Oracle® Fusion Middleware

Installing and Configuring Oracle HTTP Server

12*c* (12.1.3)

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Documentation for installers and system administrators that describes how to install and configure Oracle HTTP Server.

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Oracle Fusion Middleware Installing and Configuring Oracle HTTP Server, 12*c* (12.1.3)

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Primary Author: Rajesh Gouthaman, Hannah Cheng

Contributing Author: Peter LaQuerre

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Preface

This document describes how to install and configure an Oracle HTTP Server domain.

Audience

This document is intended for system administrators or application developers who are installing the Oracle HTTP Server. It is assumed that readers are familiar with Web technologies and have a general understanding of Windows and UNIX platforms.

Document Organization

The document is organized as follows:

- Chapter 1, "Planning Your Oracle HTTP Server Installation," lists the products that can be installed with the WebLogic Server installer, and describes the high-level tasks that are required for installation.

- Chapter 2, "Installing the Oracle HTTP Server Software," describes how to install the Oracle HTTP Server software on Windows and UNIX platforms, using a Java-based graphical user interface (GUI).

- Chapter 3, "Configuring Oracle HTTP Server in a WebLogic Server Domain," describes how to create and configure your Oracle HTTP Server if you choose to configure in a WebLogic domain.

- Chapter 4, "Configuring Oracle HTTP Server in a Standalone Domain," describes how to create and configure your Oracle HTTP Server if you choose to configure in a standalone domain.

- Chapter 5, "Next Steps After Configuring an Oracle HTTP Server Domain," provides links to basic administration tasks and topics to prepare your environment for high availability configuration.

- Chapter 6, "Deinstalling Oracle HTTP Server," describes how to deinstall your software.

- Appendix A, "Understanding the Oracle HTTP Server Directory Structures," describes the basic directory structure obtained after installing and configuring Oracle HTTP Server.

- Appendix B, "Configuring Oracle HTTP Server WebGate for Oracle Access Manager," describes the steps for configuring Oracle HTTP Server WebGate.

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Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1

Planning Your Oracle HTTP Server Installation

This guide will help you install Oracle HTTP Server 12.1.3.

Various topics are covered that should be reviewed thoroughly to help ensure that you do not encounter any problems either during or after the Oracle HTTP Server installation and domain configuration.

This chapter contains the following sections:

- About Oracle HTTP Server
- Understanding Oracle HTTP Server Domain Configuration Options
- Selecting an Oracle HTTP Server Domain Configuration
- Introducing the Oracle HTTP Server Standard Installation Topologies
- Roadmaps for Installing and Configuring Oracle HTTP Server
- Roadmap for Verifying Your System Environment
- Understanding and Obtaining the Oracle HTTP Server Distribution

1.1 About Oracle HTTP Server

Oracle HTTP Server is the web server component for Oracle Fusion Middleware. It is designed to deliver HTTP Listener for Oracle WebLogic Server through built-in WebLogic Web Server Proxy Plug-In, and provide Web Server component for Fusion Middleware. In addition, it can serve static web content such as HTML, JavaScript, Images, and dynamic web content built with CGI/FastCGI based applications.

For more information, see "Introduction to Oracle HTTP Server" in *Administering Oracle HTTP Server*.

1.2 Understanding Oracle HTTP Server Domain Configuration Options

Oracle HTTP Server can be integrated into your Oracle Fusion Middleware environment in a number of ways. For the purposes of this guide, and for general planning purposes, there are two primary domain configurations supported by Oracle HTTP Server:

- Section 1.2.1, "Oracle HTTP Server in a WebLogic Server Domain"
- Section 1.2.2, "Oracle HTTP Server in a Standalone Domain"

1.2.1 Oracle HTTP Server in a WebLogic Server Domain

When you configure Oracle HTTP Server in a WebLogic Server domain, the Oracle HTTP Server instances can be managed like any other elements of the WebLogic Server domain. Specifically, you can manage your Oracle HTTP Server instances from Enterprise Manager Fusion Middleware Control, the WLST Command line interface, and WebLogic Server Node Manager.

To configure Oracle HTTP Server in a WebLogic Server domain, you must first install the Oracle HTTP Server software in an existing Oracle Fusion Middleware Infrastructure Oracle home. For more information, see "Installing and Configuring the Oracle Fusion Middleware Infrastructure Software" in *Installing the Oracle Fusion Middleware Infrastructure*.

When you run the Oracle Fusion Middleware Configuration Wizard from the Oracle home, you can then configure or extend a WebLogic Server domain so that it contains one or more Oracle HTTP Server instances, in addition to the Administration Server, Managed Servers, and other elements of the domain.

1.2.2 Oracle HTTP Server in a Standalone Domain

When you configure Oracle HTTP Server in a standalone domain, the Oracle HTTP Servers reside in a separate, standalone domain that is dedicated to managing system components only.

To configure Oracle HTTP Server instances in a standalone domain, you install the Oracle HTTP software in a separate Oracle home and there is no prerequisite for Oracle Fusion Middleware Infrastructure.

For more information, see "What Is a Standalone Domain?" in *Understanding Oracle Fusion Middleware*.

1.3 Selecting an Oracle HTTP Server Domain Configuration

Use the following guidelines when you decide which Oracle HTTP Server domain option to configure:

- Use the Oracle HTTP Server in a WebLogic Server domain configuration if any of the following applies:

  - You want to take advantage of advanced management capabilities of Fusion Middleware Control to manage your Oracle HTTP Server instances.

  - You want to scale out your domain to multiple hosts and still manage the Oracle HTTP instances from a single FMW Control.

- Use the Oracle HTTP Server in a standalone domain configuration if you are not interested in managing the Oracle HTTP Server instances with Fusion Middleware Control.

  Instead, you can use the WLST command-line and other features available in a standalone domain.

> **Note:** You can also configure a test or evaluation domain for Oracle HTTP Server, using a special WLST command. This WLST command creates an Oracle HTTP Server instance in a WebLogic Server domain that provides all the administrative capabilities of a full production domain but does not require an external database. The test domain cannot be scaled out to other machines and is not certified to be used in production.
>
> For more information, see "createOHSTestDomain()" in the *WLST Command Reference for Infrastructure Components*.

1.4 Introducing the Oracle HTTP Server Standard Installation Topologies

This section contains the following topics:

- About the Standard Installation Topologies
- Standard Installation Topology for Oracle HTTP Server in a WebLogic Server Domain
- Standard Installation Topology for Oracle HTTP Server in a Standalone Domain

1.4.1 About the Standard Installation Topologies

Using the Oracle HTTP Server software together with other application software, you can create a variety of production topologies to suit the needs of your applications, your organization, and your application users.

As a result, it is difficult to provide exact instructions for every possible Oracle HTTP Server installation. To solve this problem, this documentation provides detailed instructions for installing two typical Oracle HTTP Server configurations. These typical topologies are referred to as the Oracle Fusion Middleware 12*c* standard installation topologies.

Specifically, this guide describes how to install and configure the standard installation topology for Oracle HTTP Server in two configuration types: Oracle HTTP Server in a WebLogic Server domain (Figure 1–1) and Oracle HTTP Server in a standalone domain (Figure 1–2).

Your actual topology may vary, but the topologies described here provide an example that can be used as a guide to install Oracle HTTP Server and even span out to HA topologies.

For more information about standard installation topologies, see "Understanding the Standard Installation Topology" in *Planning an Installation of Oracle Fusion Middleware*.

1.4.2 Standard Installation Topology for Oracle HTTP Server in a WebLogic Server Domain

For this topology, you install the Oracle HTTP Server software in an existing Oracle Fusion Middleware Infrastructure Oracle home, and then you configure it as part of the Oracle Fusion Middleware Infrastructure domain.

Figure 1–1 shows the standard Oracle Fusion Middleware Infrastructure topology with an Oracle HTTP Server instance in the same domain home. Note that you can also use this topology to scale out to an HA environment spanning multiple machines.

Figure 1–1   Topology of an Oracle HTTP Server Installation in a WebLogic Server Domain
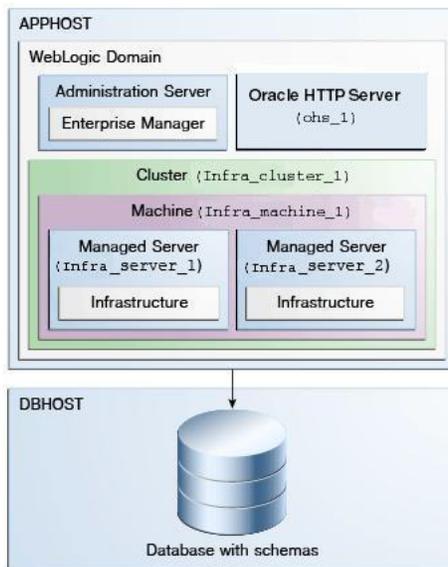
This figure depicts the Oracle Fusion Middleware Infrastructure standard installation topology with an Oracle HTTP Server instance. The Infrastructure domain contains an Administration Server and a cluster containing two Managed Servers and an Oracle HTTP Server instance, all configured within the same Infrastructure domain.

The Oracle Fusion Middleware Infrastructure includes Oracle software libraries, Oracle Enterprise Manager Fusion Middleware Control, and additional software required for deploying and managing Oracle ADF applications. The domain is configured on a single host and requires a supported database to host the required Fusion Middleware schemas.

Table 1–1 describes the elements of this topology.

Table 1–1   Description of the Elements in the Oracle HTTP Server Installation Topology

Element	Description and Links to Additional Documentation
APPHOST	Standard term used in Oracle documentation referring to the machine that is hosting the application tier.
	Note that in this topology the APPHOST hosts the web tier too.
DBHOST	Standard term used in Oracle documentation referring to the machine that is hosting the database.
WebLogic Domain	A logically related group of Java components (in this case, the Administration Server, Managed Servers, and other related software components).
	For more information, see "What is an Oracle WebLogic Server Domain" in *Understanding Oracle Fusion Middleware*.
Administration Server	The central control entity for the configuration of the entire domain.
	For more information, see "What is the Administration Server" in *Understanding Oracle Fusion Middleware*.
Enterprise Manager Fusion Middleware Control	Oracle Enterprise Manager Fusion Middleware Control. This is the main tool that can be used to manage your domain.
	For more information, see "Oracle Enterprise Manager Fusion Middleware Control" in *Understanding Oracle Fusion Middleware*.

Table 1–1   (Cont.) Description of the Elements in the Oracle HTTP Server Installation

Element	Description and Links to Additional Documentation
Oracle HTTP Server	The Oracle HTTP Server binaries and an Oracle HTTP Server instance.
Cluster	A collection of multiple WebLogic Server instances running simultaneously and working together.
	For more information, see "Understanding Managed Servers and Managed Server Clusters" in *Understanding Oracle Fusion Middleware*.
Machine	Logical representation of the computer that hosts one or more WebLogic Server instances (servers). Machines are also the logical glue between WebLogic Managed Servers and the Node Manager; in order to start or stop a Managed Server with Node Manager, the Managed Server must be associated with a machine.
Managed Server	Host for your applications, application components, Web services, and their associated resources.
	For more information, see "Oracle Enterprise Manager Fusion Middleware Control" in *Understanding Oracle Fusion Middleware*.
Infrastructure	Collection of services that include the following:
	■ Metadata repository (MDS)
	This contains metadata for Oracle Fusion Middleware components, such as the Oracle Application Developer Framework.
	For more information, see "What is the Metadata Repository" in *Understanding Oracle Fusion Middleware*.
	■ Oracle Application Developer Framework (Oracle ADF)
	■ Oracle Web Services Manager (OWSM)

For information about the roadmap for arriving at this topology, see Section 1.5.1.

1.4.3 Standard Installation Topology for Oracle HTTP Server in a Standalone Domain

The standalone Oracle HTTP Server topology can be installed and configured without the Oracle Fusion Middleware Infrastructure. For this topology, you install the Oracle HTTP Server software in its own Oracle home, and you configure the Oracle HTTP Server instance in its own **Standalone Domain**.

Figure 1–2 shows the standard Oracle HTTP Server instance in the Web tier.

Figure 1–2   Topology of an Oracle HTTP Server in a Standalone Domain

Table 1–2 describes the elements of this topology.

Table 1–2   Description of the Elements in the Oracle HTTP Server Standalone Installation Topology

Element	Description and Links to Additional Documentation
WEBHOST	This a separate host, which the sends requests to a WebLogic Server domain.
Standalone Domain	For more information, see "Standalone Domain" in *Administering Oracle HTTP Server.*
Oracle HTTP Server	The Oracle HTTP Server instance, which is created and managed by the management tools available in the standalone domain.

For more information about the roadmap for arriving at this topology, see Section 1.5.2.

1.5 Roadmaps for Installing and Configuring Oracle HTTP Server

This section contains the following topics:

- Roadmap for Installing and Configuring Oracle HTTP Server in a WebLogic Server Domain

- Roadmap for Installing and Configuring Oracle HTTP Server in a Standalone Domain

1.5.1 Roadmap for Installing and Configuring Oracle HTTP Server in a WebLogic Server Domain

Table 1–3 shows the steps required to install and configure Oracle HTTP Server in a WebLogic Server Domain.

> **Tip:**   You could install both the Oracle Fusion Middleware Infrastructure and the Oracle HTTP Server distributions into the same Oracle home and configure both the Infrastructure domain and the Oracle HTTP Server instance at the same time.

Table 1–3   Roadmap for Oracle HTTP Server Installation Configured in a WebLogic Server Domain

Task	Description	For More Information
Install and configure the Oracle Fusion Middleware Infrastructure standard installation topology	Before beginning the Oracle HTTP Server installation, you must install and configure an Oracle Fusion Middleware Infrastructure software.	See, *Installing and Configuring Oracle Fusion Middleware Infrastructure.*
Make sure all processes associated with the Oracle Fusion Middleware Infrastructure domain are shut down.	If your Node Manager, Administration Server, Managed Servers, and any other servers are up and running, then you must shut them down before you can begin installing and configuring Oracle HTTP Server in a WebLogic Server domain.	See, "Stopping an Oracle Fusion Middleware Environment" in *Administering Oracle Fusion Middleware* "Installing Multiple Products in the Same Domain" in *Planning an Installation of Oracle Fusion Middleware*.
Verify your system environment	Before beginning the installation, verify that the minimum system and network requirements are met.	See, Section 1.6

Table 1–3   (Cont.) Roadmap for Oracle HTTP Server Installation Configured in a WebLogic Server Domain

Task	Description	For More Information
Obtain the appropriate distribution	To create the topology described in this guide, obtain the Oracle HTTP Server distribution.	See, Section 1.7
Determine your installation directories	Verify whether the directories created while installing and configuring the Oracle Fusion Middleware Infrastructure topology exists and can be accessed by the installer.	See, Appendix A
Install Oracle HTTP Server	Run the installation program to install the software. This transfers the software to your system and update the Oracle Fusion Middleware Infrastructure Oracle home to include the Oracle HTTP Server binaries.	See, Chapter 2
Update the existing Infrastructure domain	Use the configuration wizard to extend the Infrastructure domain to include an Oracle HTTP Server instance. **Note**: If you have not configured Oracle Fusion Middleware Infrastructure yet, then you can configure Oracle Fusion Middleware Infrastructure and Oracle HTTP Server at the same time.	See, Chapter 3
Review post-configuration administration and configuration tasks	Discover additional tools and resources to administer your domain and configure your domain to be highly available.	See, Chapter 5

1.5.2 Roadmap for Installing and Configuring Oracle HTTP Server in a Standalone Domain

Table 1–4 shows the steps required to install and configure Oracle HTTP Server in a standalone domain.

Table 1–4   Roadmap for Oracle HTTP Server Installation Configured in a Standalone Domain

Task	Description	For More Information
Verify your system environment	Before beginning the installation, verify that the minimum system and network requirements are met.	Section 1.6
Obtain the appropriate distribution	To create the topology described in this guide, obtain the Oracle HTTP Server distribution.	Section 1.7
Determine your installation directories	Verify that the *product* and *config* directories are created, is accessible by the installer, and exist on systems that meet the minimum requirements.	Section A

Table 1–4 (Cont.) Roadmap for Oracle HTTP Server Installation Configured in a Standalone Domain

Task	Description	For More Information
Install Oracle HTTP Server	Run the installation program to install the software. This transfers the software to your system and creates the Oracle home directory.	Chapter 2
Create an Oracle HTTP Server Standalone Domain	Use the configuration wizard to create and configure an Oracle HTTP Server in a standalone domain.	Chapter 4
Review post-configuration administration and configuration tasks	Discover additional tools and resources to administer your domain and configure your domain to be highly available.	Chapter 5

1.6 Roadmap for Verifying Your System Environment

Table 1–5 contains important information that you must read and understand prior to beginning the installation and configuration process. It identifies important tasks and checks, that you must perform, to make sure that your environment is properly prepared for installing and configuring Oracle HTTP Server.

Table 1–5 Roadmap for Verifying Your System Environment

Task	Description	For More Information, See
Verify certification and system requirements.	Verify that your operating system is certified and properly configured for Oracle Fusion Middleware Infrastructure installation and configuration.	"Verifying Certification and System Requirements" in *Planning an Installation of Oracle Fusion Middleware*.
Prepare your system for installation.	Verify that the necessary environment variables are set, and you have identified a proper installation user.	"Prepare Your System for Installation" in *Planning an Installation of Oracle Fusion Middleware*.

1.7 Understanding and Obtaining the Oracle HTTP Server Distribution

The Oracle HTTP Server distribution is available as a standalone executable installation program which includes a Java Runtime Environment.

> **Tip:** For more information about distributions, see "Understanding and Obtaining Product Distributions" in *Planning an Installation of Oracle Fusion Middleware*.

To obtain the distribution, see "Obtaining Product Distributions" in *Planning an Installation of Oracle Fusion Middleware*.

2

Installing the Oracle HTTP Server Software

This chapter describes how to install the Oracle HTTP Server software.

It contains the following sections:

- Starting the Installation Program
- Navigating the Installation Screens
- Verifying the Installation

2.1 Starting the Installation Program

To start the installation program, perform the following steps.

1. Log in to the target system.

2. Go to the directory in which you downloaded the installation program.

3. Launch the installation program by entering the following command:

    - On Linux:

        ```
        ./ohs_121300_linux64.bin
        ```

    - On Windows:

        ```
        ohs_121300_win64.exe
        ```

        You can also start the installer by double-clicking the `ohs_121300_win64.exe` file.

        > **Note:** You will not be able to execute `ohs_121300_linux64.bin` if it does not have execute permission. Make sure to check and grant execute permission before running this command.

When the installation program appears, you are ready to begin the installation.

For a description of each installation program screen, see Section 2.2.

2.2 Navigating the Installation Screens

Table 2–1 lists the screens in the order that the installation program displays.

If you need additional help with any of the installation screens, click the screen name.

> **Note:** Oracle Fusion Middleware Infrastructure screens are used as sample screens and all screens are exactly the same with the exception of the Installation Type screen.

Table 2–1   Oracle HTTP Server Install Screens

Screen	Description
Installation Inventory Setup	On UNIX operating systems, this screen will appear if this is the first time you are installing any Oracle product on this host. Specify the location where you want to create your central inventory. Make sure that the operating system group name selected on this screen has write permissions to the central inventory location.
	For more information about the central inventory, see "Understanding the Oracle Central Inventory" in *Oracle Fusion Middleware Installing Software with the Oracle Universal Installer.*
	This screen will not appear on Windows operating systems.
Welcome	This screen introduces you to the product installer.
Installation Location	Use this screen to specify the location of your Oracle home directory.
	■ If you are installing using the standard installation topology for Oracle HTTP Server in a WebLogic Server domain, then you must enter the path to an existing Oracle Fusion Middleware Infrastructure Oracle home.
	■ If you are installing using the standard installation topology for Oracle HTTP Server in a standalone domain, you can specify an Oracle home directory of your choice. However, ensure that you install the software in a new Oracle home.
	For more information about Oracle Fusion Middleware directory structure, see "Selecting Directories for Installation and Configuration" in *Planning an Installation of Oracle Fusion Middleware*.
Installation Type	Use this screen to select the type of installation and consequently, the products and feature sets you want to install.
	■ Select **Standalone HTTP Server (Managed independently of WebLogic server)** if you are installing Oracle HTTP Server in a Standalone domain.
	■ Select **Collocated HTTP Server (Managed through WebLogic server)** if you are installing Oracle HTTP Server in a WebLogic Server domain.
Prerequisite Checks	This screen verifies that your system meets the minimum necessary requirements.
	If there are any warning or error messages, you can refer to one of the documents in Section 1.6.
Specify Security Updates	**Note**: This screen will appear only if you selected **Standalone HTTP Server (Managed independently of WebLogic server)** as the Installation Type.
	If you already have an Oracle Support account, use this screen to indicate how you would like to receive security updates.
	If you do not have one and are sure you want to skip this step, clear the check box and verify your selection in the follow-up dialog box.

Table 2–1   (Cont.) Oracle HTTP Server Install Screens

Screen	Description
Installation Summary	Use this screen to verify the installation options you selected. If you want to save these options to a response file, click **Save Response File** and provide the location and name of the response file. Response files can be used later in a silent installation situation.
	For more information about silent or command line installation, see "Using the Oracle Universal Installer in Silent Mode" in *Installing Software with the Oracle Universal Installer*.
Installation Progress	This screen allows you to see the progress of the installation.
Installation Complete	This screen appears when the installation is complete. Review the information on this screen, then click **Finish** to dismiss the installer.

2.3 Verifying the Installation

To verify that your installation was completed successfully, you can compare your directory structure to the one shown in Appendix A.

> **Note:**   To configure Oracle HTTP Server, go to the respective locations listed below:
>
> - If you have selected **Collocated HTTP Server (Managed through WebLogic server)** in the Installation Type screen, then go to Chapter 3.
> - If you have selected **Standalone HTTP Server (Managed independently of WebLogic server)** in the Installation Type screen, then go to Chapter 4.

3

Configuring Oracle HTTP Server in a WebLogic Server Domain

This chapter provides instructions for updating an existing Infrastructure domain with Oracle HTTP Server, using the Oracle Fusion Middleware Configuration Wizard.

> **Note:** Perform the configuration steps in this chapter only if you have selected **Collocated HTTP Server (Managed through WebLogic server)** in the Installation Type screen. If you have selected **Standalone HTTP Server (Managed independently of WebLogic server)**, follow the tasks in Chapter 4.
>
> For information about Oracle HTTP Server domain configuration options, see Section 1.2, "Understanding Oracle HTTP Server Domain Configuration Options".

This chapter contains the following sections:

- Stopping the Administration Server
- Starting the Configuration Wizard
- Navigating the Configuration Wizard Screens to Extend the Domain
- Starting the Servers
- Next Steps

If you have not created the Oracle Fusion Middleware Infrastructure domain, you can create it at the same time as that of Oracle HTTP Server. For instructions, see "Configuring your Oracle Fusion Middleware Infrastructure Domain" in *Installing and Configuring the Oracle Fusion Middleware Infrastructure*. However, in Task 9 "Selecting Advanced Configuration", ensure that you select **System Components** too. When you reach the System Components screen, follow the instructions in this guide, beginning from Task 7.

3.1 Stopping the Administration Server

Before starting the configuration wizard, it is important to shut down the Administration Server. This is to prevent any configuration locks, saves, or activations from occurring during the configuration of the domain.

To stop the Administration Server, go to the *DOMAIN_HOME*/bin directory.

- **On UNIX**

  ```
  ./stopWebLogic.sh
  ```

- **On Windows**

  ```
  stopWebLogic.cmd
  ```

You might be prompted for the login credentials of the Administrator user you provided when you configured the Oracle Fusion Middleware Infrastructure domain.

3.2 Starting the Configuration Wizard

To begin domain configuration, go to the *ORACLE_HOME*/oracle_common/common/bin directory on UNIX and *ORACLE_HOME*\oracle_common\common\bin on Windows and start the Oracle HTTP Server Server Configuration Wizard.

- **On UNIX**

  ```
  ./config.sh
  ```
- **On Windows**

  ```
  config.cmd
  ```

3.3 Navigating the Configuration Wizard Screens to Extend the Domain

Follow the instructions in this section too update an existing Infrastructure domain with an Oracle HTTP Server instance.

> **Note:**   When you are adding an Oracle HTTP Server instance to an existing domain, verify that the ports you are assigning to any new components are available. The Configuration Wizard does not perform automatic port allocation.

- Task 1, "Selecting the Domain Type and Domain Home Location"
- Task 2, "Selecting the Configuration Templates"
- Task 3, "Specifying the Datasource Configuration Type"
- Task 4, "Specifying JDBC Component Schema Information"
- Task 5, "Testing the JDBC Connections"
- Task 6, "Selecting Advanced Configuration"
- Task 7, "Adding System Components"
- Task 8, "OHS Server screen"
- Task 9, "Assign System Components to Machines"
- Task 10, "Reviewing Your Configuration Specifications and Configuring the Domain"
- Task 11, "Writing Down Your Domain Home and Administration Server URL"

Task 1 Selecting the Domain Type and Domain Home Location
On the Configuration Type screen, select **Update an existing domain**.

In the Domain Location field, select the Domain home location specified while configuring the Infrastructure domain.

> **Tip:** More information about the Domain home directory can be found in "Choosing a Domain Home" in *Planning an Installation of Oracle Fusion Middleware*.
>
> More information about the other options on this screen can be found in "Configuration Type" in *Creating Domains Using the Configuration Wizard*.

Task 2 Selecting the Configuration Templates

On the Templates screen, ensure that **Update Domain Using Product Templates** is selected, and then select **Oracle HTTP Server (Collocated) - 12.1.3 [ohs]**. This automatically selects **Oracle Enterprise Manager Plugin for WEBTIER - 12.1.3.0 [em]**.

> **Tip:** More information about the options on this screen can be found in "Templates" in *Creating Domains Using the Configuration Wizard*.

Task 3 Specifying the Datasource Configuration Type

All fields are pre-populated, because you already configured the domain to reference the Fusion Middleware schemas that are required for the Infrastructure domain. Verify and ensure that credentials in all the fields are the same that you have provided while configuring Oracle Fusion Middleware Infrastructure.

Click **Get RCU Configuration** after you finish verifying the database connection information. The following output in the Connection Result Log indicates that the operating succeeded:

```
Connecting to the database server...OK
Retrieving schema data from database server...OK
Binding local schema components with retrieved data...OK

Successfully Done.
```

> **Tip:** More information about the **RCU Data** option can be found in "Understanding the Service Table Schema" in *Creating Schemas with the Repository Creation Utility*.
>
> More information about the other options on this screen can be found in "Datasource Defaults" in *Creating Domains Using the Configuration Wizard*.

Task 4 Specifying JDBC Component Schema Information

Verify that the values on this screen are correct for all schemas. If you selected **RCU Data** on the previous screen, the schema table should already be populated appropriately.

> **Tip:** For high availability environments, see the following sections in *High Availability Guide* for additional information on configuring data sources for Oracle RAC databases:
>
> - "Configuring GridLink Data Sources with Oracle RAC"
> - "Configuring Multi Data Sources"
>
> More information about the other options on this screen can be found in "JDBC Component Schema" in *Creating Domains Using the Configuration Wizard*.

Task 5 Testing the JDBC Connections

Use this screen to test the datasource connections you have just configured.

> **Tip:** More information about the other options on this screen can be found in "Test Component Schema" in *Creating Domains Using the Configuration Wizard*

Task 6 Selecting Advanced Configuration

To update the domain configuration for the topology, select **System Components** on the Advanced Configuration.

Task 7 Adding System Components

On the System Components screen, click **Add** to create a new Oracle HTTP Server instance.

1. Specify `ohs_1` in the **System Component** field.

2. Specify `OHS` in the **Component Type** field.

3. **Restart Interval Seconds**: Specify the number of seconds to wait before attempting a restart if an application is not responding.

4. **Restart Delay Seconds**: Specify the number of seconds to wait between restart attempts.

Task 8 OHS Server screen

Use the OHS Server screen to configure the Oracle HTTP Server servers in your domain. In the **System Component** field specify the IP address of the host on which the Oracle HTTP Server instance will reside. Do not use "localhost". For more information, see "Specifying the Listen Address" in *Creating WebLogic Domains Using the Configuration Wizard*.

All of the remaining fields are pre-populated, but you can change the values as per your needs. For more information on the fields on this screen, see "OHS Server" in the *Oracle Fusion Middleware Creating WebLogic Domains Using the Configuration Wizard* guide.

Task 9 Assign System Components to Machines

Oracle HTTP Server instances are associated with a machine. Use this screen to assign system components to the machine that you defined when you configured the initial Fusion Middleware Infrastructure domain.

1. In the Machine list box, select the machine (for example, `infra_machine_1`) to which you want to assign the Oracle HTTP Server instance.

2. Assign the Oracle HTTP Server instance to the selected machine in one of the following ways:

- Double-click `ohs_1` in the System Components list box.

- Select the `ohs_1` in the System Components list box and click the right arrow.

  Tip: You can associate an Oracle HTTP Server machine to an existing machine or create a new machine. You typically create additional machines when you are planning to scale out the topology to multiple host computers. For more information, see "Scaling Out a Topology (Machine Scale Out)" in *High Availability Guide*.

Task 10 Reviewing Your Configuration Specifications and Configuring the Domain

The Configuration Summary screen contains the detailed configuration information for the domain you are about to extend. Review the details of each item on the screen and verify that the information is correct.

You can go back to any previous screen if you need to make any changes, either by using the **Back** button or by selecting the screen in the navigation pane.

Domain update will not begin until you click **Update**.

  Tip: More information about the options on this screen can be found in "Configuration Summary" in *Creating Domains Using the Configuration Wizard*.

Task 11 Writing Down Your Domain Home and Administration Server URL

The Configuration Success screen will show the updated Domain home location and URL of the Administration Server.

You must make a note of both items as you will need them to start the servers and access the Administration Server.

Click **Finish** to dismiss the configuration wizard.

  Note: You can rename the Oracle HTTP Server system component name (for example, `ohs_1`), when you re-run the configuration wizard and select **Update an existing domain** in the Configuration Type screen. But when you do this, the original Oracle HTTP Server component name and all customized values, like port designation, gets deleted and a new system component with default values get created. So, avoid renaming the Oracle HTTP Server component, unless you want the default settings.

3.4 Starting the Servers

After configuration is complete, do the following to access the tools with which you can manage your domain:

1. Starting the Node Manager

2. Starting the Administration Server

3. Starting the Oracle HTTP Server Instance

  Note: For more information on additional tools you can use to manage your domain, see "Overview of Oracle Fusion Middleware Administration Tools" in *Administering Oracle Fusion Middleware*.

3.4.1 Starting the Node Manager

To start your per-domain Node Manager, go to the *DOMAIN_HOME*/bin directory.

- **On UNIX**

  Start the Node Manager as shown below, using nohup and nm.out as an example output file:

  ```
  nohup ./startNodeManager.sh > nm.out&
  ```

- **On Windows**

  ```
  startNodeManager.cmd
  ```

  > **Note:** On Windows operating systems, it is recommended that you configure Node Manager to run as a startup service. This allows Node Manager to start up automatically each time the system is restarted.
  >
  > For more information, see "Running Node Manager as a Startup Service" in *Administering Node Manager for Oracle WebLogic Server*.

For more information about additional Node Manager configuration options, see *Administering Node Manager for Oracle WebLogic Server*.

3.4.2 Starting the Administration Server

To start the Administration Server, go to the *DOMAIN_HOME*/bin directory.

- **On UNIX**

  ```
  ./startWebLogic.sh
  ```

- **On Windows**

  ```
  startWebLogic.cmd
  ```

You will be prompted for the login credentials of the Administrator user you provided when you configured the Oracle Fusion Middleware Infrastructure domain. You are prompted for credentials whenever the domain is configured using the **Production Mode** option in the configuration wizard.

> **Tip:** For more information about starting the Administration Server, see "Starting and Stopping Administration Servers" in *Administering Oracle Fusion Middleware*.
>
> In production mode, a boot identity file can be created to bypass the need to provide a user name and password when starting the Administration Server. For more information, see "Creating a Boot Identity File for an Administration Server" in *Administering Server Startup and Shutdown for Oracle WebLogic Server*.

You can verify that the Administration Server is up and running by accessing the Oracle Fusion Middleware Control. The URL is provided on the Configuration Success screen in Task 11.

> **Note:** Make sure that the database hosting your product schemas is up and running and accessible by the Administration Server.

```
http://administration_server_host:administration_server_port/em
```

The default Administration Server port number is `7001`.

Figure 3–1   Oracle Fusion Middleware Control
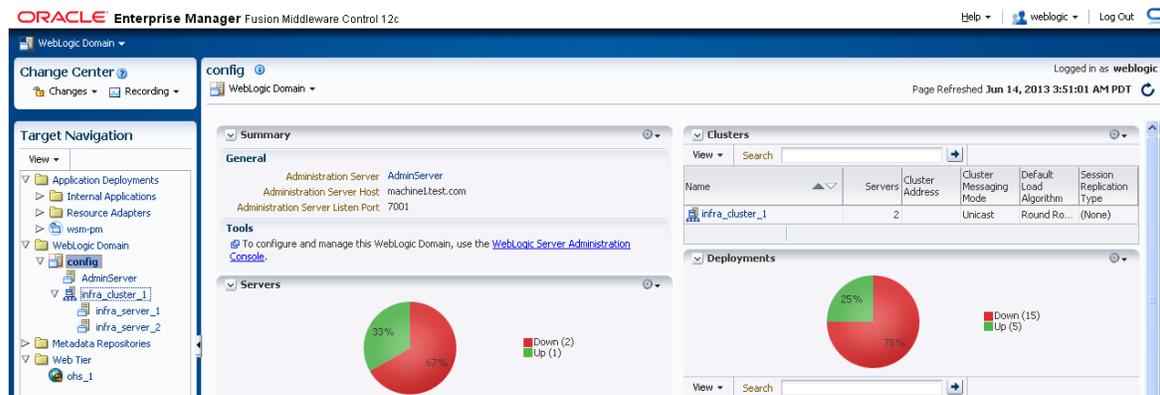
For more information about how to use the Administration Console, see "Getting Started Using Oracle Enterprise Manager Fusion Middleware Control" in *Administering Oracle Fusion Middleware*.

3.4.3 Starting the Oracle HTTP Server Instance

To start the Oracle HTTP Server instance:

1. Log in to Oracle Fusion Middleware Control:

    ```
    http://administration_server_host:administration_server_port/em
    ```

    The Administration Server host and port number were in the URL on the Configuration Success screen (Task 11). The default Administration Server port number is `7001`.

    The login credentials were provided on the Administrator Account screen while installing.

2. Click **WebTier** in the navigation panel on your left-hand side.

3. Select the Oracle HTTP Server instance you want to start (for example, `ohs_1`) and click **Start Up** from the top panel.

    > **Tip:**   More information about managing Oracle Fusion Middleware using Oracle Enterprise Manager Fusion Middleware Control can be found in *Administering Oracle Fusion Middleware with Fusion Middleware Control*.

For other tools and instructions, see "Starting Oracle HTTP Server Instances" in *Administering Oracle HTTP Server*.

3.5 Next Steps

Your Oracle HTTP Server installation and configuration in a WebLogic Server domain is complete. For steps on what to do next, see Section 5.1.

4

Configuring Oracle HTTP Server in a Standalone Domain

This chapter describes how to create and configure your Oracle HTTP Server in a standalone domain by using the Oracle Fusion Middleware Configuration Wizard.

For more information on other methods available for domain creation, see "Additional Tools for Creating, Extending, and Managing WebLogic Domains" in *Creating Domains Using the Configuration Wizard*.

Note: Perform the configuration steps in this section only if you have selected **Standalone HTTP Server (Managed independently of WebLogic server)** in the Installation Type screen. If you have selected **Collocated HTTP Server (Managed through WebLogic server)**, follow the tasks in Chapter 3.

For information about Oracle HTTP Server domain configuration options, see Section 1.2, "Understanding Oracle HTTP Server Domain Configuration Options".

This chapter contains the following sections:

- Starting the Configuration Wizard
- Navigating the Configuration Wizard Screens to Configure the Domain
- Starting the Instances
- Next Steps

4.1 Starting the Configuration Wizard

To begin domain configuration, go to the *ORACLE_HOME*/oracle_common/common/bin directory on UNIX and *ORACLE_HOME*\oracle_common\common\bin on Windows and start the Oracle HTTP Server Configuration Wizard.

- **On UNIX**

    ```
    ./config.sh
    ```

- **On Windows**

    ```
    config.cmd
    ```

4.2 Navigating the Configuration Wizard Screens to Configure the Domain

Follow the instructions in this section to configure the Oracle HTTP Server in a Standalone domain.

> **Note:** When you are creating an Oracle HTTP Server instance for your domain, verify that the ports you are assigning to your components are available. The Configuration Wizard does not perform automatic port allocation.

- Task 1, "Selecting the Domain Type and Domain Home Location"
- Task 2, "Selecting the Configuration Templates"
- Task 3, "Specifying the JDK"
- Task 4, "Selecting the System Components"
- Task 5, "Specifying the OHS Server details"
- Task 6, "Configuring Node Manager"
- Task 7, "Reviewing Your Configuration Specifications and Configuring the Domain"

Task 1 Selecting the Domain Type and Domain Home Location

On the Configuration Type screen, select **Create a new domain**.

In the Domain Location field, specify your Domain home directory.

It is recommended that you create your domain home outside of the Oracle HTTP Server Oracle home so that if you need to patch or upgrade your Oracle HTTP Server Oracle home, your domain data is not overwritten. Your domain home can reside anywhere on your system.

> **Tip:** More information about the Domain home directory can be found in "Choosing a Domain Home" in *Planning an Installation of Oracle Fusion Middleware*.
>
> More information about the other options on this screen can be found in "Configuration Type" in *Creating Domains Using the Configuration Wizard*.

Task 2 Selecting the Configuration Templates

On the Templates screen, select **Oracle HTTP Server (Standalone) - 12.1.3.0 [ohs]**.

Figure 4–1   Select Oracle HTTP Server (Standalone) - 12.1.3.0 [ohs]
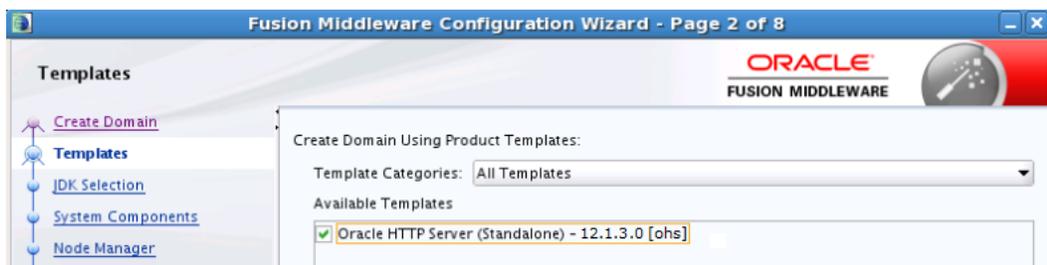
> **Tip:** More information about the options on this screen can be found in "Templates" in *Creating Domains Using the Configuration Wizard*.

Task 3 Specifying the JDK

On the JDK Selection screen, select **Oracle Hotspot JDK**.

Task 4 Selecting the System Components

To add an OHS instance in the System Components screen, click the **Add** icon and specify the system component name in the table. For example, `ohs_1`.

Task 5 Specifying the OHS Server details

All options are auto populated except for the **Listen Address**. Even if defaults are provided for port numbers, ensure that these ports are not used by other services. The listen address is required if you need to limit the network interfaces used by Oracle HTTP Server for incoming connections. Specify the **Listen Address** if required. You can also change the other values as required.

> **Tip:** More information about the options on this screen can be found in "OHS Server" in *Creating Domains Using the Configuration Wizard*.

Task 6 Configuring Node Manager

The Node Manager screen can be used to select the type of node manager you want to configure, along with the Node Manager credentials.

Select **Per Domain** as the Node Manager type and specify the Node Manager credentials.

> **Tip:** More information about the options on this screen can be found in "Node Manager" in *Creating Domains Using the Configuration Wizard*.
>
> More information about the types of Node Manager can be found in "Node Manager Overview" in *Administering Node Manager for Oracle WebLogic Server*.

Task 7 Reviewing Your Configuration Specifications and Configuring the Domain

The Configuration Summary screen contains the detailed configuration information for the domain you are about to create. Review the details of each item on the screen and verify that the information is correct.

You can go back to any previous screen if you need to make any changes, either by using the **Back** button or by selecting the screen in the navigation pane.

Domain creation will not begin until you click **Create**.

> **Tip:** More information about the options on this screen can be found in "Configuration Summary" in *Creating Domains Using the Configuration Wizard*.

4.3 Starting the Instances

After the configuration is complete, do the following to access the tools with which you can manage your domain:

- Starting the Node Manager
- Starting the Oracle HTTP Server Instance

> **Note:**
>
> ■ For more information on additional tools you can use to manage your domain, see "Overview of Oracle Fusion Middleware Administration Tools" in *Administering Oracle Fusion Middleware*.
>
> ■ If you are attempting to create an Oracle HTTP Server instance that uses a TCP port in the reserved range (typically less than 1024), then you must perform some extra configuration to allow the server to bind to privileged ports. For more information, see "Starting Oracle HTTP Server Instances on a Privileged Port (Unix Only)" in *Administering Oracle HTTP Server.*

4.3.1 Starting the Node Manager

To start your per-domain Node Manager, go to the *DOMAIN_HOME*/bin directory. *Domain_Home* is the complete path to the location in which you have configured Oracle HTTP Server.

■ **On UNIX**

Start the Node Manager as shown below, using nohup and nm.out as an example output file:

```
nohup ./startNodeManager.sh > nm.out&
```

■ **On Windows**

```
startNodeManager.cmd
```

> **Note:** On Windows operating systems, it is recommended that you configure Node Manager to run as a startup service. This allows Node Manager to start up automatically each time the system is restarted.
>
> For more information, see "Running Node Manager as a Startup Service" in *Administering Node Manager for Oracle WebLogic Server*.

Do not close the terminal once you start Node Manager. For information about additional Node Manager configuration options, see *Administering Node Manager for Oracle WebLogic Server*.

4.3.2 Starting the Oracle HTTP Server Instance

To start the Oracle HTTP Server instance:

■ **On UNIX**

1. Go to the *Domain_Home*/bin directory. *Domain_Home* is the complete path to the location where you have configured Oracle HTTP Server.

   For example:

   ```
   cd /user_projects/domains/base_domain/bin
   ```

2. Run the following command:

   ```
   ./startComponent.sh system_component_name
   ```

In the preceding command, `system_component_name` is the Oracle HTTP Server system component name you provided while configuring the domain.

For example:

```
./startComponent.sh ohs_1
```

- **On Windows**

  1. Go to the `Domain_Home\bin` directory. `Domain_Home` is the complete path to the location where you have configured Oracle HTTP Server.

     For example:

     ```
     cd \user_projects\domains\base_domain\bin
     ```

  2. Run the following command:

     ```
     startComponent.cmd system_component_name
     ```

     In the preceding command, `system_component_name` is the Oracle HTTP Server system component name you provided while configuring the domain.

     For example:

     ```
     startComponent.cmd ohs_1
     ```

For more information, see "Starting Oracle HTTP Server Instances from the Command Line" in *Administering Oracle HTTP Server*.

4.4 Next Steps

Your Oracle HTTP Server installation and configuration in a standalone domain is complete. For steps on what to do next, see Section 5.2.

5

Next Steps After Configuring an Oracle HTTP Server Domain

This chapter describes common tasks you might want to perform on a newly created or updated Oracle HTTP Server domain.

This chapter contains the following sections:

- Next Steps for Oracle HTTP Server in a WebLogic Server Domain
- Next Steps for Oracle HTTP Server in a Standalone Domain
- Preparing Your Environment For High Availability

5.1 Next Steps for Oracle HTTP Server in a WebLogic Server Domain

Table 5–1 lists some common administration tasks you will likely want to perform on your newly created or updated domain.

> **Note:** A WebLogic Server domain can be scaled out to multiple physical machines and be centrally managed by the administration server. For more information, see the section "Oracle HTTP Server Release 12c (12.1.3) Topologies" in *Administering Oracle HTTP Server*.

Table 5–1   Basic Administration Tasks for Oracle HTTP Server in a WebLogic Server Domain

Task	Description	More Information
Getting familiar with Fusion Middleware administration tools	Get familiar with the various tools available, which you can use to manage your environment.	Section A.1, "Understanding the Oracle HTTP Server Directory Structure in a WebLogic Server Domain"
		Section A.2, "Understanding the Oracle HTTP Server Directory Structure in a Standalone Domain"
		"Overview of Oracle Fusion Middleware Administration Tools" in *Administering Oracle Fusion Middleware*.
Starting and stopping products and servers	Learn how to start and stop Oracle Fusion Middleware, including the Administration Server, Managed Servers, and components.	"Starting and Stopping Oracle Fusion Middleware" in *Administering Oracle Fusion Middleware*.
Configuring Secure Sockets Layer (SSL)	Learn how to set up secure communications among between Oracle Fusion Middleware components using SSL.	"Configuring SSL in Oracle Fusion Middleware" in *Administering Oracle Fusion Middleware*.
Deploying Applications	Learn how to deploy your applications to Oracle Fusion Middleware.	"Deploying Applications" part in *Administering Oracle Fusion Middleware*.
Monitoring Oracle Fusion Middleware	Learn how to keep track of the status of Oracle Fusion Middleware components.	"Monitoring Oracle Fusion Middleware" in *Administering Oracle Fusion Middleware*.
Understanding Backup and Recovery Procedures	Learn the recommended backup and recovery procedures for Oracle Fusion Middleware.	"Introducing Backup and Recovery" in *Administering Oracle Fusion Middleware*.
Tuning and configuring Coherence for your topology.	The standard installation topology includes a Coherence cluster that contains storage-enabled Managed Coherence Servers. This configuration is a good starting point for using Coherence, but depending upon your specific requirements, consider tuning and reconfiguring Coherence to improve performance in a production environment.	For information about Coherence clusters, see "Configuring and Managing Coherence Clusters" in *Administering Clusters for Oracle WebLogic Server*.
		For information about tuning Coherence, see *Administering Oracle Coherence*.
		For information about storing HTTP session data in Coherence, see "Using Coherence*Web with WebLogic Server" in *Administering HTTP Session Management with Oracle Coherence*Web*.
		For more information about creating and deploying Coherence applications, see *Developing Oracle Coherence Applications for Oracle WebLogic Server*.

Table 5–1   (Cont.) Basic Administration Tasks for Oracle HTTP Server in a WebLogic Server Domain

Task	Description	More Information
Wiring Oracle HTTP Server to the Administration Server.	Learn how to connect Oracle HTTP Server to the Administration Server so that you can access Fusion Middleware Control Console and to the Administration Console through the Oracle HTTP Server.	
Routing Applications Through Oracle HTTP Server to Oracle WebLogic Server.	Perform these steps to connect Oracle HTTP Server so that requests are routed through Oracle HTTP Server to Oracle WebLogic Server	
Wiring Oracle HTTP Server with Oracle Fusion Middleware Infrastructure	Learn how to configure WebLogic proxy plug-in to proxy requests from Oracle HTTP Server to Oracle WebLogic Server.	"Wiring Oracle HTTP Server to the Administration Server" in *Administering Oracle Fusion Middleware*. "Routing Applications Through Oracle HTTP Server" to Oracle WebLogic Server" in *Administering Oracle Fusion Middleware*. "Configuring the WebLogic Proxy Plug-In for Oracle HTTP Server" in *Using Oracle WebLogic Server Proxy Plug-Ins 12.1.3*.

5.2 Next Steps for Oracle HTTP Server in a Standalone Domain

Table 5–2 lists some common administration tasks you will likely want to perform on your newly created or updated domain.

Table 5–2   Basic Administration Tasks for Oracle HTTP Server in a Standalone Domain

Task	Description	More Information
Getting familiar with Oracle HTTP Server management tools	Get familiar with the various tools available, which you can use to manage your environment.	"Understanding Oracle HTTP Server Management Tools" in *Administering Oracle HTTP Server*.
Starting and stopping Oracle HTTP Server instances	Learn how to start and stop Oracle Fusion Middleware, including the Administration Server, Managed Servers, and components.	"Performing Basic OHS Tasks" in *Administering Oracle HTTP Server*.
Routing requests to managed servers in a WebLogic Server domain	Learn how to configure WebLogic proxy plug-in to proxy requests from Oracle HTTP Server to Oracle WebLogic Server.	"Configuring the WebLogic Proxy Plug-In Manually" in *Using Oracle WebLogic Server Proxy Plug-Ins 12.1.3*.

5.3 Preparing Your Environment For High Availability

Table 5–3 provides a list of tasks to perform if you want to scale out your standard installation environment for high availability.

Table 5–3   Tasks Required to Prepare Your Environment for High Availability

Task	Description	More Information
Configuring Node Manager	Node Manager enables you to start, shut down, and restart the Administration Server and Managed Server instances from a remote location, making this an essential utility for any high availability environment.	*Administering Node Manager for Oracle WebLogic Server*.
Scaling out to multiple host computers	To enable high availability, it is important to provide failover capabilities to another host computer. That way, if one computer goes down, your environment can continue to serve the consumers of your deployed applications.	"Scaling Out a Topology (Machine Scaleout)" in *High Availability Guide*.
Configuring high availability for your Web Tier components.	If you have added a Web tier front-end, then you must configure the Web Tier for high availability, as well as the WebLogic Server software.	"Configuring High Availability for Web Tier Components" in *High Availability Guide*.
Setting up a front-end load balancer	A load balancer can be used to distribute requests across servers more evenly.	"Server Load Balancing in a High Availability Environment" and "Configure Load Balancer" in *High Availability Guide*. "Load Balancer" in *High Availability Guide*.

6

Deinstalling Oracle HTTP Server

This chapter describes how to deinstall or reinstall Oracle HTTP Server.

You should always use the instructions provided in this chapter for removing the software. If you try to remove the software manually, you may experience problems when you try to reinstall the software again at a later time. Following the procedures in this chapter will ensure that the software is properly removed.

This chapter includes the following sections:

- Understanding Product Deinstallation
- Stopping Oracle Fusion Middleware
- Deinstalling the Software
- Removing the Oracle Home Directory Manually
- Removing Your Domain and Application Data
- Reinstalling the Software

6.1 Understanding Product Deinstallation

The Oracle Fusion Middleware deinstaller removes the software from the Oracle home directory from which it is started. Table 6–1 summarizes the procedure and provides links to supporting documentation.

Table 6–1 Roadmap for Deinstalling Oracle HTTP Server

Task	Description	Documentation
Stop Oracle Fusion Middleware.	All servers and processes in your domain should be stopped before running the deinstaller.	See Section 6.2.
Remove the software.	Run the product deinstaller to remove Oracle HTTP Server.	See Section 6.3.
Remove the Oracle home directory.	The deinstaller does not remove all files and folders from the Oracle home directory. After the deinstaller is finished, you must manually remove the Oracle home to complete your product removal.	See Section 6.4.
Remove your domain and application data.	The deinstaller does not remove data contained in your Domain home or Application home directories, even if they are located inside the Oracle home. You must remove these directories manually.	See Section 6.5.

6.2 Stopping Oracle Fusion Middleware

Before running the deinstaller, you should stop all servers and processes associated with the Oracle home you are going to remove.

For more information, see "Stopping an Oracle Fusion Middleware Environment" in *Administering Oracle Fusion Middleware*.

6.3 Deinstalling the Software

Follow the instructions in this section to start the product deinstaller and remove the software.

- Section 6.3.1, "Starting the Deinstallation Program"

- Section 6.3.2, "Navigating the Deinstallation Screens"

If you want to perform a silent (command-line) deinstallation, see "Running the Oracle Universal Installer for Silent Deinstallation" in *Installing Software with the Oracle Universal Installer*.

6.3.1 Starting the Deinstallation Program

To start the deinstaller:

- **On UNIX**

    Go to the *ORACLE_HOME*/oui/bin directory and enter the following command:

    `./deinstall.sh`

- **On Windows**

    1. Do one of the following:

        - Use a file manager window to go to the *ORACLE_HOME*\oui\bin directory and double click on `deinstall.cmd`.

        - From the command line, go to the *ORACLE_HOME*\oui\bin and enter the following command:

            `deinstall.cmd`

        - From the **Start** menu, select **All Programs**, then select **Oracle**, then select **OracleHome**, and then select **Uninstall Oracle Middleware**.

    2. From the drop-down list, select **Oracle HTTP Server 12.1.3.0.0** and click **Deinstall**. The deinstallation program displays the screens listed in Table 6–2.

        Note that if you select **WebLogic Server for FMW 12.1.3.0.0** from the drop-down list, then you will get the following error:

Figure 6–1   Error message

Click **Cancel** and reconfirm by clicking **Yes** in the dialog box. Start the deinstaller again and select **Oracle HTTP Server 12.1.3.0.0** from the distribution list.

> **Note:** You can deinstall Oracle Fusion Middleware Infrastructure once the Oracle HTTP Server software is deinstalled, by running the deinstallation wizard again. You will not run into the Distribution to Deinstall screen if no other software is dependent on Oracle Fusion Middleware Infrastructure.

6.3.2 Navigating the Deinstallation Screens

The deinstallation program displays a series of screens, in the order listed in Table 6–2.

If you need additional help with any of the deinstallation screens, click the screen name.

Table 6–2   Deinstall Screens and Descriptions

Screen	Description
Welcome	This screen introduces you to the product deinstaller.
Deinstallation Summary	This screen shows the Oracle home directory and its contents that will be deinstalled. Verify that this is the correct directory.
	Click **Deinstall** to begin removing the software.
Deinstallation Progress	This screen shows the progress of the deinstallation.
Deinstallation Complete	This screen appears when the deinstallation is complete. Review the information on this screen, then click **Finish** to dismiss the deinstaller.

6.4 Removing the Oracle Home Directory Manually

After the deinstaller is finished, you must manually remove your Oracle home directory and any existing sub-directories that were not removed by the deinstaller. For example, if your Oracle home directory was /home/Oracle/Products/Oracle_Home on a UNIX operating system:

```
> cd /home/Oracle/Products
> rm -rf Oracle_Home
```

On a Windows operating system, if your Oracle home directory was C:\Oracle\Products\Oracle_Home, use a file manager window and navigate to the C:\Oracle\Products directory, then right-click on the Oracle_Home folder and select **Delete**.

6.5 Removing Your Domain and Application Data

To remove your domain and application data:

1. Manually remove your Domain home directory.

   For example, if your Domain home directory was /home/Oracle/config/domains/ohs_domain on a UNIX operating system:

   ```
   > cd /home/Oracle/config/domains
   > rm -rf ohs_domain
   ```

   On a Windows operating system, if your Domain home directory was C:\Oracle\Config\domains\ohs_domain, use a file manager window and navigate to the C:\Oracle\Config\domains directory, then right-click on the ohs_domain folder and select **Delete**.

2. Manually remove your Application home directory.

   For example, if your Application home directory was
   `/home/Oracle/config/applications/ohs_domain` on a UNIX operating system:

   ```
   > cd /home/Oracle/config/applications
   > rm -rf ohs_domain
   ```

   On a Windows operating system, if your Application home directory was
   `C:\Oracle\Config\applications\ohs_domain`, use a file manager window and
   navigate to the `C:\Oracle\Config\applications` directory, then right-click on the
   `ohs_domain` folder and select **Delete**.

3. Backup the `domain_registry.xml` file in your Oracle home, then edit the file and
   remove the line associated with the domain you are removing. For example, to
   remove the `ohs_domain`, find the following line and remove it:

   ```
   <domain location="/home/Oracle/config/domains/ohs_domain"/>
   ```

   Save and exit the file when you are finished.

6.6 Reinstalling the Software

You can reinstall your software into the same Oracle home as a previous installation
only if you have deinstalled the software according to the instructions in this chapter.
When you reinstall, you can then specify the same Oracle home as your previous
installation.

Consider the following cases:

- Installing in an existing Oracle home that contains the same feature sets.

  The installer will warn you that the Oracle home you specified during the
  installation already contains the same software you are trying to install. Your
  options are to:

  1. Select a different installation type. In this case, only the feature sets that do not
     already exist in the Oracle home directory will be installed.

  2. Select a different Oracle home directory.

- Installing in an existing, non-empty Oracle home.

  For example, suppose that you have chosen to create your Domain home or
  Application home somewhere inside your existing Oracle home. This data is not
  removed during the deinstallation process, so if you attempt to reinstall into the
  same Oracle home, the installer will not allow it. Your options are to:

  1. Deinstall your software from the Oracle home as described in this chapter, and
     then remove the Oracle home directory. After this is complete, you can
     reinstall and reuse the same Oracle home location, using the instructions in
     Chapter 2. Any domain or application data that was in the Oracle home will
     have to be re-created.

  2. Select a different Oracle home directory.

A

Understanding the Oracle HTTP Server Directory Structures

This appendix describes the directory structure that will be created on your system at the end of your Oracle HTTP Server installation and domain configuration.

This appendix contains the following sections:

- Understanding the Oracle HTTP Server Directory Structure in a WebLogic Server Domain
- Understanding the Oracle HTTP Server Directory Structure in a Standalone Domain

A.1 Understanding the Oracle HTTP Server Directory Structure in a WebLogic Server Domain

Figure A–1 shows an example of the basic directory structure after installation and domain configuration of Oracle HTTP Server, in a WebLogic Server domain, is complete. Note that figure shows only important directories. There are other directories and files created too.

This example shows the recommended directory structure, as described in "Understanding the Recommended Directory Structure" in *Planning an Installation of Oracle Fusion Middleware*. Your directory structure may differ slightly based on where you choose to create these directories on your system.

Figure A–1 Sample Oracle HTTP Server Directory Structure in a WebLogic Server Domain

Table A–1 describes these directories in more details.

Table A–1 Directory Description for Oracle HTTP Server in a WebLogic Server Domain

Directory or file	Description
coherence	This directory contains the Coherence product files.
install	This directory contains install-related files and scripts.
inventory	This directory contains information about the components, feature sets, and patches installed in this Oracle home directory.
ohs	This directory contains the Oracle HTTP Server binaries.
OPatch	This directory contains OPatch and supported files. OPatch is a tool used to patch Oracle Fusion Middleware software.
em	This is the Fusion Middleware Control Product folder.
oracle_common	This directory contains the binary and library files required for Oracle Enterprise Manager Fusion Middleware Control, Java Required Files (JRF), and Oracle HTTP Server.
orainst.loc	This Linux-only text file contains the location of your Oracle inventory, and also the group ID of the user creating the inventory. This does not exist on a Windows installation.
oui	This directory contains files used by the Oracle Universal Installer, including the deinstallation program. If you need to run the Oracle Universal Installer again after the product is installed, you should do so from this directory.

Table A–1   (Cont.) Directory Description for Oracle HTTP Server in a WebLogic Server

Directory or file	Description
webgate	This directory contains the Oracle HTTP Server Webgate binaries for Oracle Access Manager (OAM).
wlserver	This directory contains the WebLogic Server product files.
	This directory is also referred to as the WebLogic home directory, or *WL_HOME*.
logs	This directory contains the log files generated during domain creation.
domain-registry.xml	This registry file contains the location of all domains currently registered with this WebLogic Server installation. Whenever you add a new domain, it is registered in this file.

A.2 Understanding the Oracle HTTP Server Directory Structure in a Standalone Domain

Figure A–2 shows an example of the basic directory structure after installation and domain configuration of Oracle HTTP Server, in a standalone domain, is complete. Note that figure shows only important directories. There are other directories and files created too.

This example shows the recommended directory structure, as described in "Understanding the Recommended Directory Structure" in *Planning an Installation of Oracle Fusion Middleware*. Your directory structure may differ slightly based on where you choose to create these directories on your system.

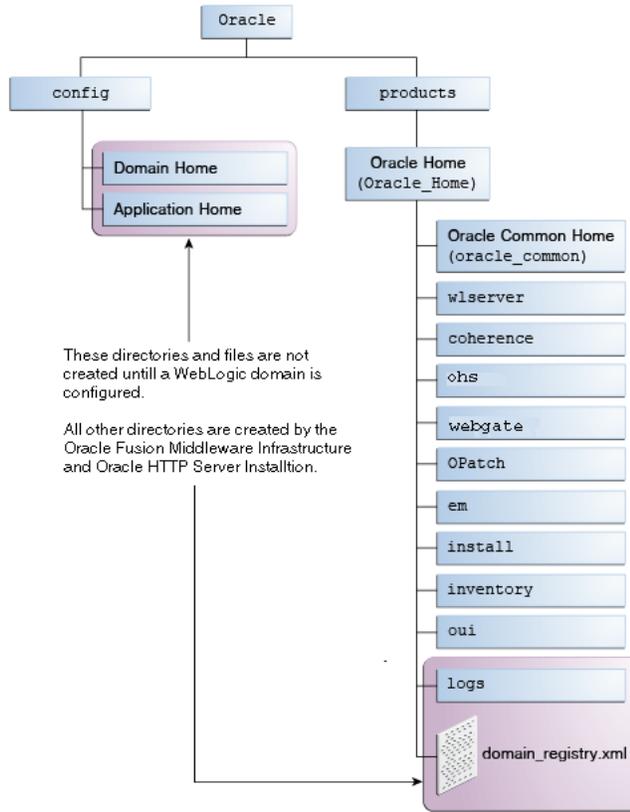*Figure A–2   Sample Oracle HTTP Server Directory Structure in a Standalone Domain*
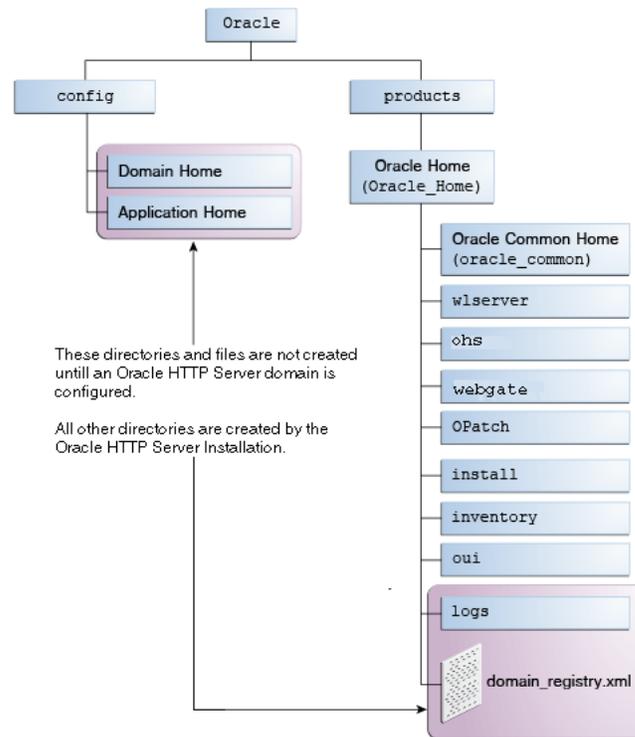
Table A–2 describes these directories in more details.

Table A–2 Directory Description for Oracle HTTP Server in a Standalone Domain

Directory or file	Description
install	This directory contains install-related files and scripts.
inventory	This directory contains information about the components, feature sets, and patches installed in this Oracle home directory.
ohs	This directory contains the Oracle HTTP Server binaries.
OPatch	This directory contains OPatch and supported files. OPatch is a tool used to patch Oracle Fusion Middleware software.
em	This is the Fusion Middleware Control Product folder.
oracle_common	This directory contains the binary and library files required for Oracle HTTP Server and WebGates.
orainst.loc	This Linux-only text file contains the location of your Oracle inventory, and also the group ID of the user creating the inventory. This does not exist on a Windows installation.
webgate	This directory contains the Oracle HTTP Server Webgate binaries for Oracle Access Manager (OAM).
oui	This directory contains files used by the Oracle Universal Installer, including the deinstallation program. If you need to run the Oracle Universal Installer again after the product is installed, you should do so from this directory.
wlserver	This directory contains a small portion of webLogic Server binaries that are used for management functionality. This directory is also referred to as the WebLogic home directory, or *WL_HOME*.
logs	This directory contains the log files generated during domain creation.
domain-registry.xml	This registry file contains the location of all domains currently registered with this WebLogic Server installation. Whenever you add a new domain, it is registered in this file.

B

Configuring Oracle HTTP Server WebGate for Oracle Access Manager

This appendix describes the steps for configuring Oracle HTTP Server 12*c* WebGate for Oracle Access Manager.

A WebGate is a web-server plug-in for Oracle Access Manager (OAM) that intercepts HTTP requests and forwards them to the Access Server for authentication and authorization. WebGate gets installed when you install Oracle HTTP Server, so you do not need a separate installer.

This appendix contains the following sections:

- Prerequisites for Configuring Oracle HTTP Server 12c Webgate
- Configuring Oracle HTTP Server 12c WebGate
- Verifying the Configuration of Oracle HTTP Server 12c WebGate
- Getting Started with a New Oracle HTTP Server 12c WebGate

B.1 Prerequisites for Configuring Oracle HTTP Server 12*c* Webgate

Before you can configure Oracle HTTP Server 12*c* WebGate, you must install one of the following versions of Oracle Access Manager. Oracle Fusion Middleware Installation Guide for Oracle Identity and Access Management 11g Release 2 (11.1.2.2) is the version that is recommended:

> **Note:** It is highly recommended that Oracle Access Manager is installed in its own environment and not on the same machine as WebLogic Server. Oracle Access Manager and WebLogic Server can be installed on the same machine if they are both 11g versions. For example, Oracle Access Manager 11.1.2.2 and WebLogic Server 10.3.6.

- *Oracle Fusion Middleware Installation Guide for Oracle Identity and Access Management 11g Release 1 (11.1.1.7.0)*
- *Oracle Fusion Middleware Installation Guide for Oracle Identity and Access Management 11g Release 2 (11.1.2.1)*
- *Oracle Fusion Middleware Installation Guide for Oracle Identity and Access Management 11g Release 2 (11.1.2.2)*

B.2 Configuring Oracle HTTP Server 12*c* WebGate

You must complete the following steps after installing Oracle HTTP Server to configure Oracle HTTP Server 12*c* WebGate for Oracle Access Manager:

- **On UNIX**

  1. Go to the `Oracle_Home`/webgate/ohs/tools/deployWebGate directory by running the following command:

     ```
     cd Oracle_Home/webgate/ohs/tools/deployWebGate
     ```

  2. Run the following command to copy the required bits of agent from the `Oracle_Home` directory to the `OHS_Master_Config_Directory` location:

     ```
     ./deployWebGateInstance.sh -w OHS_Master_Config_Directory -oh
     Oracle_Home
     ```

     In this command:

     - `Oracle_Home` is the directory in which you have installed Oracle HTTP Server WebGate.

       Example:

       ```
       /home/oracle
       ```

     - `OHS_Master_Config_Directory` is the location of the directory where the main Oracle HTTP Server configuration files are kept.

       Example:

       ```
       Oracle_Home/user_projects/domains/base_
       domain/config/fmwconfig/components/OHS/ohs1
       ```

  3. Run the following command to ensure that the `LD_LIBRARY_PATH` variable contains `Oracle_Home`/lib:

     ```
     export LD_LIBRARY_PATH=$LD_LIBRARY_PATH:Oracle_Home/lib
     ```

  4. Go to the following directory:

     ```
     Oracle_Home/webgate/ohs/tools/setup/InstallTools/
     ```

  5. On the command line, run the following command to copy the `apache_webgate.template` file from the `Oracle_Home` directory to the main Oracle HTTP Server configuration directory (re-named to `webgate.conf`) and update the `httpd.conf` file to add one line to include the name of `webgate.conf`:

     ```
     ./EditHttpConf -w OHS_Master_Config_Directory [-oh Oracle_Home] [-o
     output_file]
     ```

     Note: The `-oh Oracle_Home` and `-o output_file` parameters are optional.

     In this command:

     - `Oracle_Home` is the directory in which you have installed Oracle HTTP Server WebGate for Oracle Access Manager.

       Example:

       ```
       /home/oracle
       ```

- OHS_Master_Config_Directory is the location of the directory where the main Oracle HTTP Server configuration files are kept.

  Example:

  Oracle_Home/user_projects/domains/base_
  domain/config/fmwconfig/components/OHS/ohs1

- output_file is the name of the WebGate configuration file generated by the tool. A default webgate.conf file is generated if you do not specify this option.

  Example:

  webgate.conf

- **On Windows**

  1. Go to the *Oracle_Home*\webgate\ohs\tools\deployWebGate directory by running the following command:

     cd *Oracle_Home*\webgate\ohs\tools\deployWebGate

  2. Run the following command to copy the required bits of agent from the *Oracle_Home* directory to the *OHS_Master_Config_Directory* location:

     deployWebGateInstance.bat -w *OHS_Master_Config_Directory* -oh *Oracle_
     Home*

     In this command:

     - Oracle_Home is the directory in which you have installed Oracle HTTP Server WebGate.

       Example:

       \home\oracle

     - OHS_Master_Config_Directory is the location of the directory where the main Oracle HTTP Server configuration files are kept.

       Example:

       Oracle_Home\user_projects\domains\base_
       domain\config\fmwconfig\components\OHS\ohs1

  3. Run the following command to set the PATH environment variable:

     set %PATH%=%PATH%;*Oracle_Home*\webgate\ohs\lib;*Oracle_Home*\bin

  4. Go to the following directory:

     Oracle_Home\webgate\ohs\tools\EditHttpConf

  5. On the command line, run the following command to copy the apache_
     webgate.template file from the *Oracle_Home* directory to the main Oracle HTTP Server configuration directory (re-named to webgate.conf) and update the httpd.conf file to add one line to include the name of webgate.conf:

     EditHttpConf -w *OHS_Master_Config_Directory* [-oh *Oracle_Home*] [-o
     output_file]

     Note: The -oh *Oracle_Home* and -o *output_file* parameters are optional.

In this command:

- ‒ `Oracle_Home` is the directory in which you have installed Oracle HTTP Server WebGate for Oracle Access Manager.

  Example:

  `\home\oracle`

- ‒ `OHS_Master_Config_Directory` is the location of the directory where the main Oracle HTTP Server configuration files are kept.

  Example:

  `Oracle_Home\user_projects\domains\base_`
  `domain\config\fmwconfig\components\OHS\ohs1`

- ‒ `output_file` is the name of the WebGate configuration file generated by the tool. A default `webgate.conf` file is generated if you do not specify this option.

  Example:

  `webgate.conf`

B.3 Verifying the Configuration of Oracle HTTP Server 12*c* WebGate

After installing Oracle HTTP Server 12*c* WebGate for Oracle Access Manager and completing the configuration steps, you can examine the *installDATE-TIME_STAMP.out* log file to verify the installation. The default location of the log are as follows:

- **On UNIX**

  Oracle_Home/oraInst.loc

- **On Windows**

  `C:\Program Files\Oracle\Inventory\logs`

B.4 Getting Started with a New Oracle HTTP Server 12*c* WebGate

Before you can use the new Oracle HTTP Server 12*c* WebGate agent for Oracle Access Manager, you must complete the following tasks:

1. Registering the New Oracle HTTP Server 12c WebGate

2. Copying Generated Files and Artifacts to the Oracle HTTP Server WebGate Instance Location

3. Restarting the Oracle HTTP Server Instance

B.4.1 Registering the New Oracle HTTP Server 12*c* WebGate

You can register the new WebGate agent with Oracle Access Manager by using the Oracle Access Manager Administration console. For more information, see "Registering an OAM Agent Using the Console" in the *Oracle Fusion Middleware Administrator's Guide for Oracle Access Management*.

Alternatively, you can use the RREG command-line tool to register a new WebGate agent. You can use the tool to run in two modes: **In-Band** and **Out-Of-Band**.

This section contains the following topics:

- Setting Up the RREG Tool
- Updating the OAM11gRequest.xml File
- Using the In-Band Mode
- Using the Out-Of-Band Mode
- Files and Artifacts Generated by RREG

B.4.1.1 Setting Up the RREG Tool

To set up the RREG tool, complete the following steps:

- **On UNIX**

    1. After installing and configuring Oracle Access Manager, go to the following directory:

        Oracle_IDM2/oam/server/rreg/client

    2. Untar the `RREG.tar.gz` file.

        Example:

        gunzip RREG.tar.gz

        tar -xvf RREG.tar

    The tool for registering the agent is located at:

    RREG_Home/bin/oamreg.sh

    > **Note:**   *RREG_Home* is the directory in which you extracted the contents of `RREG.tar.gz/rreg.`

- **On Windows**

    1. After installing and configuring Oracle Access Manager, go to the following location:

        Oracle_IDM2\oam\server\rreg\client

    2. Extract the contents of the `RREG.tar.zip` file to a destination of your choice.

    The tool for registering the agent is located at:

    RREG_Home\bin\oamreg.bat

    > **Note:**   *RREG_Home* is the directory in which you extracted the contents of `RREG.tar.gz/rreg.`

Set the following environment variables in the `oamreg.sh` script, on UNIX, and `oamreg.bat` script, on Windows:

- `OAM_REG_HOME`

    Set this variable to the absolute path to the directory in which you extracted the contents of `RREG.tar/rreg.`

- `JDK_HOME`

    Set this variable to the absolute path to the directory in which Java or JDK is installed on your machine.

B.4.1.2 Updating the OAM11gRequest.xml File

You must update the agent parameters, such as `agentName`, in the `OAM11GRequest.xml` file in the `RREG_Home`\input directory on Windows. On UNIX, the file is in the `RREG_Home`/input directory.

> **Note:** The `OAM11GRequest.xml` file or the short version `OAM11GRequest_short.xml` is used as a template. You can copy this template file and use it.

Modify the following required parameters in the `OAM11GRequest.xml` file or in the `OAM11GRequest_short.xml` file:

- `serverAddress`

  Specify the host and the port of the OAM Administration Server.

- `agentName`

  Specify any custom name for the agent.

- `agentBaseUrl`

  Specify the host and the port of the machine on which Oracle HTTP Server 12c WebGate is installed.

- `preferredHost`

  Specify the host and the port of the machine on which Oracle HTTP Server 12*c* WebGate is installed.

- `security`

  Specify the security mode, such as `open`, based on the WebGate installed.

- `primaryServerList`

  Specify the host and the port of Managed Server for the Oracle Access Manager proxy, under a *Server* container element.

After modifying the file, save and close it.

B.4.1.3 Using the In-Band Mode

If you run the RREG tool once after updating the WebGate parameters in the `OAM11GRequest.xml` file, the files and artifacts required by WebGate are generated in the following directory:

On UNIX:

RREG_Home/output/*agent_name*

On Windows:

RREG_Home\output*agent_name*

> **Note:** You can run RREG either on a client machine or on the server. If you are running it on the server, you must manually copy the artifacts back to the client.

Complete the following steps:

1. Open the `OAM11GRequest.xml` file, which is in *RREG_Home*/input/ on UNIX and *RREG_Home*\input on Windows. *RREG_Home* is the directory on which you extracted the contents of `RREG.tar.gz/rreg`.

   Edit the XML file and specify parameters for the new Oracle HTTP Server WebGate for Oracle Access Manager.

2. Run the following command:

   On UNIX:

   `./RREG_Home/bin/oamreg.sh inband input/OAM11GRequest.xml`

   On Windows:

   `RREG_Home\bin\oamreg.bat inband input\OAM11GRequest.xml`

B.4.1.4 Using the Out-Of-Band Mode

If you are an end user with no access to the server, you can e-mail your updated `OAM11GRequest.xml` file to the system administrator, who can run RREG in the out-of-band mode. You can collect the generated *AgentID*_Response.xml file from the system administrator and run RREG on this file to obtain the WebGate files and artifacts you require.

After you receive the generated *AgentID*_Response.xml file from the administrator, you must manually copy the file to the `input` directory on your machine.

- **On UNIX**

  Complete the following steps:

  1. If you are an end user with no access to the server, open the `OAM11GRequest.xml` file, which is in *RREG_Home*/input/.

     RREG_Home is the directory on which you extracted the contents of `RREG.tar.gz/rreg`. Edit this XML file and specify parameters for the new Oracle HTTP Server WebGate for Oracle Access Manager. Send the updated file to your system administrator.

  2. If you are an administrator, copy the updated `OAM11GRequest.xml` file, which is in *RREG_Home*/input/ directory.

     This is the file that you received from the end user. Go to your (administrator's) *RREG_Home* directory and run the following command:

     `./RREG_Home/bin/oamreg.sh outofband input/OAM11GRequest.xml`

     An *Agent_ID*_Response.xml file is generated in the `output` directory on the administrator's machine, in the *RREG_Home*/output/ directory. Send this file to the end user who sent you the updated `OAM11GRequest.xml` file.

  3. If you are an end user, copy the generated *Agent_ID*_Response.xml file, which is in *RREG_Home*/input/.

     This is the file that you received from the administrator. Go to your (client's) RREG home directory and run the following command on the command line:

     `./RREG_Home/bin/oamreg.sh outofband input/Agent_ID_Response.xml`

> **Note:** If you register the WebGate agent by using the Oracle Access Manager Administration Console, as described in "Registering an OAM Agent Using the Console" in the *Oracle Fusion Middleware Administrator's Guide for Oracle Access Manager*, you must manually copy the files and artifacts generated after the registration from the server (the machine on which the Oracle Access Manager Administration Console is running) to the client machine. The files and artifacts are generated in the `Oracle_Home`/user_projects/domains/*name_of_the_WebLogic_domain_for_OAM*/output/*Agent_ID* directory.

- **On Windows**

  Complete the following steps:

  1. If you are an end user with no access to the server, open the `OAM11GRequest.xml` file, which is in *RREG_Home*\input\ directory.

     RREG_Home is the directory in which you extracted the contents of `RREG.tar.gz/rreg`. Edit this XML file, specify parameters for the new Oracle HTTP Server WebGate for Oracle Access Manager, and send the updated file to your system administrator.

  2. If you are an administrator, copy the updated `OAM11GRequest.xml` file, which is in *RREG_Home*\input\. This is the file you received from the end user. Go to your (administrator's) *RREG_Home* directory and run the following command:

     RREG_Home\bin\oamreg.bat outofband input\OAM11GRequest.xml

     An `Agent_ID_Response.xml` file is generated on the administrator's machine in the *RREG_Home*\output\ directory. Send this file to the end user who sent you the updated `OAM11GRequest.xml` file.

  3. If you are an end user, copy the generated `Agent_ID_Response.xml` file, which is in *RREG_Home*\input\. This is the file you received from the administrator. Go to your (client's) RREG home directory and run the following command:

     RREG_Home\bin\oamreg.bat outofband input\`Agent_ID_Response.xml`

     > **Note:** If you register the WebGate agent by using the Oracle Access Manager Administration Console, as described in "Registering an OAM Agent Using the Console" in the *Oracle Fusion Middleware Administrator's Guide for Oracle Access Manager*, you must manually copy the files and artifacts generated after the registration from the server (the machine on which the Oracle Access Manager Administration Console is running) to the client machine. The files and artifacts are generated in the `Oracle_Home`/user_projects/domains/*name_of_the_WebLogic_domain_for_OAM*/output/*Agent_ID* directory.

B.4.1.5 Files and Artifacts Generated by RREG

Regardless of the method or mode you use to register the new WebGate agent, the following files and artifacts are generated in the *RREG_Home*/output/*Agent_ID* directory:

- `cwallet.sso`

- `ObAccessClient.xml`

- In the **SIMPLE** mode, RREG generates:

  - `password.xml`, which contains the obfuscated global passphrase to encrypt the private key used in SSL. This passphrase can be the same as the passphrase used on the server.

  - `aaa_key.pem`

  - `aaa_cert.pem`

- In the **CERT** mode, RREG generates `password.xml`, which contains the obfuscated global passphrase to encrypt the private key used in SSL. This passphrase can be different than the passphrase used on the server.

> **Note:** You can use these files generated by RREG to generate a certificate request and get it signed by a third-party Certification Authority. To install an existing certificate, you must use the existing `aaa_cert.pem` and `aaa_chain.pem` files along with `password.xml` and `aaa_key.pem`.

B.4.2 Copying Generated Files and Artifacts to the Oracle HTTP Server WebGate Instance Location

After RREG generates these files and artifacts, you must manually copy them, based on the security mode you are using, from the *RREG_Home*/output/*Agent_ID* directory to the *OHS_Master_Config_Directory* directory.

Do the following according to the security mode you are using:

- In **OPEN** mode, copy the following files from the *RREG_Home*/output/*Agent_ID* directory to the *OHS_Master_Config_Directory*/webgate/config directory:

  - `ObAccessClient.xml`

  - `cwallet.sso`

- In **SIMPLE** mode, copy the following files from the *RREG_Home*/output/*Agent_ID* directory to the *OHS_Master_Config_Directory*/webgate/config directory:

  - `ObAccessClient.xml`

  - `cwallet.sso`

  - `password.xml`

  In addition, copy the following files from the *RREG_Home*/output/*Agent_ID* directory to the *OHS_Master_Config_Directory*/webgate/config/simple directory:

  - `aaa_key.pem`

  - `aaa_cert.pem`

- In **CERT** mode, copy the following files from the *RREG_Home*/output/*Agent_ID* directory to the *OHS_Master_Config_Directory*/webgate/config directory:

  - `ObAccessClient.xml`

  - `cwallet.sso`

  - `password.xml`

Generating a New Certificate

You can generate a new certificate as follows:

1. Go to the `Oracle_Home`/webgate/ohs/tools/openssl directory.

2. Create a certificate request as follows:

   ```
   ./openssl req -utf8 -new -nodes -config openssl_silent_ohs11g.cnf
   -keyout aaa_key.pem -out aaa_req.pem -rand Oracle_
   Home/webgate/ohs/config/random-seed
   ```

3. Self-sign the certificate as follows:

   ```
   ./openssl ca -config openssl_silent_ohs11g.cnf -policy policy_anything
   -batch -out aaa_cert.pem -infiles aaa_req.pem
   ```

4. Copy the following generated certificates to the `OHS_Master_Config_Directory`/webgate/config directory:

   - `aaa_key.pem`

   - `aaa_cert.pem`

   - `cacert.pem` located in the `simpleCA` directory

   > **Note:** After copying the `cacert.pem` file, you must rename the file to `aaa_chain.pem`.

Migrating an Existing Certificate

If you want to migrate an existing certificate (`aaa_key.pem`, `aaa_cert.pem`, and `aaa_chain.pem`), ensure that you use the same passphrase that you used to encrypt `aaa_key.pem`. You must enter the same passphrase during the RREG registration process. If you do not use the same passphrase, the `password.xml` file generated by RREG does not match the passphrase used to encrypt the key.

If you enter the same passphrase, you can copy these certificates as follows:

1. Go to the `OHS_Master_Config_Directory`/webgate/config directory.

2. Copy the following certificates to the `OHS_Master_Config_Directory`/webgate/config directory:

   - `aaa_key.pem`

   - `aaa_cert.pem`

   - `aaa_chain.pem`

B.4.3 Restarting the Oracle HTTP Server Instance

For information about restarting the Oracle HTTP Server Instance, see "Restarting Oracle HTTP Server Instances by Using WLST" in *Administering Oracle HTTP Server*.

If you have configured Oracle HTTP Server in a WebLogic Server domain, you can also use Oracle Fusion Middleware Control to restart the Oracle HTTP Server Instances. For more information, see "Restarting Oracle HTTP Server Instances by Using Fusion Middleware Control" in *Administering Oracle HTTP Server*.