

Oracle® Fusion Middleware

Installation Planning Guide for Oracle Identity and Access
Management

11g Release 2 (11.1.2.1.0)

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Oracle Fusion Middleware Installation Planning Guide for Oracle Identity and Access Management, 11g Release 2 (11.1.2.1.0)

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Preface

The *Oracle Fusion Middleware Installation Planning Guide for Oracle Identity and Access Management* covers common Oracle Fusion Middleware concepts that affect installation, installation procedures, and troubleshooting.

Intended Audience

This guide is intended for users who are installing Oracle Fusion Middleware products for the first time and are comfortable running some system administration operations, such as creating users and groups, adding users to groups, and installing operating system patches on the computer where the products are going to be installed. Users on UNIX systems who are installing Oracle Fusion Middleware need root access to run some scripts.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

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Related Documents

For additional information, see the following manuals:

- *Oracle Fusion Middleware Installation Guide for Oracle Identity and Access Management*
- *Oracle Fusion Middleware Administrator's Guide*. This book contains information for managing your Oracle Fusion Middleware environment after installation and configuration is complete.
- *Oracle Fusion Middleware High Availability Guide*. This book contains information for installing Oracle Fusion Middleware in high availability environments.

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.
<i>italic</i>	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.

Understanding Your Installation Starting Point

Oracle Fusion Middleware is a collection of standards-based software products that spans a range of tools and services from J2EE and developer tools, to integration services, business intelligence, collaboration, and content management. Oracle Fusion Middleware offers complete support for development, deployment, and management.

This guide provides important information about preparing your system and instructions for obtaining the latest version of Oracle Fusion Middleware Identity and Access Management products, which is 11g Release 2 (11.1.2.1.0).

The procedures you will need to follow will vary depending on the configuration of your existing system.

Find the starting point that best describes your current environment and go to that section for more information:

- Section 1.1, "Starting as a New Oracle Identity and Access Management User"
- Section 1.2, "Starting with Oracle Application Server 10g"
- Section 1.3, "Starting with Oracle Identity and Access Management 11g Release 1 (11.1.1)"
- Section 1.4, "Starting with Oracle Identity and Access Management 11g Release 2 (11.1.2)"

1.1 Starting as a New Oracle Identity and Access Management User

If you are a new Oracle Fusion Middleware user, refer to the *Oracle Fusion Middleware Installation Guide for Oracle Identity and Access Management*, which provides complete information about installing and configuring your Oracle Identity and Access Management products.

1.2 Starting with Oracle Application Server 10g

For information on upgrading from any of the Oracle Identity Management 10g products to Oracle Identity and Access Management 11g Release 2 (11.1.2.1.0), refer to the *Oracle Fusion Middleware Upgrade and Migration Guide for Oracle Identity and Access Management*.

1.3 Starting with Oracle Identity and Access Management 11g Release 1 (11.1.1)

For information on upgrading from any of the Oracle Identity and Access Management 11g Release 1 (11.1.1) products to 11g Release 2 (11.1.2.1.0), refer to the *Oracle Fusion Middleware Upgrade and Migration Guide for Oracle Identity and Access Management*.

1.4 Starting with Oracle Identity and Access Management 11g Release 2 (11.1.2)

For information on patching your Oracle Identity and Access Management 11g Release 2 (11.1.2) products to 11g Release 2 (11.1.2.1.0), refer to the *Oracle Fusion Middleware Patching Guide for Identity and Access Management*.

Understanding Oracle Fusion Middleware Concepts and Directory Structure

During the installation process, you will be asked for a variety of directory locations. This section defines each of these directories and explains the contents of each directory.

This chapter contains the following content:

- Section 2.1, "Oracle Fusion Middleware Concepts"
- Section 2.2, "Oracle Fusion Middleware Directory Structure"

2.1 Oracle Fusion Middleware Concepts

For more information about important Oracle Fusion Middleware concepts for all users, refer to *Oracle Fusion Middleware Concepts*.

2.2 Oracle Fusion Middleware Directory Structure

This section describes the various directories that are created when you install Oracle Fusion Middleware products.

2.2.1 Middleware Home and WebLogic Server Home Directories

All Oracle Fusion Middleware products (except for Oracle Web Tier and some Oracle Identity Management products, such as Oracle Internet Directory) require the presence of an application server on your system. All Oracle Fusion Middleware products support Oracle WebLogic Server as the application server. Beginning with 11g Release 1 (11.1.1.4.0), Oracle Application Developer and Oracle SOA Suite and Oracle Business Process Management Suite also support IBM WebSphere as the application server.

The top-level directory for all Oracle Fusion Middleware products is called the Middleware home; this directory serves as a container for the Oracle WebLogic Server home, Oracle Common home, and one or more product Oracle homes. The Middleware home directory is created when Oracle WebLogic Server is installed as the application server. The WebLogic Server home directory is inside the Middleware home and is created when Oracle WebLogic Server is installed. Figure 2-1 shows the directory structure after a typical Oracle WebLogic Server installation:

Figure 2–1 Directory Structure after an Oracle WebLogic Server Installation

Some of the notable directories in the Middleware home when created by the Oracle WebLogic Server installation are the WebLogic Server home (`wlsrver_10.3`), the directory for the JDK which you can use for product installations (`jdk160_27`), and the Oracle Coherence directory, which is used by Oracle Service Bus for its business service result caching functionality (`coherence_3.7`).

If you choose to use IBM WebSphere as your application server, then you must still manually create a Middleware home directory where your Oracle Fusion Middleware products will be installed, as shown in Figure 2–2. The Middleware home and WebSphere home do not have any relation to each other and can be located anywhere on your system.

Figure 2–2 Directory Structure after an IBM WebSphere Installation and Middleware Home

If you are installing Oracle Web Tier or Oracle Identity Management with only Oracle Internet Directory where an application server is not required, you must still manually create a Middleware home directory on your system.

2.2.2 Oracle Home and Oracle Common Home Directories

Each Oracle Fusion Middleware product must be installed in its own Oracle home location. When a product is installed, two Oracle home directories are created: the product Oracle home and the Oracle Common home.

The product's software binaries will be installed into the product Oracle home; no runtime process can write to this directory.

The Oracle Common home contains the binary and library files required for the Oracle Enterprise Manager Fusion Middleware Control and Java Required Files (JRF). There can be only one Oracle Common home within each Middleware home.

Both the product Oracle home (in the example shown in Figure 2–3, the SOA Oracle home) and Oracle Common home directories must reside inside an existing Middleware home directory:

Figure 2–3 Directory Structure with Oracle Home Directories

2.2.2.1 Creating the Product Oracle Home

The product Oracle home directory can be created in the following ways:

- Before running the installation, you can create your Oracle home directory on your system. Remember that the Oracle home must reside inside the Middleware home directory, and it must also be an empty directory. Then, when you run the installer and are asked to provide the location of your Oracle home, you can specify the directory you have created.
- While running the installer, you can specify the name of a new directory. This directory will automatically be created for you by the installer and will be located inside the Middleware home directory.

2.2.2.2 Creating the Oracle Common Home

The Oracle Common home directory is created in the following ways:

- Installing Oracle Application Developer. For more information, see the *Oracle Fusion Middleware Installation Guide for Application Developer*.
- Installing any Oracle Fusion Middleware product. The directory `oracle_common` is automatically created inside the Middleware home directory.

2.2.2.3 Checking Port Numbers Across Multiple Oracle Homes

Each product requires its own Oracle home directory. If you are creating an environment where you will have multiple products (and therefore, multiple Oracle home directories), Oracle recommends that you use the `staticports.ini` file, so that you will have a record of all the ports that are in use on your system to help avoid conflicts.

To use the `staticports.ini` file, select **Specify Ports using Configuration file** on the Configure Ports screen during installation.

2.2.3 WebLogic Server Domain

After a product is installed, it can be configured into a WebLogic Server domain. See *Oracle Fusion Middleware Concepts* for more information about WebLogic Server domains.

During configuration, on the "Specify Domain Name and Location" screen, you will be asked for the location where you want to store data for your domains and applications. Specifically, you will be asked for:

- Domain name
- Domain location
- Application location

The domain location and domain name together are referred to as the domain home. For example, on a UNIX operating system, if you specified `/home/Oracle/Middleware/domains` as your domain location and `soa_domain` as your domain name, the domain home would be `/home/Oracle/Middleware/domains/soa_domain`.

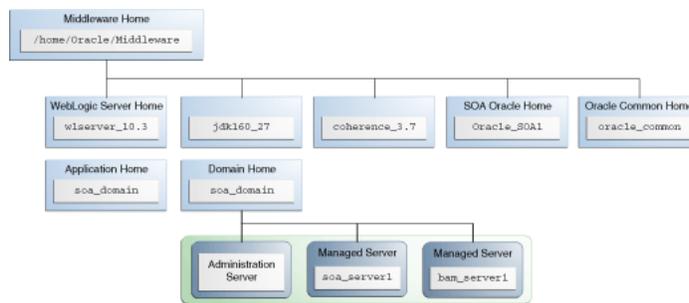
The application location and domain name together are referred to as the application home. For example, on a Windows operating system, if you specified `C:\Oracle\Middleware\applications` as your application location, then the application home would be `C:\Oracle\Middleware\applications\soa_domain`.

Note that a directory with the specified domain name is created in both the specified domain location and application location.

The domain home and application home can be created anywhere on your system. When you run the Configuration Wizard, the default value in the domain location field is `user_projects/domains` under the Middleware home. The default value for the application home is `user_projects/applications`, also under the Middleware home. However, it is recommended that you create your domain home and application home outside of both the Middleware home and Oracle home directories, so that in the event you need to patch either the Middleware home or Oracle home, your domain and application information would remain untouched.

For more information about domain configuration, see the Installation Guide for your product. For recommendations about configuring a domain in an enterprise production environment, see the Enterprise Deployment Guide for your product.

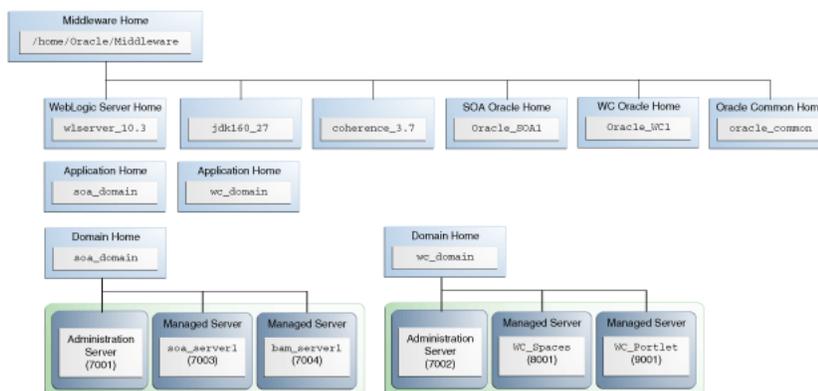
Figure 2-4 Directory Structure after a WebLogic Server Domain is Created



2.2.4 Multiple Products with Multiple WebLogic Server Domains

If you install multiple products and choose to create a separate domain for each product, then your directory structure would look something like the one shown in Figure 2-5:

Figure 2-5 Directory Structure with Multiple Oracle Fusion Middleware Products



Notice that each product has its own Oracle home directory. To differentiate among all the product Oracle home directories, the install guides typically refer to each Oracle home by product name; for example, the Oracle home for Oracle SOA Suite is referred to as the SOA Oracle home, while the Oracle home for Oracle WebCenter Suite is referred to as the WebCenter Oracle home.

2.2.4.1 Notes for Creating Multiple Domains

If you choose to create multiple domains on a single machine, make sure that each domain has a unique name. When you are running the Configuration Wizard to create and configure your domains, be sure to specify a unique domain name on the "Specify Domain Name and Location" screen. For example, in Figure 2–5, the WebCenter domain might have the name `wc_domain`, while the SOA domain could be called `soa_domain`. Refer to the product installation guides for more information.

When you are configuring multiple domains, you must also make sure that the Administration Server and Managed Servers in each domain use a unique port number. There is no provision for checking port numbers across multiple domains, so you will have to keep track of this manually.

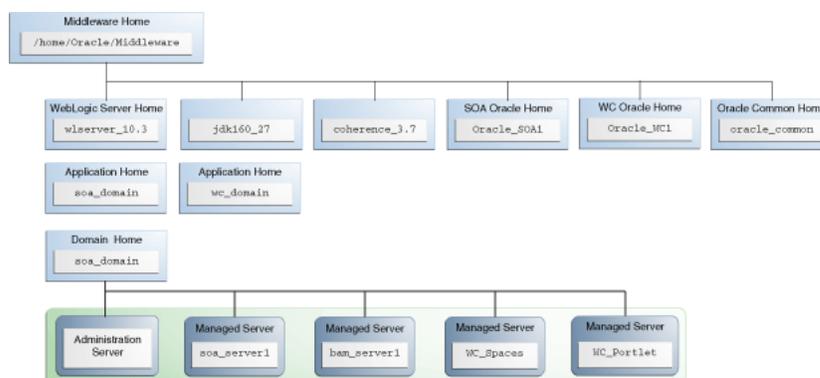
To customize the Administration Server port number, select **Administration Server** on the "Select Optional Configuration" screen in the Configuration Wizard. This will cause the Configure the Administration Server screen to appear, on which you can specify the Administration Server port number.

To customize the Managed Server port numbers, select **Managed Servers, Clusters and Machines** on the "Select Optional Configuration" screen in the Configuration Wizard. This will cause the Configure Manager Servers screen to appear, on which you can specify the port numbers for your managed servers.

2.2.5 Extending an Existing Domain

During installation and configuration, you may choose to extend an existing domain rather than creating a new domain. Extending a domain means that you add products and functionality to an existing domain. If, for example, you first install Oracle SOA Suite to create a new domain, then install Oracle WebCenter while choosing to extend the existing Oracle SOA Suite domain, then your topology would look like the one shown in Figure 2–6.

Figure 2–6 Directory Structure with Multiple Oracle Fusion Middleware Products in a Single Domain



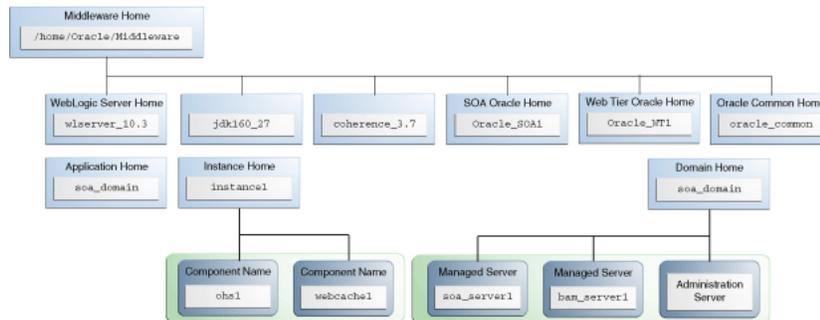
In essence, you are adding the products and functionality of Oracle WebCenter Suite to the existing Oracle SOA Suite domain.

Not all Oracle Fusion Middleware products can be configured or used in conjunction with other Oracle Fusion Middleware products. If you intend to configure multiple products in your domain, make sure you have read "Domain Extension Interoperability" in *Oracle Fusion Middleware Interoperability and Compatibility Guide for Oracle Identity and Access Management*.

2.2.6 Oracle Instance and WebLogic Server Domain

Figure 2–7 shows the directory structure when two products are installed, but one product (Oracle SOA Suite) is configured in a WebLogic Server domain (because it consists of Java components) while the other product (Oracle WebTier) is configured in an Oracle Instance (because it consists of system components):

Figure 2–7 Directory Structure with an Oracle Instance and a WebLogic Server Domain



For more information about Java components and system components, refer to "Understanding Key Oracle Fusion Middleware Concepts" in *Oracle Fusion Middleware Administrator's Guide*.

Common Installation Planning Tasks

This chapter describes some common tasks that should be performed prior to beginning any Oracle Fusion Middleware installation.

The following topics are covered:

- Section 3.1, "Before You Begin"
- Section 3.2, "Installing Oracle Configuration Manager"
- Section 3.3, "Understanding Installation and Configuration Privileges and Users"
- Section 3.4, "Recovering From a Partial or Interrupted Installation or Configuration"
- Section 3.5, "Creating and Starting Managed Servers on a Remote Machine"

3.1 Before You Begin

This section contains important information that you should read before you begin to install or upgrade your system:

- Section 3.1.1, "Read and Understand Oracle Fusion Middleware Concepts"
- Section 3.1.2, "Review System Requirements and Specifications"
- Section 3.1.3, "Review Certification Information"
- Section 3.1.4, "Review Interoperability and Compatibility"
- Section 3.1.5, "Obtain the Oracle Fusion Middleware Software"
- Section 3.1.6, "Install an Application Server"
- Section 3.1.7, "Install and Configure a Database and Schemas"
- Section 3.1.8, "Create Operating System Users for IBM DB2 Databases"

3.1.1 Read and Understand Oracle Fusion Middleware Concepts

If you are new to Oracle Fusion Middleware, you should read *Oracle Fusion Middleware Concepts* before proceeding with an installation or upgrade. Chapter 2, "Understanding Oracle Fusion Middleware Concepts and Directory Structure", contains important information about the directory structure of Oracle Fusion Middleware installations that you should be familiar with before you install any product.

3.1.2 Review System Requirements and Specifications

Before performing any upgrade or installation you should read the Oracle Fusion Middleware System Requirements and Specifications document to ensure that your environment meets the minimum installation requirements for the products you are installing.

This document contains information related to hardware and software requirements, minimum disk space and memory requirements, database schema requirements, and required system libraries, packages, or patches.

If you are installing on a DHCP server, non-networked computer, or multihomed computer, there are additional configuration steps that are required. These steps are also available in the system requirements document in the "Oracle Fusion Middleware System Configuration Requirements" section.

If you are installing on a Windows operating system and want to install and configure Java Access Bridge for Section 508 Accessibility, read the "Installing and Configuring Java Access Bridge" section in this document.

If you are installing on a UNIX operating system, Oracle recommends that you configure your system to enable Unicode support. For more information, read the "Enabling Unicode Support" section in this document.

3.1.3 Review Certification Information

Before performing any upgrade or installation you should read the *System Requirements and Supported Platforms for Oracle Fusion Middleware 11gR1* document. This document contains certification information related to supported 32-bit and 64-bit operating systems, databases, web servers, LDAP servers, adapters, IPv6, JDKs, and third-party products. It is located on the Oracle Fusion Middleware Supported System Configurations page.

3.1.4 Review Interoperability and Compatibility

Before performing any upgrade or installation you should read *Oracle Fusion Middleware Interoperability and Compatibility Guide for Oracle Identity and Access Management*. This document contains important information regarding the ability of Oracle Fusion Middleware products to function with previous versions of other Oracle Fusion Middleware, Oracle, or third-party products. This information is applicable to both new Oracle Fusion Middleware users and existing users who are upgrading their existing environment.

3.1.5 Obtain the Oracle Fusion Middleware Software

Depending on your specific needs, there are multiple places where you can obtain Oracle Fusion Middleware software. For details, refer to the Oracle Fusion Middleware Download, Installation, and Configuration ReadMe Files page, where you can find the ReadMe file for your specific release.

3.1.6 Install an Application Server

All Oracle Fusion Middleware products (except for Oracle Web Tier and Oracle Identity Management with Oracle Internet Directory only) require an application server on your system. For Oracle Application Developer or Oracle SOA Suite and Business Process Management Suite you can choose to install Oracle WebLogic Server or IBM WebSphere as the application server. Refer to the *System Requirements and Supported Platforms for Oracle Fusion Middleware 11gR1* document to determine the

certified versions of these application servers for installation on your system. This document is located on the "Oracle Fusion Middleware Supported System Configurations" page.

All Oracle Fusion Middleware products must be installed in the Oracle Middleware home directory, which can be created by installing Oracle WebLogic Server as the application server on your system. If you choose to use IBM WebSphere as your application server, you must manually create a Middleware home directory in which you can install your Oracle Fusion Middleware products.

For more information about the installation directory structure, see Section 2.2, "Oracle Fusion Middleware Directory Structure".

For instructions on how to install Oracle WebLogic Server, see "Running the Installation Program in Graphical Mode" in *Oracle Fusion Middleware Installation Guide for Oracle WebLogic Server*.

For instructions on how to install IBM WebSphere, see *Oracle Fusion Middleware Third-Party Application Server Guide for Oracle Identity and Access Management*.

3.1.7 Install and Configure a Database and Schemas

Installation of most Oracle Fusion Middleware products requires the availability of a database (only Oracle Web Tier and Oracle Forms and Reports without Oracle Identity Management protection do not require a database). This database must be up and running, and does not have to be on the same system where you are installing the components. The database must also be compatible with Repository Creation Utility (RCU), which is used to create the schemas necessary for your Oracle Fusion Middleware components.

Note: It is recommended that all metadata repositories reside on a database at the same site as the products to minimize network latency issues.

For information about which databases are certified for use with Oracle Fusion Middleware and RCU, and important database configuration information, see "RCU System and Database Requirements" in *Oracle Fusion Middleware Repository Creation Utility User's Guide*.

After your database is installed and configured, run the latest version of RCU to create your schemas. For instructions, see "Creating Schemas" in *Oracle Fusion Middleware Repository Creation Utility User's Guide*.

For more information about managing metadata repositories, refer to "Managing the Oracle Metadata Repository" in the Oracle Fusion Middleware System Requirements and Specifications document.

3.1.8 Create Operating System Users for IBM DB2 Databases

If you are not using an IBM DB2 database, you can skip this section.

IBM DB2 authenticates its database users using equivalent operating system users. Therefore, prior to running RCU, one operating system user must be created on the database host for each schema. The operating system user name must match the schema owner name and must contain only lowercase letters; no all-uppercase or mixed-case names are allowed. For example, if you plan to create a schema named DEV_MDS using RCU, then the operating system user must be named `dev_mds` (all lowercase letters).

You can create the operating system user with the following command (this example creates the operating system user `dev_mds` and assigns the password `welcome1`):

```
/usr/sbin/useradd dev_mds -p welcome1 -d /scratch/dev_mds
```

Refer to your system documentation for more information.

3.2 Installing Oracle Configuration Manager

During installation, you will be asked whether or not you want to configure your system to automatically check for security (**Specify Security Updates** screen) and software (**Install Software Updates** screen) updates. Electing to do so installs Oracle Configuration Manager on your system.

Oracle Configuration Manager continuously tracks key Oracle and system details, providing essential data to help you manage and service your configurations. Collected data is sent via HTTPS to Oracle Support, which maintains a secure view of each configuration. My Oracle Support then provides system health checks, patch advice, and other valuable information about your Oracle products. Configuration manager does NOT collect application data, such as user passwords.

For more information, log into or create a My Oracle Support account at <https://support.oracle.com/>, then click on the **Collector** tab.

3.3 Understanding Installation and Configuration Privileges and Users

This section contains the following:

- Section 3.3.1, "Installation and Configuration Privileges"
- Section 3.3.2, "Installing as a Non-Default User on UNIX Operating Systems"

3.3.1 Installation and Configuration Privileges

The user who installs a Fusion Middleware product owns and has read, write, and execute privileges on the binary files installed in the Oracle home. Other users in the operating system group have only read and execute privileges (no write privileges). This means they cannot write to the files, but they can use the installed binaries in the Oracle home to configure a domain or set of Fusion Middleware products.

During configuration, the files generated by the configuration process are owned by the user who ran the Configuration Wizard. The user who ran the Configuration Wizard has read, write, and execute privilege on those files. Other users in the operating system group can read and execute the files, but they do not have write privileges.

To ensure the proper permissions and privileges for all files, the same owner must perform both tasks - install the Oracle Fusion Middleware product and configure the WebLogic Server domain using the Configuration Wizard.

3.3.2 Installing as a Non-Default User on UNIX Operating Systems

On UNIX operating systems, the installation of Fusion Middleware products is owned and controlled as a known user (for example, "oracle"). The file permissions associated with this installation are configured to ensure the highest level of security possible, which by default are 700 (meaning all files are owned and accessible by the owner only).

Changing the default permissions settings will reduce the security of the installation and possibly your system. Therefore, making such a change is not recommended. If access to particular files or executables is required by other users, the UNIX `sudo` command (or other similar command) should be considered in lieu of changing file permissions.

Refer to your UNIX operating system Administrator's Guide or contact your operating system vendor if you need further assistance.

3.4 Recovering From a Partial or Interrupted Installation or Configuration

The installation of an Oracle Fusion Middleware 11g product consists of two phases:

1. Installation Phase

During this phase, the installer lays down the binaries in an Oracle home directory. The Oracle home directory must be located inside the Middleware home directory (see Section 2.2.1, "Middleware Home and WebLogic Server Home Directories") and no runtime processes can write to this directory.

2. Configuration Phase

During this phase, the configuration of instances for system components and/or the configuration of a WebLogic Server domain for Java components occurs (see "Understanding Key Oracle Fusion Middleware Concepts" in *Oracle Fusion Middleware Administrator's Guide* for more information about Java components and system components).

The Oracle Instance home (for Oracle instances) and WebLogic Server domains (for the Managed Servers that host the Java components) contain no binaries; they hold files such as configuration files, log files, and temporary files that can be updated.

The installers for Oracle SOA Suite and Oracle Business Process Management Suite, Oracle WebCenter Portal, Oracle WebCenter Content, Oracle Application Developer, and Oracle Service Bus create only Java components in a WebLogic Server domain. For these products, the installation and configuration phases are completely separate - you must run the Configuration Wizard separately after the software installation to configure your Java components.

The installer for Oracle Identity Management and Oracle Portal, Forms, Reports and Discoverer will create both system components and Java components in a WebLogic Server domain. The installer for Oracle Web Tier will create only system components, and you will have the option of associating these components with an existing WebLogic Server domain. For these products, the installer gives you the option to "Install and Configure"; if you choose this option, the installer runs and performs both the installation and configuration phase. If you do not choose to "Install and Configure" then you can install the binaries first and then run the configuration tool separately to configure your components.

The actions required to recover from a partial installation or configuration are described in the following sections:

- Section 3.4.1, "Recovering From an Installation Phase Failure or Interruption"
- Section 3.4.2, "Recovering From a Configuration Phase Failure or Interruption"

Additional information can be found in the Troubleshooting appendix in each product installation guide.

3.4.1 Recovering From an Installation Phase Failure or Interruption

If the product installation is interrupted during the installation phase, the recommended approach is to deinstall the product and remove the Oracle home, then start the installation again.

3.4.2 Recovering From a Configuration Phase Failure or Interruption

If the installation phase is completed successfully but the configuration phase is interrupted and cannot be restarted, the recommended approach is to:

1. Address and fix the cause of the failure or interruption.
2. Perform one of the following:
 - a. Retry the configuration by selecting the **Retry** button in the graphical user interface.
 - b. Exit the installer (for system components) or Configuration Wizard (for Java components) session, deinstall and remove the failed instance or domain, then restart your configuration tool.

For product-specific deinstallation information, refer to the deinstallation chapter in your product installation guide.

3.5 Creating and Starting Managed Servers on a Remote Machine

To create and start a Managed Server in a WebLogic domain on a remote machine, complete the following steps:

- Use the `pack` command located in the `WebLogic_Home/common/bin` (on UNIX operating systems) or `WebLogic_Home\common\bin` (on Microsoft Windows operating systems) directory to create a Managed Server template that contains a subset of the files in a domain that are required to create a Managed Server domain directory hierarchy on a remote machine.

The `-managed={true|false}` parameter of the `pack` command specifies whether the template is to be used to create Managed Servers on remote machines.

- Use the `unpack` command located in the `WebLogic_Home/common/bin` (on UNIX operating systems) or `WebLogic_Home\common\bin` (on Windows operating systems) directory to create the Managed Server domain directory on the remote machine.

For more information, see the "Creating and Starting a Managed Server on a Remote Machine" in *Oracle Fusion Middleware Creating Templates and Domains Using the Pack and Unpack Commands*.

Silent Oracle Fusion Middleware Installation and Deinstallation

This chapter describes how to install and deinstall your Oracle Fusion Middleware environment from the command line in silent mode.

This chapter contains the following content:

- Section 4.1, "What is a Silent Installation?"
- Section 4.2, "Response Files"
- Section 4.3, "Pre-Installation Tasks"
- Section 4.4, "Silent Database Schema Creation"
- Section 4.5, "Silent Oracle WebLogic Server Installation"
- Section 4.6, "Silent Product Installation"
- Section 4.7, "Silent Product Configuration"
- Section 4.8, "Silent Product Deinstallation"

4.1 What is a Silent Installation?

Silent installation eliminates the need to monitor your product installation because no graphical output is displayed and no input by the user is required.

Silent installation of your Oracle Fusion Middleware product is accomplished by using the `-silent` flag on the command line when you start the installer. In most cases, you will need to supply the location and name of a file containing certain variable and parameter values (for example, installation location). These are the values that would be asked for during a typical installation using the graphical user interface.

For Oracle Fusion Middleware products, this file is typically called a response file. For more information, see Section 4.2, "Response Files".

Note: For UNIX users, if this is a first time installation of any Oracle product, you must create the `oraInst.loc` file before starting. Please refer to Section 4.3.1, "UNIX Users: Creating the `oraInst.loc` File" for more information.

Following installation of your product, you need to run the `root.sh` script as the `root` user. The `root.sh` script detects settings of environment variables and enables you to enter the full path of the local `bin` directory.

Note: For Windows users, if this is a first time installation of any Oracle product, you must create the registry keys before starting. Registry key creation is described in Section 4.3.2, "Windows Users: Creating the Registry Key"

4.2 Response Files

Before doing a silent installation, you must provide information specific to your installation in a response file. The installer will fail if you attempt an installation using a response file that is not configured correctly. Response files are text files that you can create or edit in a text editor.

4.2.1 Creating a Response File

Oracle recommends creating a response file in the following manner:

1. Run your product's graphical installer, as described in your product installation guide.
2. On the Installation Summary screen, click **Save** to save your installation parameters to a response file.

You will be prompted for a name and location where you want to create this response file. After it is created, you can use it exactly as-is to replicate the installation on other systems, or modify it as needed.

4.2.2 Sample Response Files

Pre-existing sample response files are provided in the `Disk1/stage/Response` (on UNIX operating systems) or `Disk1\stage\Response` (on Windows operating systems) directory in the location where you unzipped your downloaded archive files for installation.

Refer to your product installation guide for more detailed descriptions of the sample installation and deinstallation response files that are provided for each product.

4.2.3 Securing Your Response Files for Silent Installation

Your response files contain certain passwords required by the installer. To minimize security issues regarding these passwords in the response file, follow these guidelines:

- Set the permissions on the response files so that they are readable only by the operating system user who will be performing the silent installation.
- If possible, remove the response files from the system after the silent installation is completed.

4.3 Pre-Installation Tasks

This section covers the pre-installation tasks that may be required before you are able to perform a silent installation.

The following topics are covered:

- Section 4.3.1, "UNIX Users: Creating the `oraInst.loc` File"
- Section 4.3.2, "Windows Users: Creating the Registry Key"

4.3.1 UNIX Users: Creating the `oraInst.loc` File

The Oracle inventory directory is used by the installer to keep track of all Oracle products installed on the computer. The inventory directory is stored in a file called `oraInst.loc`. If this file does not already exist on your system, you must create it before starting a silent installation. This file is used by the installer.

1. Log in as the root user.

```
prompt> su
```

2. Using a text editor such as `vi` or `emacs`, create the `oraInst.loc` file in the directory of your choice. The contents of the file consist of the following two lines:

```
inventory_loc=oui_inventory_directory
inst_group=oui_install_group
```

Replace `oui_inventory_directory` with the full path to the directory where you want the installer to create the inventory directory. Then, replace `oui_install_group` with the name of the group whose members have write permissions to this directory.

3. Exit from the root user.

```
# exit
```

4.3.2 Windows Users: Creating the Registry Key

If you have not installed Oracle SOA Suite on your computer, then you need to create the following Registry key and value:

```
HKEY_LOCAL_MACHINE / SOFTWARE / Oracle / inst_loc = [inventory_directory]
```

Replace `Inventory_Directory` with the full path to your installer files. For example:

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

4.4 Silent Database Schema Creation

If your Oracle Fusion Middleware product requires database schemas, you must first create the schemas in your database before installing and configuring your product.

For instructions on how to create the schemas in silent mode, refer to "Running Repository Creation Utility (RCU) from the Command Line" in *Oracle Fusion Middleware Repository Creation Utility User's Guide*.

4.5 Silent Oracle WebLogic Server Installation

Installation of all Oracle Fusion Middleware products requires the presence of an Oracle Middleware home directory, which can be created by installing Oracle WebLogic Server.

To install Oracle WebLogic Server in silent mode, refer to "Running the Installation Program in Silent Mode" in *Oracle Fusion Middleware Installation Guide for Oracle WebLogic Server*.

4.6 Silent Product Installation

To install your Oracle Fusion Middleware product in silent mode, use the `-silent` mode from the command line. The full syntax for running the installer from the command line on UNIX operating systems is shown below:

```
runInstaller [-mode] [-options] [(<CommandLinevariable=Value>)*]
```

On Windows operating systems:

```
setup.exe [-mode] [-options] [(<CommandLinevariable=Value>)*]
```

Table 4–1 lists the valid command line parameters for silent installation.

Table 4–1 Installer Command Line Parameters

Parameter	Description
Installation Modes - Only One Mode Can be Specified	
-i -install	Launches the installer in GUI mode. This is the default mode and is used if no mode is specified on the command line.
-silent	Install in silent mode. The installer must be passed either a response file or command line variable value pairs.
-d -deinstall	Launches the installer in GUI mode for deinstallation. NOTE - this option is only available when you start the deinstaller from the <code>ORACLE_HOME/oui/bin</code> (on UNIX operating systems) or <code>ORACLE_HOME\oui\bin</code> (on Windows operating systems) directory.
-p -prerequisite	Launches the installer in GUI mode but only checks the prerequisites. No software is installed.
-v -validate	Launches the installer in GUI mode and performs all prerequisite and validation checking, but does not install any software.
-sv -silentvalidate	Performs all prerequisite and validation checking in silent mode. You must pass the installer either a response file or a series of command line variable value pairs.
Installation Options	
-help --help --usage	Displays the usage parameters for the <code>runInstaller</code> command.
-invPtrLoc <i>file</i>	Pointer to the inventory location file. Replace <i>file</i> with the full path and name of the <code>oraInst.loc</code> file.
-response <i>file</i> -responseFile <i>file</i>	Pointer to the response file. Replace <i>file</i> with the full path and name of the response file. See Section 4.2, "Response Files" for information about creating the response files.
-jreLoc <i>location</i>	Pointer to the location where Java Runtime Environment (JRE) is installed. Replace <i>location</i> with the full path to the <code>jre</code> directory where your JRE is installed.

Table 4–1 (Cont.) Installer Command Line Parameters

Parameter	Description
-logLevel <i>level</i>	Specify the level of logging performed by the installer; all messages with a lower priority than the specified <i>level</i> will be recorded. Valid levels are: <ul style="list-style-type: none"> ▪ severe ▪ warning ▪ info ▪ config ▪ fine ▪ finer ▪ finest
-debug	Obtain debug information from the installer.
-force	Allow the silent installation to proceed in a non-empty directory.
-printdiskusage	Log debugging information pertaining to disk usage.
-printmemory	Log debugging information pertaining to memory usage.
-printtime	Log debugging information pertaining to time usage. This command causes the <code>timeTakenTimestamp.log</code> file to be created.
-waitforcompletion	Windows only - the installer will wait for completion instead of spawning the Java engine and exiting.
-noconsole	Messages will not be displayed to the console window.
-ignoreSysPrereqs	Ignore the results of the system prerequisite checks and continue with the installation.
-executeSysPrereqs	Execute the system prerequisite checks only, then exit.
-paramFile <i>file</i>	Specify the full path to the <code>oraparam.ini</code> file. This file is the initialization file for the installer. The default location of this file is <code>Disk1/install/platform</code> (on UNIX operation systems) or <code>Disk1\install\platform</code> (on Windows operation systems).
-novalidation	Disables all validation checking performed by the installer.
-nodefaultinput	For the GUI install, several screens have information or default values pre-populated. Specifying this option disables this behavior so that no information or values are pre-populated.
Command Line Variables	
Installer Variables	Installer variables are specified using <code>varName=value</code> . For example, on a UNIX operating system: <code>ORACLE_HOME=/home/Oracle/Middleware/as_1</code> On a Windows operating system: <code>ORACLE_HOME=C:\products\Oracle\Middleware\as_1</code>
Session Variables	Session variables are specified using <code>session:varName=value</code> .
Component Variables	Component variables are specified using <code>session:compInternalName:[Version:]varName=value</code> .

4.6.1 Sample Silent Install Commands

If this is the first time you are installing on your system (meaning there is no pre-existing Oracle Inventory location), use the following command to perform a silent installation on UNIX systems:

```
./runInstaller -silent -response file -invPtrLoc file
```

On Windows systems:

```
setup.exe -silent -response file -invPtrLoc file
```

Below is a full example of this command for UNIX systems:

```
./runInstaller -silent -response /home/Oracle/response/devSOA.rsp -invPtrLoc /home/jdoe/oraInst.loc
```

On Windows operating systems:

```
setup.exe -silent -response C:\home\Oracle\response\devSOA.rsp -invPtrLoc c:\home\Oracle\oraInst.loc
```

If you have already installed an Oracle product on your system and do not need to specify an inventory location, then you can use a command similar to the following on UNIX systems:

```
./runInstaller -silent -response file
```

On Windows systems:

```
setup.exe -silent -response file
```

Below is a full example of this command on a UNIX system:

```
./runInstaller -silent -response /home/Oracle/response/devSOA.rsp
```

On Windows operating systems:

```
setup.exe -silent -response c:\home\Oracle\response\devSOA.rsp
```

4.6.2 Sample Silent Install Output

Below is a sample output from a silent Oracle SOA Suite installation using the `sampleResponse_wls.rsp` template:

```
$ ./runInstaller -jreLoc /home/Oracle/Middleware/jdk160_21/ -silent -response /home/Oracle/response/sampleResponse_wls.rsp
Platform is Linux X86 32 bit
Starting Oracle Universal Installer...

Checking if CPU speed is above 300 MHz.    Actual 2999 MHz    Passed
Checking Temp space: must be greater than 150 MB.    Actual 69669 MB    Passed
Checking swap space: must be greater than 512 MB.    Actual 1395 MB    Passed
Preparing to launch Oracle Universal Installer from /tmp/OraInstall2009-04-03_10-49-20PM. Please wait ...[jdoe@examplehost Disk1]$ Log:
/home/Oracle/oraInventory/logs/install2009-04-03_10-49-20PM.log
Copyright © 1999, 2011, Oracle and/or its affiliates. All rights reserved.
Reading response file..
Expected result: One of enterprise-4,enterprise-5,redhat-4,redhat-5,SuSE-10
Actual Result: enterprise-4
Check complete. The overall result of this check is: Passed
CertifiedVersions Check: Success.
Checking for gcc-3.4.3-22.1; found gcc-3.4.6-10.0.1-i386.    Passed
```

```

Checking for gcc-c++-3.4.3-22.1; found gcc-c++-3.4.6-10.0.1-i386.      Passed
Checking for openmotif21-2.1.30-11.RHEL4.4 ; found
openmotif21-2.1.30-11.0.1.RHEL4.6-i386.      Passed
Checking for setarch-1.6-1; found setarch-1.6-1-i386.      Passed
Checking for pdksh-5.2.14-30; found pdksh-5.2.14-30.6-i386.      Passed
Checking for sysstat-5.0.5-1; found sysstat-5.0.5-19.el4-i386.      Passed
Checking for gnome-libs-1:1.4.1.2.90-44.1; found
gnome-libs-1:1.4.1.2.90-44.2-i386.      Passed
Checking for libstdc++-3.4.3-22.1 ; found libstdc++-3.4.6-10.0.1-i386.      Passed
Checking for libstdc++-devel-3.4.3-22.1; found libstdc++-devel-3.4.6-10.0.1-i386.
Passed
Checking for compat-libstdc++-296-2.96-132.7.2; found
compat-libstdc++-296-2.96-132.7.2-i386.      Passed
Checking for compat-db-4.1.25-9; found compat-db-4.1.25-9-i386.      Passed
Checking for control-center-2.8.0-12; found
control-center-1:2.8.0-12.rhel4.5-i386.      Passed
Checking for glibc-common-2.3.4-2.9; found glibc-common-2.3.4-2.41-i386.
Passed
Checking for binutils-2.15.92.0.2-13; found binutils-2.15.92.0.2-25-i386.
Passed
Checking for make-1:3.80-5; found make-1:3.80-7.EL4-i386.      Passed
Checking for xscreensaver-4.18-5.rhel4.2; found
xscreensaver-1:4.18-5.rhel4.14.0.1-i386.      Passed
Check complete. The overall result of this check is: Passed
Packages Check: Success.
Checking for VERSION=2.6.9; found VERSION=2.6.9-78.0.0.0.1.ELxenU.      Passed
Checking for hardnofiles=4096; found hardnofiles=4096.      Passed
Checking for softnofiles=4096; found softnofiles=4096.      Passed
Check complete. The overall result of this check is: Passed
Kernel Check: Success.
Expected result: ATLEAST=2.3.4-2.19
Actual Result: 2.3.4-2.41
Check complete. The overall result of this check is: Passed
GLIBC Check: Success.
Expected result: 922MB
Actual Result: 4000MB
Check complete. The overall result of this check is: Passed
TotalMemory Check: Success.
Verifying data.....
Copying Files...
-----20%-----40%-----60%-----80%-----100%

The installation of Oracle SOA Suite 11g completed successfully.

```

4.7 Silent Product Configuration

The way in which you can configure your Oracle Fusion Middleware product from the command line varies depending on the type of product.

4.7.1 System Components

If your product contains system components (for example, Oracle Web Tier, Oracle Portal, Forms, Reports and Discoverer, or Oracle Identity Management), you can use the same commands as described in Section 4.6, "Silent Product Installation".

These products use the same engine for both installation and configuration, so the contents of the response file determine whether you are only installing the software, only configuring existing software, or installing and configuring at the same time.

As mentioned in Section 4.2, "Response Files", the recommended way to create these response files is to run the graphical installer once and save the configuration to a response file. Each product also comes with sample response files that you can use. Refer to the product installation guides for more information.

4.7.2 Java Components

If your product contains Java components (for example, Oracle SOA Suite, or Oracle WebCenter), the installer and the Configuration Wizard are essentially different products and therefore you cannot configure your products silently using the same silent installation commands.

Instead, silent configuration for Java components must be done using WebLogic Scripting Tool (WLST) commands.

For more information, refer to:

- *Oracle Fusion Middleware WebLogic Scripting Tool Command Reference*
- *Oracle Fusion Middleware Oracle WebLogic Scripting Tool*

4.8 Silent Product Deinstallation

To deinstall the Oracle Fusion Middleware product software on your system (both system and java components), use the `-d` or `-deinstall` parameter from the command line. You must start the deinstaller from the `ORACLE_HOME/oui/bin` (on UNIX operating systems) or `ORACLE_HOME\oui\bin` (on Windows operating systems) directory; this is the only directory where the `-d` or `-deinstall` parameters are accepted.

On UNIX operating systems:

```
./runInstaller -silent -deinstall -response file
```

On Windows operating systems:

```
setup.exe -silent -deinstall -response file
```

4.8.1 Command Line Parameters for Silent Deinstallation

Table 4–2 lists the valid command line parameters for silent deinstallation.

Table 4–2 Deinstaller Command Line Parameters

Parameter	Description
Installation Modes - Only One Mode Can be Specified	
<code>-d</code>	Launches the installer in GUI mode for deinstallation.
<code>-deinstall</code>	
Installation Options	
<code>-help</code>	Displays the usage parameters for the <code>runInstaller</code> (on UNIX operating systems) or <code>setup.exe</code> (on Windows operating systems) command.
<code>--help</code>	
<code>--usage</code>	
<code>-invPtrLoc file</code>	Pointer to the inventory location file. Replace <i>file</i> with the full path and name of the <code>oraInst.loc</code> file.
<code>-response file</code>	Pointer to the response file. Replace <i>file</i> with the full path and name of the response file.
<code>-responseFile file</code>	

Table 4–2 (Cont.) Deinstaller Command Line Parameters

Parameter	Description
-jreLoc <i>location</i>	Pointer to the location where Java Runtime Environment (JRE) is installed. Replace <i>location</i> with the full path to the <code>jre</code> directory where your JRE is installed.
-logLevel <i>level</i>	Specify the level of logging performed by the installer; all messages with a lower priority than the specified <i>level</i> will be recorded. Valid levels are: <ul style="list-style-type: none"> ▪ severe ▪ warning ▪ info ▪ config ▪ fine ▪ finer ▪ finest
-debug	Obtain debug information from the installer.
-force	Allow the silent installation to proceed in a non-empty directory.
-printdiskusage	Log debugging information pertaining to disk usage.
-printmemory	Log debugging information pertaining to memory usage.
-printtime	Log debugging information pertaining to time usage. This command causes the <code>timeTakenTimestamp.log</code> file to be created.
-waitforcompletion	Windows only - the installer will wait for completion instead of spawning the Java engine and exiting.
-noconsole	Messages will not be displayed to the console window.
-ignoreSysPrereqs	Ignore the results of the system prerequisite checks and continue with the installation.
-executeSysPrereqs	Execute the system prerequisite checks only, then exit.
-paramFile <i>file</i>	Specify the full path to the <code>oraparam.ini</code> file. This file is the initialization file for the installer. The default location of this file is <code>Disk1/install/platform</code> (on UNIX operation systems) or <code>Disk1\install\platform</code> (on Windows operation systems).
-novalidation	Disables all validation checking performed by the installer.
-nodefaultinput	For the GUI install, several screens have information or default values pre-populated. Specifying this option disables this behavior so that no information or values are pre-populated.

Command Line Variables

Installer Variables	<p>Installer variables are specified using <code>varName=value</code>. For example, on a UNIX operating system:</p> <pre>ORACLE_HOME=/home/Oracle/Middleware/as_1</pre> <p>On a Windows operating system:</p> <pre>ORACLE_HOME=C:\products\Oracle\Middleware\as_1</pre>
Session Variables	Session variables are specified using <code>session:varName=value</code> .
Component Variables	Component variables are specified using <code>session:compInternalName:[Version:]varName=value</code> .

4.8.2 Sample Silent Deinstall Output

Below is a sample output from a silent deinstall using the `deinstall_oh.rsp` template:

```
$ ./runInstaller -silent -deinstall -jreLoc /home/Oracle/Middleware/jdk160_21/
-response /home/Oracle/Response/deinstall_oh.rsp
Starting Oracle Universal Installer...

Checking swap space: must be greater than 500 MB.   Actual 4047 MB   Passed
Preparing to launch Oracle Universal Installer from /tmp/OraInstall2010-03-26_
10-01-21AM. Please wait ...[]$ Log: /home/oraInventory/logs/deinstall2010-03-26_
10-01-21AM.log
Reading response file..
Starting silent deinstallation...
Starting Oracle Home deinstallation...
Completed deinstallation of Oracle Home.
```