p> <p>Step 3 Provide options to compile JSPs</p> <p>Step 4 Provide JSP reloading options for Web modules</p> <p>Step 5 Map shared libraries</p> <p>Step 6 Map virtual hosts for Web modules</p> <p>Step 7 Map context roots for Web modules</p> <p>→ Step 8: Summary</p>	<p>Summary</p> <p>Summary of installation options</p> <table border="1"> <thead> <tr> <th>Options</th> <th>Values</th> </tr> </thead> <tbody> <tr> <td>Precompile JavaServer Pages files</td> <td>Yes</td> </tr> <tr> <td>Directory to install application</td> <td></td> </tr> <tr> <td>Distribute application</td> <td>Yes</td> </tr> <tr> <td>Use Binary Configuration</td> <td>No</td> </tr> <tr> <td>Deploy enterprise beans</td> <td>No</td> </tr> <tr> <td>Application name</td> <td>ContentServer</td> </tr> <tr> <td>Create MBeans for resources</td> <td>Yes</td> </tr> <tr> <td>Enable class reloading</td> <td>No</td> </tr> <tr> <td>Reload interval in seconds</td> <td></td> </tr> <tr> <td>Deploy Web services</td> <td>No</td> </tr> <tr> <td>Validate Input off/warn/fail</td> <td>warn</td> </tr> <tr> <td>Process embedded configuration</td> <td>No</td> </tr> <tr> <td>File Permission</td> <td>.*\,dll=755#.*\,so=755#.*\,a=755#.*\,sl=755</td> </tr> <tr> <td>Application Build ID</td> <td>Unknown</td> </tr> <tr> <td>Allow dispatching includes to remote resources</td> <td>No</td> </tr> <tr> <td>Allow servicing includes from remote resources</td> <td>No</td> </tr> <tr> <td>Cell/Node/Server</td> <td>Click: here</td> </tr> </tbody> </table>	Options	Values	Precompile JavaServer Pages files	Yes	Directory to install application		Distribute application	Yes	Use Binary Configuration	No	Deploy enterprise beans	No	Application name	ContentServer	Create MBeans for resources	Yes	Enable class reloading	No	Reload interval in seconds		Deploy Web services	No	Validate Input off/warn/fail	warn	Process embedded configuration	No	File Permission	.*\,dll=755#.*\,so=755#.*\,a=755#.*\,sl=755	Application Build ID	Unknown	Allow dispatching includes to remote resources	No	Allow servicing includes from remote resources	No	Cell/Node/Server	Click: here
Options	Values																																				
Precompile JavaServer Pages files	Yes																																				
Directory to install application																																					
Distribute application	Yes																																				
Use Binary Configuration	No																																				
Deploy enterprise beans	No																																				
Application name	ContentServer																																				
Create MBeans for resources	Yes																																				
Enable class reloading	No																																				
Reload interval in seconds																																					
Deploy Web services	No																																				
Validate Input off/warn/fail	warn																																				
Process embedded configuration	No																																				
File Permission	.*\,dll=755#.*\,so=755#.*\,a=755#.*\,sl=755																																				
Application Build ID	Unknown																																				
Allow dispatching includes to remote resources	No																																				
Allow servicing includes from remote resources	No																																				
Cell/Node/Server	Click: here																																				

Previous Finish Cancel

22. In the “Installing...” screen, wait until all stages complete successfully. When the message, “Application ContentServer has installed successfully” appears, click **Save**.

Installing...

If there are enterprise beans in the application, the EJB deployment process can take several minutes. Please do not save the configuration until the process completes.

Check the SystemOut.log on the Deployment Manager or server where the application is deployed for specific information about the EJB deployment process as it occurs.

ADMA5016: Installation of ContentServer started.

ADMA5067: Resource validation for application ContentServer completed successfully.

ADMA5058: Application and module versions are validated with versions of deployment targets.

ADMA5009: An application archive is extracted at /u01/software/Apps/WebSphere/6.1/AppServer/profiles/Dmgr01/wstemp/wstemp/app_11073a1f083/extract

ADMA5003: The JavaServer Pages (JSP) files in the Web archive (WAR) files cs.war compiled successfully.

ADMA5005: The application ContentServer is configured in the WebSphere Application Server repository.

ADMA5053: The library references for the installed optional package are created.

ADMA5005: The application ContentServer is configured in the WebSphere Application Server repository.

ADMA5001: The application binaries are saved in /u01/software/Apps/WebSphere/6.1/AppServer/profiles/Dmgr01/wstemp/0/workspace/cells/realhp00Cell01/applications/ContentServer.ear/ContentServer.ear

ADMA5005: The application ContentServer is configured in the WebSphere Application Server repository.

SECJ0400: Successfully updated the application ContentServer with the appContextIDForSecurity information.

ADMA5011: The cleanup of the temp directory for application ContentServer is complete.

ADMA5013: Application ContentServer installed successfully.

Application ContentServer installed successfully.

To start the application, first save changes to the master configuration.

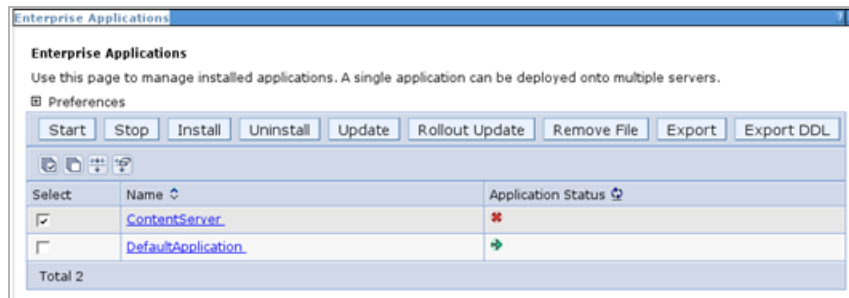
Changes have been made to your local configuration. You can:

- [Save](#) directly to the master configuration.
- [Review](#) changes before saving or discarding.

To work with installed applications, click the “Manage Applications” button.

[Manage Applications](#)

23. In the “Enterprise Applications” screen, click the **ContentServer** application.



24. In the screen that follows, click **Class loading and update detection**.

Enterprise Applications > ContentServer

Use this page to configure an enterprise application. Click the links to access pages for further configuring of the application or its modules.

Configuration

General Properties

* Name
ContentServer

Application reference validation
Issue warnings

Detail Properties

- [Target specific application status](#)
- [Startup behavior](#)
- [Application binaries](#)
- [Class loading and update detection](#)
- [Remote request dispatcher properties](#)
- [View Deployment Descriptor](#)
- [Last participant support extension](#)

Modules

- [Manage Modules](#)

Web Module Properties

- [Session management](#)
- [Context Root For Web Modules](#)
- [JSP reload options for web modules](#)
- [Virtual hosts](#)

References

- [Shared library references](#)

Apply OK Reset Cancel

25. In the screen that appears, do the following:

- a. In the **Polling interval for updated files** field, enter 30.
- b. In the “Class load order” section, select **Classes loaded with application class loader first**.
- c. In the “WAR class loader policy” section, select **Single class loader for application**.
- d. Click **OK**.

Enterprise Applications > ContentServer > Startup behavior > Class loader

Use this page to configure the reloading of classes when application files are updated.

Configuration

General Properties

Reload classes when application files are updated

Polling interval for updated files
30 Seconds

Class loader order

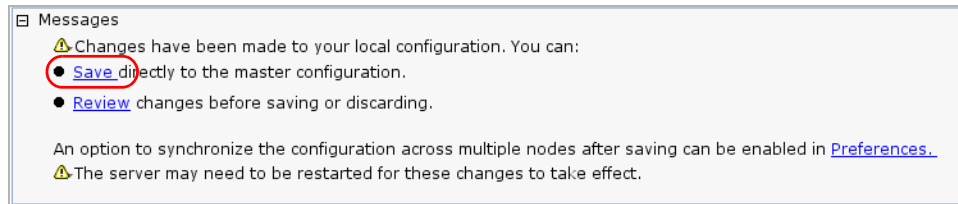
- Classes loaded with parent class loader first
- Classes loaded with application class loader first

WAR class loader policy

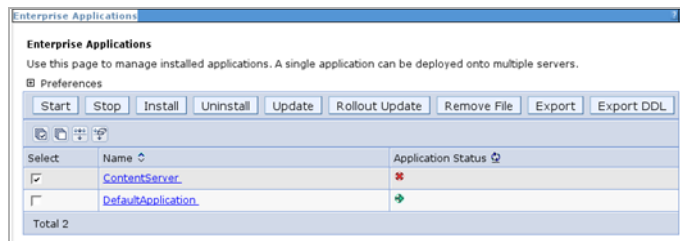
- Class loader for each WAR file in application
- Single class loader for application

Apply OK Reset Cancel

26. In the “Messages” box, click **Save**.



27. In the “Enterprise Applications” screen, select the check box next to the **ContentServer** application and click **Start**.



28. Similar to deploying the WebCenter Sites application, if you wish to deploy the CAS application, perform [steps 8 – 27](#) of this procedure (replacing the values for the WebCenter Sites application with values for the CAS application).
29. If you are creating a WebCenter Sites cluster, repeat [steps 3–27](#) of this procedure for each additional member of the cluster. For information about clustering CAS, see *Oracle WebCenter Sites: Configuring Supporting Software*.

Restarting the WebCenter Sites Application

If you made changes to WebCenter Sites property files after the WebCenter Sites application has been deployed (for example, to configure WebCenter Sites as a cluster member), you will need to restart the WebCenter Sites application for the changes to take effect. This section shows you how to restart the WebCenter Sites application using the Deployment Manager console.

To restart the WebCenter Sites application

1. Log in to the Deployment Manager console:

Note

The default Deployment Manager console port is 9060.

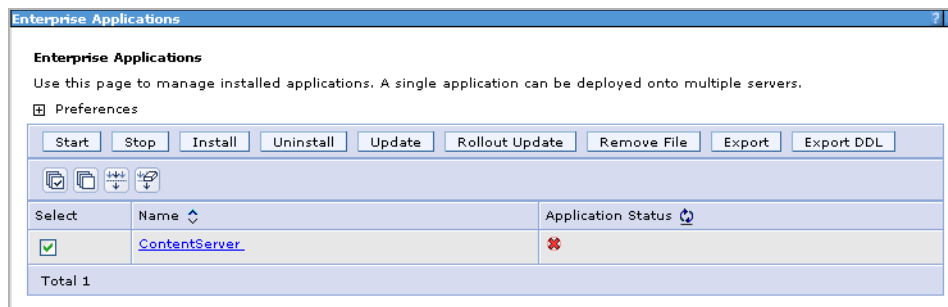
- a. Point your browser to the following URL:
`http://<DM_host>:<DM_console_port>/admin`
- b. Enter your user name and password.
- c. Click **Log in**.

The Deployment Manager console loads.

2. In the left-hand pane, expand the **Applications** node.



3. Under the **Applications** node, click **Enterprise Applications**.
4. In the “Enterprise Applications” screen, select the check box next to the WebCenter Sites application you want to restart.



5. Click **Stop**, then click **OK**.
6. Click **Start**, then click **OK**.

Part 3

Web Server

This part explains how to install and configure a supported web server. It also explains how to integrate WAS with a supported web server using the WAS web server plug-in.

This part contains the following chapter:

- [Chapter 4, “Setting Up a Web Server”](#)

Chapter 4

Setting Up a Web Server

This chapter explains how to install IBM HTTP Server, and how to integrate WAS with a local or remote installation of IBM HTTP Server or the Apache 2.0.x web server, using the WebSphere web server plug-in.

This chapter contains the following sections:

- [Installing IBM HTTP Server](#)
- [Installing the Apache 2.2.x Web Server](#)
- [Integrating WAS with a Supported Web Server](#)

Installing IBM HTTP Server

This section explains how to install IBM HTTP Server for integration with WAS.

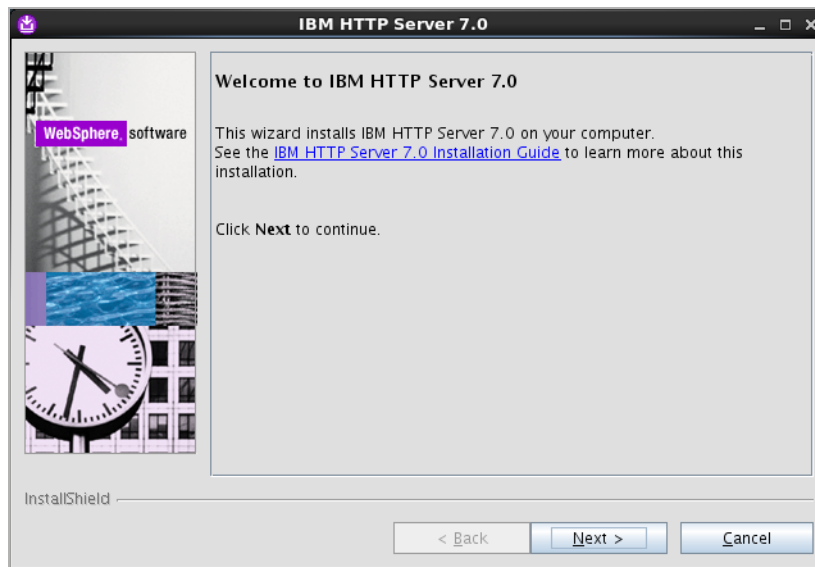
To install IBM HTTP Server

1. Create the directory where IBM HTTP Server will be installed. Ensure the installer can read from and write to this directory.

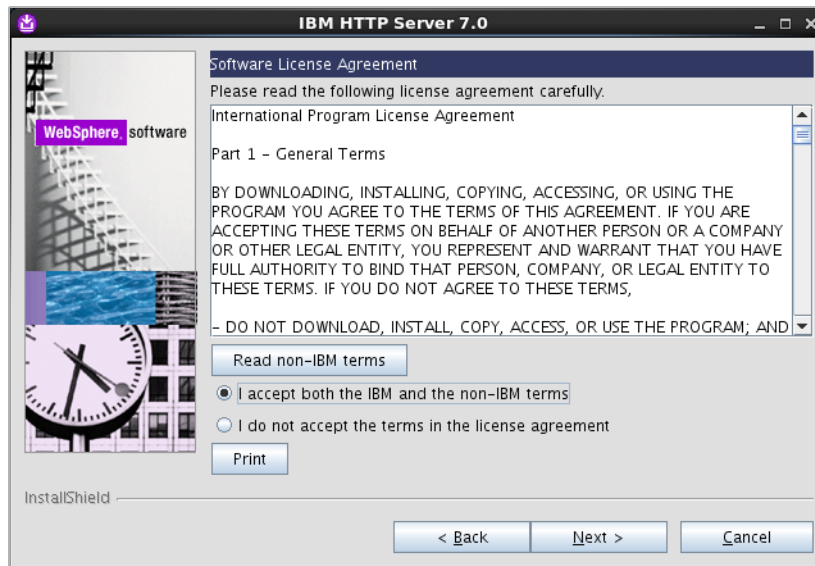
Note

Throughout this guide, the directory where IBM HTTP Server is installed is referred to as `<ibm_http_home>`.

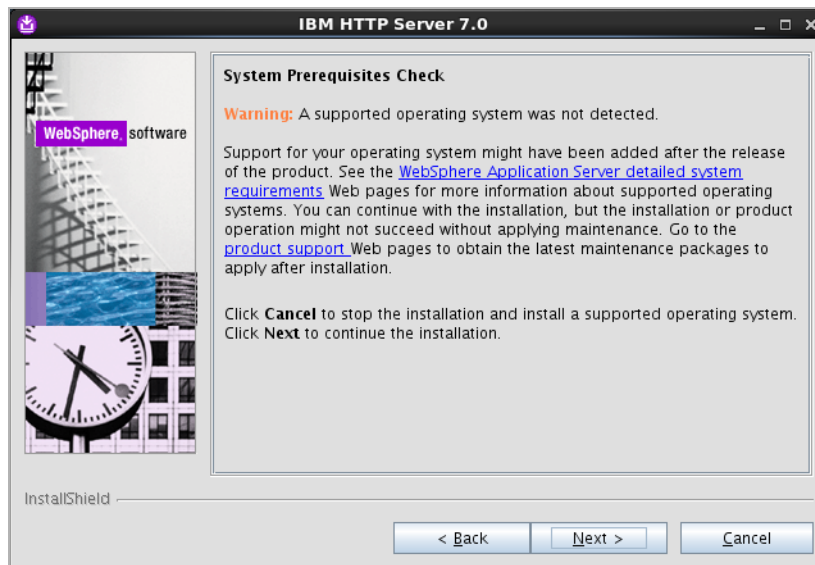
2. Decompress the IBM HTTP Server installer archive into a temporary directory.
3. Run the IBM HTTP Server installer:
 - On Windows: **install.exe**
 - On Unix: **install.sh**
4. In the “Welcome” screen, click **Next**.



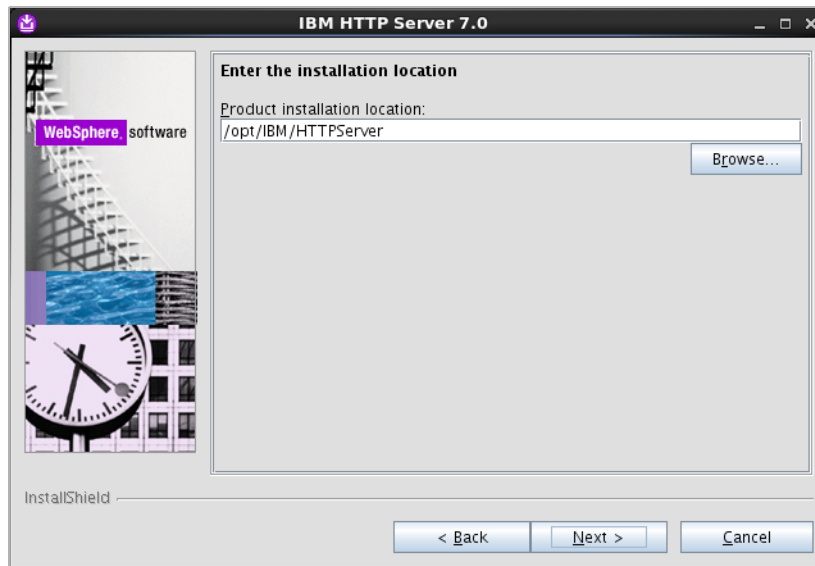
5. In the “Software License Agreement” screen, select **I accept both the IBM and the non-IBM terms** and click **Next**.



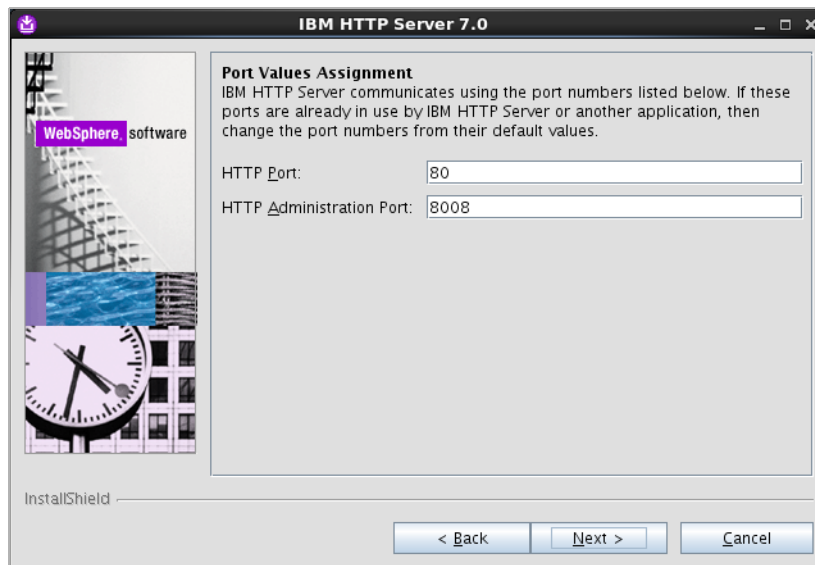
6. In the “System prerequisites check” screen, do one of the following:
 - If the system prerequisites check is successful, click **Next**.
 - If your system does not pass the prerequisites check, stop the installation, correct the problems indicated by the installer, and restart the installation.



7. In the “Enter the install location” screen, enter the path to the `<ibm_http_home>` directory you created in [step 1](#), then click **Next**.



8. In the “Port Values Assignment” screen, do one of the following:
 - If you want to keep the default port numbers, click **Next**.
 - If you want to specify your own port numbers, enter them into the appropriate fields and click **Next**.

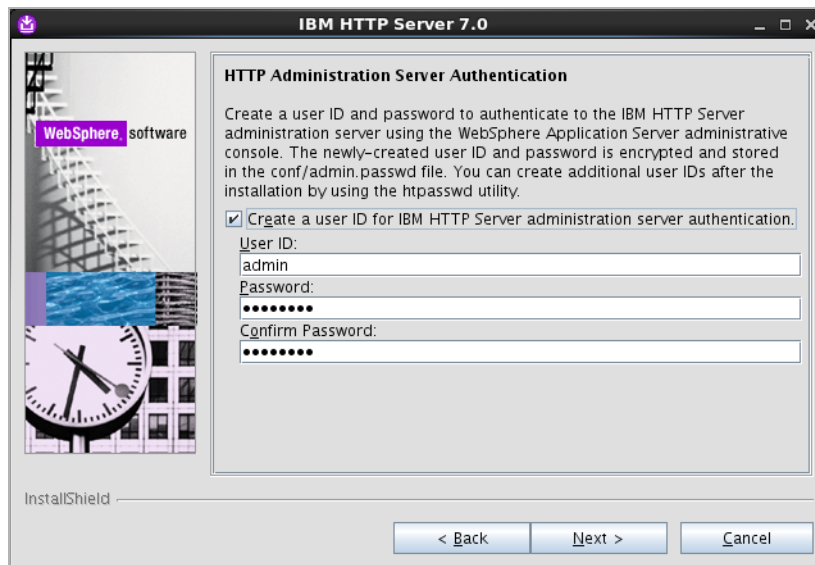


9. If you are installing on Windows, do the following in the “Windows Service Definition” screen:

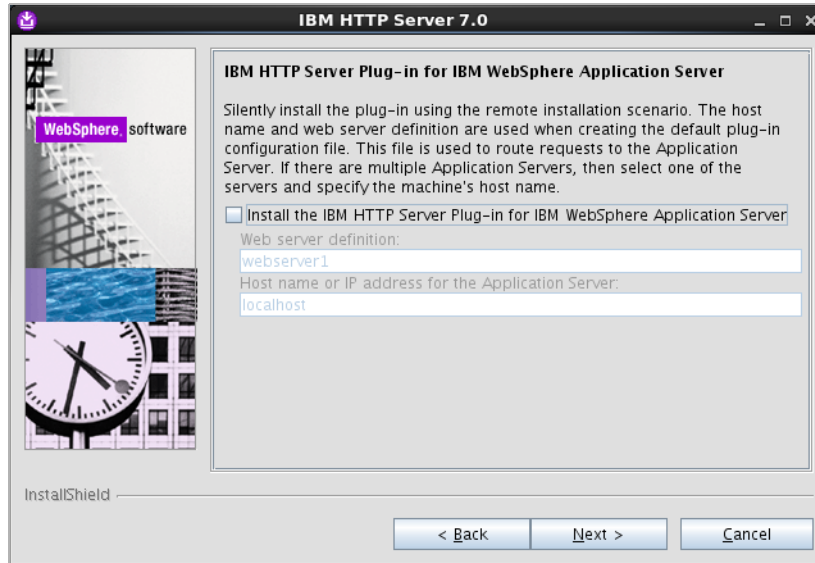
Note

If you are installing on Unix, skip this step.

- a. Select the **Run the IBM HTTP Server as a Windows Service** and **Run IBM HTTP Administration as a Windows Service** check boxes.
 - b. If you want the IBM HTTP Windows services to run under a specific user account, select the **Log on as a specified user account** check box and enter the desired user name and password into the appropriate fields.
 - c. Click **Next**.
10. In the “HTTP Administration Server Authentication” screen, do the following:
 - a. Select the **Create a user ID for IBM HTTP administration server authentication** check box. You will use this user account to log in to the IBM HTTP administration server.
 - b. In the **User ID** and **Password** fields, enter the desired credentials. (Re-enter the password for verification.)
 - c. Click **Next**.



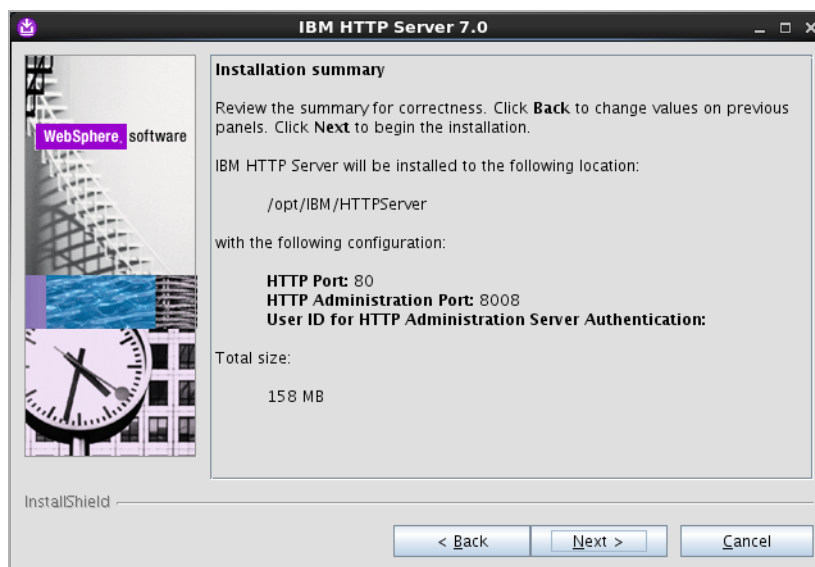
11. In the “IBM HTTP Server Plug-in for WebSphere Application Server” screen, deselect the **Install the IBM HTTP Server Plug-in for WebSphere Application Server** check box and click **Next**.



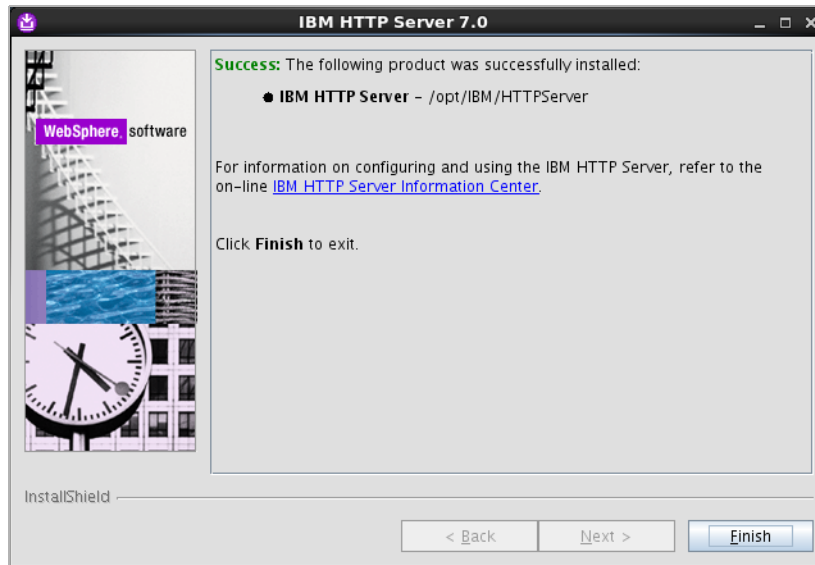
Note

If you leave the **Install the IBM HTTP Server Plug-in for WebSphere Application Server** check box selected, the plug-in will be installed only for the default WAS application server profile. To set up the plug-in on all desired WAS instances, you must use the separate plug-in installer, as described in “[Integrating WAS with a Supported Web Server](#),” on page 82.

12. In the “Installation Summary” screen, review the settings you have chosen, then click **Next**.



13. When the installation completes successfully, click **Finish**.



Installing the Apache 2.2.x Web Server

The procedure to set up the Apache 2.2.x web server (beyond the steps necessary to integrate with WAS) is not covered in this guide. For information on setting up the Apache 2.2.x web server, consult one of the following sources:

- If you are installing an Apache web server on Linux or Solaris, consult *Oracle WebCenter Sites: Configuring Supporting Software* for instructions.
- If you are using an operating system other than Linux or Solaris, consult the Apache documentation.

Integrating WAS with a Supported Web Server

This section explains how to integrate WAS with IBM HTTP Server or the Apache 2.2.x web server using the WAS web server plug-in.

Note

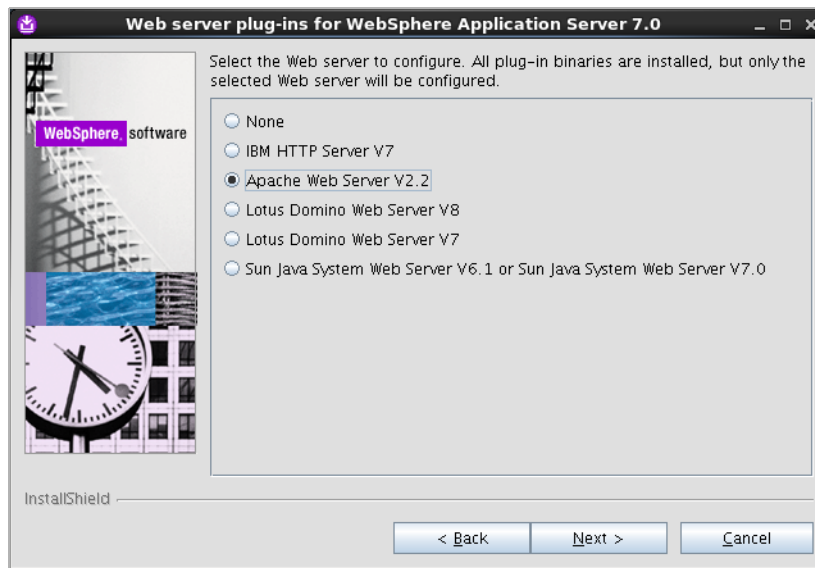
Before starting this procedure, ensure the following:

- You have installed and configured a web server of your choice.
- The web server is not running.

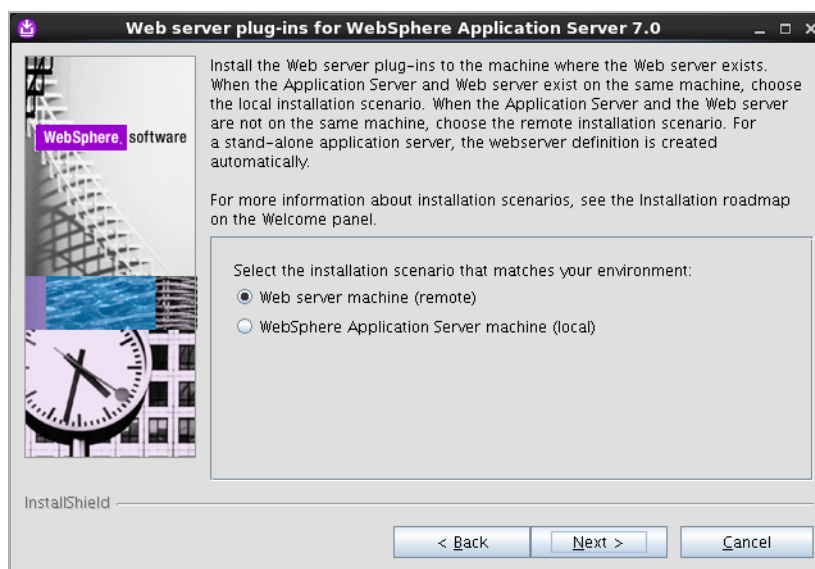
To set up the WAS web server plug-in

1. On the machine on which the web server is installed, decompress the WebSphere Supplements archive into a temporary directory.
2. Run the WAS web server plug-in installer:
 - On Windows:
`<temp_dir>\plugin\install.exe`
 - On Unix:
`<temp_dir>/plugin/install.sh`
3. In the “Welcome” screen, click **Next**.
4. In the “Software License Agreement” screen, select **I accept both the IBM and the non-IBM terms**, and click **Next**.

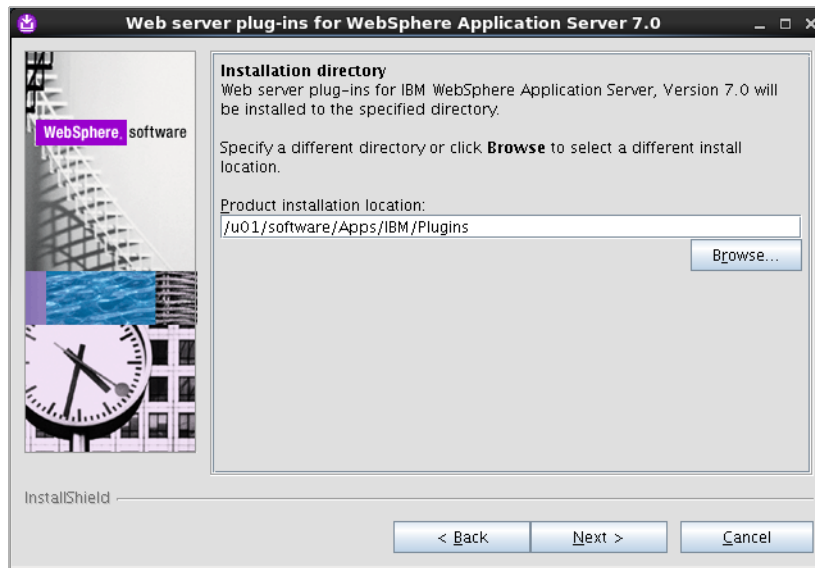
5. In the “System prerequisites check” screen, do one of the following:
 - If the system prerequisites check is successful, click **Next**.
 - If your system does not pass the prerequisites check, stop the installation, correct the problems indicated by the installer, and restart the installation.
6. In the “Select the web server to configure” screen, select the web server you are using (either **IBM HTTP Server V7** or **Apache Web Server V2.2**) and click **Next**.



7. In the “Scenario selection” screen, do one of the following:
 - If the web server is installed on the same machine as WAS, select **WebSphere Application Server machine (local)** and click **Next**.
 - If the web server is installed on a different machine, select **Web server machine (remote)** and click **Next**.



8. In the “Installation directory” screen, browse to the web server’s `<plugin_root>` directory and click **Next**.



9. If you selected **WebSphere Application Server machine (local)** in [step 7](#), browse to the `<WAS_home>` directory and click **Next**.

Note

If you selected **Web server machine (remote)** in [step 7](#), skip this step.

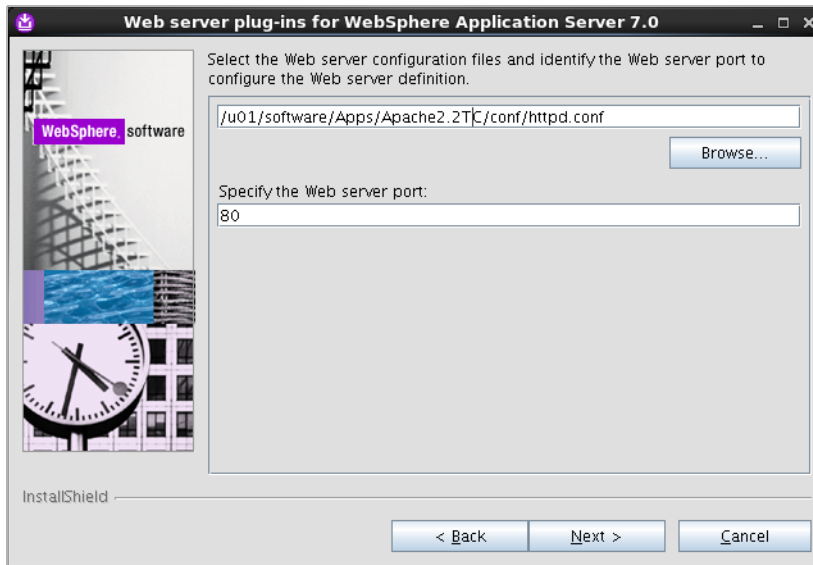
10. If you selected **WebSphere Application Server machine (local)** in [step 7](#), select the profile name of the WAS instance you want to integrate with the web server, then click **Next**.

Note

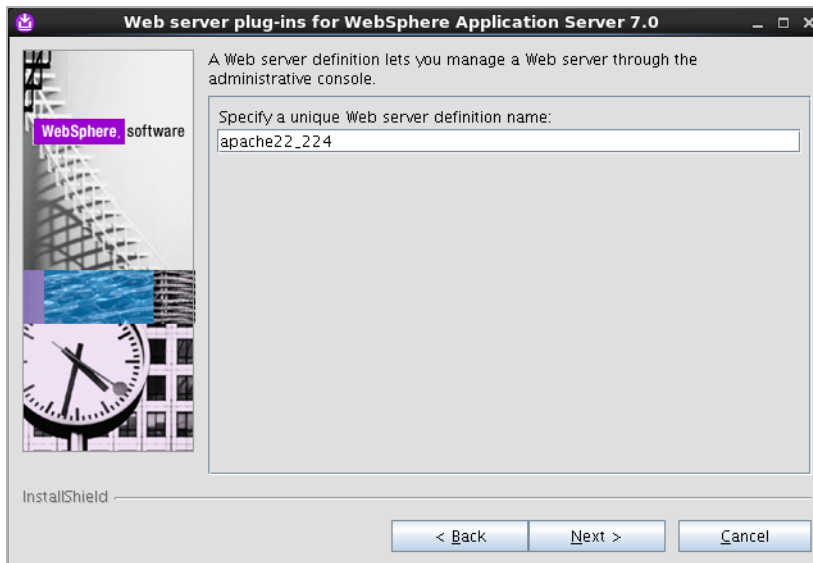
If you selected **Web server machine (remote)** in [step 7](#), skip this step.

11. In the “Web server configuration file and port” screen, do the following:
 - a. Browse to the web server configuration file:
 - If you are using IBM HTTP Server, the location and name of the file are:
`<ibm_http_home>/conf/httpd.conf`
 - If you are using the Apache web server, the location and name of the file are:
`<apache_home>/conf/httpd.conf`
 - b. Specify the port on which your web server is listening for connections.

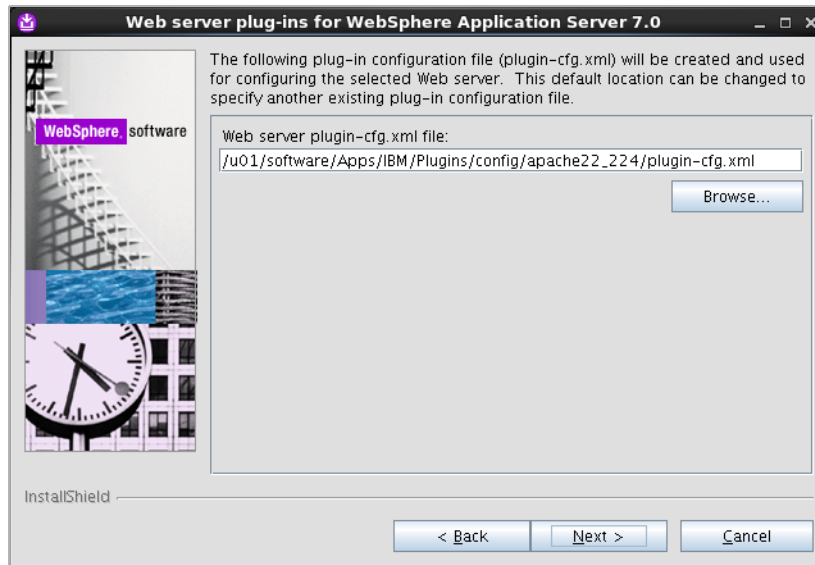
c. Click **Next**.



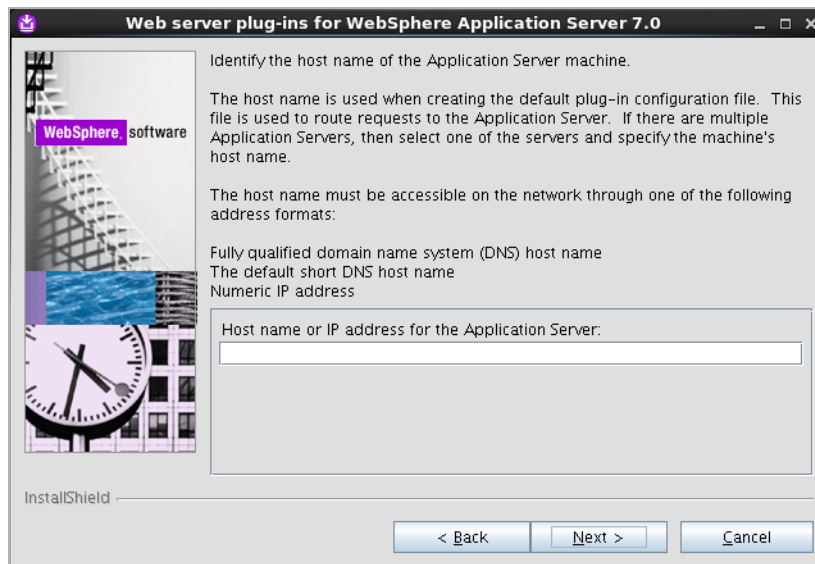
12. In the “Web server definition” screen, enter a unique name for this web server definition. (A web server definition stores the web server configuration data you have entered in the previous steps.) When you are finished, click **Next**.



13. In the “Web server plug-in configuration” screen, click **Next**.



14. If you selected **Web server machine (remote)** in [step 7](#), enter the fully qualified host name or IP address of the machine where WAS is installed, then click **Next**.



Note

If you selected **WebSphere Application Server machine (local)** in [step 7](#), skip this step.

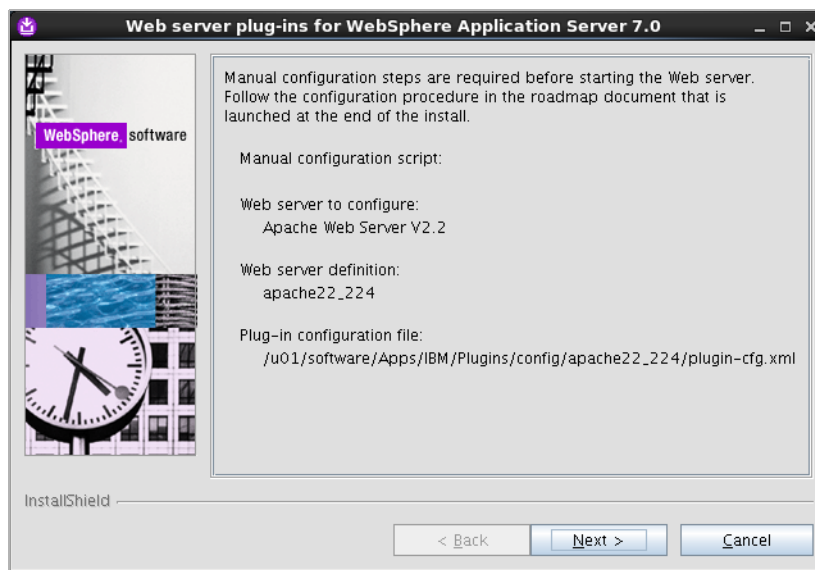
15. In the “Web server plug-in installation information” screen, click **Next**.
16. In the “Web server plug-in installation summary” screen, click **Next**.

17. If you selected **Web server machine (remote)** in [step 7](#), do the following in the “Manual configuration steps” screen:

Note

If you selected **WebSphere Application Server machine (local)** in [step 7](#), skip this step.

- a. When the installation completes successfully, write down the path to the manual configuration script. You will need this path to locate the script in [step 19](#). (This path will be referred to as <plugin_root> in [step 19](#).)
- b. Click **Next**.



18. In the “Installation completion status” screen, click **Finish**.

19. If you selected **Web server machine (remote)** in [step 7](#), copy the manual configuration script from the `<plugin_root>/bin` directory on web server machine to the `<WAS_home>/bin` directory on the WAS machine.

Note

Before performing this step, note the following:

- If you selected **WebSphere Application Server machine (local)** in [step 7](#), skip this step.
- The manual configuration script is named as follows:
 - On Windows: `configure<web_server_definition_name>.bat`
 - On Unix: `configure<web_server_definition_name>.sh`

where `<web_server_definition_name>` is the name you assigned to the web server definition in [step 12](#).

- If the web server and WAS machines are not running the same operating system, you should instead use the manual configuration script located in the `<plugin_root>/bin/crossPlatformScripts` directory on the web server machine.

20. Run the manual configuration script:

- On Windows: `configure<web_server_definition_name>.bat`
- On Unix: `configure<web_server_definition_name>.sh`

Part 4

Oracle WebCenter Sites

This part shows you how to install WebCenter Sites. It contains the following chapter:

- [Chapter 5, “Installing and Configuring Oracle WebCenter Sites”](#)

Chapter 5

Installing and Configuring Oracle WebCenter Sites

This chapter guides you through the installation of WebCenter Sites on WebSphere Application Server.

This chapter contains the following sections:

- [Installing WebCenter Sites](#)
- [Post-Installation Steps](#)

Installing WebCenter Sites

Note

The WebCenter Sites installer includes the installation of CAS. By default, CAS will be installed only on the primary server.

After completing [Steps I – IV.1](#) in the “[Installation Quick Reference](#),” on [page 9](#), you install WebCenter Sites using the provided installer. The installation process consists of two stages:

- In the first stage, the installer gathers necessary configuration information, installs the file structure, and creates the WebCenter Sites application for deployment. At the end of the first stage, the installer displays the “Installation Actions” window prompting you to deploy the WebCenter Sites application. In a silent installation, these steps are displayed on the command line. These steps include the deployment of the WebCenter Sites application.

If the first stage fails, the installer allows you to go back and modify your configuration options (except the database type), and retry the installation.

Note

If you need to change the type of database you have specified during the installation, you must delete the installed WebCenter Sites file structure and restart the installation.

- In the second stage, the installer populates the database with the tables and data required for WebCenter Sites to function. If the second stage fails, you must drop the database tables, undeploy the WebCenter Sites application, delete the WebCenter Sites file structure, and re-install WebCenter Sites.

Installation Options

This section explains the two ways to install WebCenter Sites:

- [Running the GUI Installer](#)

When you run the GUI installer, a graphical interface guides you through the installation process, prompting you to enter information and select options as required. It also provides access to extensive online help.

- [Installing Silently](#)

When you install silently, you enter your installation settings into one of the sample `omii.ini` files provided, using comments in the file for guidance. The installer uses the settings in the file to install and deploy WebCenter Sites.

Running the GUI Installer

To install WebCenter Sites using the GUI installer

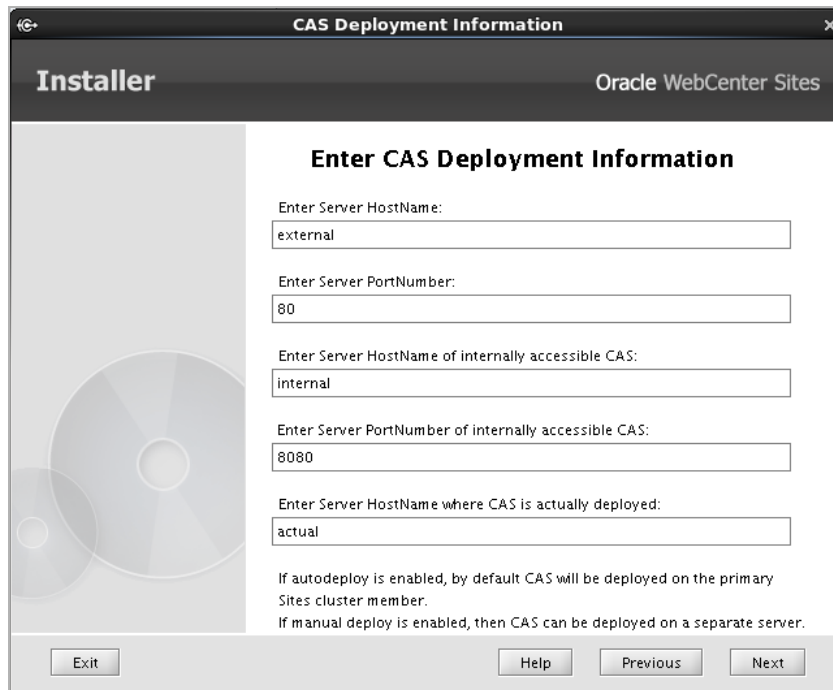
1. Ensure you have completed [Steps I – IV.1](#) in the “[Installation Quick Reference](#),” on [page 9](#).
2. Extract the WebCenter Sites installer archive into a temporary directory.
3. Change to the temporary directory containing the installer files.
4. Execute the installer script:

- On Windows: **csInstall.bat**
- On Unix: **csInstall.sh**

The installer provides online help at each screen. Read the online help for detailed explanations of the options that are presented in each screen. If you encounter problems during the installation process, consult the online help for possible causes and solutions.

5. In the “Enter CAS Deployment information” screen, do one of the following:
 - For networks with firewalls, fill in the fields as follows:
 - **Enter Server HostName** – Enter the hostname/IP address of the CAS server, as referred to by the external network. If you are clustering CAS, enter the hostname/IP address of the externally facing load balancer.
 - **Enter Server PortNumber** – Enter the port number of the CAS server, as referred to by the external network. If you are clustering CAS, enter the port number of the externally facing load balancer.
 - **Enter Server HostName of internally accessible CAS** – Enter the hostname/IP address of the CAS server, as referred to by the internal network. If you are clustering CAS, enter the hostname/IP address of the load balancer, as referred to by the internal network.
 - **Enter Server PortNumber of internally accessible CAS** – Enter the port number of the CAS server, as referred to by the internal network. If you are clustering CAS, enter the hostname/IP address of the load balancer, as referred to by the internal network.
 - **Enter Server HostName where CAS is actually deployed** – Enter the hostname of the machine where CAS will be deployed.
 - For networks without firewalls, fill in the fields as follows:
 - **Enter Server HostName** – Enter the hostname/IP address of the CAS server. If you are clustering CAS, enter the hostname/IP address of the load balancer.
 - **Enter Server PortNumber** – Enter the port number of the CAS server. If you are clustering CAS, enter the port number of the load balancer.
 - **Enter Server HostName of internally accessible CAS** – Enter the hostname/IP address of the CAS server. If you are clustering CAS, enter the hostname/IP address of the load balancer.
 - **Enter Server PortNumber of internally accessible CAS** – Enter the port number of the CAS server. If you are clustering CAS, enter the port number of the load balancer.

- **Enter Server HostName where CAS is actually installed** – Enter the hostname of the machine where CAS will be deployed.



The screenshot shows a window titled "CAS Deployment Information" with a sub-header "Oracle WebCenter Sites". The main heading is "Enter CAS Deployment Information". The form contains five input fields:

- Enter Server HostName: external
- Enter Server PortNumber: 80
- Enter Server HostName of internally accessible CAS: internal
- Enter Server PortNumber of internally accessible CAS: 8080
- Enter Server HostName where CAS is actually deployed: actual

Below the fields, there is explanatory text: "If autodeploy is enabled, by default CAS will be deployed on the primary Sites cluster member. If manual deploy is enabled, then CAS can be deployed on a separate server." At the bottom, there are buttons for "Exit", "Help", "Previous", and "Next".

6. Halfway through the installation, the installer displays the "Installation Actions" window, which lists the steps you must perform to complete the installation. Do the following:
 - a. Deploy the WebCenter Sites and CAS applications. For instructions, see ["Deploying the WebCenter Sites Application,"](#) on page 61.
 - b. Before continuing with the installation process, do the following:
 - 1) To ensure that Ehcache functions properly, edit the `cas-cache.xml`, `cs-cache.xml`, `ss-cache.xml`, and `linked-cache.xml` files (located in the WebCenter Sites deployed directory in the `WEB-INF/classes` folder). The following fields must be unique for each cache type:
 - `multicastGroupAddress`
 - `multicastGroupPort`
 - `timeToLive`

Note

When setting up a cluster, ensure that each corresponding file has identical values across cluster members. Edit the `timeToLive` field to control the propagation of multicast packets. The following is a list of possible options:

- 1- (multicast packets restricted to the same subnet)
- 32- (multicast packets restricted to the same site)
- 64- (multicast packets restricted to the same region)
- 128- (multicast packets restricted to the same continent)
- 255- (multicast packets are unrestricted)

- 2) Edit the `jbossTicketCacheReplicationConfig.xml` file, located under the `<cs_install>/bin` directory. Ensure that the following fields have unique values:

- `mcast addr`
- `mcast port`

Note

When setting up a CAS cluster, ensure that each cluster member has identical values for the following fields:

- `ClusterName`
- `mcast addr`
- `mcast port`
- `ip_ttl` (set this value to 1 or 32 depending on your network)

For more details on setting up a CAS cluster, see *Oracle WebCenter Sites: Configuring Supporting Software*.

- 3) If you are using an Oracle database and require text attributes greater than 2000 characters, set the `cc.bigtext` property to CLOB:
- 1) Open the Property Editor by clicking the **Property Editor** button.
 - 2) In the Property Editor, open the `futuretense.ini` file.
 - 3) Click the **Database** tab.
 - 4) Locate the `cc.bigtext` property and set its value to CLOB.
 - 5) Save your changes and close the Property Editor.
7. When the installation completes successfully, continue with “[Post-Installation Steps](#),” on [page 97](#).

Installing Silently

To install WebCenter Sites silently

1. Ensure you have completed [Steps I – IV.1](#) in the “[Installation Quick Reference](#),” on [page 9](#).

2. Extract the WebCenter Sites installer archive into a temporary directory.
3. The `Misc/silentinstaller` folder of the temporary directory contains sample `omii.ini` files that you can use for your silent installation.
 - If you are installing a content management or development system, use the `generic_omii.ini` file.
 - If you are installing a delivery system, use the `delivery_omii.ini` file.
 - a. Edit the file for your type of installation by verifying the default values and entering additional values as required. Refer to the comments in the file for guidance.
 - b. Save the file and copy it to a folder outside `<cs_install_dir>`.
4. If you are installing a delivery system, you must set unique passwords for the `fwadmin` and `ContentServer/SatelliteServer` users:
 - a. Open the `cscore.xml` file in the `ContentServer` folder of the temporary directory.
 - b. Set passwords in the following section:


```

          <IF COND="Variables.bShowInstallTypeDialog=false">
            <THEN>
              <DIALOGACTION>
                <SETVARIABLE NAME="passwordVar" VALUE=" "/>
                <SETVARIABLE NAME="passwordAdminVar" VALUE=" "/>
              </DIALOGACTION>
            </THEN>
          </IF>
          
```

 - 1) Set the password for the `fwadmin` user in the `VALUE` field following `NAME="passwordVar"`.
 - 2) Set the password for the `ContentServer/SatelliteServer` user in the `VALUE` field following `NAME="passwordAdminVar"`.
 - c. Save and close the file.
5. Edit the `install.ini` file in the root folder of the temporary directory:
 - a. Set the `nodisplay` property to `true`.
 - b. Uncomment the `loadfile` property and set it to the path and name of the `omii.ini` file from [step 3b](#).

Note

Verify that you have correctly specified the file system path. For example, for Windows:

```

CSInstallDirectory=C\:/csinstall
- or -
c:\:\install

```

- c. Save and close the file.
6. Change to the temporary directory containing the installer files.

7. Execute the installer script:
 - On Windows: `csInstall.bat -silent`
 - On Unix: `csInstall.sh -silent`
8. To complete the installation, see [steps 5 – 7](#) starting on [page 93](#).
9. When the installation completes successfully, continue with “[Post-Installation Steps](#),” on [page 97](#).

Post-Installation Steps

When the WebCenter Sites installation completes successfully, perform the following steps:

- A. [Setting File Permissions \(Unix Only\)](#)
- B. [Loading the XML Parser](#)
- C. [Adding the WebCenter Sites Binaries Directory to the Library Path Variable](#)
- D. [Verifying the Installation](#)
- E. [Integrating Oracle Access Manager \(OAM\) with WebCenter Sites \(Optional\)](#)
- F. [Integrating with LDAP \(Optional\)](#)
- G. [Setting Up a WebCenter Sites Cluster \(Optional\)](#)
- H. [Setting Up a CAS Cluster \(Optional\)](#)
- I. [Redeploying CAS \(Optional\)](#)
- J. [Setting Up WebCenter Sites for Its Business Purpose](#)

A. Setting File Permissions (Unix Only)

If you installed WebCenter Sites on Unix, you must grant the “executable” permission to all files in the `<cs_install_dir>/bin` directory. To do so, perform the following steps:

1. Change to the `<cs_install_dir>/bin` directory.
2. Run the following command: `chmod +x *`
3. Restart the WebCenter Sites application.

B. Loading the XML Parser

WebCenter Sites contains a modified version of the Microsoft XML Parser (`MSXML.jar` in the `WEB-INF/lib` directory). If a different version of the Parser is referenced in the `CLASSPATH` environment variable, you must change the path to refer to the version used by WebCenter Sites; otherwise, WebCenter Sites will fail when parsing XML.

C. Adding the WebCenter Sites Binaries Directory to the Library Path Variable

Note

If the classpath and library path are not set properly, the System Tools node in the Admin tab of the WebCenter Sites Admin interface will have reduced functionality and CAS will not start.

In order for the ContentServer component to function in WebCenter Sites, you must add the WebCenter Sites binaries directory, `<cs_install_dir>/bin`, to your library path variable as follows:

- For HP-UX:
Add `<cs_install_dir>/bin` to `SHLIB_PATH`.
- For Linux and Solaris:
Add `<cs_install_dir>/bin` to `LD_LIBRARY_PATH`.
- For AIX:
Add `<cs_install_dir>/bin` to `LIBPATH`.
- For Windows:
Add `<cs_install_dir>\bin` to your system's `PATH` variable.

For AIX and Solaris based systems, you will have to manually copy the correct library file from the `sigar/bin/<os_type>` folder, located under the Installer folder (into which you extracted the WebCenter Sites installer), to the `<cs_install_dir>/bin` directory. Then, remove the incorrect version from the `<cs_install_dir>/bin` directory.

For example, for AIX 64 bit, copy the `libsigar-ppc64-aix-5.so` from `<Installer>/sigar/bin/AIX64/` to the `<cs_install_dir>/bin` directory and delete the `libsigar-ppc-aix-5.so` from the `<cs_install_dir>/bin` directory.

Note

In the WebCenter Sites log file, the following message indicates that the correct libraries are not found in the library path:

“UnsatisfiedLinkError caught: Content Server is unable to gather/display system information. Ensure that `java.library.path` (or **`LD_LIBRARY_PATH`**) is pointed to `CSInstallDirectory/bin`”

In such cases, set `-Djava.library.path=<cs_install_dir>/bin` for the application server.

The default WebCenter Sites log file (`sites.log`) is created during the installation process in the `<cs_install_dir>/logs` directory.

D. Verifying the Installation

Verify the installation by logging in to Oracle WebCenter Sites as a general administrator and accessing the WebCenter Sites Admin, Contributor, and WEM Admin interfaces. In the process, you will verify that single sign-on functions (by accessing a different application without logging out and back in to WebCenter Sites).

To access the WebCenter Sites interfaces

1. Point your browser to the following URL:

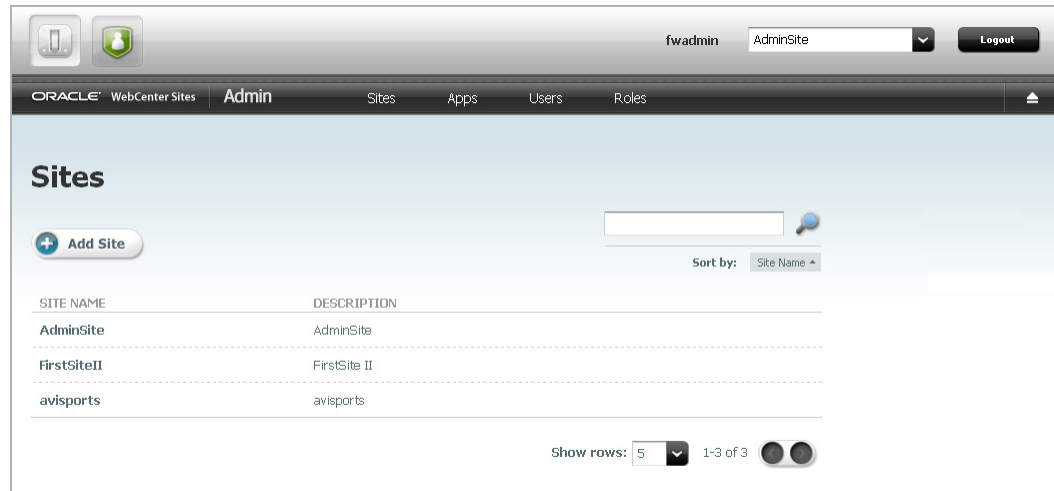
`http://<server>:<port>/<context>/login`

where `<server>` is the host name or IP address of the server running WebCenter Sites, `<port>` is the port number of the WebCenter Sites application, and `<context>` is the name of the WebCenter Sites application that was deployed on the server.

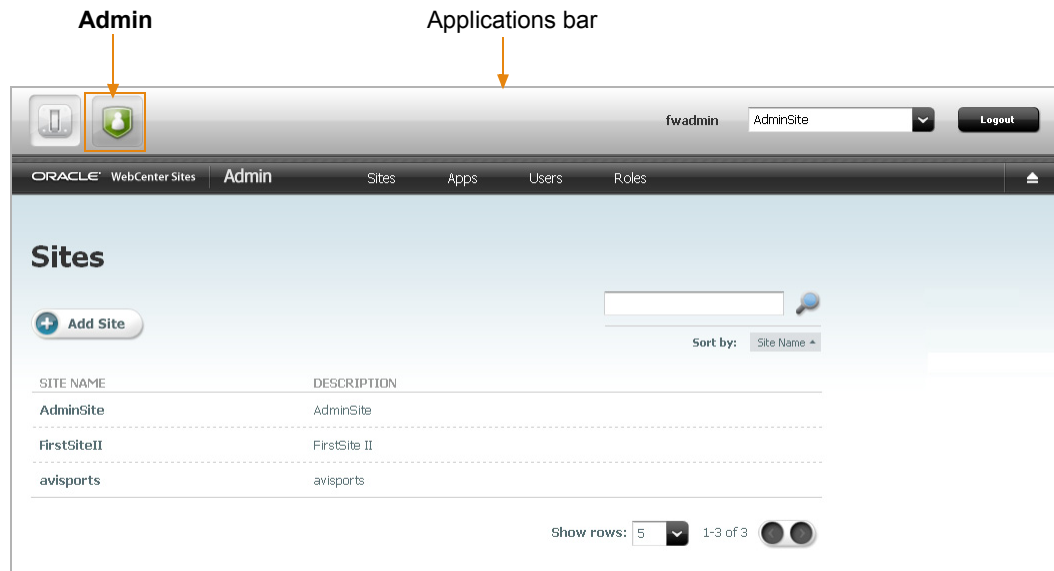
The WebCenter Sites login form is displayed.

2. Enter the following credentials:
 - User name: **fwadmin**
 - Password: **xceladmin**
3. Click **Login**.
4. Access the WEM Admin interface. In the “Site” drop-down, select **AdminSite** and the icon for the **WEM Admin** interface.

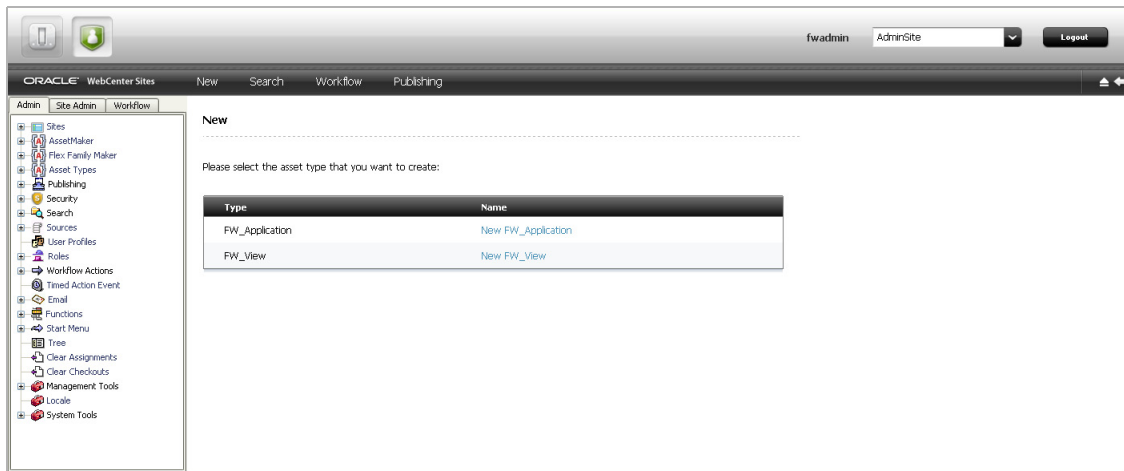
The WEM Admin interface (on AdminSite) is displayed:



5. Switch to the WebCenter Sites Admin interface by navigating to the applications bar and selecting the icon for the WebCenter Sites **Admin** interface:



The WebCenter Sites Admin interface (on AdminSite) is displayed. Only system administration functionality is available.



6. Switch to the WebCenter Sites Contributor interface:

Note

The WebCenter Sites Contributor interface is not associated with AdminSite. If the avisports and FirstSite II sample sites are installed, you can switch to either one of these sample sites to access the Contributor interface. If no sample sites are installed, you will have to access the WEM Admin interface (see [step 4 on page 99](#)), create a site, create users, and then assign the users to the site. The Contributor interface is automatically assigned to the site. (For instructions, see the *Oracle WebCenter Sites Administrator's Guide for the Web Experience Management Framework*.) Then continue with this step.

- a.** Navigate to the applications bar. In the site selection drop-down menu, select a site other than AdminSite.

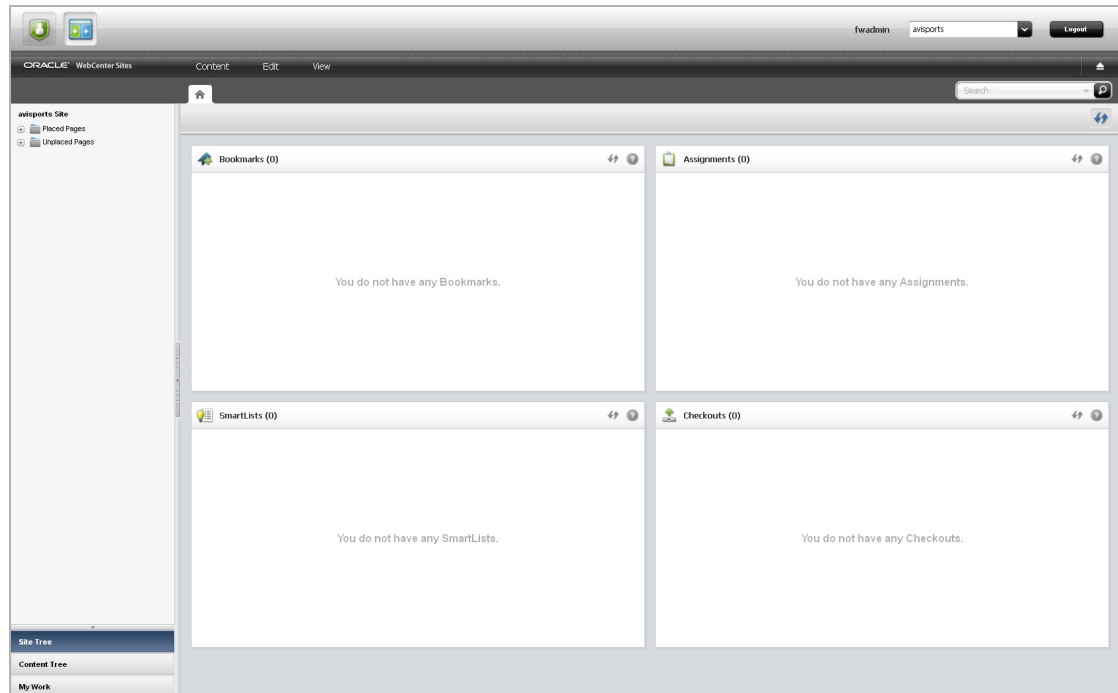


- b. Since this is the first time you are accessing the selected site, the following screen is displayed. Select the icon for the **Contributor** interface.



(Upon subsequent access, WebCenter Sites opens the application you last accessed for the site you selected.)

The Contributor interface on the site to which you are logged in is displayed:



WebCenter Sites is now ready to be configured. Follow the steps in the rest of this chapter.

E. Integrating Oracle Access Manager (OAM) with WebCenter Sites (Optional)

If you wish to replace CAS with Oracle Access Manager (OAM), refer to the instructions in *Oracle WebCenter Sites: Configuring Supporting Software*.

F. Integrating with LDAP (Optional)

If you wish to perform LDAP integration, do the following:

1. Set up a supported LDAP server of your choice. For instructions, see *Oracle WebCenter Sites: Configuring Supporting Software*.
2. Run the LDAP integration program included on the WebCenter Sites CD.

For more information, see *Oracle WebCenter Sites: Integrating with LDAP*.

Note

If you have configured LDAP for the primary cluster member, make sure to run the `configureLDAP.sh` for all secondary cluster members.

G. Setting Up a WebCenter Sites Cluster (Optional)

Before beginning the steps in this section, ensure the following:

- You are installing a vertical cluster (WAS instances are installed on the same machine).
- You have already installed and configured an instance of WAS, and it is running a verified WebCenter Sites system.
- You have created a shared file system directory (referred to in this guide as `<cs_shared_dir>`) that all cluster members can read from and write to. The directory name and path cannot contain spaces.
- You have created a `sync` directory inside the shared file system directory.
- You have created a J2C authentication containing the login information for the database which all WebCenter Sites cluster members will be using. For instructions, see [“Creating a J2C Authentication,” on page 46](#).

To set up a WebCenter Sites cluster

For each cluster member, do the following:

1. Create a new WAS instance. For instructions, see [“Creating a WAS Instance Using the Command Line,” on page 39](#).
2. Create a WebCenter Sites installation directory. The directory name and path cannot contain spaces, and the application server must be able to read from and write to the directory.
3. Create a unique JDBC provider based on the J2C authentication you created for the WebCenter Sites database. For instructions, see [“Creating a JDBC Provider,” on page 48](#).
4. Create a unique JDBC data source based on the J2C authentication you created for the WebCenter Sites database, and the JDBC provider you created in [step 3](#) of this procedure. For instructions, see [“Creating a JDBC Data Source,” on page 52](#).
5. Install the WebCenter Sites cluster member on the newly created WAS instance. Follow the steps in [“Running the GUI Installer,” on page 93](#) or [“Installing Silently,” on page 95](#), but observe the following exceptions:
 - When running the GUI installer:

- In the “Installation Directory” screen, select the installation directory that you created in [step 2](#) of this section.
- In the “Clustering” screen, select **Cluster Member**.
- In the “WebCenter Sites Shared File System” screen, enter the path to the shared file system of the primary cluster member.
- In the “WebCenter Sites Application Deployment” screen, enter the path to the WAS instance you created in [step 1](#) of this section.
- When configuring the `omii.ini` file for silent installation:
 - Set `CSInstallDirectory` to the installation directory that you created in [step 2](#) of this section.
 - Set `CSInstallType` to `cluster`.
 - Set `CSInstallSharedDirectory` to the shared file system of the primary cluster member.
 - Set `CSInstallAppServerPath` to the WAS instance you created in [step 1](#) of this section.
 - Set `CSInstallAppServerPath` to `CATALINA_HOME` of the Tomcat instance you created in [step 1](#) of this section.
 - Set `CASHostName` to the resolvable hostname/IP address of the external load balancer for CAS.
 - Set `CASPortNumber` to the port number of external load balancer for CAS.
 - Set `CASHostNameLocal` to the resolvable hostname/IP address of the internal load balancer for CAS.
 - Set `CASPortNumberLocal` to the port number of internal load balancer for CAS.
 - Set `CASHostNameActual` to the resolvable hostname/IP address of the Server where CAS is actually deployed.
- 6. Edit the `<cs_install_dir>/futuretense.ini` file by making the following changes:
 - a. Set `ft.sync` to a value that is the same for all cluster members.
 - b. Set `ft.usedisksync` to `<cs_shared_dir>/sync`.
- 7. Restart the WebCenter Sites application for the changes to take effect. For instructions, see “[Restarting the WebCenter Sites Application](#),” on page 71.

H. Setting Up a CAS Cluster (Optional)

The installer is configured to deploy CAS only on the primary WebCenter Sites cluster member. In cases where CAS is deployed on a separate server, you will have to manually deploy CAS. Additionally, you must configure and deploy secondary CAS cluster members manually. For instructions, see *Oracle WebCenter Sites: Configuring Supporting Software*.

I. Redeploying CAS (Optional)

There may be cases where you will have to manually redeploy CAS on another server. For instructions on redeploying CAS, see *Oracle WebCenter Sites: Configuring Supporting Software*.

J. Setting Up WebCenter Sites for Its Business Purpose

Once you have completed your WebCenter Sites installation, you are ready to configure it for business use. For instructions, see the *WebCenter Sites Administrator's Guide* and the *WebCenter Sites Developer's Guide*. The guides explain how to create and enable a content management environment including the data model, content management sites, site users, publishing functions, and client interfaces.

