

Oracle® Fusion Middleware

Installation Guide for Oracle SOA Suite and Oracle Business
Process Management Suite

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Oracle Fusion Middleware Installation Guide for Oracle SOA Suite and Oracle Business Process Management Suite 11g Release 1 (11.1.1)

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Contents

Preface	ix
Intended Audience	ix
Documentation Accessibility	ix
Related Documents	x
Conventions	x
1 Installation Overview	
1.1 Oracle SOA Suite Components	1-1
1.2 Oracle SOA Suite Installation Roadmap	1-1
2 Installing Oracle SOA Suite and Oracle Business Process Management Suite	
2.1 Preparing to Install	2-1
2.1.1 Enabling Unicode Support	2-1
2.1.2 Synchronizing Clocks When Working with Clusters.....	2-2
2.2 Installation Instructions	2-2
2.2.1 Starting the Installer	2-2
2.2.2 Installation Log Files	2-3
2.2.3 Inventory Screens (UNIX Only).....	2-3
2.2.4 Installation Screens and Instructions	2-3
2.3 Patching your Software and Installing Oracle Business Process Management Suite	2-4
2.4 Installing Oracle SOA Suite Design-Time Components	2-4
3 Configuring Oracle SOA Suite and Oracle Business Process Management Suite	
3.1 Configuration Instructions	3-1
3.1.1 Using Default Settings for Managed Servers.....	3-2
3.1.2 Shutting Down Running Managed Servers	3-2
3.1.3 Running the Configuration Wizard with an Oracle RAC Database	3-2
3.1.4 Starting the Oracle Fusion Middleware Configuration Wizard	3-2
3.1.5 Configuration Log Files	3-3
3.1.6 Creating a New Domain	3-3
3.1.7 Extending an Existing Domain	3-3
3.2 Using Oracle Business Process Management Suite with WebCenter Spaces	3-4
3.3 Manual Configuration for Oracle BAM.....	3-4
3.3.1 Configuring Oracle BAM with Custom Port Numbers	3-4

3.3.2	Deploying Oracle SOA and Oracle BAM on Different Servers	3-5
3.3.3	Configuring Oracle SOA and Oracle BAM Against an External LDAP Server	3-5
3.4	Applying Java Required Files (JRF)	3-5
3.5	Starting the Servers.....	3-5
3.6	Creating an Administration Server Only Domain.....	3-7
3.7	Starting Node Manager.....	3-8
3.8	Verifying the Installation and Configuration	3-8

4 Deinstalling Oracle SOA Suite

4.1	Deinstallation Instructions.....	4-1
4.1.1	Stopping Oracle Fusion Middleware.....	4-2
4.1.2	Removing Oracle SOA Suite Schemas.....	4-2
4.1.3	Removing Oracle SOA Suite	4-2
4.1.3.1	Removing the SOA Oracle Home	4-2
4.1.3.2	Removing the Oracle Common Home	4-3
4.1.3.3	Manually Removing Your Oracle Home Directories	4-3
4.1.4	Removing Oracle WebLogic Server	4-4
4.1.5	Removing Oracle JDeveloper.....	4-4
4.1.6	Removing the Program Groups (Windows Only).....	4-4
4.1.7	Rebooting Your System (Windows Only).....	4-4
4.2	Reinstallation	4-4

A Oracle SOA Suite Installation Screens

A.1	Specify Inventory Directory Screen (UNIX Only).....	A-2
A.2	Inventory Location Confirmation Screen (UNIX Only)	A-3
A.3	Welcome Screen	A-4
A.4	Prerequisite Checks Screen.....	A-5
A.5	Specify Installation Location Screen.....	A-6
A.6	Installation Summary Screen	A-8
A.7	Installation Progress Screen.....	A-9
A.8	Installation Complete Screen.....	A-10

B Oracle SOA Suite Deinstallation Screens

B.1	Welcome Screen	B-2
B.2	Deinstall Oracle Home Screen	B-3
B.3	Deinstallation Progress Screen.....	B-4
B.4	Deinstallation Complete Screen.....	B-5

C Silent Installation and Deinstallation

C.1	About Silent Installation and Deinstallation.....	C-1
C.2	Oracle SOA Suite Response Files.....	C-1
C.2.1	Installation Response Files	C-1
C.2.2	Deinstallation Response Files	C-2

D Troubleshooting

D.1	General Troubleshooting Tips	D-1
D.2	Installation and Configuration Log Files.....	D-2
D.2.1	Installation Log Files	D-2
D.2.2	Configuration Log Files	D-2
D.3	Keeping Track of Your JRE Location	D-3
D.4	Invoking SOA Composites Over SSL.....	D-3
D.5	Using Data Sources with an SSL-Enabled Database.....	D-3
D.6	Extending an Identity Management Domain with a SOA Installation.....	D-4
D.7	XA Configuration Required to Start the SOA Infrastructure on Microsoft SQL Server 2008 . D-4	
D.8	Need More Help?	D-6

Index

Preface

The *Oracle Fusion Middleware Installation Guide for Oracle SOA Suite* provides information and instructions for installing, configuring, and troubleshooting Oracle SOA Suite.

Intended Audience

This guide is intended for users who are installing Oracle Fusion Middleware 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 your products will be installed. Users on UNIX systems who are installing need `root` access to run some scripts.

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Related Documents

For additional information, see the following manuals:

- *Oracle Fusion Middleware Installation Planning Guide*
- *Oracle Fusion Middleware Administrator's Guide*
- *Oracle Fusion Middleware Concepts*
- *Oracle Fusion Middleware High Availability Guide*

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.
<code>monospace</code>	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Installation Overview

Oracle SOA Suite is a middleware component of Oracle Fusion Middleware. Oracle SOA Suite enables services to be created, managed, and orchestrated into SOA composite applications. Composites enable you to easily assemble multiple technology components into one SOA composite application. Oracle SOA Suite plugs into heterogeneous infrastructures and enables enterprises to incrementally adopt SOA.

Oracle Business Process Management Suite provides a complete set of tools for creating, executing, and optimizing business processes.

This chapter includes the following sections:

- Section 1.1, "Oracle SOA Suite Components"
- Section 1.2, "Oracle SOA Suite Installation Roadmap"

1.1 Oracle SOA Suite Components

Oracle SOA Suite contains the following components:

- Oracle Business Process Execution Language (BPEL) Process Manager (PM), with Mediator, Rules, B2B, and Human Workflow

Oracle BPEL is an XML-based language for enabling task sharing across multiple enterprises using a combination of Web services. BPEL is based on the XML schema, simple object access protocol (SOAP), and Web services description language (WSDL).

Oracle BPEL Process Manager provides a framework for easily designing, deploying, monitoring, and administering processes based on BPEL standards.

- Oracle Business Activity Monitoring (BAM)

Oracle BAM provides a framework for creating dashboards that display real-time data inflow and creating rules to send alerts under specified conditions.

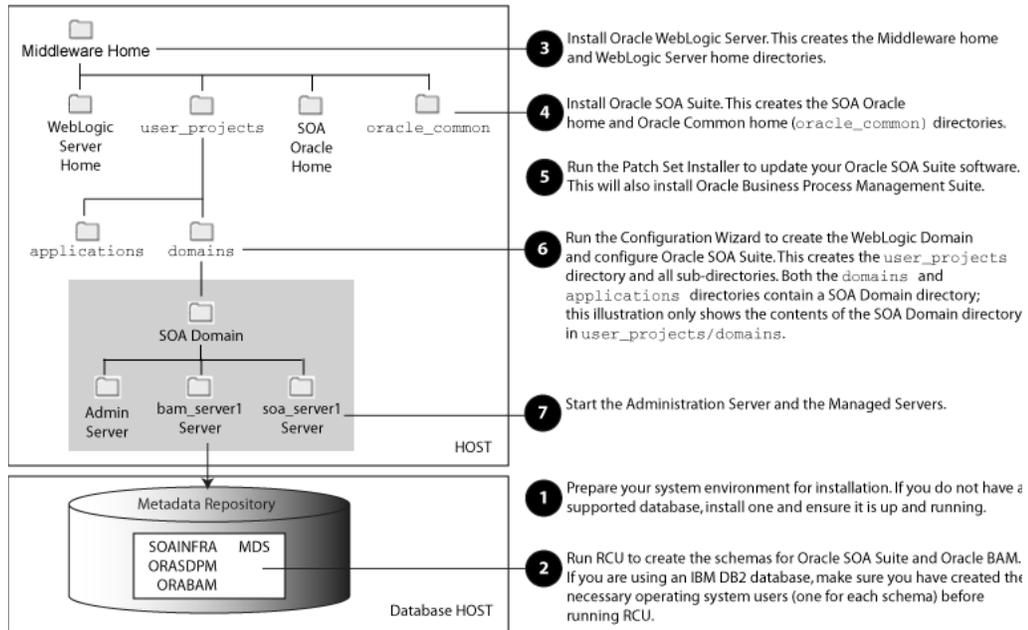
- Oracle Business Process Management Suite

This product is available in 11g (11.1.1.3) only. If you want to install Oracle Business Process Management Suite, go to Section 2.3, "Patching your Software and Installing Oracle Business Process Management Suite" for instructions.

1.2 Oracle SOA Suite Installation Roadmap

Figure 1–1 shows the directory structure of a simple Oracle SOA Suite installation on a single host, using all of the default values.

Figure 1–1 Directory Structure of Oracle SOA Suite Installation



The steps you need to take to install Oracle SOA Suite are described in Table 1–1.

Table 1–1 Tasks in the Oracle SOA Suite Installation Procedure

Task	Description	Documentation
Task 1 - Prepare your system environment for installation.	Ensure that your system environment meets the general installation requirements for Oracle Fusion Middleware as well as Oracle SOA Suite and RCU.	For system requirements information, go to: http://www.oracle.com/technology/software/products/ias/files/fusion_requirements.htm For certification information, go to: http://www.oracle.com/technology/software/products/ias/files/fusion_certification.html
Task 2 - Run RCU to create the necessary schemas.	Oracle SOA Suite and Oracle BAM require schemas that must be installed in a database. You create and load these schemas in your database by using RCU.	Make sure you have a supported Oracle database up and running. See http://www.oracle.com/technology/software/products/ias/files/fusion_certification.html for more information. See "Creating Schemas" in <i>Oracle Fusion Middleware Repository Creation Utility User's Guide</i> for instructions.
Task 3 - Install Oracle WebLogic Server and create a Middleware home	Oracle SOA Suite requires a Middleware home directory. The Middleware home is created during the Oracle WebLogic Server installation. The WebLogic Server installer also creates the WebLogic home directory within the Oracle Middleware home directory.	To download the latest Oracle WebLogic Server, see "Product Distribution" in <i>Oracle Fusion Middleware Installation Guide for Oracle WebLogic Server</i> . For installation instructions, see "Running the Installation Program in Graphical Mode" in <i>Oracle Fusion Middleware Installation Guide for Oracle WebLogic Server</i> . For more information about the Middleware home and WebLogic home directories, see "Middleware Home and WebLogic Home Directories" in <i>Oracle Fusion Middleware Installation Planning Guide</i> .
Task 4 - Install Oracle SOA Suite	Use the installer to install Oracle SOA Suite. This creates the SOA Oracle home directory (Oracle_SOA1 by default) and the Oracle Common home (oracle_common) directory.	Chapter 2, "Installing Oracle SOA Suite and Oracle Business Process Management Suite".

Table 1–1 (Cont.) Tasks in the Oracle SOA Suite Installation Procedure

Task	Description	Documentation
Task 5 - Update your Oracle SOA Suite software.	Run the Patch Set Installer to update your Oracle SOA Suite software to the latest version. The Patch Set Installer for Oracle SOA Suite also installs the Oracle Business Process Management software.	"Applying the Latest Oracle Fusion Middleware Patch Set with the Patch Set Installers" in <i>Oracle Fusion Middleware Patching Guide</i> .
Task 6 - Configure Oracle SOA Suite and create your WebLogic Domain.	<p>Use the Oracle Fusion Middleware Configuration Wizard to create your WebLogic Domain and configure your Oracle SOA Suite components.</p> <p>The installer creates the <code>user_projects/domain</code> and <code>user_projects/applications</code> directories, both of which contain an Oracle SOA Suite domain directory.</p> <p>The Oracle SOA Suite domain directory in the <code>domains</code> directory contains the Administration Server and several Managed Servers, depending on the components you choose to install.</p> <p>After the domain is created, you can extend it later if you want to add more components to the domain.</p>	Chapter 3, "Configuring Oracle SOA Suite and Oracle Business Process Management Suite".
Task 7 - Start the servers.	Start the Administration Server and Managed Servers.	Section 3.5, "Starting the Servers".

Installing Oracle SOA Suite and Oracle Business Process Management Suite

This chapter describes how to install the Oracle SOA Suite run-time components.

See Section 2.4, "Installing Oracle SOA Suite Design-Time Components" for information about installing Oracle JDeveloper and installing the Oracle SOA Suite extensions in Oracle JDeveloper. These extensions provide the functionality and online documentation for designing SOA composite applications.

The following topics are covered in this chapter:

- Section 2.1, "Preparing to Install"
- Section 2.2, "Installation Instructions"
- Section 2.3, "Patching your Software and Installing Oracle Business Process Management Suite"
- Section 2.4, "Installing Oracle SOA Suite Design-Time Components"

2.1 Preparing to Install

Before continuing, make sure you have completed tasks 1 - 3 in Table 1-1 in Section 1.2, "Oracle SOA Suite Installation Roadmap".

2.1.1 Enabling Unicode Support

Your operating system configuration can influence the behavior of characters supported by Oracle SOA Suite.

On a UNIX operating system, Oracle highly recommends that you enable Unicode support by setting the `LANG` and `LC_ALL` environment variables to a locale with the UTF-8 character set. This enables the operating system to process any character in Unicode. SOA technologies are based on Unicode.

If the operating system is configured to use a non-UTF-8 encoding, SOA components may function in an unexpected way. For example, a non-ASCII file name can make the file inaccessible and cause an error. Oracle does not support problems caused by operating system constraints.

In a design-time environment, if you are using Oracle JDeveloper, select **Tools -> Preferences -> Environment -> Encoding -> UTF-8** to enable Unicode support.

2.1.2 Synchronizing Clocks When Working with Clusters

Oracle SOA uses Quartz, which is an open source job-scheduling framework. When you are setting up clusters on multiple systems, Quartz requires that the clocks on all the systems be synced up. For more information, refer to the following URL:

<http://www.opensymphony.com/quartz/wikidocs/TutorialLesson11.html>

Also refer to the *Oracle Fusion Middleware Enterprise Deployment Guide for Oracle SOA Suite* and *Oracle Fusion Middleware High Availability Guide* for more information about clustering in advanced topologies.

2.2 Installation Instructions

Oracle BAM and Oracle SOA Suite are both installed onto your system by default. After the products are installed, you must run the Configuration Wizard to configure the product(s) of your choice.

This section contains the following topics:

- Section 2.2.1, "Starting the Installer"
- Section 2.2.2, "Installation Log Files"
- Section 2.2.4, "Installation Screens and Instructions"

2.2.1 Starting the Installer

The installer requires the location of a Java Runtime Environment (JRE) on your system.

Tip: When you installed Oracle WebLogic Server, a JRE was installed on your system. You can use this location (the location of the `jre` directory) to start the installer. The default location for the JRE is `MW_HOME/jdk160_18` (on UNIX operating systems) or `MW_HOME\jdk160_18` (on Windows operating systems), where `MW_HOME` is the Middleware Home directory.

On 64-bit platforms, the JRE location is the `JAVA_HOME` you used to install Oracle WebLogic Server.

For more information, refer to *Oracle Fusion Middleware Installation Guide for Oracle WebLogic Server*.

On UNIX operating systems:

```
> ./runInstaller -jreLoc JRE_LOCATION
```

Note: Starting the installer as `root` user is not supported.

On Windows operating systems:

```
D:\ setup.exe -jreLoc JRE_LOCATION
```

You must specify the absolute path to your `JRE_LOCATION`; relative paths are not supported.

Note: You must also specify the *JRE_LOCATION* in the same manner if you are installing Oracle SOA Suite on a 64-bit UNIX or Windows operating system with a 32-bit JDK.

If no JRE location is specified, you will be prompted to provide the location of your JRE before the installer is started:

```
[> ./runInstaller
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 66070 MB    Passed
Checking swap space: must be greater than 512 MB.    Actual 4047 MB    Passed
Checking monitor: must be configured to display at least 256 colors.    Actual 256
Passed
Preparing to launch Oracle Universal Installer from /tmp/OraInstall2010-02-23_
10-57-58AM. Please wait ...
Please specify JRE/JDK location ( Ex. /home/jre ), <location>/bin/java should
exist :
```

Specify the absolute path to the JRE on your system before you continue.

2.2.2 Installation Log Files

The installer writes logs files to the *Oracle_Inventory_Location/log* (on UNIX operating systems) or *Oracle_Inventory_Location\logs* (on Windows operating systems) directory. Refer to Section D.2.1, "Installation Log Files" for more information about the log files and their contents.

2.2.3 Inventory Screens (UNIX Only)

If you are installing on a UNIX system, and if this is the first time any Oracle product is being installed on your system with the Oracle Universal Installer, you will be asked to provide the location of an inventory directory. This is where the installer will set up subdirectories and maintain inventory data for each Oracle product that is installed on this system.

Follow the instructions in Table 2–1 to configure the inventory directory information. For more help, click on the screen name in the table below, or click the **Help** button in the GUI.

Table 2–1 *Inventory Directory and Group Screens*

No.	Screen	Description and Action Required
1	Specify Inventory Directory Screen (UNIX Only)	Specify the Oracle inventory directory and group permissions for that directory. The group must have write permissions to the Oracle inventory directory. Click OK to continue.
2	Inventory Location Confirmation Screen (UNIX Only)	Run the <code>createCentralInventory.sh</code> script as root. Click OK to continue.

2.2.4 Installation Screens and Instructions

Follow the instructions in Table 2–2 to install the Oracle SOA Suite components.

If you need additional help with any of the installation screens, refer to Appendix A, "Oracle SOA Suite Installation Screens" or click **Help** to access the online help.

Table 2–2 Installation Flow for Oracle SOA Suite

No.	Screen	Description and Action Required
1	Welcome Screen	Click Next to continue.
2	Prerequisite Checks Screen	Click Next to continue.
3	Specify Installation Location Screen	Specify Oracle Middleware home and Oracle home locations. The Oracle Common home (oracle_common) directory will automatically be created inside the Middleware home; do not use oracle_common as the name of your Oracle home directory. Click Next to continue.
4	Installation Summary Screen	Verify the installation about to be performed. Click Install to continue.
5	Installation Progress Screen	This screen shows the progress of the installation. When the progress shows 100% complete, click Next to continue.
6	Installation Complete Screen	Click Finish to dismiss the screen.

2.3 Patching your Software and Installing Oracle Business Process Management Suite

The next step is to patch your Oracle SOA Suite software to the latest version by running the Patch Installer for Oracle SOA Suite. The Patch Installer for Oracle SOA Suite will also install the Oracle Business Process Management Suite software onto your system.

For instructions, see "Applying the Latest Oracle Fusion Middleware Patch Set with the Patch Set Installers" in *Oracle Fusion Middleware Patching Guide*.

After this is complete, you are ready to run the Configuration Wizard to configure your domain for Oracle SOA Suite, including Oracle Business Process Management Suite. Go to Chapter 3, "Configuring Oracle SOA Suite and Oracle Business Process Management Suite" for instructions.

2.4 Installing Oracle SOA Suite Design-Time Components

Oracle SOA Suite is not automatically installed with Oracle JDeveloper. Before you can create a SOA application and project, you must install the SOA Suite extension for JDeveloper.

For instructions on installing SOA Suite extension for JDeveloper, see *Oracle Fusion Middleware Installation Guide for Oracle JDeveloper*.

Configuring Oracle SOA Suite and Oracle Business Process Management Suite

This chapter describes how to configure Oracle SOA Suite and Oracle Business Process Management Suite after the components have already been installed.

The following topics are covered:

- Section 3.1, "Configuration Instructions"
- Section 3.2, "Using Oracle Business Process Management Suite with WebCenter Spaces"
- Section 3.3, "Manual Configuration for Oracle BAM"
- Section 3.4, "Applying Java Required Files (JRF)"
- Section 3.5, "Starting the Servers"
- Section 3.7, "Starting Node Manager"
- Section 3.8, "Verifying the Installation and Configuration"

3.1 Configuration Instructions

After the installation is complete, you must run the Oracle Fusion Middleware Configuration Wizard to create and configure a new WebLogic domain, and choose the products that you want to configure in that domain. If you have run the sparse installer, Oracle Business Process Management will be among the list of products available for configuration.

This new domain will contain the Administration Server and other managed servers depending on the products you choose to configure.

After you have created a new domain, you can later extend that domain if you want to add more products to that domain.

Note: Once you have configured a domain for Oracle Business Process Management, you can no longer create another domain in the same Oracle home that contains Oracle SOA Suite only. An Oracle SOA Suite domain that does not contain Oracle Business Process Management cannot share the same Oracle home as an Oracle Business Process Management domain.

3.1.1 Using Default Settings for Managed Servers

During the configuration, the Oracle Fusion Middleware Configuration Wizard automatically creates managed servers in the domain to host the Fusion Middleware system components. Oracle recommends that you use the default configuration settings for these managed servers. If you modify the default configuration settings, then you will have to perform some manual configuration steps before the Fusion Middleware environment can be started.

By default, the following Managed Servers are created:

- `soa_server1` - Hosts Oracle SOA
- `bam_server1` - Hosts Oracle BAM

3.1.2 Shutting Down Running Managed Servers

Before you start the Configuration Wizard, you must shut down any managed servers that are currently running. If you do not, validation of your managed servers will fail due to port number conflicts from the managed servers that are currently running.

For more information, see "Starting and Stopping Oracle Fusion Middleware" in *Oracle Fusion Middleware Administrator's Guide*.

3.1.3 Running the Configuration Wizard with an Oracle RAC Database

If you are running the Configuration Wizard with a backend Oracle RAC database, Oracle recommends that you keep all the RAC instances configured for the service to be up and running. This will ensure that JDBC validation checks are reliable and minimize the possibility of accidental misconfiguration.

3.1.4 Starting the Oracle Fusion Middleware Configuration Wizard

The Configuration Wizard is located in the `SOA_ORACLE_HOME/common/bin` (on UNIX operating systems) or `SOA_ORACLE_HOME\common\bin` (on Windows operating systems) directory. Go to this directory, then run the `config.sh` (on UNIX operating systems) or `config.cmd` (on Windows operating systems) script to start the Configuration Wizard:

On UNIX operating systems:

```
./config.sh
```

On Windows operating systems:

```
config.cmd
```

If this is a new installation and you need to create a new WebLogic domain, follow the instructions in Section 3.1.6, "Creating a New Domain". You can also run the Configuration Wizard to extend an existing WebLogic domain, as described in Section 3.1.7, "Extending an Existing Domain".

If you are using a 32-bit operating system, Oracle JRockit SDK is installed as part of the Oracle WebLogic installation. This is the JDK that the Configuration Wizard will use by default. If you want to invoke the Configuration Wizard with the Sun JDK, do the following prior to starting the Configuration Wizard:

1. Set the `JAVA_HOME` environment variable to the location of the Sun JDK. For example, you can set it to the Sun JDK that was installed with Oracle WebLogic Server in the `MW_HOME/jdk160_18` (on UNIX operating systems) or `MW_HOME\jdk160_18` (on Windows operating systems) directory.

2. Set the `JAVA_VENDOR` environment variable to "Sun."

3.1.5 Configuration Log Files

Log files of your configuration session are created in the `SOA_ORACLE_HOME/common/bin` (on UNIX operating systems) or `SOA_ORACLE_HOME\common\bin` (on Windows operating systems) directory. For more information about the Configuration Wizard log files, see Section D.2, "Installation and Configuration Log Files".

3.1.6 Creating a New Domain

Follow the instructions in "Creating a WebLogic Domain" in *Oracle Fusion Middleware Creating Domains Using the Configuration Wizard* to create a new WebLogic domain for your Oracle SOA Suite components.

Note: You must configure XA support in both the Microsoft SQL Server database and Microsoft operating system to test the SOA Infrastructure connection during domain creation and to successfully start the SOA Infrastructure.

For more information, see Section D.7, "XA Configuration Required to Start the SOA Infrastructure on Microsoft SQL Server 2008".

3.1.7 Extending an Existing Domain

While creating your WebLogic domain, if you chose not to configure all of the components in Oracle SOA Suite, you can add these components at a later date by extending your domain. If this is a first time installation or you do not want to add more components, you can skip this section and move to the next section.

Note: Before proceeding, make sure that schemas exist in your database for the components you are configuring when you extend the domain. For example, if you are planning to extend the domain and configure Oracle BAM, then make sure the required schemas for Oracle BAM (for example, `prefix_MDS`, `prefix_ORASDPM`, and `prefix_ORABAM`) exist in your database before you continue.

Follow the instructions in "Extending WebLogic Domains" in *Oracle Fusion Middleware Creating Domains Using the Configuration Wizard* to extend an existing domain.

Note: If you are running the Configuration Wizard to extend a domain that was created with a previous version of Oracle Fusion Middleware, the Configure JDBC Component Schema screen will have all components un-selected by default. You should leave the components un-selected and click **Next** to advance to the next screen and skip the JDBC connection testing.

If you select a component on the Configure JDBC Component Schema screen, the data source connection for that component will be tested and you may receive an error message. If this happens, you can ignore the error message and continue with your domain extension operation.

3.2 Using Oracle Business Process Management Suite with WebCenter Spaces

If you want to access some of the Oracle Business Process Management Suite functionality through WebCenter Spaces, then you must install Process Portal on Oracle WebCenter. However, doing so requires that Oracle WebCenter is either configured with Oracle Discussions and Content Server, or that a Discussions and Content server should exist somewhere to which the Process Portal installation can configure connections.

For more information, see "Configuring Process Portal on WebCenter Spaces" in *Oracle Fusion Middleware Patching Guide*.

3.3 Manual Configuration for Oracle BAM

Depending on your configuration options and environment, Oracle BAM may require some custom configuration steps, as described in this section.

3.3.1 Configuring Oracle BAM with Custom Port Numbers

The default port number of the Oracle BAM managed server (`bam_server1`) is 9001. If, during configuration, you changed this port number or specified a listen address using the WebLogic Configuration Wizard, you must make the following changes:

1. Manually change the port number from 9001 to the new port number in the `SOA_ORACLE_HOME/bam/config/BAMCommandConfig.xml` (on UNIX operating systems) or `SOA_ORACLE_HOME\bam\config\BAMCommandConfig.xml` (on Windows operating systems) file. The parameter that needs to be changed is shown below:

```
<ADCServerPort>9001</ADCServerPort>
```

2. Oracle BAM single-instance web application configuration information is maintained in the `MW_HOME/user_projects/domains/domain_name/servers/BAM_server_name/tmp/_WL_user/oracle-bam_11.1.1/yhryfp/APP-INF/classes/config` (on UNIX operating systems) or `MW_HOME\user_projects\domains\domain_name\servers\BAM_server_name\tmp_WL_user\oracle-bam_11.1.1\yhryfp\APP-INF\classes\config` (on Windows operating systems) directory. The properties in these files can be modified by using the Mbeans exposed in the Oracle Enterprise Manager Fusion Middleware Control. The properties exposed through MBeans are specific to each server:

Note: The folder name under `oracle-bam_11.1.1` is randomly generated (in this case, it is `yhryfp`). When you are looking for this directory on your system, be aware that the name of the directory on your system may not match the name of the directory shown in the documentation.

- a. Changes in `BAMCommonConfig.xml`:

The `<ApplicationURL>` parameter should contain the new URL.

- b. Changes in `BAMServerConfig.xml`:

```
<ADCServerName>localhost</ADCServerName>
<ADCServerPort>9001</ADCServerPort>
```

c. Changes in `BAMWebConfig.xml`:

```
<ServerName>localhost</ServerName>
<ServerPort>9001</ServerPort>
```

3.3.2 Deploying Oracle SOA and Oracle BAM on Different Servers

Oracle SOA and Oracle BAM are configured in their own managed servers by default (`soa_server1` for Oracle SOA and `bam_server1` for Oracle BAM). If you choose to configure Oracle SOA on `AdminServer` by deleting `soa_server1` in the Configuration Wizard, and if Oracle BAM is also selected for configuration, then Oracle BAM also needs to be targeted on `AdminServer` by deleting `bam_server1` in the Configuration Wizard.

3.3.3 Configuring Oracle SOA and Oracle BAM Against an External LDAP Server

If you are configuring Oracle SOA and Oracle BAM against an external LDAP server, make sure the following are present in the external LDAP server:

- `OracleSystemUser` (a user in the external LDAP server)
- `OracleSystemGroup` (a group in the external LDAP server)
- `OracleSystemUser` must be a part of the `OracleSystemGroup`

3.4 Applying Java Required Files (JRF)

Java Required Files (JRF) consists of those components not included in the Oracle WebLogic Server installation and that provide common functionality for Oracle business applications and application frameworks.

JRF consists of a number of independently developed libraries and applications that are deployed into a common location (the Oracle Common Home or `oracle_common` directory). The components that are considered part of Java Required Files include: Oracle Application Development Framework, Oracle Fusion Middleware Audit Framework, Dynamic Monitoring Service, Infrastructure Security, Java Object Cache, Oracle Platform Security Services, logging, MDS, Oracle Web Services, and Oracle Web Services Manager.

If you are creating or extending a domain and JRF is the only component selected on the Select Domain Source Screen or Select Extension Source Screen, you must manually apply JRF to a Managed Server or cluster. To do so:

1. Start the Configuration Wizard (see Section 3.1.4, "Starting the Oracle Fusion Middleware Configuration Wizard").
2. When you reach the Select Optional Configuration Screen, select **Deployments and Services**.
3. On the Target Services to Servers or Clusters Screen, target the `mds-owsm` data source to the Administration Server (by default, it is not targeted to any server).
4. Finish the domain creation or extension.

3.5 Starting the Servers

To get your deployments up and running, you must start the Administration Server and various Managed Servers:

1. To start the Administration Server, run the `startWebLogic.sh` (on UNIX operating systems) or `startWebLogic.cmd` (on Windows operating systems) script in the directory where you created your new domain.

On UNIX systems:

```
MW_HOME/user_projects/domains/domain_name/startWebLogic.sh
```

On Windows systems:

```
MW_HOME\user_projects\domains\domain_name\startWebLogic.cmd
```

You entered the domain name and location on the Specify Domain Name and Location Screen in the Configuration Wizard.

2. To start the Managed Servers, run the `startManagedWebLogic.sh` (on UNIX operating systems) or `startManagedWebLogic.cmd` (on Windows operating systems) script in the `bin` directory inside the directory where you created your domain. These managed servers must be started from the command line.

This command also requires that you specify a server name. The servers that need to be started are:

- `soa_server1` (Oracle SOA Server)
- `bam_server1` (Oracle BAM Server)

For example, to start Oracle SOA Server on a UNIX system:

```
MW_HOME/user_projects/domains/domain_name/bin/startManagedWebLogic.sh soa_server1
```

On Windows systems:

```
MW_HOME\user_projects\domains\domain_name\bin\startManagedWebLogic.cmd soa_server1
```

Before the managed server is started, you will be prompted for the WebLogic Server user name and password. These were provided on the Configure Administrator Username and Password Screen in the Configuration Wizard.

Note: If this is the first time that both Oracle SOA Server and Oracle BAM Server are being started after installation and configuration, you must make sure that your startup of Oracle SOA Server is complete before starting Oracle BAM Server.

If your Administration Server is using a non-default port, or resides on a different host than your managed servers (in a distributed environment), you must also specify the URL to access your Administration Server.

On UNIX systems:

```
MW_HOME/user_projects/domains/domain_name/bin/startManagedWebLogic.sh soa_server1 http://host:admin_server_port
```

On Windows systems:

```
MW_HOME\user_projects\domains\domain_name\bin\startManagedWebLogic.cmd soa_server1 http://host:admin_server_port
```

Instead of being prompted for the Administration Server user name and password, you can also specify them directly from the command line.

On UNIX systems:

```
MW_HOME/user_projects/domains/domain_name/bin/startManagedWebLogic.sh soa_
server1 http://host:admin_server_port -Dweblogic.management.username=user_name
-Dweblogic.management.password=password
```

On Windows systems:

```
MW_HOME\user_projects\domains\domain_name\bin\startManagedWebLogic.cmd soa_
server1 http://host:admin_server_port -Dweblogic.management.username=user_name
-Dweblogic.management.password=password
```

If you do not know the names of the managed servers that need to be started, you can view the contents of the following file on UNIX systems:

```
MW_HOME/user_projects/domains/domain_name/startManagedWebLogic_readme.txt
```

On Windows systems:

```
MW_HOME\user_projects\domains\domain_name\startManagedWebLogic_readme.txt
```

Or, you can access the Administration Server console at the following URL:

```
http://host:admin_server_port/console
```

Supply the user name and password that you specified on the Configure Administrator Username and Password Screen of the Configuration Wizard. Then, navigate to **Environment > Servers** to see the names of your managed servers.

3.6 Creating an Administration Server Only Domain

When the Administration Server is started, the contents of the `soa-infra` directory under `DOMAIN_HOME/config` (on UNIX systems) or `DOMAIN_HOME\config` (on Windows systems) are overwritten by the Administration Server. However, since SOA configuration parameters are updated only on managed servers and on a per-server basis, all updates to the SOA configuration are lost when the managed servers are restarted if the system hosting the Administration Server does not have an updated copy.

The `SOA_ORACLE_HOME/bin/ant-soa-util.xml` (on UNIX operating systems) or `SOA_ORACLE_HOME\bin\ant-soa-util.xml` (on Windows operating systems) script can be used to resolve this issue. The script does the following:

Note: The script must be run before you try to start the Administration Server or any of the Managed Servers.

- Moves the `config/soa-infra` (on UNIX operating systems) or `config\soa-infra` (on Windows operating systems) to the `DOMAIN_HOME/soa_backup/config/soa-infra` (on UNIX operating systems) or `DOMAIN_HOME\soa_backup\config\soa-infra` (on Windows operating systems) directory.
- Replaces the `startManagedWebLogic.sh` (on UNIX operating systems) or `startManagedWebLogic.cmd` (on Windows operating systems) scripts with versions that prevent the Managed Servers from starting.

3.7 Starting Node Manager

Node Manager is a Java utility that runs as separate process from Oracle WebLogic Server and allows you to perform common operations for a Managed Server, regardless of its location with respect to its Administration Server. For example, Node Manager can be used for:

- Starting servers on remote machines (via the Console).
- Automatically restarting failed servers.
- Automatic Service Migration when using consensus-based leasing.
- Whole Server Migration.

While use of Node Manager is optional, it provides valuable benefits if your WebLogic Server environment hosts applications with high-availability requirements.

For more information about Node Manager, refer to *Oracle Fusion Middleware Node Manager Administrator's Guide for Oracle WebLogic Server*.

3.8 Verifying the Installation and Configuration

To verify the installation, start your browser and enter the following URLs:

- To access the Administration Server console:

`http://host:admin_server_port/console`

- If you configured your Administration Server to accept SSL connection, use the following URL to access the Administration Server console in secure mode:

`https://host:secure_admin_server_port/console`

- To access Enterprise Manager:

`http://host:admin_server_port/em`

Deinstalling Oracle SOA Suite

This chapter describes how to remove Oracle SOA Suite from your system.

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. See Section 4.2, "Reinstallation" for more information.

The following topics are covered:

- Section 4.1, "Deinstallation Instructions"
- Section 4.2, "Reinstallation"

4.1 Deinstallation Instructions

The deinstaller will attempt to remove the Oracle home from which it was started. Before you choose to remove your Oracle home, make sure that it is not in use by an existing domain, and also make sure you stop all running processes that use this Oracle home.

Note: If you have installed Oracle Business Process Management, removing Oracle Business Process Management also removes Oracle SOA Suite, since they share the same Oracle home. It is not possible to remove only Oracle Business Process Management without also removing Oracle SOA Suite.

This procedure will not remove any WebLogic domains that you have created - it only removes the software in the Oracle home.

Properly removing Oracle SOA Suite from your system involves the following tasks:

- Stopping Oracle Fusion Middleware
- Removing Oracle SOA Suite Schemas
- Removing Oracle SOA Suite
- Removing Oracle WebLogic Server
- Removing Oracle JDeveloper
- Removing the Program Groups (Windows Only)
- Rebooting Your System (Windows Only)

4.1.1 Stopping Oracle Fusion Middleware

Before deinstalling Oracle Fusion Middleware software components, you should stop all servers and processes.

For instructions, refer to "Starting and Stopping Oracle Fusion Middleware" in *Oracle Fusion Middleware Administrator's Guide*.

To stop Node Manager, see the instructions in "Stopping Node Manager" in *Oracle Fusion Middleware Node Manager Administrator's Guide for Oracle WebLogic Server*.

4.1.2 Removing Oracle SOA Suite Schemas

Run the Repository Creation Utility (RCU) to drop the Oracle SOA Suite schemas from your database.

For instructions, refer to "Dropping Schemas" in *Oracle Fusion Middleware Repository Creation Utility User's Guide*.

4.1.3 Removing Oracle SOA Suite

Deinstalling Oracle SOA Suite involves removing the SOA Oracle home and also the Oracle Common home directories.

The deinstaller will attempt to remove the Oracle home from which it was started. This procedure will not remove any WebLogic domains that you have created - it only removes the software in the Oracle home.

Before you choose to remove your SOA Oracle home, make sure that it is not in use by an existing domain, and also make sure you stop all running processes that use this Oracle home. After you remove the software, you will no longer be able to use your WebLogic domain.

4.1.3.1 Removing the SOA Oracle Home

To start the deinstaller, navigate to the `SOA_ORACLE_HOME/oui/bin` (on UNIX operating systems) or `SOA_ORACLE_HOME\oui\bin` (on Windows operating systems) directory and start the deinstaller.

On UNIX operating systems:

```
./runInstaller.sh -deinstall
```

On Windows operating systems:

```
setup.exe -deinstall
```

On Windows operating systems, you can also start the deinstaller from the Start menu by selecting **Programs > Oracle SOA 11g - Home1 > Uninstall**.

Follow the instructions in Table 4-1 to deinstall your software.

If you need additional help with any of the deinstallation screens, refer to Appendix B, "Oracle SOA Suite Deinstallation Screens" or click **Help** to access the online help.

Table 4-1 Deinstallation Flow

No.	Screen	Description and Action Required
1	Welcome Screen	Click Next to continue.

Table 4–1 (Cont.) Deinstallation Flow

No.	Screen	Description and Action Required
2	Deinstall Oracle Home Screen	<p>Verify the Oracle home you are about to deinstall. Click Deinstall to continue.</p> <p>On the Warning screen, select whether or not you want the deinstaller to remove the Oracle home directory in addition to removing the software. Click Yes to have the deinstaller remove the software and Oracle home, No to remove only the software, or Cancel to return to the previous screen.</p> <p>If you select No, go to Section 4.1.3.3, "Manually Removing Your Oracle Home Directories" for instructions on how to manually remove your Oracle home directory.</p>
3	Deinstallation Progress Screen	This screen shows the progress and status of the deinstallation.
4	Deinstallation Complete Screen	Click Finish to dismiss the screen.

4.1.3.2 Removing the Oracle Common Home

This section describes how to remove the `oracle_common` directory. This directory contains its own deinstaller in `oui/bin` (on UNIX operating systems) or `oui\bin` (on Windows operating systems), just like any other Oracle home directory.

To start the deinstaller, navigate to the `MW_HOME/oracle_common/oui/bin` (on UNIX operating systems) or `MW_HOME\oracle_common\oui\bin` (on Windows operating systems) directory and start the deinstaller.

On UNIX operating systems:

```
./runInstaller -deinstall -jreLoc JRE_LOCATION
```

On Windows operating systems:

```
setup.exe -deinstall -jreLoc JRE_LOCATION
```

Note: Specify the absolute path to your `JRE_LOCATION`; relative paths are not supported.

After the deinstaller is started, follow the instructions in Table 4–1 to remove the Oracle Common home directory.

4.1.3.3 Manually Removing Your Oracle Home Directories

If you selected **No** on the warning screen during deinstallation, you must manually remove your Oracle home directories and all sub-directories. For example, if your SOA Oracle home directory was `/home/Oracle/Middleware/Oracle_SOA1` on a UNIX operating system:

```
> cd /home/Oracle/Middleware
> rm -rf Oracle_SOA1
```

On a Windows operating system, if your SOA Oracle home directory was `C:\Oracle\Middleware\Oracle_SOA1`, use a file manager window and navigate

to the `C:\Oracle\Middleware` directory, then right-click on the `Oracle_SOA1` folder and select **Delete**.

The same procedure can be used to manually remove the Oracle Common home (`oracle_common`) directory.

4.1.4 Removing Oracle WebLogic Server

Instructions for removing Oracle WebLogic Server are provided in "Uninstalling the Software" in *Oracle Fusion Middleware Installation Guide for Oracle WebLogic Server*.

After the software is removed, you must manually remove the Middleware home directory and all sub-directories. For example, if your Middleware home directory was `/home/Oracle/Middleware` on a UNIX operating system:

```
> cd /home/Oracle
> rm -rf Middleware
```

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

4.1.5 Removing Oracle JDeveloper

If you have installed Oracle JDeveloper on your system, refer to *Oracle Fusion Middleware Installation Guide for Oracle JDeveloper* for instructions on how to remove this software from your system.

4.1.6 Removing the Program Groups (Windows Only)

On Windows systems, you must also manually remove the program groups from the `Start Menu\Programs` folder. As an example (the folder names and program group names on your system may be different), you might remove the following from `C:\Documents and Settings\All Users\Start Menu\Programs`:

- Oracle Fusion Middleware 11.1.1.3.0
- Oracle SOA Suite 11g - Home1
- Oracle WebLogic

4.1.7 Rebooting Your System (Windows Only)

On Windows operating systems, you should reboot your computer after you have finished removing all your programs to ensure proper cleanup.

4.2 Reinstallation

The installer does not allow reinstallation of Oracle SOA Suite in a directory that already contains an Oracle product. To reinstall Oracle SOA Suite in the same directory as before, you must follow the instructions in this chapter to deinstall the software, then follow the instructions in Chapter 2, "Installing Oracle SOA Suite and Oracle Business Process Management Suite" to reinstall the software.

Oracle SOA Suite Installation Screens

This appendix contains screenshots and descriptions for all of the Oracle SOA Suite installation screens:

- Specify Inventory Directory Screen (UNIX Only)
- Inventory Location Confirmation Screen (UNIX Only)
- Welcome Screen
- Prerequisite Checks Screen
- Specify Installation Location Screen
- Installation Summary Screen
- Installation Progress Screen
- Installation Complete Screen

A.1 Specify Inventory Directory Screen (UNIX Only)



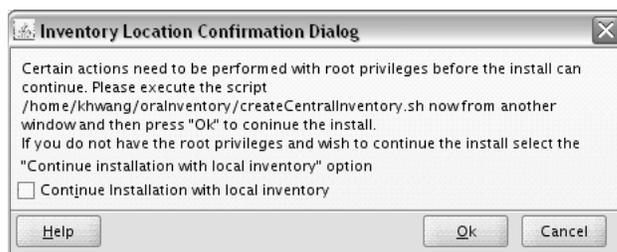
This screen appears for UNIX systems only; if this is your first Oracle installation on this host, you must specify the location of the inventory directory. This inventory directory is used by the installer to keep track of all Oracle products installed on the computer.

The default inventory location is *USER_HOME/orainventory*.

In the **Operating System Group name** field, select the group whose members you want to grant access to the inventory directory; all members of this group will be able to install products on this system.

Click **OK** to continue.

A.2 Inventory Location Confirmation Screen (UNIX Only)

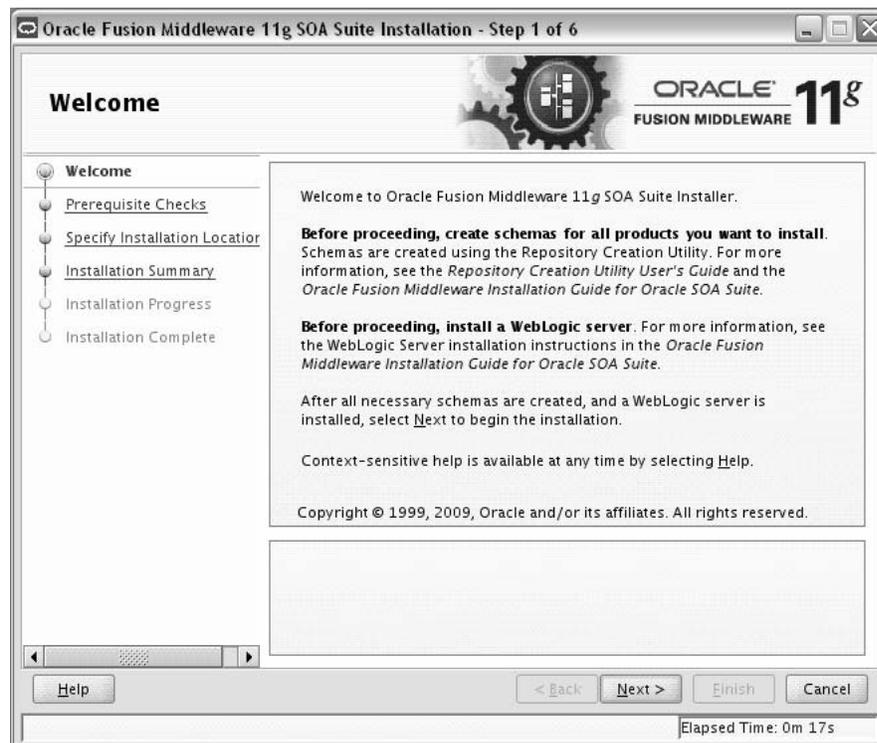


This screen appears for UNIX systems only; you are asked to run the `inventory_directory/createCentralInventory.sh` script as `root`.

If you do not have `root` access on this system but wish to continue with the installation, select **Continue installation with local inventory**.

Click **OK** to continue.

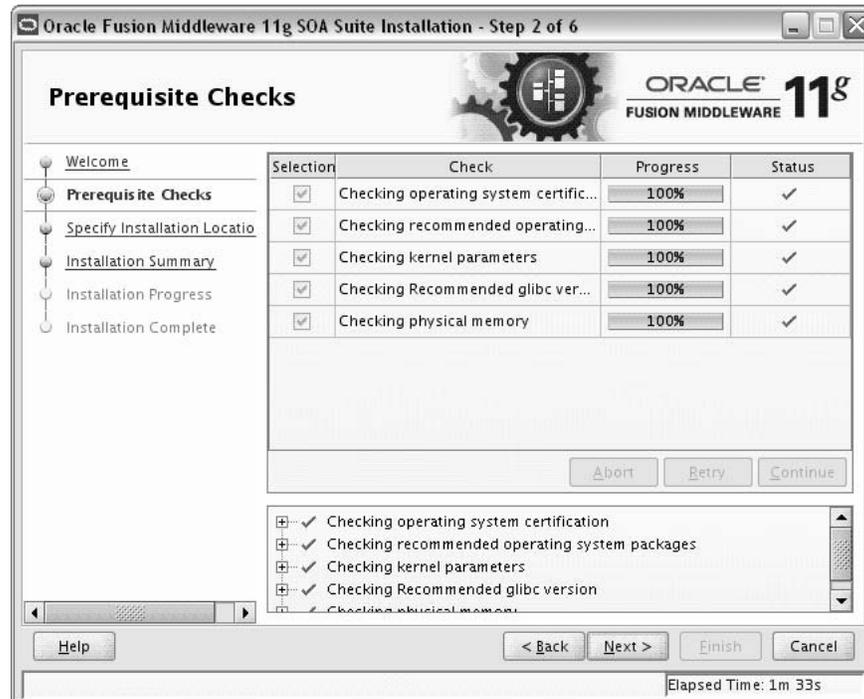
A.3 Welcome Screen



The Welcome screen is displayed each time you start the installer.

Click **Next** to continue.

A.4 Prerequisite Checks Screen



If there is a problem, a short error message appears in the bottom portion of the screen. Fix the error and click **Retry** to try again.

If you want to ignore the error and warning messages and continue with the installation, click **Continue**.

Click **Abort** to stop prerequisite checking for all components.

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

A.5 Specify Installation Location Screen



In the Oracle Middleware Home field, specify the absolute path to your existing Oracle Middleware Home directory; this is the directory that was created when you installed Oracle WebLogic Server. If you do not know the full path to your Middleware Home, you can click **Browse** to select an existing directory in your system.

In the Oracle Home Directory field, specify the directory inside the Oracle Middleware Home where you want to install your products:

- If you specify a directory that already exists, it must be either:
 - An empty directory inside the Oracle Middleware Home (for example, you have created an empty directory inside the Middleware Home in advance of this installation and should specify this directory here).
 - An existing Oracle Home directory (for example, you are reinstalling Oracle SOA Suite to an existing Oracle Home because of an incomplete previous installation).
- If you specify a new directory, it will be created inside the Oracle Middleware Home.

If you are performing an installation on a Windows operating system, be sure that your directory paths are valid and do not contain double backslashes (\\).

The Oracle Home directory is where your products will be installed. All software binaries will reside in this directory, and no runtime process can write to this directory.

Note: For the remainder of this document, this directory will be referred to as your SOA Oracle Home to avoid any confusion with the Oracle Home directories of other Oracle Fusion Middleware products. For more information about Oracle Home directories, refer to *Oracle Fusion Middleware Installation Planning Guide*.

Click **Next** to continue.

A.6 Installation Summary Screen



Review the information on this screen, and click **Install** to begin the installation. The operations summarized on this page will be performed when you click **Install**.

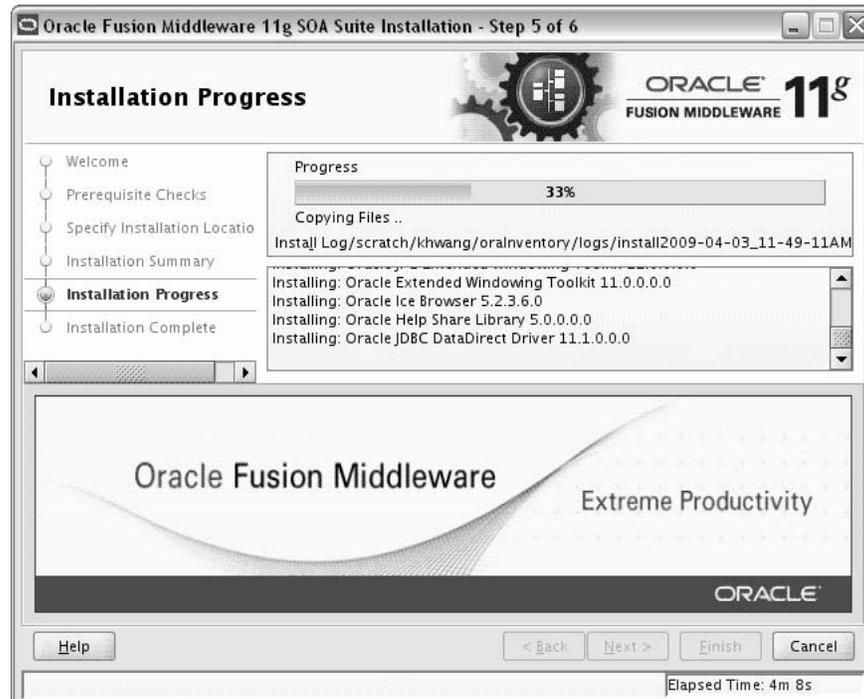
If you want to make any changes to the configuration before starting the installation, use the navigation pane and select the topic you want to edit.

If you want to save this configuration to a text file, click **Save**. This file can be used later if you choose to perform the same installation from the command line.

For more information about silent installation, refer to:

<http://fmwdocs.us.oracle.com/~khwang/DEMO/ASINS/silent.htm#sthref135>

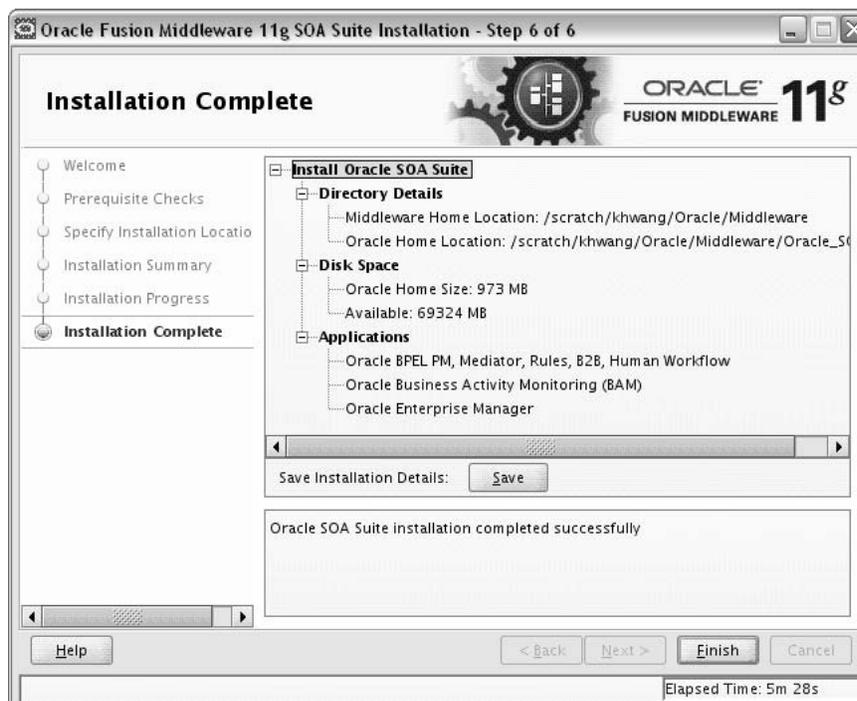
A.7 Installation Progress Screen



This screen shows you the progress of the installation.

If you want to quit before the installation is completed, click **Cancel**. Doing so will result in a partial installation; the portion of the software that was installed on your system before you click **Cancel** will remain on your system, and you will have to remove it manually.

A.8 Installation Complete Screen



This screen summarizes the installation that was just completed.

If you want to save this summary information to a text file for future reference, click **Save**.

Click **Finish** to dismiss the screen.

Oracle SOA Suite Deinstallation Screens

This appendix contains screenshots and descriptions for all of the Oracle SOA Suite deinstallation screens:

- Welcome Screen
- Deinstall Oracle Home Screen
- Deinstallation Progress Screen
- Deinstallation Complete Screen

B.1 Welcome Screen



The Welcome screen is displayed each time you start the deinstaller.
Click **Next** to continue.

B.2 Deinstall Oracle Home Screen

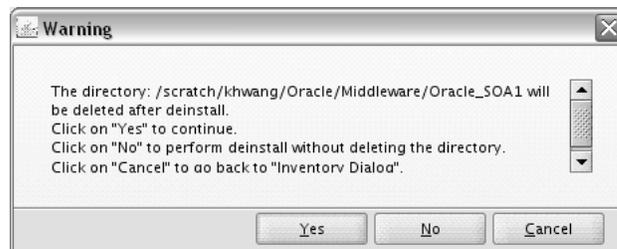


This screen shows the Oracle home directory that is about to be deinstalled. This is the Oracle home directory from which the deinstaller was started.

Note: Before you choose to remove this Oracle home, make sure that it is not in use by an existing domain.

Verify that this is the correct directory, then click **Deinstall** to continue.

The following warning screen will appear:

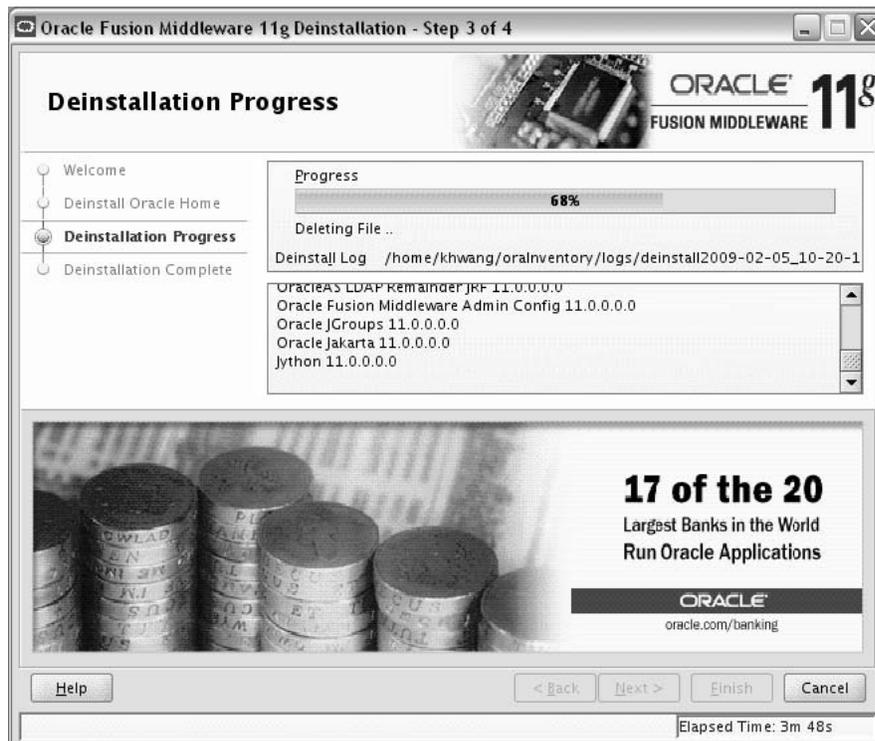


Click **Yes** to remove the software and the Oracle home directory from which the deinstaller was started.

Click **No** to remove the software but do not remove the Oracle home directory.

Click **Cancel** to return to the previous screen.

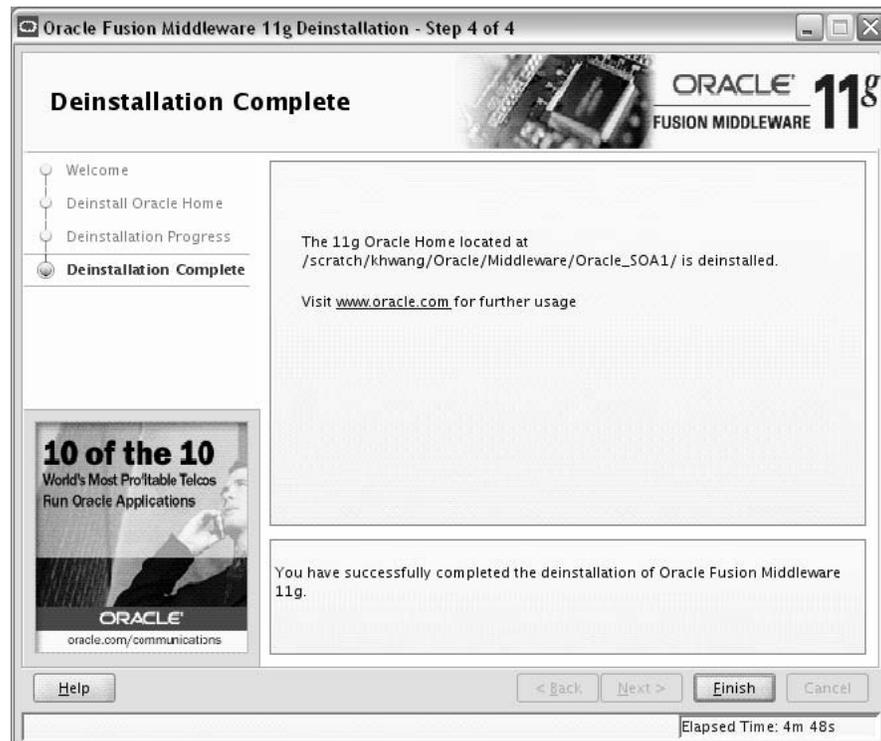
B.3 Deinstallation Progress Screen



This screen shows you the progress of the deinstallation.

If you want to quit before the deinstallation is completed, click **Cancel**.

B.4 Deinstallation Complete Screen



This screen summarizes the deinstallation that was just completed.

Click **Finish** to dismiss the screen.

Silent Installation and Deinstallation

This appendix contains information you need to know to perform a silent installation or deinstallation of Oracle SOA Suite.

- Section C.1, "About Silent Installation and Deinstallation"
- Section C.2, "Oracle SOA Suite Response Files"

C.1 About Silent Installation and Deinstallation

For information about silent installation and deinstallation, refer to "Silent Installation and Deinstallation" in *Oracle Fusion Middleware Installation Planning Guide*.

C.2 Oracle SOA Suite Response Files

Oracle recommends creating your response file by first running the install GUI, then clicking **Save** on the Installation Summary Screen. 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.

C.2.1 Installation Response Files

A sample response file called `sampleResponse.rsp` is provided in the `Disk1/stage/Response` (on UNIX operating systems) or `Disk1\stage\Response` (on Windows operating systems) directory on the installation CD-ROM. This template response file can be used to install the Oracle SOA Suite software only. You will still need to run the Configuration Wizard separately to create or extend your WebLogic domain and configure Oracle SOA Suite products.

The only parameters you need to specify in this file are `ORACLE_HOME` and `MIDDLEWARE_HOME`:

```
[ENGINE]
```

```
#DO NOT CHANGE THIS.  
Response File Version=1.0.0.0.0
```

```
[GENERIC]
```

```
#Provide the Oracle Home location. The location has to be the immediate child  
under the specified Middleware Home location. The Oracle Home directory name may  
only contain alphanumeric , hyphen (-) , dot (.) and underscore (_) characters,  
and it must begin with an alphanumeric character. The total length has to be less  
than or equal to 128 characters. The location has to be an empty directory or a  
valid SOA Oracle Home.
```

```
ORACLE_HOME=/home/middleware/Oracle_SOA1

#Provide existing Middleware Home location.
MIDDLEWARE_HOME=/home/middleware
```

```
[SYSTEM]
```

```
[APPLICATIONS]
```

```
[RELATIONSHIPS]
```

C.2.2 Deinstallation Response Files

A sample deinstallation response file called `deinstall_oh.rsp` is provided in the `Disk1/stage/Response` (on UNIX operating systems) or `Disk1\stage\Response` (on Windows operating systems) directory on the installation CD-ROM. This template response file can be used to deinstall a SOA Oracle home.

The contents of the `deinstall_oh.rsp` file are shown below:

```
[ENGINE]
```

```
#DO NOT CHANGE THIS.
Response File Version=1.0.0.0.0
```

```
[GENERIC]
```

```
#Identifies if the Instance deinstallation is valid or not
DEINSTALL_IN_ASINSTANCE_MODE=false
```

```
[SYSTEM]
```

```
[APPLICATIONS]
```

```
[RELATIONSHIPS]
```

Troubleshooting

This appendix describes solutions to common problems that you might encounter when installing Oracle SOA Suite. It contains the following sections:

- Section D.1, "General Troubleshooting Tips"
- Section D.2, "Installation and Configuration Log Files"
- Section D.3, "Keeping Track of Your JRE Location"
- Section D.4, "Invoking SOA Composites Over SSL"
- Section D.5, "Using Data Sources with an SSL-Enabled Database"
- Section D.6, "Extending an Identity Management Domain with a SOA Installation"
- Section D.7, "XA Configuration Required to Start the SOA Infrastructure on Microsoft SQL Server 2008"
- Section D.8, "Need More Help?"

D.1 General Troubleshooting Tips

If you encounter an error during installation:

- Read the *Oracle Fusion Middleware Release Notes* for the latest updates. The most current version of the release notes is available on Oracle Technology Network (<http://www.oracle.com/technology/documentation>).
- Verify that your computer meets the requirements specified in "Checking System Requirement and Certification:"

`http://fmwdocs.us.oracle.com/~khwang/DEMO/ASINS/preparing.htm#CEGIJAED`
- If you entered incorrect information on one of the installation screens, return to that screen by clicking **Back** until you see the screen.
- If an error occurred while the installer is copying or linking files:
 1. Note the error and review the installation log files.
 2. Remove the failed installation by following the steps in Chapter 4, "Deinstalling Oracle SOA Suite".
 3. Correct the issue that caused the error.
 4. Restart the installation.

D.2 Installation and Configuration Log Files

This section contains information about the log files that are created when running the Oracle SOA Suite installer and the Oracle Fusion Middleware Configuration Wizard. Log files contain information that can help you troubleshoot problems with your installation or configuration.

D.2.1 Installation Log Files

The installer writes log files to the *Oracle_Inventory_Location/log* (on UNIX operating systems) or *Oracle_Inventory_Location/logs* (on Windows operating systems) directory. On UNIX systems, if you do not know the location of your Oracle Inventory directory, you can find it in the *SOA_ORACLE_HOME/oraInst.loc* file. On Windows systems, the default location for the inventory directory is *C:\Program Files\Oracle\Inventory\logs*.

The following install log files are written to the log directory:

- *installdate-time-stamp.log*
This is the main log file.
- *installdate-time-stamp.out*
This log file contains the output and error streams during the installation.
- *installActionsdate-time-stamp.log*
This file is used by the installer GUI to keep track of internal information.
- *installProfiledate-time-stamp.log*
This log file contains the overall statistics like time taken to complete the installation, as well as configuration, memory and CPU details.
- *oraInstalldate-time-stamp.log*
This log file contains the output stream of the copy session.

If you start the installer with the *-printtime* parameter, the *timeTakedate-time-stamp.log* and *timedate-time-stamp.log* files are created in the same directory:

- *timeTakedate-time-stamp.log*
This file contains information for the amount of time taken to move between screens (applicable for GUI installations only).
- *timedate-time-stamp.log*
This file contains time information for the copy session.

If you start the installer with the *-printmemory* parameter, the *memorydate-time-stamp.log* file is created. This file contains memory usage information for the copy session.

D.2.2 Configuration Log Files

To create a log file of your configuration session, start the Configuration Wizard with the *-log* option, as shown below:

On UNIX operating systems:

```
% ./config.sh -log=log_filename
```

On Windows operating systems:

```
G:\ config.cmd -log=log_filename
```

If you specify an absolute path with your *log_filename* then your log file will be created there. If you only specify a file name with no path, then the log files are created in the *SOA_ORACLE_HOME/common/bin* (on UNIX operating systems) or *SOA_ORACLE_HOME\common\bin* (on Windows operating systems) directory.

D.3 Keeping Track of Your JRE Location

The JRE location used by the installer is stored in the *SOA_ORACLE_HOME/oui/oraparam.ini* (on UNIX operating systems) or *SOA_ORACLE_HOME\oui\oraparam.ini* (on Windows operating systems) file. This file is used by OPatch and Oracle Universal Installer (OUI) to determine the location of your preferred JRE.

It is possible to change the location of your JRE (for example, the JRE directory is moved out of the Middleware Home). If this happens, you will get an error message when trying to run OPatch or OUI since the JRE location can no longer be found. If this happens, you can do one of the following:

- Edit the *SOA_ORACLE_HOME/oui/oraparam.ini* (on UNIX operating systems) or *SOA_ORACLE_HOME\oui\oraparam.ini* (on Windows operating systems) file to point to the new JRE location.
- Use the `-jreLoc` command line option to point to the new JRE location. See Section 2.2.1, "Starting the Installer" for more information.

D.4 Invoking SOA Composites Over SSL

If Oracle WebLogic Server is configured to use custom trust key store, you must manually revise the *setDomainEnv.cmd* (on Windows operating systems) or *setDomainEnv.sh* (on UNIX operating systems) file so that the *Djavax.net.ssl.trustStore* parameter points to the custom trust keystore file. For example:

```
Djavax.net.ssl.trustStore=/myfolder/mystore/mytrustkeystore.jks
```

D.5 Using Data Sources with an SSL-Enabled Database

If you are using an SSL-enabled database, follow the instructions below so that your data sources will work with SSL connections:

1. Create a truststore and add the *./root/b64certificate.txt* as a trusted certificate to the truststore using a keytool:

```
keytool -importcert -trustcacerts -alias dbroot -keystore ./truststore
-storepass welcome1 -file ./b64certificate.txt
```

2. In the WebLogic Server console, navigate to the "Connection Pool" tab of the data source you are using. Modify the following properties accordingly:

- a. Requires Authentication:

```
javax.net.ssl.keyStore=keystore_password
javax.net.ssl.keyStoreType=JKS
javax.net.ssl.keyStorePassword=keystore_password
javax.net.ssl.trustStore=truststore_location
javax.net.ssl.trustStoreType=JKS
```

```
javax.net.ssl.trustStorePassword=truststore_password
```

b. Does Not Require Authentication:

```
javax.net.ssl.trustStore=truststore_location
javax.net.ssl.trustStoreType=JKS
javax.net.ssl.trustStorePassword=truststore_password
```

3. In the URL field, enter the following:

```
jdbc:oracle:thin:@(DESCRIPTION=(ADDRESS_
LIST=(ADDRESS=(PROTOCOL=TCPS) (HOST=database_host) (PORT=database_
port))) (CONNECT_DATA=(SERVICE_NAME=service_name)) (SECURITY=(SSL_SERVER_CERT_
DN="distinguished_name"
)))
```

4. In the JDBC data source files, modify the <property> parameter as shown below:

```
<property>
@ <name>javax.net.ssl.trustStorePassword</name>
  <value>truststore_password</value>
</property>
```

D.6 Extending an Identity Management Domain with a SOA Installation

If you create a domain by installing Oracle Identity Management, then extend it by installing Oracle SOA Suite, the Oracle SOA installer changes the `ORACLE_HOME` environment variable. This breaks the Oracle Identity Federation (OIF) WebLogic Scripting Tool (WLST) environment, which relies on the value of `ORACLE_HOME` as set by the Identity Management installation.

To work around this issue, do the following:

1. Follow the instructions in "Setting up the WLST Environment" in *Oracle Fusion Middleware Administrator's Guide for Oracle Identity Federation*.
2. Copy all of the `.py` files in the `OIF_ORACLE_HOME/fed/script` (on UNIX operating systems) or `OIF_ORACLE_HOME\fed\script` (on Windows operating systems) directory to the `WebLogic_Home/common/wlst` (on UNIX operating systems) or `WebLogic_Home\common\wlst` (on Windows operating systems) directory.
3. Append the `OIF_ORACLE_HOME/fed/script` (on UNIX operating systems) or `OIF_ORACLE_HOME\fed\script` (on Windows operating systems) directory to the `CLASSPATH` environment variable.

D.7 XA Configuration Required to Start the SOA Infrastructure on Microsoft SQL Server 2008

You must configure XA support in both the Microsoft SQL Server database and Microsoft operating system to test the SOA Infrastructure connection during domain creation and to successfully start the SOA Infrastructure.

1. Install Oracle WebLogic Server.
2. Install Microsoft SQL Server JDBC XA procedures. These procedures enable you to use JDBC distributed transactions through JTA. This procedure must be repeated for each MS SQL Server installation to include in a distributed transaction.

- a. Copy the `sqljdbc.dll` and `instjdbc.sql` files to the directory appropriate to your version of SQL Server.

For SQL Server...	Copy Both Files From...	To...
2005	<code>WL_HOME_10.3\server\lib</code>	<code>C:\Program Files\Microsoft SQL Server\MSSQL.1\MSSQL\Binn</code>
2008	<code>WL_HOME_10.3\server\lib</code>	<code>C:\Program Files\Microsoft SQL Server\MSSQL10.INSTANCE_NAME\MSSQL\Binn</code>

Notes:

- If you are installing stored procedures on a database server with multiple Microsoft SQL Server instances, then each running SQL Server instance must be able to locate the `sqljdbc.dll` file. Therefore, the `sqljdbc.dll` file must be anywhere on the global PATH or on the application-specific PATH. For the application-specific PATH, place the `sqljdbc.dll` file into the `drive:\Program Files\Microsoft SQL Server\MSSQL$Instance_1_Name\Binn` directory for each instance.
- If your Oracle WebLogic Server and Oracle SOA Suite installations are on a Linux host, the `sqljdbc.dll` file does not appear under the `WL_HOME_10.3/server/lib` directory. In these cases, you must copy this file from a host on which `sqljdbc.dll` is installed.

- b. From the database server, use the ISQL utility to run the `instjdbc.sql` script for your version of SQL Server. As a precaution, back up the master database before running `instjdbc.sql`.

For SQL Server...	Run...
2005	<code>C:\Program Files\Microsoft SQL Server\90\Tools\Binn\SQLCMD.EXE -S "DB_HOST\INSTANCE_NAME" -U SA -P SA_PASSWORD -i instjdbc.sql -o LOG_FILE</code>
2008	<code>C:\program files\Microsoft SQL Server\100\Tools\Binn\SQLCMD.EXE -S "DB_HOST\INSTANCE_NAME" -U SA -P SA_PASSWORD -i instjdbc.sql -o LOG_FILE</code>

where:

- `DB_HOST` is the name of the host on which SQL Server is installed.
- `INSTANCE_NAME` is the name of the SQL Server instance.
- `SA_PASSWORD` is the password of the system administrator.

The `instjdbc.sql` script generates many messages. In general, these messages can be ignored; however, scan the output for any messages that may indicate an execution error. The last message should indicate that `instjdbc.sql` ran successfully. The script fails when there is insufficient space available in the master database to store the JDBC XA procedures or to log changes to existing procedures.

3. Configure the Microsoft Distributed Transaction Coordinator (DTC) for the Microsoft operating system.
 - a. From the **Start** menu, select **Control Panel > Administrative Tools > Component Services** icon > Component Services (in the navigator under **Console Root**) > **Computers > My Computer**.
 - b. Right-click **My Computer** and select **Properties > MSDTC > Security Configuration**.

The Security Configuration dialog appears.
 - c. In the **Security Settings** section, select the **Network DTC Access** checkbox.
 - d. In the **Client and Administration** section, select the **Allow Remote Clients** checkbox.
 - e. In the **Transaction Manager Communication** section, select the **Allow Inbound, Allow Outbound, No Authentication Required**, and **Enable Transaction Internet Protocol (TIP) Transactions** checkboxes.
 - f. In the **Security Settings** section, select the **Enable XA Transactions** checkbox.
 - g. Click **OK** in the Security Configuration dialog.
 - h. Click **OK** in the My Computer Properties dialog.

D.8 Need More Help?

If this appendix does not solve the problem you encountered, try these other sources:

- *Oracle Fusion Middleware Release Notes*, available on the Oracle Technology Network (<http://www.oracle.com/technology/documentation>)
- My Oracle Support (formerly OracleMetaLink: <https://support.oracle.com>)

If you do not find a solution for your problem, open a service request.

Index

A

Administration Server
 starting, 3-6
 using non-default ports, 3-6
Administration Server Only domain, 3-7
applying Java Required Files, 3-5

B

bam_server1 managed server, 3-6
BAMCommonConfig.xml file, 3-4
BAMICommandConfig.xml file, 3-4
BAMServerConfig.xml file, 3-4

C

clusters
 synchronizing clocks, 2-2
config.cmd command, 3-2
config.sh command, 3-2
configuration log files, 3-3, D-2
Configuration Wizard
 creating log files, 3-3
 starting, 3-2
 starting with Sun JDK, 3-2
configuring Oracle SOA and Oracle BAM against
 external LDAP servers, 3-5
configuring XA support, D-4
createCentralInventory.sh script, 2-3, A-3
creating a new WebLogic domain, 3-3
creating an Administration Server Only domain, 3-7

D

deinstallation screens, B-1
deinstalling Oracle SOA Suite, 4-1
deploying Oracle SOA Suite and Oracle BAM on
 different servers, 3-5
design-time components
 installing, 2-4
directory structure, 1-1

E

extending a WebLogic domain, 3-3

I

installation directory structure, 1-1
installation log files, 2-3, D-2
installation overview, 1-1
installation screens, 2-3
installing Oracle Business Process Management, 1-1
installing Oracle SOA Suite design-time
 components, 2-1, 2-4
installing Oracle SOA Suite run-time
 components, 2-1

J

Java Required Files, 3-5
 applying, 3-5
JRE location, 2-2
 keeping track of, D-3
JRF
 See Java Required Files

L

LANG environment variable, 2-1
LC_ALL environment variable, 2-1
log files, D-2
 installation log files, 2-3

M

managed servers
 finding the names of, 3-7
 shutting down, 3-2
 starting, 3-6
 using default settings, 3-2
Middleware Home
 specifying location of, A-6
My Oracle Support, D-6

N

Node Manager
 starting, 3-8

O

Oracle BAM

- manual configuration tasks, 3-4
- Oracle BAM managed server, 3-2
- Oracle Business Activity Monitoring (BAM)
 - See Oracle BAM
- Oracle Business Process Management Suite
 - configuring, 3-1
 - using with WebCenter Spaces, 3-4
- Oracle Business Process Execution Language (BPEL)
 - See Oracle BPEL
- Oracle Business Process Execution Language (BPEL) Process Manager (PM)
 - See Oracle BPEL PM
- Oracle Business Process Management, 1-1
 - how to install, 1-1
- Oracle Business Process Management Suite
 - installing, 2-4
- Oracle database
 - using data sources with an SSL-enabled database, D-3
- Oracle Fusion Middleware
 - stopping, 4-2
- Oracle Home
 - specifying location of, A-6
- Oracle Identity Management
 - extending with Oracle SOA Suite, D-4
- Oracle Inventory, 2-3, A-2
 - group permissions, 2-3
 - location, 2-3
- Oracle JDeveloper
 - removing, 4-4
- Oracle SOA managed server, 3-2
- Oracle SOA Suite
 - components, 1-1
 - configuring, 3-1
 - deinstalling, 4-1
 - directory structure, 1-1
 - installation instructions, 2-2
 - installation screens, 2-3
 - installing design-time components, 2-1
 - installing run-time components, 2-1
 - overview, 1-1
 - silent installation, C-1
 - starting the installer, 2-2
 - troubleshooting, D-1
 - Unicode support, 2-1
 - updating your software to the latest version, 1-4
 - verifying the installation, 3-8
- Oracle WebLogic Server
 - downloading the latest version, 1-3
 - installation instructions, 1-3
 - removing, 4-4
- oraparam.ini file, D-3
- overview of installation, 1-1
- overview of Oracle SOA Suite, 1-1

P

- Patch Set Installer, 1-4

Q

- Quartz
 - synchronizing clocks, 2-2

R

- removing Oracle JDeveloper, 4-4
- removing Oracle SOA Suite, 4-1
- removing Oracle WebLogic Server, 4-4
- required schemas for Oracle SOA Suite and Oracle BAM, 1-3
- response files
 - creating, A-8, C-1
 - samples provided, C-1, C-2

S

- schemas
 - dropping, 4-2
- setDomainEnv.cmd command, D-3
- setDomainEnv.sh command, D-3
- silent installation, C-1
- SOA composites
 - invoking over SSL, D-3
- soa_server1 managed server, 3-6
- SSL-Enabled Database
 - using data sources with, D-3
- starting the Administration Server, 3-6
- starting the installer, 2-2
- starting the managed servers, 3-6
- startManagedWebLogic.cmd command, 3-6
- startManagedWebLogic.sh command, 3-6
- startWebLogic.cmd command, 3-6
- startWebLogic.sh command, 3-6
- stopping Oracle Fusion Middleware, 4-2
- synchronizing clocks for clusters, 2-2

T

- troubleshooting, D-1
- troubleshooting Oracle SOA Suite, D-1

U

- Unicode support, 2-1
- updating your Oracle SOA Suite software to the latest version, 1-4
- using data sources with an SSL-enabled database, D-3

V

- verifying the installation, 3-8

W

- WebLogic domain
 - creating, 3-3
 - creating an Administration Server Only domain, 3-7

extending, 3-3

X

XA support
configuring, D-4

