Oracle® Application Server

Installing and Getting Started with Standard Edition One

10*g* Release 2 (10.1.2) for Linux x86

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Oracle Application Server Installing and Getting Started with Standard Edition One, 10*g* Release 2 (10.1.2) for Linux x86

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Primary Author: Preeti Shukla

Contributing Author: Kevin Hwang

Contributors: Hiroaki Hiratsuka, Nirguna Kota, Punit Nagar, Seema Pai, Saurabh Pandey, Sudhir Sharma, Janelle Simmons, Lyju Vadassery

Contents

2 System and Installation Requirements

3 Installing J2EE and Web Services

4 Installing OracleAS Portal

5 Installation Screens

6 Postinstallation Tasks

10 Changing the HTTP Port and Listener Settings

11 Viewing Log Files

12 Changing Network Configurations

15 OracleAS Metadata Repository Overview and Requirements

16 Loading OracleAS Metadata Repository into an Existing Database

G Troubleshooting

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Preface

This guide covers requirements, new features in the Oracle Universal Installer, Oracle Application Server concepts that affect installation, installation procedures, and troubleshooting tips.

Intended Audience

This guide is intended for users who 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 Oracle Application Server is going to be installed. Users who are installing Oracle Application Server need root access to run some scripts.

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Structure

This guide contains the following:

Part I, "Installing Oracle Application Server"

This part contains overview information about Oracle Application Server as well as installation and postinstallation instructions.

Chapter 1, "Product and Installation Overview"

This chapter provides an overview of the installation steps, as well as an overview of Oracle Application Server and its components.

Chapter 2, "System and Installation Requirements"

This chapter lists the requirements for installing and running Oracle Application Server Standard Edition One.

Chapter 3, "Installing J2EE and Web Services"

This chapter describes how to install the services provided by J2EE and Web Services.

Chapter 4, "Installing OracleAS Portal"

This chapter describes how to install the services provided by OracleAS Portal.

Chapter 5, "Installation Screens"

This chapter contains screenshots and description for each of the Oracle Universal Installer screens.

Chapter 6, "Postinstallation Tasks"

This chapter describes additional setup steps that you should do after installation.

Part II, "Getting Started with Oracle Application Server Standard Edition One"

This part provides information about how to get started using and configuring Oracle Application Server after it has been successfully installed.

Chapter 7, "Getting Started"

This chapter provides tasks for getting familiar with your installation.

Chapter 8, "Using the Administration Tools"

This chapter introduces Web-based and command-line administration tools for managing Oracle Application Server.

Chapter 9, "Starting and Stopping"

This chapter describes how to start and stop environments, instances, components, and clusters.

Chapter 10, "Changing the HTTP Port and Listener Settings"

This chapter describes how to view and change port numbers.

Chapter 11, "Viewing Log Files"

This chapter describes how to view and manage log files.

Chapter 12, "Changing Network Configurations"

This chapter describes how to change the host name and IP address of an host.

Chapter 13, "Enabling SSL"

This chapter provides information about enabling Secure Sockets Layer (SSL) in Oracle Application Server.

Chapter 14, "Backup and Recovery"

This chapter describes how to back up and recover the Oracle Application Server Standard Edition One configuration files and OracleAS Metadata Repository.

Part III, "Installing OracleAS Metadata Repository Creation Assistant"

This part contains information about installing Oracle Application Server Metadata Repository Creation Assistant (OracleAS Metadata Repository Creation Assistant).

Chapter 15, "OracleAS Metadata Repository Overview and Requirements"

This chapter provides an overview of OracleAS Metadata Repository Creation Assistant and outlines the system requirements necessary for using this tool.

Chapter 16, "Loading OracleAS Metadata Repository into an Existing Database"

This chapter describes how to install, or load, OracleAS Metadata Repository in an existing database.

Chapter 17, "Registering OracleAS Metadata Repository with Oracle Internet Directory"

This chapter describes how to register the OracleAS Metadata Repository with Oracle Internet Directory.

Part IV, "Appendixes"

This part contains various appendixes.

Appendix A, "Deinstallation and Reinstallation"

This appendix describes how to install and deinstall Oracle Application Server.

Appendix B, "Deregistering and Removing OracleAS Metadata Repository"

This appendix describes how to use OracleAS Metadata Repository Creation Assistant to remove OracleAS Metadata Repository tablespaces and schemas from your database.

Appendix C, "Default Port Numbers"

This appendix lists the port numbers assigned to components by the installer.

Appendix D, "Ports to Open in Firewalls"

This appendix shows the ports that you have to open in a firewall if you are installing and running Oracle Application Server in such environments.

Appendix E, "OracleAS Metadata Repository Schemas"

This appendix provides descriptions of OracleAS Metadata Repository schemas, and lists their tablespaces and datafiles.

Appendix F, "Configuration Assistants"

This appendix describes the configuration assistants run by the installer.

Appendix G, "Troubleshooting"

This appendix describes how to solve problems that might arise during installation and deinstallation.

Related Documents

For additional information, refer to the following manuals:

- *Oracle Application Server Administrator's Guide*
- *Oracle Application Server Concepts*

Conventions

This guide uses the following conventions:

Convention	Meaning
boldface text	Boldface type in text indicates objects (such as buttons and fields) on screens.
`code`	Text in the code font indicates filenames, commands, or contents of configuration files.
`italicized code`	Italicized code font indicates placeholder text that you need to replace with an appropriate value.
[ ]	Brackets enclose optional clauses from which you can choose one or none.
. . .	Ellipses indicate that extraneous information have been omitted.

Part I

Installing Oracle Application Server

This part contains information for installing Oracle Application Server 10*g* Release 2 (10.1.2). It contains the following chapters:

1

Product and Installation Overview

Oracle Application Server Standard Edition One is an integrated and powerful product. To optimize its capabilities, you should take time to read this guide to get the basic idea about the product.

This chapter contains the following sections:

1.1 Product Overview

Oracle Application Server Standard Edition One provides a complete Web infrastructure tailored to the needs of small to medium-sized enterprises and departmental users within large organizations.

Oracle Application Server Standard Edition One includes:

- A Web server with PHP and PERL to build Web sites
- A J2EE-compliant application server and development tools to build Web sites and Internet applications in Java/J2EE
- An easy to use Enterprise Portal to quickly, easily, and securely share information with your colleagues

1.2 What's New?

Oracle Application Server Standard Edition One includes the following new features:

- Oracle Instant Portal (Q42)

  This component features What You See Is What You Get (WYSIWYG) content editing, a prebuilt home page, prebuilt departmental pages, and a customizable content portlet for secure publishing and content sharing. Point and click operations let you manage page content, style, and administration.

  See Also: *Oracle Instant Portal Getting Started* for more information

- Basic (one click) installation

A new basic installation enables you to install Oracle Application Server Standard Edition One by answering a few questions on a single installation screen. The installation proceeds using the default values for all the components.

> **See Also:** Section 1.3.3, "Basic and Advanced Installation" for more information

- One click start and stop functionality

  New functionality has been added to enable you to start and stop the Oracle Enterprise Manager Application Server Control, middle tier, infrastructure instance, and all Oracle Application Server Standard Edition One components from the Start menu.

  > **See Also:** Chapter 9, "Starting and Stopping" for more information

  Additionally, an administrator can start, stop, enable, or disable components from the Application Server Control Console.

  Note: One click start and stop functionality does not start or stop the following processes:

  - DB Control
  - Cluster Ready Services (CRS)
  - Cluster Synchronization Services (CSS)

  These processes must be stopped or started manually after the one click start and stop functions are performed.

- Backup/Recovery tab in the Application Server Control Console

  Backup your configuration information and data directly from the Application Server Control Console by clicking the **Backup/Recovery** tab.

  > **See Also:** Chapter 14, "Backup and Recovery" for more information

- Bulk loading of Oracle Internet Directory users through the Oracle Directory Integration and Provisioning assistant (the `loaddata` command).
- OracleAS Single Sign-On login, which enables users to reset their password.

1.3 Installation Overview

Following are the main groups of services available for Oracle Application Server Standard Edition One:

- Section 1.3.1, "Oracle J2EE and Web Services"
- Section 1.3.2, "OracleAS Portal"

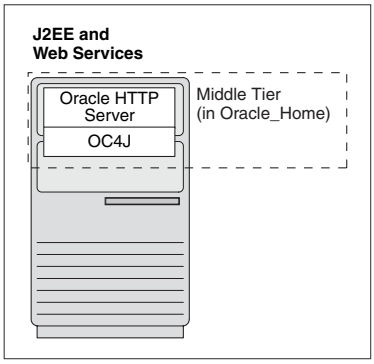
These two groups of services are also referred to as Oracle Application Server middle tiers. If you install OracleAS Portal, then the Oracle Application Server Infrastructure is also installed. The OracleAS Portal middle tier requires OracleAS Infrastructure to function whereas the J2EE and Web Services middle tier does not.

The following subsections describe these services in further detail.

1.3.1 Oracle J2EE and Web Services

Oracle J2EE and Web Services includes components used for application deployment, such as Oracle HTTP Server and Oracle Application Server Containers for J2EE (OC4J). Figure 1–1 illustrates the installation configuration.

Figure 1–1 Configuration for J2EE and Web Services



1.3.2 OracleAS Portal

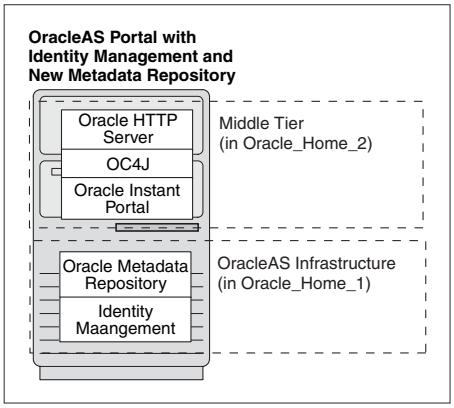
OracleAS Portal services include Oracle Instant Portal with Identity Management and Metadata Repository, along with everything included in J2EE and Web Services. You have the option of using an existing database, such as the Metadata Repository, rather than using the Metadata Repository included with the product.

If you choose to install either of the available OracleAS Portal services, then Oracle Universal Installer performs a *chained installation*, which means that it will install and configure all applicable infrastructure components first, and then install and configure the middle tier components.

1.3.2.1 OracleAS Portal with a New Metadata Repository

If you use a new metadata repository, then the Oracle Application Server Standard Edition One infrastructure (Identity Management and Metadata Repository) is installed as shown in Figure 1–2.

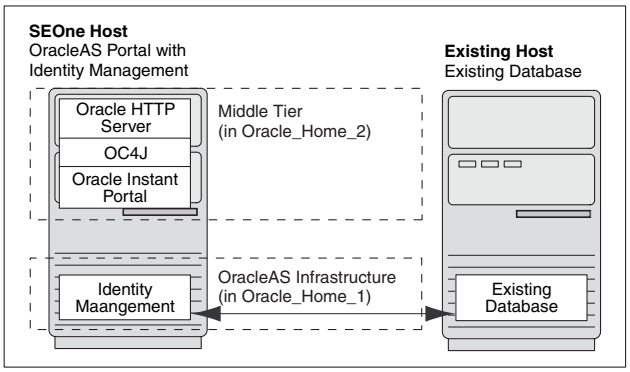
Figure 1–2 Configuration of OracleAS Portal with New Metadata Repository



1.3.2.2 OracleAS Portal with an Existing Metadata Repository

If you use an existing metadata repository, then the Oracle Application Server Standard Edition One infrastructure (Identity Management only) is installed, as illustrated in Figure 1–3.

Figure 1–3 Configuration for OracleAS Portal for an Existing Metadata Repository



For this configuration, you must use Oracle Application Server Metadata Repository Creation Assistant (OracleAS Metadata Repository Creation Assistant) to create the Metadata Repository in an existing database before you install OracleAS Portal and Identity Management. OracleAS Metadata Repository Creation Assistant is available on a separate CD.

> **Note:** For more information about OracleAS Metadata Repository Creation Assistant, refer to Part III.

1.3.3 Basic and Advanced Installation

Table 1–1 summarizes the groups of services available with each installation type.

Table 1–1 Oracle Application Server Standard Edition One Install Types

Install Type	Available Services
Basic	■ J2EE and Web Services ■ OracleAS Portal with Identity Management and New Metadata Repository
Advanced	■ J2EE and Web Services ■ OracleAS Portal with Identity Management and New Metadata Repository ■ OracleAS Portal with Identity Management and Existing Metadata Repository

This basic (single-click) installation prompts you with questions on the initial installation screen, and then it proceeds to install the product without any further user interaction. The default values for all the components are used.

The advanced installation provides you with a great degree of customization and flexibility, which enables installation of additional languages, port configuration options, the use of an existing database as the Metadata Repository (OracleAS Portal installation only), and database configuration (OracleAS Portal installation only).

Table 1–2 summarizes the differences in the customization options between a basic and advanced installation.

Table 1–2 Basic and Advanced Installation Features

Action or Option	Basic	Advanced
Specify an Oracle Home	Yes	Yes
Specify an instance name and `ias_admin` password	Yes	Yes
Specify a database name and password (OracleAS Portal only)	Yes	Yes
Select additional languages	No	Yes
Specify automatic or manual port configuration	No	Yes
Specify namespace in Oracle Internet Directory (OracleAS Portal only)	No	Yes
Specify database configuration options (OracleAS Portal only)	No	Yes
Specify schema passwords (OracleAS Portal only)	No	Yes
Specify existing repository to be used as a database (OracleAS Portal only)	No	Yes
Configuration assistants	Yes	Yes

Note:

- For OracleAS Portal installations, you are asked to specify an installation directory, which then becomes part of the Oracle home directory. For details, refer to Section 1.4.2, "Oracle Home Directory".
- In the basic installation screen, you can specify only a single password, which will be used by the database and `SYS`, `SYSTEM`, `DBSNMP` and `SYSMAN` accounts. In an advanced installation, you can specify a single password or specify a different password for each account.

1.3.4 General Installation Procedure

The steps for installing Oracle Application Server Standard Edition One are as follows:

1. Refer to the following documents for the most current information:
   - *Oracle Application Server Release Notes*

     You can find the latest version of the release notes on Oracle Technology Network (`http://www.oracle.com/technology/documentation`).
2. Refer to Chapter 2, to ensure that the computer where you want to run Oracle Application Server Standard Edition One meets the requirements. This chapter also includes a summary of the checks automatically performed by the installer.
3. Refer to Chapter 3, "Installing J2EE and Web Services" or Chapter 4, "Installing OracleAS Portal" , to get detailed information about the installation procedures.
4. Refer to Chapter 6, "Postinstallation Tasks", for information about what tasks should be performed immediately following the successful installation.
5. After you install Oracle Application Server Standard Edition One, access the Welcome page and run some demos to ensure that the installation was successful.

1.4 Things to Know Before Installing Oracle Application Server Standard Edition One

This section contains a list of things that you should know before you install Oracle Application Server Standard Edition One. It contains the following topics:

1.4.1 Where can I Install Oracle Application Server Standard Edition One?

Oracle Application Server Standard Edition One must be installed on a single computer.

1.4.2 Oracle Home Directory

During the installation, you will be asked to provide the full path of the directory in which you install Oracle Application Server Standard Edition One. This directory is called the Oracle home.

For example, you can install Oracle Application Server Standard Edition One in `/oracle/OraHome_SEOne`, and you can name it `OraHome_SEOne`.

Notes: Spaces are not allowed anywhere in the Oracle home directory path. For example, you cannot install in `/opt/oracle/app server/infra10_1_2` because of the space character in `app server`. The installer does not check for this until several screens after you have entered the path.

See Also: Section 1.4.2.1, "Naming Your Oracle Home", which describes how the name is used

If you choose to install only J2EE and Web Services, then only one Oracle home directory is created, which you specify during the installation.

If you install either of the two available OracleAS Portal services, then two Oracle home directories are created, one for OracleAS Infrastructure and one for OracleAS Portal.

- *`user-specified-dir`*`/infra`
- *`user-specified-dir`*`/portal`

The *`user-specified-dir`* variable refers to the directory you specify during the installation.

Note: If you install either of the two available OracleAS Portal services on the same computer, then you need to create scripts for setting the environment for each instance (OracleAS Infrastructure and OracleAS Portal). This is to ensure that you run the binaries from the proper Oracle home. The environment variables that you need to set include `ORACLE_HOME` and `PATH`.

1.4.2.1 Naming Your Oracle Home

Each Oracle home directory is automatically given a name.

If you are installing only J2EE and Web Services, then your Oracle home is named `oracleas1`.

If you are installing either of the two available OracleAS Portal services, then:

- The *`user-specified-dir`*`/infra` directory is named `oracleas1`
- The *`user-specified-dir`*`/portal` directory is named `oracleas2`

The Oracle home name can consist of alphanumeric and the underscore (_) characters, and cannot be longer than 128 characters.

Because middle tiers (for example, OracleAS Portal) depend on OracleAS Infrastructure (for example, OracleAS Metadata Repository) services, the OracleAS Infrastructure services must be started before the middle tier services are started.

1.4.2.2 Installing in a Non-Empty Oracle Home

You cannot install Oracle Application Server Standard Edition One in a directory that already contains some files. For example, if you cancel an installation or if an installation fails, then you have to clean up the directory before you can reinstall Oracle Application Server Standard Edition One in it. In addition, the installer cannot repair an installation. Refer to Section G.3.4, "Message About Installing in a Non-Empty Directory" for instructions on how to clean up a non-empty directory.

1.4.3 Oracle Application Server Instances and Instance Names

If you install only J2EE and Web Services, then one middle tier instance is created on your computer. You are prompted to specify this instance name during the installation. This name can be different from the Oracle home name. For example, you might specify an instance name as `seone`.

If you install either of the two available OracleAS Portal services, then two instances are created on your computer, one for the OracleAS Infrastructure and the second for the middle tier. If you perform a basic installation, then you only specify the instance name for the middle tier because the OracleAS Infrastructure instance name is generated automatically. For details, refer to Section 5.3, "Welcome Screen".

If you perform an advanced installation, then you will be prompted to specify the OracleAS Infrastructure and middle tier (OracleAS Portal) instance name separately. For more information, refer to Section 5.11, "Specify Instance Names and ias_admin Password".

You cannot change the instance name after installation.

Oracle Application Server appends the host name and domain name to the given instance name to form a complete instance name. For example, if you are installing an instance on a computer named `c1`, and you name the instance `seone1`, then the full

name of the instance is `seone1.c1.mydomain.com`, assuming the domain name is `mydomain.com`.

Valid Characters in Instance Names

Instance names can consist only of the alphanumeric characters (`A-Z`, `a-z`, `0-9`) and the underscore (_) character.

There is no maximum length restriction for instance names.

Restrictions on Oracle Application Server Instance Names

Do not use the host name of the computer when naming Oracle Application Server Standard Edition One instances.

How Oracle Application Server Uses Instance Names

Instance names are important because Oracle Application Server Standard Edition One uses them to uniquely identify instances. This means that if you install either of the two available OracleAS Portal services with an advanced installation, then ensure that you specify different names for OracleAS Infrastructure and OracleAS Portal.

When you administer Oracle Application Server Standard Edition One using Oracle Enterprise Manager Application Server Control (Application Server Control), the instance name appears on the screens. You can click the instance name to view details about the instance, such as the components that are installed in that instance, if the components are running or stopped, and the log files for the components. The Application Server Control is a browser-based administration tool for Oracle Application Server Standard Edition One.

> **See Also:** *Oracle Application Server Administrator's Guide* for details about this administration tool

In addition, some `dcmctl` commands require an instance name as a parameter. `dcmctl` is a command-line tool for administering Oracle Application Server instances.

> **See Also:** *Distributed Configuration Management Administrator's Guide* for details about `dcmctl`

1.4.4 The ias_admin User and Restrictions on its Password

The installer prompts you to specify the password for the `ias_admin` user. The `ias_admin` user is the administrative user for Oracle Application Server Standard Edition One.

For Oracle Application Server Standard Edition One the `ias_admin` password you specify on the first installation screen is also the password used for:

- Logging in as user `ias_admin` to Application Server Control Console to manage Oracle Application Server Standard Edition One.
- Logging in as user portal to Oracle Instant Portal to monitor and manage Oracle Instant Portal.
- Logging in as user `orcladmin` to OracleAS Single Sign-On to manage user access to your applications.

ias_admin Password Restrictions

The password for the `ias_admin` user must conform to password policy of Oracle Internet Directory:

- The minimum length is five alphanumeric characters.
- At least one of the characters must be a number.

In addition to the password policy defined in Oracle Internet Directory, the password for the `ias_admin` user has the following restrictions:

- Passwords must be shorter than 30 characters.
- Passwords can contain only alphanumeric characters from your database character set, the underscore (_), the dollar sign ($), and the number sign (#).
- Passwords must begin with an alphabetic character. Passwords cannot begin with a number, the underscore (_), the dollar sign ($), or the number sign (#).
- Passwords cannot be Oracle reserved words. The *Oracle Database SQL Reference* lists the reserved words. You can find this guide on Oracle Technology Network (`http://www.oracle.com/technology/documentation`). Or you can just avoid using words that sound like they might be reserved words.

Note: When entering your password, check that the state of the Caps Lock key is what you want it to be. Passwords are case-sensitive.

You must remember the password because when you log on to Application Server Control to manage Oracle Application Server, you log on as the `ias_admin` user. If you forget the password, then you can reset it.

See Also: *Oracle Application Server Administrator's Guide* for details

1.4.5 Global Database Name and Restrictions on its Password

A database is identified by its global database name. The global database name consists of two parts:

```
database_name.database_domain
```

For example: `sales.us.yourcompany.com`

In this example, `sales` is the database name, and `us.yourcompany.com` is the database domain.

Use the following guidelines when specifying the global database name:

- Choose a database name that reflects the intended use of the database (for example, `sales`).

  Do not include references to the software version in the database name.
- Choose a database domain that distinguishes this database from other databases in a distributed environment. For example, by choosing the two different domains `us.yourcompany.com` and `jp.yourcompany.com`, the Sales departments in Japan and the US can both have a database called sales.
- The database domain that you specify need not be the same as the system's network domain, but it can be the same if appropriate.
- The following characters are valid in both the database name and database domain: alphanumeric characters, the underscore (_) character, the hyphen character (-), and the number sign (#) character.
- The period character is valid in the database domain.

- The database name cannot be longer than eight characters.
- The database name must begin with an alphanumeric character (A-Z and 0-9).
- The database domain, including periods, must be no longer than 128 characters.

The value that you specify, up to the first period, becomes the value of the DB_NAME initialization parameter. Any value that you specify after the first period becomes the value of the DB_DOMAIN initialization parameter.

The value of the DB_NAME parameter is also automatically assigned to the ORACLE_SID environment variable. This environment variable defines the name of an Oracle database instance.

Database Password Restrictions

Typically, an Oracle database requires a password for the following database administrative accounts (schemas): SYS, SYSTEM, SYSMAN, and DBSNMP. For a basic Oracle Application Server Standard Edition One installation, the global database password that you specify on the first installation screen will be used for all these accounts.

Following are the restrictions for the database password:

- Passwords must be between 4 and 30 characters long.
- Passwords cannot be the same as the user name.
- Passwords must be from the database character set and can include the underscore (_), dollar ($), and pound sign (#) characters.
- Passwords cannot be Oracle reserved words.

Database Password Recommendations

Following are some recommendations for selecting a database password:

- Passwords should have at least one alphabetic, one numeric, and one punctuation mark character.
- Passwords should not be simple or obvious words, such as welcome, account, database, or user.

1.4.6 Language and Locale Settings

The basic installation creates a repository database with the AL32UTF8 character set, and installs Oracle Application Server Standard Edition One with messages in English and in the locale where the Oracle Universal Installer is run. If you need additional languages, then you must perform an advanced installation, and select the desired languages in the Language Selection screen. For more information about this screen, refer to Section 5.5.

When you select additional languages to install, the installer installs messages in the selected languages, as well as the fonts required to display those languages.

1.4.6.1 Installing Additional Languages After Installing Oracle Application Server Standard Edition One

If you need to support more languages after the installation, then you must run the Portal Language Assistant tool to load the translations for those languages, and also copy necessary font files to your middle tier directory from the OracleAS Metadata Repository Upgrade Assistant and Utilities CD-ROM.

1.4.6.2 Portal User Interface Message Installation

You can find Portal translated resource files in the following directory:

```
$ORACLE_HOME/portal/admin/plsql/nlsres/ctl
```

These files must be loaded into a repository database to support the additional languages.

To load the translation, you can use the following command:

```
ptllang -lang lang_code [-i install_type]
                        [-s portal_schema]
                        [-sp portal_schema_password]
                        [-c portal_db_connect_string]
```

> **See Also:** *Oracle Application Server Portal Configuration Guide* for more information

Table 1–3 describes the optional configuration parameters for this command.

Table 1–3 ptllang Command Configuration Parameters

Parameter	Description
`-lang`	Abbreviation for the language to install. **See Also:** Table 4-4, "OracleAS Portal Languages and Language Abbreviations" in *Oracle Application Server Portal Configuration Guide* for a list of all supported abbreviations
`-i`	Installation type. This can be set to `typical` or `custom`. In the `typical` mode, the script automatically connects to the registered OracleAS Metadata Repository. For OracleAS Portal schemas in a customer database, use the `custom` mode. Default: `typical`
`-s`	OracleAS Portal schema name. Default: `portal`
`-sp`	OracleAS Portal schema password. The password can either be retrieved from Oracle Internet Directory or changed using SQLPlus. **See Also:** *Oracle Application Server Administrator's Guide*.
`-c`	Connect string to the database where the OracleAS Metadata Repository is installed. The format must be: `DbHostName:DbPortNumber:DbServiceName`

Following is an example of the `ptllang` command:

```
ptllang -lang ja -i custom -s portal -sp welcome1 -c host:1521:orasid
```

1.4.6.3 Oracle Unicode Font Installation Requirements

Only fonts required by Application Server Control Console and Help (for example, Albany fonts ALBANWTJ.TTF and ALBANWTK.TTF) for the languages you select during the installation will be installed. This means that some text might be displayed as control characters for the languages you did not choose during the installation.

The additional required fonts are stored in the `/utilities/fonts` folder on the Oracle Application Server Metadata Repository Upgrade Assistant and Utility CD-ROM.

Following is the font list for the languages you might need to support:

- ALBANWTJ - Non English, plus Japanese
- ALBANWTK - Korean
- ALBANWTS - Simplified Chinese
- ALBANWTT - Traditional Chinese

To install these fonts, perform the following steps after the middle tier is installed:

1. Navigate to the `/utilities/fonts` folder on the Oracle Application Server Metadata Repository Upgrade Assistant and Utility CD-ROM.
2. Copy the contents of the `/utilities/fonts` directory to the following folder on the middle tier:

   ```
   $ORACLE_HOME/jdk/jre/lib/fonts
   ```

1.4.7 Ports

Many Oracle Application Server components, such as Oracle HTTP Server and Oracle Enterprise Manager Application Server Control, use ports. You can have the installer assign default port numbers, or use port numbers that you specify.

This section contains the following topics regarding ports:

- Section 1.4.7.1, "Checking If a Port Is Being Used"
- Section 1.4.7.2, "Getting a List of Port Numbers"
- Section 1.4.7.3, "Using Default Port Numbers"
- Section 1.4.7.4, "Using Custom Port Numbers (the "Static Ports" Feature)"

1.4.7.1 Checking If a Port Is Being Used

To check if a port is being used, you can run the `netstat` command as follows:

```
/> netstat -an | grep portnum
```

1.4.7.2 Getting a List of Port Numbers

You can get a list of port numbers in the following ways:

- Use Oracle Enterprise Manager Application Server Control.

  Click the Ports link on the Oracle Enterprise Manager Application Server Control home page. This takes you to a page that lists all ports in use and the suggested port ranges for different components.

- Look in the `$ORACLE_HOME/install/portlist.ini` file. `ORACLE_HOME` refers to the directory containing the Oracle Application Server installation.

  If you change the port number of a component after installation, then the `portlist.ini` file is *not* updated because the `portlist.ini` file is not updated after installation.

1.4.7.3 Using Default Port Numbers

If you want to use the default port numbers for such components, then you do not have to do anything. Refer to Appendix C, "Default Port Numbers" for a list of the default port numbers and ranges. Ensure that at least one port is available in the port range for each component. If the installer is unable to find a free port in that range, then the installation will fail.

Note:

- The installer will not assign port numbers that are specified in the `/etc/services` file. If you do not want the installer to assign a specific port number, then add the port number to the `/etc/services` file. For example, if you want to reserve port 7777 for an application, then you can add something like the following line to `/etc/services`:

  ```
  myApplication      7777/tcp
  ```

  The installer will not assign port 7777 to any component if this line exists in the `/etc/services` file.

- In the default configuration, the `/etc/services` file includes ports 389 and 636 (for LDAP and LDAP/SSL). These happen to be the default ports for Oracle Internet Directory. This means that if you want to use these port numbers for Oracle Internet Directory, then you must either delete or comment out these lines in the `/etc/services` file. To comment out a line, add a `#` at the beginning of the line, as shown:

  ```
  # ldap   389/tcp   # Lightweight Directory Access Protocol
  # ldap   389/udp   # Lightweight Directory Access Protocol
  # ldaps  636/tcp   # LDAP protocol over TLS/SSL (was sldap)
  # ldaps  636/udp   # LDAP protocol over TLS/SSL (was sldap)
  ```

  If you do not comment out or remove the lines from `/etc/services`, then the installer will not assign ports 389 and 636. It assigns a number from the port number range for Oracle Internet Directory. Refer to Appendix C, "Default Port Numbers" for a list of default port numbers.

1.4.7.4 Using Custom Port Numbers (the "Static Ports" Feature)

To instruct the installer to assign custom port numbers for components:

1. Create a file containing the component names and port numbers. This file is typically called the `staticports.ini` file, but you can name it anything you want.
2. In the installer, on the Specify Port Configuration Options screen, select **Manual** and enter the full path to the `staticports.ini` file.

   If you do not specify the full path to the file, then the installer will not be able to find the file. The installer will then assign default ports for all the components, and it will do this without displaying any warning.

Format of the staticports.ini File

The `staticports.ini` file has the following format. Replace *`port_num`* with the port number that you want to use for the component.

```
# staticports.ini Template File
```

```
# This file is a template for specifying port numbers at installation time.
# To specify a port number, uncomment the appropriate line (remove #) and
# replace "port_num" with the desired port number.
#
# Please refer to Oracle Application Server  10g Standard Edition one
# Installation Guide for instructions on how to use this file.
# This file cannot be specified on the command line when launching OUI

[Infrastructure]
#Oracle Internet Directory port = port_num
#Oracle Internet Directory (SSL) port = port_num
#Oracle Certificate Authority SSL Server Authentication port = port_num
#Oracle Certificate Authority SSL Mutual Authentication port = port_num
#Ultra Search HTTP port number = port_num
#Oracle HTTP Server port = 80
#Oracle HTTP Server Listen port = port_num
#Oracle HTTP Server SSL port = port_num
#Oracle HTTP Server Listen (SSL) port = port_num
#Oracle HTTP Server Diagnostic port = port_num
#Java Object Cache port = port_num
#DCM Java Object Cache port = port_num
#DCM Discovery port = port_num
#Oracle Notification Server Request port = port_num
#Oracle Notification Server Local port = port_num
#Oracle Notification Server Remote port = port_num
#Application Server Control port = port_num
#Application Server Control RMI port = port_num
#Oracle Management Agent port = port_num
#Log Loader port = port_num


[Portal]
#Ultra Search HTTP port number = port_num
#Oracle HTTP Server port = port_num
#Oracle HTTP Server Listen port = port_num
#Oracle HTTP Server SSL port = port_num
#Oracle HTTP Server Listen (SSL) port = port_num
#Oracle HTTP Server Diagnostic port = port_num
#Java Object Cache port = port_num
#DCM Java Object Cache port = port_num
#DCM Discovery port = port_num
#Oracle Notification Server Request port = port_num
#Oracle Notification Server Local port = port_num
#Oracle Notification Server Remote port = port_num
#Application Server Control port = port_num
#Application Server Control RMI port = port_num
#Oracle Management Agent port = port_num
#Web Cache HTTP Listen port = port_num
#Web Cache HTTP Listen (SSL) port = port_num
#Web Cache Administration port = port_num
#Web Cache Invalidation port = port_num
#Web Cache Statistics port = port_num
#Log Loader port = port_num
#Discoverer OSAgent port = port_num


[j2ee]
#Ultra Search HTTP port number = port_num
#Oracle HTTP Server port = port_num
```

```
#Oracle HTTP Server Listen port = port_num
#Oracle HTTP Server SSL port = port_num
#Oracle HTTP Server Listen (SSL) port = port_num
#Oracle HTTP Server Diagnostic port = port_num
#Java Object Cache port = port_num
#DCM Java Object Cache port = port_num
#DCM Discovery port = port_num
#Oracle Notification Server Request port = port_num
#Oracle Notification Server Local port = port_num
#Oracle Notification Server Remote port = port_num
#Application Server Control port = port_num
#Application Server Control RMI port = port_num
#Oracle Management Agent port = port_num
#Web Cache HTTP Listen port = port_num
#Web Cache HTTP Listen (SSL) port = port_num
#Web Cache Administration port = port_num
#Web Cache Invalidation port = port_num
#Web Cache Statistics port = port_num
#Log Loader port = port_num
```

The easiest way to create the file is to use the `staticports.ini` file on the CD-ROM (Disk 1) or DVD as a template:

1. Copy the `staticports.ini` file from the CD-ROM or DVD to the hard disk. Table 1–4 provides the location of the file on the CD-ROM and DVD.

Table 1–4 Location of the staticports.ini file on the CD-ROM and DVD

Media	Location of the staticports.ini File
CD-ROM	*Disk1*`/stage/Response/staticports.ini`
DVD	CD-ROM

2. Edit the local copy (the file on the hard disk) to include the desired port numbers.

   You do not need to specify port numbers for all components in the `staticports.ini` file. If a component is not listed in the file, then the installer uses the default port number for that component.

   You cannot change the port used by the OracleAS Metadata Repository (port 1521) during installation, but you can do so after installation.

   See Also: *Oracle Application Server Administrator's Guide* for details.

   The following example sets the Application Server Control port and some OracleAS Web Cache ports. For components not specified, the installer will assign the default port numbers.

   ```
   Application Server Control port = 2000
   Web Cache Administration port = 2001
   Web Cache Invalidation port = 2002
   Web Cache Statistics port = 2003
   ```

   When the installation is complete, you can check the `$ORACLE_HOME/install/portlist.ini` file to view the assigned ports.

   Note: Port numbers cannot be greater than 65535.

The installer verifies that the ports specified in the file are available by checking the memory. This means that it can only detect ports that are being used by running processes. It does not look in configuration files to determine which ports an application is using.

If the installer detects that a specified port is not available, then it displays an alert. The installer will not assign a port that is not available. To fix this:

1. Edit the `staticports.ini` file to specify a different port, or shut down the application that is using the port.
2. Click **Retry**. The installer re-reads the `staticports.ini` file and verifies the entries in the file again.

Using portlist.ini as the staticports.ini File

The `staticports.ini` file uses the same format as the `$ORACLE_HOME/install/portlist.ini` file, which is created after the installation. If you have installed Oracle Application Server Standard Edition One and you want to use the same port numbers in another installation, then you can use the `portlist.ini` file from the first installation as the `staticports.ini` file for subsequent installations.

However, note this difference in the `staticports.ini`: the line `Oracle Management Agent port` corresponds to `Enterprise Manager Agent port` in `portlist.ini`.

Error Conditions That Will Cause the Installer to Use Default Ports Instead of Custom Ports

Check your `staticports.ini` file carefully because a mistake can cause the installer to use default ports without displaying any warning.

Following are some things that you should check:

- If you specify the same port for more than one component, then the installer will use the specified port for the first component, but for the other components, it will use the default ports of the components. If you have specified the same port for multiple components, then the installer does not warn you.
- If you have syntax errors in the `staticports.ini` file (for example, if you omitted the = character for a line), then the installer ignores the line. For the components specified on such lines, the installer assigns the default ports. The installer does not display a warning for lines with syntax errors.
- If you misspell a component name, then the installer assigns the default port for the component. Names of components in the file are case sensitive. The installer does not display a warning for lines with unrecognized names.
- If you specify a non-numeric value for the port number, then the installer ignores the line and assigns the default port number for the component. It does this without displaying any warning.
- If you specify a relative path to the `staticports.ini` file (for example, `./staticports.ini.` or just `staticports.ini`), then the installer will not find the file. The installer continues without displaying a warning and it will assign default ports to all components. You must specify a full path to the `staticports.ini` file.

1.4.8 If Port 1521 is Already in Use

The installer configures port 1521 for the OracleAS Metadata Repository listener (version 10.1.0.3). This port cannot be changed using the `staticports.ini` file.

> **Note:** If your computer has a listener that uses the IPC protocol with the `EXTPROC` key, then you should change the key to have some other value. This is because the OracleAS Metadata Repository listener requires access to the `EXTPROC` key.

If port 1521 on your computer is already in use by an existing application, such as Oracle database listener or some other application, then you might have to take some action before running the installer. Refer to the following sections for details:

- Section 1.4.8.1, "If an Existing Oracle Database Is Using Port 1521"
- Section 1.4.8.2, "If Some Other Application Is Using Port 1521"

1.4.8.1 If an Existing Oracle Database Is Using Port 1521

If you are installing a new database for the OracleAS Metadata Repository on a computer that is already running an Oracle database, then ensure that the listeners for both databases do not conflict.

You might be able to use the same listener for both the existing database and the OracleAS Metadata Repository database. You have to consider the version of the existing listener as well as the port number. Table 1–5 provides various scenarios and outcomes.

You can change the OracleAS Metadata Repository listener to use a different port after installation.

See Also: *Oracle Application Server Administrator's Guide* for details

Table 1–5 Scenarios and Outcomes if You Have an Existing Database on the Computer Where You Want to Install the OracleAS Metadata Repository

Version of the Existing Listener	Existing Listener Uses Port 1521	Existing Listener Uses a Port Other Than 1521
Earlier than 10.1.0.2	You need two listeners: one for the existing database and one for the OracleAS Metadata Repository. Refer to Scenario 1: Existing Listener Uses Port 1521 and Listener Version Is Earlier Than 10.1.0.2.	You need two listeners: one for the existing database and one for the OracleAS Metadata Repository. Refer to Scenario 3: Existing Listener Uses a Port Other Than 1521.
10.1.0.2 or later	The existing listener supports both the existing database and the OracleAS Metadata Repository. Refer to Scenario 2: Existing Listener Uses Port 1521 and Listener Version Is 10.1.0.2 or Later	You need two listeners: one for the existing database and one for the OracleAS Metadata Repository. Refer to Scenario 3: Existing Listener Uses a Port Other Than 1521.

To check the listener version, run the following command:

```
/> cd $ORACLE_HOME/bin
/> lsnrctl version
```

where `ORACLE_HOME` is the home directory for your database.

You can also use the same command to check the listener port.

Here is a sample output of the command:

```
/> ./lsnrctl VERSION LSNRCTL for Linux: Version 10.1.0.3.0 - Production on
19-MAR-2005 19:46:54
Copyright (c) 1991, 2004, Oracle.  All rights reserved.
Connecting to (ADDRESS=(PROTOCOL=tcp)(PORT=1521))TNSLSNR for Linux: Version
10.1.0.2.0 - Production
        TNS for Linux: Version 10.1.0.2.0 - Production
     Unix Domain Socket IPC NT Protocol Adaptor for Linux: Version 10.1.0.2.0 -
Production
        Oracle Bequeath NT Protocol Adapter for Linux: Version 10.1.0.2.0 -
Production
               TCP/IP NT Protocol Adapter for Linux: Version 10.1.0.2.0 -
Production,,
The command completed successfully
```

Scenario 1: Existing Listener Uses Port 1521 and Listener Version Is Earlier Than 10.1.0.2

Listeners earlier than version 10.1.0.2 are not compatible with the OracleAS Metadata Repository from this Oracle Application Server release (10.1.2). What you need to do is to install the OracleAS Metadata Repository, which installs a version 10.1.0.3 listener. You can then use this new listener to service your existing database and the OracleAS Metadata Repository database.

1. Stop the existing listener before you install the OracleAS Metadata Repository using the following command:

   ```
   /> cd $ORACLE_HOME/bin
   /> lsnrctl stop
   ```

   `ORACLE_HOME` is the home directory for your existing database.

   If you do not stop the existing listener, then the installation will fail.

2. Install the OracleAS Metadata Repository.

   Refer to any of the procedures that install an OracleAS Metadata Repository in Chapter 4, "Installing OracleAS Portal".

3. Update the configuration file of the new listener, as necessary. The name of the listener configuration file is `listener.ora`, located in the `$ORACLE_HOME/network/admin` directory.

   a. Check network address entries in the configuration file of the existing listener.

      If the configuration file of the existing listener contains only the following network addresses, then you do not have to edit the OracleAS Metadata Repository configuration file of the listener for the following network addresses:

      * TCP Port 1521
      * IPC key EXTPROC

      If the configuration file contains other network addresses, then you need to add them to OracleAS Metadata Repository configuration file of the listener.

   b. Check `SID_DESC` entries in the existing listener configuration file.

If the existing listener configuration file contains `SID_DESC` entries for the existing database, then you need to add these entries to the OracleAS Metadata Repository listener configuration file.

c. Do not start the existing listener (version earlier than 10.1.0.2). Now that the new listener supports both databases, you do not need to run the existing listener.

Note: Step c in the preceding procedure is very important. You only need to run one listener (the new listener) to support both databases.

Scenario 2: Existing Listener Uses Port 1521 and Listener Version Is 10.1.0.2 or Later

The existing listener will support both the existing database and the OracleAS Metadata Repository. The installer will perform this configuration automatically.

The listener can be running during installation.

Scenario 3: Existing Listener Uses a Port Other Than 1521

You will end up running two listeners: one for the existing database and one for the OracleAS Metadata Repository, regardless of the version of the existing listener.

The existing listener can be running during installation, because it is not using port 1521.

1.4.8.2 If Some Other Application Is Using Port 1521

If you have some other application listening on port 1521, then you need to reconfigure it to listen on a different port. If that is not possible, then shut it down while you install the OracleAS Metadata Repository. After installation, you can reconfigure OracleAS Metadata Repository to use a port other than 1521.

> **See Also:** *Oracle Application Server Administrator's Guide* for instructions on how to reconfigure OracleAS Metadata Repository to use a port other than 1521

1.4.9 Where Does the Installer Write Files?

The installer writes files to the directories listed in Table 1–6:

Table 1–6 Directories Where the Installer Writes Files

Directory	Description
Oracle home directory	This directory contains Oracle Application Server Standard Edition One files. You specify this directory when you install Oracle Application Server Standard Edition One.
Inventory directory (as specified in `/etc/oraInst.loc`)	The installer uses the inventory directory to keep track of which Oracle products are installed on the computer. The inventory directory is created when you install the first Oracle product on the computer. In subsequent installations, the installer uses the same inventory directory.
`/tmp` directory	The installer writes files needed only during installation to a temporary directory. The temporary directory is specified by the TEMP variable. Refer to TMP and TMPDIR on page 2-21 for details.

2

System and Installation Requirements

This chapter lists the requirements for installing and running Oracle Application Server Standard Edition One. It covers the following sections:

2.1 Hardware Requirements for Linux Systems

Table 2–1 lists the hardware requirements for running Oracle Application Server Standard Edition One. The installer checks many of these requirements at the start of the installation process and warns you if any of them is not met. To save time, you can manually check only the ones that are not checked by the installer. Refer to the appropriate table to view which requirements are not checked by the installer.

You can also run the system checks performed by the installer without doing an installation, by running the `runInstaller` command as shown. The `runInstaller` command is on the Oracle Application Server CD-ROM (Disk 1) or DVD (in the `application_server` directory).

CD-ROM:

```
prompt> mount_point/1012disk1/runInstaller -executeSysPrereqs
```

DVD:

```
prompt> mount_point/application_server/runInstaller -executeSysPrereqs
```

Table 2–1 Hardware Requirements for Linux Systems

Item	Minimum Requirements	Checked by Installer
Processor type	Pentium (32-bit)	No
Processor speed	450 MHz or faster	Yes
Network	You can install Oracle Application Server on a standalone computer that is not connected to a network. If you change the network configuration later, then refer to the *Oracle Application Server Administrator's Guide* for information about reconfiguring Oracle Application Server.	No
IP	The computer's IP address can be static or allocated using DHCP. If you later change the IP configuration, then refer to *Oracle Application Server Administrator's Guide* for information about reconfiguring Oracle Application Server.	No
Memory	The memory requirements provided for the various installation types represents enough physical memory to install and run Oracle Application Server. However, for most production sites, you should configure at least 1 GB of physical memory. For sites with substantial traffic, increasing the amount of memory further may improve your performance. For Java applications, you should either increase the maximum heap allocated to the OC4J processes, or configure additional OC4J processes to utilize this memory. Refer to *Oracle Application Server Performance Guide* for details. In determining the optimal amount of memory for your installation, the best practice is to load test your site. Resource requirements can vary substantially for different applications and different usage patterns. In addition, some operating system utilities for monitoring memory can overstate memory usage (partially due to the representation of 7shared memory). The preferred method for determining memory requirements is to monitor the improvement in performance resulting from the addition of physical memory in your load test. Refer to your platform vendor documentation for information about how to configure memory and processor resources for testing purposes. Oracle Application Server 10*g* Release 2 (10.1.2.0.1): 1 GB To determine the amount of memory, enter the following command: `# grep MemTotal /proc/meminfo`	Yes
Disk space	OracleAS Infrastructure, J2EE, and WebCache with Portal: 4 GB ■ J2EE and Web Services: 450 MB ■ OracleAS Portal with Metadata Repository: 3.4 GB ■ OracleAS Portal using an existing Metadata Repository: 2 GB (approximately) The installer may display inaccurate disk space requirement figures. Refer to the figures listed for disk space requirements. To determine the amount of free disk space, use the `df` command: `prompt> df -k dir` Replace `dir` with the Oracle home directory or with the parent directory if the Oracle home directory does not exist yet. For example, if you plan to install Oracle Application Server in the `/opt/oracle/infra` directory, then you can replace `dir` with the `/opt/oracle or /opt/oracle/infra` directory path.	No

Table 2–1 (Cont.) Hardware Requirements for Linux Systems

Item	Minimum Requirements	Checked by Installer
Space in the `/tmp` directory	400 MB To determine the amount of free disk space in the `/tmp` directory, use the `df` command: `prompt> df -k /tmp` If the `/tmp` directory does not have enough free space, then you can specify a different directory by setting the `TMP` environment variable. Refer to TMP and TMPDIR on page 2-21 for details.	Yes
Swap space	1.5 GB of available swap space To determine the amount of available swap space, enter the following command: `# grep SwapTotal /proc/meminfo` Refer to the operating system documentation for information about how to configure additional swap space.	Yes
Monitor	256 color display To determine the display capabilities of the monitor, run the following command: `prompt> /usr/X11R6/bin/xdpyinfo` Look for the `depths` line. You need a depth of at least 8 (bits for each pixel).	Yes

2.2 Software Requirements for Linux

Depending on your distribution of Linux, refer to one of the following sections for information about checking the software requirements:

- Section 2.2.1, "Software Requirements for Red Hat Enterprise Linux AS/ES 2.1 Systems"
- Section 2.2.2, "Software Requirements for Red Hat Enterprise Linux AS/ES 3.0 Systems"
- Section 2.2.3, "Software Requirements for SUSE Linux Enterprise Server 8 Systems"
- Section 2.2.4, "Software Requirements for SUSE Linux Enterprise Server 9 Systems"

Oracle does not support customized kernels or modules not supported by the Linux vendor.

You can install Oracle Application Server 10*g* Release 2 (10.1.2) on a Linux system that is not on a network, and you can install Oracle Application Server 10*g* Release 2 (10.1.2) on a Linux computer that is configured to use DHCP. If you want to install Oracle Application Server on a computer that is not on a network, then you must configure the computer to use either a static IP address or a loopback IP address. Configure the computer to resolve the host name of the computer to either a static IP address or a loopback IP address.

2.2.1 Software Requirements for Red Hat Enterprise Linux AS/ES 2.1 Systems

Table 2–2 lists the software requirements for Red Hat Enterprise Linux AS/ES 2.1 systems and the procedure that follows the table describes how to ensure that your

computer meets these requirements and any additional requirements for installing Oracle Application Server.

> **Note:** Oracle Application Server 10*g* Release 2 (10.1.2) is certified with the following operating system specific software. For the most current list of supported operating system specific software, for example JDK version, operating system version, check Oracle*MetaLink* at
>
> http://metalink.oracle.com

Table 2–2 Software Requirements for Red Hat Enterprise Linux AS/ES 2.1 Systems

Item	Description
Operating System	Red Hat Enterprise Linux AS/ES 2.1 For more information about Red Hat, refer to http://www.redhat.com
Red Hat Update	Update 5
Red Hat Patches	Errata 49 kernel or a higher errata patch approved by Red Hat For example, one of the following, depending on the type of Red Hat installation: ■ kernel-2.4.9-e.49 ■ kernel-smp-2.4.9-e.49 ■ kernel-enterprise-2.4.9-e.49
Software packages (check that these versions or higher versions are installed)	glibc-2.2.4-32.17 glibc-common-2.2.4-32.17 gcc-2.96-128.7.2 gcc-c++-2.96-128.7.2 pdksh-5.2.14-22 openmotif-2.1.30-12 sysstat-4.0.1-15.2.1as compat-glibc-6.2-2.1.3.2 compat-libstdc++-6.2-2.9.0.16 libstdc++-2.96-128.7.2 gnome-libs-1.2.13-16 binutils-2.11.90.0.8-12.4 make-3.79.1-8 db1-1.85-7 db3-3.3.11-5

To ensure that the system meets all the requirements:

1. Log in as the `root` user.
2. To determine which distribution and version of Linux is installed, enter the following command:

```
# cat /etc/issue
Red Hat Linux Advanced Server release 2.1AS/\m (Pensacola)
```

Note: Red Hat Enterprise Linux AS/ES 2.1, 3.0 and SUSE Linux Enterprise Server 8 and 9 are certified and supported. For the most current list of supported Linux operating systems, check Oracle*MetaLink* http://metalink.oracle.com

3. To check that Update 5 is installed:

```
# cat /etc/redhat-release
Red Hat Linux Advanced Server release 2.1AS/\m (Pensacola Update 5)
```

If Update 5 is installed, then errata 49 is installed and all the required software packages are installed.

4. To determine which version of the Linux kernel is installed, enter the following command:

```
# uname -r
kernel-smp-2.4.9-e.49
```

In this example, the version shown is 2.4.9 with errata 49. Refer to the operating system documentation for information about upgrading the kernel if necessary.

See Also: http://www.redhat.com for more information about Red Hat patches

5. To determine whether any other package is installed, enter a command similar to the following:

```
# rpm -q package_name
```

If a package is missing, then download and install it using the following command:

```
# rpm -i package_name
```

When installing a package, ensure that you are using the correct architecture and optimization rpm file. To check the architecture of an rpm file, run the following command:

```
# rpm -q package_name --queryformat "%{arch}\n"
```

In the following example, the `glibc` rpm file is suitable for an Intel architecture

```
# rpm -q glibc --queryformat "%{arch}\n"
i686
```

2.2.2 Software Requirements for Red Hat Enterprise Linux AS/ES 3.0 Systems

Table 2–3 lists the software requirements for Red Hat Enterprise Linux AS/ES 3.0 systems and the procedure that follows the table describes how to ensure that your computer meets these requirements and any additional requirements for installing Oracle Application Server Standard Edition One.

Note: Oracle Application Server 10*g* Release 2 (10.1.2) is certified with the following operating system specific software. For the most current list of supported operating system specific software, for example JDK version, operating system version, check Oracle*MetaLink* at

http://metalink.oracle.com.

Table 2–3 Software Requirements for Red Hat Enterprise Linux AS/ES 3.0 Systems

Item	Description
Operating System	Red Hat Enterprise Linux AS/ES 3.0 For more information about Red Hat, refer to http://www.redhat.com
Red Hat Update	Update 3
Red Hat Patches	One of the following, depending on the type of Red Hat installation: ■ kernel-2.4.21-20.EL ■ kernel-smp-2.4.21-20.EL ■ kernel-hugemem-2.4.21-20.EL
Software packages (check that these versions or higher versions are installed)	glibc-2.3.2-95.27 glibc-common-2.3.2-95.27 binutils-2.14.90.0.4-35 compat-glibc-7.x-2.2.4.32.6 compat-libstdc++-7.3-2.96.128 compat-libstdc++-devel-7.3-2.96.128 gcc-3.2.3-42 gcc-c++-3.2.3-42 libstdc++-3.2.3-42 libstdc++-devel-3.2.3-42 openmotif21-2.1.30-8 pdksh-5.2.14-21 setarch-1.3-1 make-3.79.1-17 gnome-libs-1.4.1.2.90-34.1 sysstat-4.0.7-4.EL3.3 compat-db-4.0.14-5 control-center-2.2.0.1-13.i386.rpm xscreensaver-4.10-8.i386.rpm **Note:** For Red Hat Enterprise Linux AS/ES 3.0, the equivalent version of openmotif 2.1.30-8 is openmotif21-2.1.30-8. The openmotif 21-2.1.30-8 package can be installed from disk number 3 of the Red Hat Enterprise Linux AS/ES 3.0 distribution by entering: $ rpm -ivh openmotif21-2.1.30-8

To ensure that the system meets all the requirements:

1. Log in as the `root` user.
2. To determine which distribution and version of Linux is installed, enter the following command:

```
# cat /etc/issue
Red Hat Linux Advanced Server release 3 (Taroon)
```

Note: Red Hat Enterprise Linux AS/ES 2.1, 3.0 and SUSE Linux Enterprise Server 8 and 9 are certified and supported. For the most current list of supported Linux operating systems, check Oracle*MetaLink* http://metalink.oracle.com.

3. To check that Update 3 is installed:

```
# cat /etc/redhat-release
Red Hat Enterprise Linux AS release 3 (Taroon Update 3)
```

4. To determine whether any other package is installed, enter a command similar to the following:

```
# rpm -q package_name
```

If a package is missing, then download it and install it using the following command:

```
# rpm -i package_name
```

When installing a package, ensure that you use the correct architecture and optimization rpm file. To check the architecture of an rpm file, run the following command:

```
# rpm -q package_name --queryformat "%{arch}\n"
```

In the following example, the `glibc` rpm file is suitable for an Intel architecture

```
# rpm -q glibc --queryformat "%{arch}\n"
i686
```

5. If the `hugemem` kernel is used, then set the architecture using the following command:

```
prompt> setarch i386
```

2.2.3 Software Requirements for SUSE Linux Enterprise Server 8 Systems

Table 2–4 lists the software requirements for SUSE Linux Enterprise Server 8 systems and the procedure that follows the table describes how to ensure that your system meets these requirements and any additional requirements for installing Oracle Application Server.

Note: Oracle Application Server 10*g* Release 2 (10.1.2) is certified with the following operating system specific software. For the most current list of supported operating system specific software, for example JDK version, operating system version, check Oracle*MetaLink* (http://metalink.oracle.com).

Table 2–4 Software Requirements for Red Hat Enterprise Linux AS/ES 2.1 Systems

Item	Requirements
Operating System	SUSE Linux Enterprise Server 8 For more information about SUSE Linux Enterprise Server, refer to http://www.suse.com SP3 is certified for Oracle Application Server 10*g* Release 2 (10.1.2). For SUSE Linux Enterprise Server 8 SP3, the minimum supported kernel versions are: ■ k_smp-2.4.21-138 ■ k_deflt-2.4.21-138 ■ k_psmp-2.4.21-138
Software Packages (check that these versions or higher versions are installed)	glibc-2.2.2-124 gcc-3.2.2-38 gcc-c++-3.2.2-38 pdksh-5.2.14 openmotif-2.1.30MLI4 sysstat-4.0.3 libstdc++-3.2.2 make-3.79.1-407 binutils-2.12.90.0.15-50 compat-2003.1.10-0

To ensure that the system meets all the requirements:

1. Log in as the `root` user.
2. To determine which distribution and version of Linux is installed, enter the following command:

```
# cat /etc/issue
Welcome to SUSE Linux Enterprise Server 8 (i586) - Kernel \r (\l)
```

> **Note:** Red Hat Enterprise Linux AS/ES 2.1, 3.0 and SUSE Linux Enterprise Server 8 and 9 are certified and supported. For the most current list of supported Linux operating systems, check Oracle*MetaLink* at http://metalink.oracle.com.

3. To determine the service pack version, enter the following command:

```
# uname -r
k_smp-2.4.21-138
```

   If the kernel version contains the string 2.4.21, then SP3 is installed. SP3 is certified for Oracle Application Server 10*g* Release 2 (10.1.2).

4. To determine whether any other package is installed, enter a command similar to the following:

```
# rpm -q package_name
```

   If a package is missing, then download it and install it using the following command:

```
# rpm -i package_name
```

When installing a package, ensure that you are using the correct architecture and optimization rpm file. To check the architecture of an rpm file, run the following command:

```
# rpm -q package_name --queryformat "%{arch}\n"
```

In the following example, the `glibc rpm` file is suitable for an Intel architecture

```
# rpm -q glibc --queryformat "%{arch}\n"
i686
```

5. Create the following symbolic link for the Perl executable if it does not already exist:

```
# ln -sf /usr/bin/perl /usr/local/bin/perl
```

6. Create the following symbolic link for the `fuser` executable if it does not already exist:

```
# ln -sf /bin/fuser /sbin/fuser
```

7. If the `orarun` package was installed on a SUSE Linux Enterprise Server system, then complete the following steps as the `oracle` user to reset the environment:

   a. Enter the following commands:

```
prompt> cd /etc/profile.d
prompt> mv oracle.csh oracle.csh.bak
prompt> mv oracle.sh oracle.sh.bak
prompt> mv alljava.sh alljava.sh.bak
prompt> mv alljava.csh alljava.csh.bak
```

   b. Use any text editor to comment out the following line from the `$HOME/.profile` file:

```
. ./.oracle
```

   c. Log out of the `oracle` user account.

   d. Log in to the `oracle` user account for the changes to take effect.

8. If any Java packages are installed on the system, then unset the Java environment variables, for example `JAVA_HOME`.

> **Note:** Oracle recommends that you do not install any of the Java packages supplied with the SUSE Linux Enterprise Server distribution.

9. Check the `/etc/services` file to ensure that the following port ranges are available on the computer:

   - ports 3060-3129 required for Oracle Internet Directory
   - ports 3130-3199 required for Oracle Internet Directory (SSL)
   - ports 1812-1829 required for Oracle Enterprise Manager (console)
   - ports 1830-1849 required for Oracle Enterprise Manager (agent)
   - ports 1850-1869 required for Oracle Enterprise Manager (RMI)

Remove entries from the `/etc/services` file and restart the computer, if necessary. To remove the entries, you can use the perl script included in the `utils/3167528/` directory of CD-ROM Disk 1 or in the `application_server/utils/3167528/` directory on the DVD. Run the script as the `root` user. This script is also available as patch 3167528. This patch is available at

`http://metalink.oracle.com`

If these ports are not available, then the associated configuration assistants will fail during the installation.

10. If you use Network Information Service (NIS):

    a. Ensure that the following line exists in the `/etc/yp.conf` file:

    ```
    hostname.domainname broadcast
    ```

    b. Ensure that the following line exists in the `/etc/nsswitch.conf` file:

    ```
    hosts: files nis dns
    ```

11. Ensure that the `localhost` entry in the `/etc/hosts` file is an IPv4 entry. If the IP entry for `localhost` is in IPv6 format, installation cannot succeed. The following example shows an IPv6 entry:

    ```
    # special IPv6 addresses
    ::1             localhost ipv6-localhost ipv6-loopback
    ::1             ipv6-localhost ipv6-loopback
    ```

    To correct this example `/etc/hosts` file, comment the `localhost` entry as follows:

    ```
    # special IPv6 addresses
    # ::1             localhost ipv6-localhost ipv6-loopback
    ::1             ipv6-localhost ipv6-loopback
    ```

    To comment the entries, you can use the perl script included in the `utils/4015045/` directory of CD-ROM Disk 1 and in the `application_server/utils/4015045/` directory on the DVD. Run the script as the `root` user. This script is also available as patch 4015045. This patch is available at

    `http://metalink.oracle.com`

2.2.4 Software Requirements for SUSE Linux Enterprise Server 9 Systems

Table 2–5 lists the software requirements for SUSE Linux Enterprise Server 9 systems and the procedure that follows the table describes how to ensure that your system meets these requirements and any additional requirements for installing Oracle Application Server.

Note: Oracle Application Server 10*g* Release 2 (10.1.2) is certified with the following operating system specific software. For the most current list of supported operating system specific software, for example JDK version, operating system version, check Oracle*MetaLink* (`http://metalink.oracle.com`).

Table 2–5 Software Requirements for SUSE Linux Enterprise Server 9 Systems

Item	Description
Operating System	SUSE Linux Enterprise Server 9 For more information about SUSE Linux Enterprise Server, refer to http://www.suse.com For SUSE Linux Enterprise Server 9, the minimum supported kernel versions are: ▪ kernel-bigsmp-2.6.5-7.97 ▪ kernel-default-2.6.5-7.97 ▪ kernel-smp-2.6.5-7.97
Software Packages (check that these versions or higher versions are installed)	glibc-2.3.3-98.28 gcc-3.3.3-43.24 gcc-c++-3.3.3-43.24 libstdc++-3.3.3-43.24 libstdc++-devel-3.3.3-43.24 openmotif21-libs-2.1.30MLI4-119.1 pdksh-5.2.14-780.1 make-3.80-184.1 gnome-libs-1.4.1.7-671.1 gnome-libs-devel-1.4.1.7-671.1 sysstat-5.0.1-35.1 binutils-2.15.90.0.1.1-32.5 db1-1.85-85.1 compat-2004.7.1-1.2

To ensure that the system meets all the requirements:

1. Log in as the `root` user.
2. To determine which distribution and version of Linux is installed, enter the following command:

```
# cat /etc/issue
Welcome to SUSE Linux Enterprise Server 9 (i686) - Kernel \r (\l)
```

> **Note:** Red Hat Enterprise Linux AS/ES 2.1, 3.0 and SUSE Linux Enterprise Server 8 and 9 are certified and supported. For the most current list of supported Linux operating systems, check Oracle*MetaLink* at http://metalink.oracle.com.

3. To determine the service pack version, enter the following command:

```
# uname -r
kernel-bigsmp-2.6.5-7.97
```

   If the kernel version contains the string 2.4.21, then SP3 is installed. SP3 is certified for Oracle Application Server 10*g* Release 2 (10.1.2).

4. To determine whether any other package is installed, enter a command similar to the following:

```
# rpm -q package_name
```

If a package is missing, then download it and install it using the following command:

```
# rpm -i package_name
```

When installing a package, ensure that you are using the correct architecture and optimization rpm file. To check the architecture of an rpm file, run the following command:

```
# rpm -q package_name --queryformat "%{arch}\n"
```

In the following example, the `glibc rpm` file is suitable for an Intel architecture

```
# rpm -q glibc --queryformat "%{arch}\n"
i686
```

5. Create the following symbolic link for the Perl executable if it does not already exist:

```
# ln -sf /usr/bin/perl /usr/local/bin/perl
```

6. Create the following symbolic link for the `fuser` executable if it does not already exist:

```
# ln -sf /bin/fuser /sbin/fuser
```

7. If the `orarun` package was installed on a SUSE Linux Enterprise Server system, then complete the following steps as the `oracle` user to reset the environment:

   a. Enter the following commands:

```
prompt> cd /etc/profile.d
prompt> mv oracle.csh oracle.csh.bak
prompt> mv oracle.sh oracle.sh.bak
prompt> mv alljava.sh alljava.sh.bak
prompt> mv alljava.csh alljava.csh.bak
```

   b. Use any text editor to comment out the following line from the `$HOME/.profile` file:

```
. ./.oracle
```

   c. Log out of the `oracle` user account.

   d. Log in to the `oracle` user account for the changes to take effect.

8. If any Java packages are installed on the system, then unset the Java environment variables, for example `JAVA_HOME`.

   Note: Oracle recommends that you do not install any of the Java packages supplied with the SUSE Linux Enterprise Server distribution.

9. Check the `/etc/services` file to ensure that the following port ranges are available on the system:

   - ports 3060-3129 required for Oracle Internet Directory
   - ports 3130-3199 required for Oracle Internet Directory (SSL)
   - ports 1812-1829 required for Oracle Enterprise Manager (console)

- ports 1830-1849 required for Oracle Enterprise Manager (agent)
- ports 1850-1869 required for Oracle Enterprise Manager (RMI)

Remove entries from the `/etc/services` file and restart the computer, if necessary. To remove the entries, you can use the Perl script included in the `utils/3167528/` directory of CD-ROM Disk 1 and in the `application_server/utils/3167528/` directory on the DVD. Run the script as the `root` user. This script is also available as patch 3167528. This patch is available at

`http://metalink.oracle.com`

If these ports are not available, then the associated configuration assistants will fail during the installation.

10. If you use Network Information Service (NIS), then:

    a. Ensure that the following line exists in the `/etc/yp.conf` file:

    ```
    hostname.domainname broadcast
    ```

    b. Ensure that the following line exists in the `/etc/nsswitch.conf` file:

    ```
    hosts: files nis dns
    ```

11. Enure that the `localhost` entry in the `/etc/hosts` file is an IPv4 entry. If the IP entry for `localhost` is IPv6 format, then installation cannot succeed. The following example shows an IPv6 entry:

    ```
    # special IPv6 addresses
    ::1             localhost ipv6-localhost ipv6-loopback
    ::1             ipv6-localhost ipv6-loopback
    ```

    To correct this sample `/etc/hosts` file, comment the `localhost` entry as follows:

    ```
    # special IPv6 addresses
    # ::1             localhost ipv6-localhost ipv6-loopback
    ::1             ipv6-localhost ipv6-loopback
    ```

    To comment the entries, you can use the perl script included in the `utils/4015045/` directory of CD-ROM Disk 1 or in the `application_server/utils/4015045/` directory on the DVD. Run the script as the `root` user. This script is also available as patch 4015045. This patch is available at

    `http://metalink.oracle.com`

2.3 Check Kernel Parameters and Shell Limits

The following section provides information about checking the kernel parameter values and shell limits:

- Section 2.3.1, "Configuring the Kernel Parameters on Linux"
- Section 2.3.2, "Shell Limits for the oracle User"

Note:

- The values for kernel parameters are required only for computers that will be running the OracleAS Metadata Repository or OracleAS Web Cache. The installer checks the kernel parameter values only if you are installing these components.
- If any kernel parameter values do not meet the requirements, then the installer displays an error message. You will not be able to continue the installation until you update the kernel parameters to the required values.

2.3.1 Configuring the Kernel Parameters on Linux

The computers on which you plan to install OracleAS Metadata Repository or OracleAS Web Cache require the kernel parameters to be set to the minimum values. In addition, you need to set the shell limits to improve the performance of the software.

This section provides information about the kernel parameter settings for OracleAS Metadata Repository and OracleAS Web Cache. It covers the following topics:

- Section 2.3.1.1, "Kernel Parameter Settings for OracleAS Web Cache"
- Section 2.3.1.2, "Kernel Parameter Settings for OracleAS Metadata Repository"

2.3.1.1 Kernel Parameter Settings for OracleAS Web Cache

This section is applicable if you are installing OracleAS Web Cache.

Note:

- If you are installing the J2EE and Web Services middle tier, then the OracleAS Web Cache component is optional.
- If you are installing the Portal and Wireless middle tier, then the OracleAS Web Cache component is always installed.

To check or reset the kernel parameters for OracleAS Web Cache:

1. Run the following command to check that the `nofile` kernel parameter is set to at least 65536:

   ```
   prompt> ulimit -Hn
   ```

2. Add the following line to the `/etc/security/limits.conf` file (use a text editor to edit the file) if the command returns a value that is less than 65536:

   ```
   *       hard    nofile  65536
   ```

   You need to be the `root` user to edit the `/etc/security/limits.conf` file.

3. Restart the computer for the new value to take effect.

2.3.1.2 Kernel Parameter Settings for OracleAS Metadata Repository

Verify that the kernel parameters shown in the following table are set either to the formula shown, or to values greater than or equal to the recommended value shown. The procedures following the table describe how to verify and set the values.

Note: The Linux threads model creates a process for each thread. Oracle Application Server is highly multi-threaded to improve performance. On Linux, this requires that the kernel can handle many hundreds of processes.

Parameter	Value	File
semmsl	256	/proc/sys/kernel/sem
semmns	32000	
semopm	100	
semmni	142	
shmall	2097152	/proc/sys/kernel/shmall
shmmax	2147483648	/proc/sys/kernel/shmmax
shmmni	4096	/proc/sys/kernel/shmmni
msgmax	8192	/proc/sys/kernel/msgmax
msgmnb	65535	/proc/sys/kernel/msgmnb
msgmni	2878	/proc/sys/kernel/msgmni
file-max	131072	/proc/sys/fs/file-max
ip_local_port_range	10000 65000	/proc/sys/net/ipv4/ip_local_port_range

Note:

- The semmns parameter should be set to the sum of the PROCESSES initialization parameter for each Oracle database, adding the largest one twice, and then adding an additional 10 for each database.
- If the current value for any parameter is higher than the value listed in this table, then do not change the value of that parameter.

To view the current value specified for these kernel parameters and to change them if necessary:

1. Enter commands similar to the following to view the current values of the kernel parameters:

Note: Make a note of the current values and identify any values that you must change.

Parameter	Command
semmsl, semmns, semopm, and semmni	`# /sbin/sysctl -a | grep sem` This command displays the value of the semaphore parameters in the order listed.

Parameter	Command
shmall, shmmax, and semmni	# /sbin/sysctl -a | grep shm
msgmax, msgmnb, and msgmni	# /sbin/sysctl -a | grep msg
file-max	# /sbin/sysctl -a | grep file-max
ip_local_port_range	# /sbin/sysctl -a | grep ip_local_port_range This command displays a range of port numbers.

2. If the value of any kernel parameter is different from the recommended value, then complete the following steps:

   a. Using any text editor, create or edit the /etc/sysctl.conf file and add or edit lines similar to the following:

   Note: Include lines only for the kernel parameter values that you want to change. For the semaphore parameters (kernel.sem), you must specify all four values. However, if any of the current values are larger than the recommended value, specify the larger value.

   ```
   kernel.shmall = 2097152
   kernel.shmmax = 2147483648
   kernel.shmmni = 4096
   # semaphores: semmsl, semmns, semopm, semmni
   kernel.sem = 256 32000 100 142
   fs.file-max = 131072
   net.ipv4.ip_local_port_range = 10000 65000
   kernel.msgmni = 2878
   kernel.msgmax = 8192
   kernel.msgmnb = 65535
   ```

   By specifying the values in the /etc/sysctl.conf file, these lines persist when you restart the computer.

   b. Enter that the following command to change the current values of the kernel parameters:

   ```
   # /sbin/sysctl -p
   ```

   Review the output from this command to verify that the values are correct. If the values are incorrect, then edit the /etc/sysctl.conf file and enter this command again.

   c. On SUSE Linux Enterprise Server only, enter the following command to cause the system to read the /etc/sysctl.conf file when it restarts:

   ```
   # chkconfig boot.sysctl on
   ```

2.3.2 Shell Limits for the oracle User

To improve the performance of the software on Linux systems, you must increase the following shell limits for the oracle user, depending on the default shell. The following table lists the limits different shells:

Bourne or Bash Shell Limit	Korn Shell Limit	C or tcsh Shell Limit	Hard Limit
nofile	nofile	descriptors	65536
noproc	processes	maxproc	16384

To increase the shell limits:

1. Add the following lines to `/etc/security/limits.conf` file:

```
*        soft    nproc          2047
*        hard    nproc          16384
*        soft    nofile         2048
*        hard    nofile         65536
```

2. Add the following line to the `/etc/pam.d/login` file, if it does not already exist:

```
session    required     /lib/security/pam_limits.so
```

3. Depending on default shell of the `oracle` user, make the following changes to the default shell startup file:

   - For the Bourne, Bash, or Korn shell, add the following lines to the `/etc/profile` file:

```
if [ $USER = "oracle" ]; then
        if [ $SHELL = "/bin/ksh" ]; then
              ulimit -p 16384
              ulimit -n 65536
        else
              ulimit -u 16384 -n 65536
        fi
fi
```

   - For the C or tcsh shell, add the following lines to the `/etc/csh.login` file:

```
if ( $USER == "oracle" ) then
        limit maxproc 16384
        limit descriptors 65536
endif
```

2.4 Operating System Groups

You need to create operating system groups in the following situations:

- If you plan to install Oracle Application Server on a computer that does not have Oracle products, then create a group to own the `inventory` directory. Refer to Section 2.4.1, "Create a Group for the Inventory Directory" for more information.
- If you plan to install the OracleAS Metadata Repository in a new database (that is, one created by the installer), then create groups for database administrators. Refer to Section 2.4.2, "Create Groups for Database Administrators" for more information.

> **Note:** For more information about operating system users and groups, refer to your operating system documentation or contact your system administrator.

2.4.1 Create a Group for the Inventory Directory

If you plan to install Oracle Application Server on a computer that does not have Oracle products, then create a group to own the inventory directory. The installer writes its files in the inventory directory to keep track of the Oracle products installed on the computer.

This guide uses the name `oinstall` for this operating system group.

By having a separate group for the inventory directory, you allow different users to install Oracle products on the computer. Users need write permission for the inventory directory. They can achieve this by belonging to the `oinstall` group.

For the first time installation of any Oracle product on a computer, the installer displays a screen where you enter a group name for the inventory directory, and a screen where you enter the location of the inventory directory.

The default name of the inventory directory is `oraInventory`.

If you are not sure whether there is already an inventory directory on the computer, then look in the `/etc/oraInst.loc` file. This file lists the location of the inventory directory and the group who owns it. If the file does not exist, then the computer does not have Oracle products installed on it.

2.4.2 Create Groups for Database Administrators

This section applies only if you plan to install the OracleAS Metadata Repository in a new database created by the installer.

When the database is not mounted and database authentication is unavailable, the database uses operating system groups to determine user privileges. The database recognizes these groups and privileges:

Table 2–6 Privileges for the OSDBA and OSOPER Groups

Group	Description
`OSDBA`	This is the database administrator group. Users in this group are granted `SYSDBA` privileges.
`OSOPER`	Users in this group are granted `SYSOPER` privileges, which comprise privileges required for basic maintenance. These include database startup and shutdown, and other privileges required for database operation. `SYSOPER` privileges are a subset of `SYSDBA` privileges.

You need to create operating system groups for these groups.

If you want an operating system group called dba to have `SYSDBA` privileges, then:

1. Create the `dba` group.
2. Ensure that the user running the installer is a member of the `dba` group.

If you want a different operating system group to have `SYSDBA` privileges, or if you want to associate `SYSDBA` and `SYSOPER` privileges with different groups, then ensure the user running the installer does not belong to the `dba` group.

If the user running the installer does not belong to the `dba` group, then the installer displays a screen where you can enter the names of groups to have the database administrator privileges. The screen has two fields: one for the `OSDBA` group and one for the `OSOPER` group (refer to Table 2–6). You can enter the same operating system group for both fields.

2.5 Operating System User

Create an operating system user to install and upgrade Oracle products. This guide refers to this user as the `oracle` user. The `oracle` user running the installer must have write permission for the following directories:

- The Oracle home directory, which contains files for the product you are installing
- The inventory directory, which is used by the installer for all Oracle products

If the computer contains other Oracle products, then you might already have a user for this purpose. Look in the `/etc/oraInst.loc` file on Linux systems. This file lists the location of the inventory directory and the group who owns it. If the file does not exist, then the computer does not have Oracle products installed on it.

Create a user with the following properties if you do not already have a user for installing Oracle products:

Table 2–7 Properties of the Operating System User Who Runs the Installer

Item	Description
Login name	You can use any name for the user. This guide refers to the user as the `oracle` user.
Group identifier	The primary group of the `oracle` user must have write permission for the `oraInventory` directory. Refer to Section 2.4.1, "Create a Group for the Inventory Directory" for more information about this group. You can use any name for the group. This guide uses the name `oinstall`.
Home directory	The home directory for the `oracle` user can be consistent with the home directories of other users.
Login shell	The default login shell can be the C, Bourne, or Korn shell.

Note: Use the `oracle` user only for installing and running Oracle products. Do not use root as the `oracle` user.

To create a local operating system user:

1. To create the `oracle` user, enter a command similar to the following:

   ```
   # /usr/sbin/useradd -g oinstall -G dba[,oper] oracle
   ```

   In this command:

   - The `-g` option specifies the primary group, which must be the Oracle Inventory group, for example `oinstall`
   - The `-G` option specifies the secondary groups, which must include the `OSDBA` group and if required, the `OSOPER` group, for example `dba` or `dba,oper`

2. Set the password of the `oracle` user:

   ```
   # passwd oracle
   ```

- Linux x86:

  1. To create the `oracle` user, enter a command similar to the following:

     ```
     # /usr/sbin/useradd -g oinstall -G dba[,oper] oracle
     ```

     In this command:

- The `-g` option specifies the primary group, which must be the Oracle Inventory group, for example `oinstall`
- The `-G` option specifies the secondary groups, which must include the `OSDBA` group and if required, the `OSOPER` group, for example `dba` or `dba,oper`

2. Set the password of the `oracle` user:

```
# passwd oracle
```

To check which groups an operating system user belongs to, run the `groups` command with the name of the user. For example:

```
prompt> groups oracle
```

For more information about operating system users and groups, refer to your operating system documentation or contact your system administrator.

2.6 Environment Variables

The operating system user who will be installing Oracle Application Server needs to set (or unset) the following environment variables:

> **See Also:** Section 2.6.1, "Environment Variable Tips" for some tips about using environment variables

ORACLE_HOME and ORACLE_SID

These environment variables must not be set.

PATH, CLASSPATH, and LD_LIBRARY_PATH

Edit your `PATH`, `CLASSPATH`, and `LD_LIBRARY_PATH` environment variables so that they do not reference any Oracle home directories.

DISPLAY

Set the `DISPLAY` environment variable to point to the X server that will display the installer. The format of the `DISPLAY` environment variable is:

```
hostname:display_number.screen_number
```

Example (C shell):

```
% setenv DISPLAY test.mydomain.com:0.0
```

Example (Bourne or Korn shell):

```
$ DISPLAY=test.mydomain.com:0.0; export DISPLAY
```

You can test the display by running the xclock program:

```
$ /usr/openwin/bin/xclock &
```

Oracle Application Server requires a running X server during installation only. The frame buffer X server installed with your operating system requires that you remain logged in and have the frame buffer running during installation. If you do not wish to do this, then you must use a virtual frame buffer, such as X Virtual Frame Buffer (XVFB) or Virtual Network Computing (VNC).

Visit Oracle Technology Network at

http://www.oracle.com/technology

for information about obtaining and installing XVFB or other virtual frame buffer solutions. Search OTN for frame buffer.

TNS_ADMIN

This section describes two requirements:

- The TNS_ADMIN environment variable must not be set. If set, then it can cause errors during installation. Section G.3.14, "Database Configuration Assistant (DBCA) Failures" shows such an error.
- The /etc directories must not contain a tnsnames.ora file.

These requirements are necessary to prevent conflicts between the Net configuration files for different Oracle products.

If you need to set TNS_ADMIN or if you have the tnsnames.ora file in /etc directory, then perform the following steps before installing Oracle Application Server.

1. If you have the tnsnames.ora file in /etc, then move the file from these directories to a different directory. Alternatively, you can rename the file.
2. Ensure that the TNS_ADMIN environment variable is not set.

   Example (C shell):

   ```
   % unsetenv TNS_ADMIN
   ```

   Example (Bourne or Korn shell):

   ```
   $ unset TNS_ADMIN
   ```

After installation, you can merge the contents of the newly created tnsnames.ora file with your existing tnsnames.ora file.

TMP and TMPDIR

The installer uses a temporary directory for swap space. The installer checks for the TMP and TMPDIR environment variables to locate the temporary directory. If this environment variable does not exist, then the installer uses the /tmp directory.

If you want the installer to use a temporary directory other than /tmp, then set the TMP and TMPDIR environment variables to the full path of an alternate directory. The oracle user must have right permission for this directory and the directory must meet the requirements listed in Section 2.1, "Hardware Requirements for Linux Systems".

Example (C shell):

```
% setenv TMP /tmp2
% setenv TMPDIR /tmp2
```

Example (Bourne or Korn shell):

```
$ TMP=/tmp2; export TMP
$ TMPDIR=/tmp2; export TMPDIR
```

If you do not set this environment variable, and the default directory does not have enough space, then the installer displays an error message that says the environment variable is not set. You can either set the environment variable to point to a different

directory or free up enough space in the default directory. In either case, you have to restart the installation.

ORA_NLS

To ensure that the Oracle Application Server installation completes successfully, unset this environment variable.

Example:

```
$ unset ORA_NLS
```

LD_BIND_NOW

To ensure that the Oracle Application Server installation completes successfully on Linux systems, unset this environment variable.

Example:

```
$ unset LD_BIND_NOW
```

2.6.1 Environment Variable Tips

Here are some tips when working with environment variables:

- If you set environment variables in the `.profile` file, then they might not be read. To ensure environment variables are set to the correct values, check their values in the shell where you will be running the installer.
- To check the value of environment variables, use the `env` command. This displays all the currently defined environment variables and their values.

  ```
  % env
  ```

- If you use the `su` command to switch users (for example, switching from the root user to the `oracle` user), then check the environment variables when you are the new user because the environment variables might not be passed to the new user. This can happen even if you run `su` with the `-` `parameter` (`su - user`).

  ```
  # /* root user */
  # su - oracle
  % env
  ```

2.7 The /etc/hosts File

Although the contents of the `/etc/hosts` file affect the items mentioned in the following sections, the installer provides alternative methods for you to enter the values that you want without editing the `hosts` file:

- Section 2.7.1, "Location of the Default Identity Management Realm"
- Section 2.7.2, "Host Name for Oracle Application Server Single Sign-On"

2.7.1 Location of the Default Identity Management Realm

The installer reads the `hosts` file to construct the location of the default Identity Management realm. It displays this location in the Specify Namespace in Internet Directory screen.

The `hosts` file should use the following format:

```
ip_address   fully_qualified_hostname   short_hostname
```

Example:

```
123.45.67.89   primaryHost.mydomain.com   primaryHost
```

In the preceding example, the location of the default Identity Management realm would look like `dc=mydomain,dc=com`.

If the file uses a different format, then the installer displays an incorrect value on the screen. For example, if the `hosts` file contains:

```
123.45.67.89   primaryHost   primaryHost.mydomain.com  <--- incorrect format
```

The installer would display `dc=primaryHost,dc=com` as the default Identity Management realm. This is probably not the value that you want for the default Identity Management realm.

> **Tip:** If you need the `hosts` file to use a different format, then you can edit the file to use the required format, perform the installation, then revert the file back to its original format after installation.
>
> If you are unable or unwilling to edit the `hosts` file, then you can enter the desired value for the default Identity Management realm in the Custom Namespace field on the Specify Namespace in Internet Directory screen.

2.7.2 Host Name for Oracle Application Server Single Sign-On

If you are installing Oracle Application Server Single Sign-On, and your `hosts` file contains only the host name of your computer, without the domain name, then you will only be able to sign on to the Single Sign-On server using the host name by itself (without the domain name).

If you want to require a domain name when connecting to the Single Sign-On server, then you can edit the `hosts` file to include the domain name. If you do not want to edit the file, then you can use the `OUI_HOSTNAME` command-line parameter to the installer to override the value in `hosts`. For example:

```
prompt> mount_point/1012disk1/runInstaller OUI_HOSTNAME=myserver.mydomain.com
```

2.8 Network Topics

Typically, the computer on which you want to install Oracle Application Server is connected to the network, has local storage to contain the Oracle Application Server installation, has a display monitor, and has a CD-ROM or DVD drive.

This section describes how to install Oracle Application Server on computers that do not meet the typical scenario. It covers the following cases:

- Section 2.8.1, "Installing on Multihomed (Multi-IP) Computers"
- Section 2.8.2, "Copying CD-ROMs or DVD to Hard Drive, and Installing from the Hard Drive"
- Section 2.8.3, "Installing from a Remote CD-ROM or DVD Drive"
- Section 2.8.4, "Installing on Remote Computers"

2.8.1 Installing on Multihomed (Multi-IP) Computers

If you are installing Oracle Application Server on a computer with multiple network cards, then the installer uses the first name in the `/etc/hosts` file. If this is not the name that you want to use, then you can do one of the following:

- Reorder the lines in the `/etc/hosts` file so the desired host name appears first, run the installer, then revert the file to its original state after installation.
- If you do not want to edit the `/etc/hosts` file, then you can start up the installer with the `OUI_HOSTNAME` parameter. Specify the host name that you want to use in this parameter. For example:

```
prompt> mount_point/1012disk1/runInstaller OUI_HOSTNAME=myserver.mydomain.com
```

2.8.2 Copying CD-ROMs or DVD to Hard Drive, and Installing from the Hard Drive

Instead of installing from the Oracle Application Server CD-ROMs or DVD, you can copy the contents of the CD-ROMs or DVD to a hard drive and install from there. This might be easier if you plan to install many instances of Oracle Application Server on your network, or if the computers where you want to install Oracle Application Server do not have CD-ROM or DVD drives.

(You can install from remote CD-ROM or DVD drives. Refer to Section 2.8.3, "Installing from a Remote CD-ROM or DVD Drive".)

When you install from the hard drive, the installer does not prompt you to swap CD-ROMs. It can find all the files if they are in the proper locations (refer to Figure 2–1).

Space Requirement

Ensure that the hard drive contains enough space to hold the contents of the CD-ROMs or the `application_server` directory on the DVD. Each CD-ROM contains approximately 650 MB. This means that if you are copying three CD-ROMs, you need approximately 1.9 GB of disk space.

On the DVD, the `application_server` directory is approximately 1.6 GB.

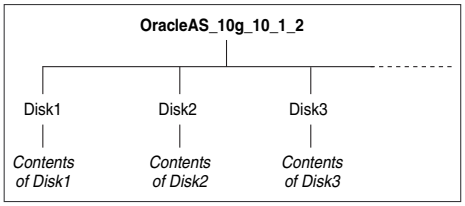
This space is in addition to the space required for installing Oracle Application Server (listed in Table 2–1).

To Copy the CD-ROMs:

1. Create a directory structure on your hard drive as shown in Figure 2–1.

   You need to create a parent directory (called `OracleAS_10g_10_1_2` in the example, but you can name it anything you like), and, under the parent directory, create subdirectories called `Disk1`, `Disk2`, and so on. The names of the subdirectories must be `Disk`*N*, where *N* is the CD-ROM number.

Figure 2–1 Directory Structure for Copying CD-ROMs to Disk



2. Copy the contents of each CD-ROM into the corresponding directory.

```
prompt> cp -pr /cdrom_mount_point/10.1.2disk1/* /path/to/hard/drive/Disk1/
prompt> cp -pr /cdrom_mount_point/10.1.2disk2/* /path/to/hard/drive/Disk2/
... Repeat for each CD-ROM.
```

To run the installer from the copied files, invoke the `runInstallersetup.exe` executable from the `Disk1` directory. Run it from the computer that will be running Oracle Application Server.

```
prompt> /path/to/hard/drive/Disk1/runInstaller
```

To Copy the application_server Directory from the DVD

Perform the following steps to copy the `application_server` directory using the command line:

1. (optional) Create a directory to contain the `application_server` directory.
2. Copy the `application_server` directory from the DVD to your hard disk.

```
prompt> cp -pr /dvd_mount_point/application_server /path/to/hard/drive
```

The following example assumes `/dvdrom` is the DVD drive, and `/>` `application_server` is the destination directory:

```
/> cp -rp /dvdrom/application_server /application_server
```

To run the installer from the copied files, invoke the `runInstaller` script executable from the computer that will be running Oracle Application Server:

```
prompt> /path/to/hard/drive/application_server/runInstaller
```

```
/> cd /application_server
/> ./runInstaller
```

2.8.3 Installing from a Remote CD-ROM or DVD Drive

If the computer where you want to install Oracle Application Server does not have a CD-ROM or DVD drive, then you can copy the discs to the hard drive of a computer with the proper disc drive as described in Section 4.9.2 and then perform a remote installation from that computer using the instructions described in Section 2.8.4, "Installing on Remote Computers".

2.8.4 Installing on Remote Computers

You can run the installer on a remote computer (remote_computer) but have the installer screens display on your local computer (local_computer). The installer will install Oracle Application Server on the remote computer.

To perform a remote installation:

1. Allow remote_computer to display on local_computer. You need to run this command on the console of the local computer.

```
local_computer> xhost +remote_computer
```

If you do not run `xhost`, then you might get an Xlib error similar to `Failed to connect to server`, `Connection refused by server`, or `Can't open display` when starting the installer.

2. On local_computer, perform a remote login (using `telnet` or `rlogin`) to `remote_computer`. Log in as the `oracle` user, as described in Section 2.5, "Operating System User". Ensure that the user has set the environment variables correctly, as described in Section 2.6, "Environment Variables".

```
local_computer> rlogin -l oracle remote_computer.mydomain.com
- OR -
local_computer> telnet remote_computer.mydomain.com
```

3. Set the `DISPLAY` environment variable on remote_computer to point to local_computer.

   Example (C shell):

```
remote_computer> setenv DISPLAY local_computer.mydomain.com:0.0
```

   Example (Bourne or Korn shell):

```
remote_computer> DISPLAY=local_computer.mydomain.com:0.0; export DISPLAY
```

4. Run the installer. Refer to Section 5.2, "Starting Oracle Universal Installer".

> **Note:** You can use a PC X emulator to run the installer if it supports a PseudoColor color model or PseudoColor visual. Set the PC X emulator to use a PseudoColor visual, and then start the installer. Refer to the X emulator documentation for instructions on how to change the color model or visual settings.

2.8.5 Installing on NFS-Mounted Storage

To run Oracle Application Server on NFS systems, you have to use a certified NFS-mounted storage system.

Currently, Oracle Application Server is certified to run on the following NFS systems:

- Network Appliance (NetApp) filers

The NetApp system should be exported to at least the remote install user and remote root user. You can do this using `exportfs` command:

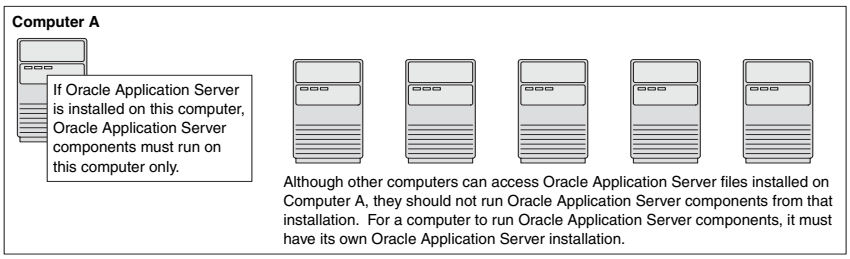
```
prompt> exportfs -i /vol/vol1
```

To check the latest certification list for any updates, visit Oracle Technology Network (`http://www.oracle.com/technology`).

2.8.6 Running Multiple Instances from One Installation

Oracle Application Server components are intended to be run only on the computer where they are installed. You cannot run the components on remote computers, even though the computers can access the files through NFS.

Figure 2–2 Run Oracle Application Server Only on the Computer Where It Is Installed



2.8.7 Support for NIS and NIS+

You can install and run Oracle Application Server in Network Information Service (NIS) and NIS+ environments.

2.8.8 Installing on a DHCP Host (Linux Only)

If you are installing Oracle Application Server Standard Edition One in a DHCP network, then you must use a loopback configuration. To access the Oracle Application Server Standard Edition One, you need to use a local browser. Perform the following steps to install Oracle Application Server in a DHCP network:

1. Find the IP address allocated from the DHCP server by running the following command:

   ```
   $ /sbin/ifconfig -a
   ```

   The IP address is associated with the interface configured to use DHCP.

2. Configure the host to resolve host name to loopback IP address:

   a. Configure the host to resolve host name to loopback IP address, by modifying the `/etc/hosts` file to contain the following entries:

      ```
      127.0.0.1 hostname.domainname hostname
      127.0.0.1 localhost.localdomain localhost
      ```

   b. Check that the host name resolves to the loopback IP address by entering the following command:

      ```
      $ /bin/ping hostname.domainname
      ```

3. Complete the Oracle Application Server installation as described in this guide using the host name used in step 2

2.9 Prerequisite Checks Performed by the Installer

Table 2–8 lists the checks performed by the installer:

Table 2–8 Prerequisite Checks Performed by the Installer

Item	Description
Processor	Refer to Section 2.1, "Hardware Requirements for Linux Systems" for the processor speed requirements.
Operating system version	Refer to Section 2.2, "Software Requirements for Linux" for supported versions.
Operating system patches	Refer to Section 2.2, "Software Requirements for Linux" for a list of required patches.

Table 2–8 (Cont.) Prerequisite Checks Performed by the Installer

Item	Description
Operating system kernel parameters	Refer to Section 2.3, "Check Kernel Parameters and Shell Limits" for a list of required kernel parameters.
Memory	Refer to Section 2.1 for recommended values.
Swap space	Refer to Section 2.1 for recommended values.
TMP space	Refer to Section 2.1 for recommended values.
Instance name	The installer checks that the computer on which you are installing Oracle Application Server does not already have an instance of the same name.
Oracle home directory name	The installer checks that the Oracle home directory name does not contain any spaces.
Path to Oracle home directory	The installer checks that the path to the Oracle home directory is not longer than 127 characters.
Oracle home directory contents	The installer checks that the Oracle home directory does not contain any files that might interfere with the installation.
Oracle home directory	You should install Oracle Application Server in a new directory, unless you are expanding a middle tier (refer to Section 3.2, "Adding the OracleAS Portal Components After Installing J2EE and Web Services") or installing a middle tier in an Oracle home that contains Oracle Developer Suite 10*g* Release 2 (10.1.2) (refer to Section 1.4.2, "Oracle Home Directory"). Here are some examples of installations that are not allowed: ■ Any type of Oracle Application Server into an 8.0, 8*i*, 9.0.1, or 9.2 database Oracle home ■ Any type of Oracle Application Server into an Oracle Management Service Oracle home ■ Any type of Oracle Application Server into an Oracle Collaboration Suite Oracle home ■ Any type of Oracle Application Server into an Oracle HTTP Server standalone Oracle home ■ Any type of Oracle Application Server into an OracleAS Web Cache standalone Oracle home ■ Any type of Oracle Application Server into an Oracle9*i* Developer Suite 9.0.2 Oracle home ■ Any type of Oracle Application Server into an Oracle Application Server Containers for J2EE standalone Oracle home ■ Any type of Oracle Application Server into an Oracle9*i*AS 1.0.2.2 Oracle home ■ Oracle Application Server middle tier into an infrastructure 9.0.2 or 10*g* Release 2 (10.1.2) Oracle home ■ Oracle Application Server middle tier into an Oracle9*i*AS 9.0.2 or 9.0.3 middle tier Oracle home ■ OracleAS Developer Kits into an infrastructure 9.0.2 or 10*g* Release 2 (10.1.2) Oracle home ■ OracleAS Developer Kits into an Oracle9*i*AS middle tier 9.0.2 or 9.0.3 Oracle home ■ OracleAS Developer Kits into an Oracle Developer Suite 9.0.2 or 10*g* Release 2 (10.1.2) Oracle home ■ OracleAS Infrastructure into any Oracle9*i*AS 9.0.2 Oracle home ■ OracleAS Infrastructure into an Oracle Application Server 10*g* Release 2 (10.1.2) middle tier or OracleAS Developer Kits Oracle home ■ OracleAS Infrastructure into an Oracle Developer Suite 9.0.2 or 10*g* Release 2 (10.1.2) Oracle home

Table 2–8 (Cont.) Prerequisite Checks Performed by the Installer

Item	Description
Port 1521	The installer displays a warning if port 1521 is in use by any application, including database listeners of any version. You need to stop the application that is using port 1521, then click **Retry** in the warning dialog box. If it is a database listener that is using port 1521, then you might be able to use it for the metadata repository database. Refer to Section 1.4.8, "If Port 1521 is Already in Use" for details. If it is another application that is using port 1521, then you need to stop it or configure it to use a different port. Alternatively, you can change the database listener to use a port other than 1521, but you can do this only after installation. Refer to the *Oracle Application Server Administrator's Guide* for details.
Static port conflicts	The installer checks the ports listed in the `staticports.ini` file, if specified. Refer to Section 1.4.7.4, "Using Custom Port Numbers (the "Static Ports" Feature)".
Monitor	The installer checks that the monitor is configured to display at least 256 colors.
Display permission	The installer checks that the user has permissions to display on the monitor specified by the `DISPLAY` environment variable.
`DISPLAY` environment variable	The installer checks that the `DISPLAY` environment variable is set.
`TNS_ADMIN` environment variable	The `TNS_ADMIN` environment variable must not be set. There must not be a `tnsnames.ora` file in the `/etc` directory.
`DBCA_RAW_CONFIG` environment variable	If you are installing the OracleAS Infrastructure in a database or Oracle Application Server Active Failover Cluster environment, then you need to set this environment variable to point to a file that describes the locations of your raw partitions.
Cluster file system	The installer checks that you are not installing Oracle Application Server in a cluster file system (CFS).
Oracle Enterprise Manager directories are writable	The installer runs this check only if you are expanding a middle tier or if you are reinstalling Oracle Application Server in the same Oracle home. The installer checks that these directories are writable by the operating system user running the installer: ■ `$ORACLE_HOME/sysman/emd` ■ `$ORACLE_HOME/sysman/config` ■ `$ORACLE_HOME/sysman/webapps/emd/WEB-INF/config`
Oracle Enterprise Manager files exist	The installer runs this check only if you are expanding a middle tier or if you are reinstalling Oracle Application Server in the same Oracle home. The installer checks that these files exist: ■ `$ORACLE_HOME/sysman/config/iasadmin.properties` ■ `$ORACLE_HOME/sysman/webapps/emd/WEB-INF/config/consoleConfig.xml`

Table 2–8 (Cont.) Prerequisite Checks Performed by the Installer

Item	Description
Kernel check on Linux systems	The installer runs this check only if you are installing on Linux. The installer makes sure that the kernel version contains the string `2.4.9-e.49` or higher for Red Hat Enterprise Linux AS/ES 21, the string `2.4.21-20.EL` for Red Hat Enterprise Linux AS/ES 3.0, the string `2.4.21` for SUSE Linux Enterprise Server 8 and the string 2.6.5-7.97 for SUSE Linux Enterprise Server 9.
glibc version check on Linux	The installer runs this check only if you are installing on Linux. The installer makes sure that the glibc version is glibc-2.2.4-32.17 or higher on Red Hat Enterprise Linux AS/ES 2.1, glibc-2.3.2-95.27 or higher on Red Hat Enterprise Linux AS/ES 3.0, glibc-2.2.2-124 or higher on SUSE Linux Enterprise Server 8, and glibc-2.3.3-98.28 or higher on SUSE Linux Enterprise Server 9.
Packages check on Linux	The installer runs this check only if you are installing on Linux.The installer makes sure that the mandatory packages are installed. For example, it checks the gcc, sysstat and openmotif packages as specified in Table 2–2 for Red Hat Enterprise Linux AS/ES 2.1, Table 2–3 for Red Hat Enterprise Linux AS/ES 3.0, Table 2–4 for SUSE Linux Enterprise Server 8 and Table 2–5 for SUSE Linux Enterprise Server 9.

3

Installing J2EE and Web Services

This chapter describes how to install Oracle J2EE and Web Services for Oracle Application Server Standard Edition One 10*g* Release 2 (10.1.2). It contains the following sections:

3.1 J2EE and Web Services Components

The following components are installed for Oracle J2EE and Web Services install type:

- Oracle HTTP Server: This is the Web server component of Oracle Application Server.
- Oracle Application Server Containers for J2EE (OC4J): This component provides a complete Java 2 Enterprise Edition (J2EE) environment for developing Java applications.
- Oracle Enterprise Manager Application Server Control: This component is used for Web-based management of Oracle Application Server.

3.2 Adding the OracleAS Portal Components After Installing J2EE and Web Services

The Oracle Application Server Standard Edition One installation does not allow you to install J2EE and Web Services and then add OracleAS Portal and Metadata Repository at a later time. You should decide which installation type is appropriate for you before performing the installation.

In the event that such a case should arise, you must first completely remove the existing J2EE and Web Services installation and then perform a new installation where you would select one of the OracleAS Portal installation types.

3.3 Installing J2EE and Web Services

This section describes the procedure for installing J2EE and Web Services. It contains the following topics:

- Section 3.3.2, "Basic Installation Summary"
- Section 3.3.3, "Advanced Installation Summary"

3.3.1 Before You Begin

Before you begin installing J2EE and Web Services for Oracle Application Server Standard Edition One, ensure that you have read both Chapter 1, "Product and Installation Overview" and Chapter 2, "System and Installation Requirements". These chapters contain important information with which you must be familiar before you begin the installation so you can avoid potential problems during the installation.

3.3.2 Basic Installation Summary

Table 3–1 provides a brief summary of the steps necessary to install J2EE and Web Services with a basic installation. Refer to Table 1–2 for a summary of basic and advanced installation features.

Table 3–1 Basic J2EE and Web Services Installation

	Screen	Action
1	None.	Start Oracle Universal Installer. For more information, refer to Section 5.2, "Starting Oracle Universal Installer".
2	Welcome to the Oracle Application Server Installation	Specify the Oracle home, then click **Basic Installation**, and select **Oracle J2EE and Web Services** from the drop-down list. Provide the instance name and `ias_admin` password. For more information, refer to: ■ Section 5.3, "Welcome Screen" ■ Section 1.4.2, "Oracle Home Directory" ■ Section 1.4.3, "Oracle Application Server Instances and Instance Names" ■ Section 1.4.4, "The ias_admin User and Restrictions on its Password"
3	Install	None. This screen shows the progress of the installation. For more information, refer to Section 5.14, "Install in Progress".
4	Configuration Assistants	None, unless you want to stop the installation of a particular configuration assistant. For more information, refer to Section 5.15, "Configuration Assistants".
5	End of Installation	None. This screen tells you whether or not your installation was successful, and provides a link to the product release notes. For more information, refer to Section 5.16, "Installation Complete".

3.3.3 Advanced Installation Summary

Table 3–2 provides a brief summary of the steps necessary to install J2EE and Web Services with an advanced installation. Refer to Table 1–2 for a summary of basic and advanced installation features.

Table 3–2 Advanced J2EE and Web Services Installation

	Screen	Action
1	None.	Start the Oracle Universal Installer. For more information, refer to Section 5.2, "Starting Oracle Universal Installer".
2	Welcome to the Oracle Application Server Installation	Click **Advanced Installation**, and then click **Next**. For more information, refer to Section 5.3, "Welcome Screen".
3	Select a Product to Install	Select **Oracle J2EE and Web Services**, then click **Next**. For more information, refer to Section 5.4, "Select a Product to Install".
4	Select Additional Languages	Select any additional languages you want to install, then click **Next**. For more information, refer to Section 5.5, "Select Additional Languages".
5	Specify Port Configuration Method	Select whether you want to configure ports automatically or manually by specifying the location of a port configuration file. For more information, refer to Section 5.6, "Specify Port Configuration Method".
6	Specify Instance Name and `ias_admin` Password	Specify the Oracle Application Server instance name and `ias_admin` Password. For more information, refer to Section 5.7, "Specify Instance Name and ias_admin Password".
7	Summary	Verify that the installation parameters shown on the screen are correct. For more information, refer to Section 5.13, "Summary".
8	Install	None. This screen shows the progress of the installation. For more information, refer to Section 5.14, "Install in Progress".
9	Configuration Assistants	None, unless you want to stop the installation of a particular configuration assistant. For more information, refer to Section 5.15, "Configuration Assistants".
10	End of Installation	None. This screen tells you whether or not your installation was successful, and provides a link to the product release notes. For more information, refer to Section 5.16, "Installation Complete".

3.4 What Should I Do Next?

After the installation is complete, you should:

- Refer to Chapter 6 for instructions and information about postinstallation tasks that should be performed.
- Refer to Part II for information about how to configure, administer, and manage Oracle Application Server Standard Edition One after it has been successfully installed.

  For detailed information about the topics covered in Part II, refer to the *Oracle Application Server Administrator's Guide*.

4

Installing OracleAS Portal

This chapter describes how to install the OracleAS Portal services for Oracle Application Server Standard Edition One. It contains the following sections:

4.1 OracleAS Portal Components

The OracleAS Portal installation include all the components included in J2EE and Web Services, as well as the following:

- Oracle Instant Portal (Q42)

  This component is used to publish and customize portlets for secure publishing and content sharing.

- Identity Management

  This component is used to create, define, and manage users.

- Metadata Repository

  This component serves as the database for Oracle Application Server Standard Edition One. You can choose to install the Metadata Repository that is included with the product, or you can use an existing database as the Metadata Repository.

- OracleAS Web Cache

  This component is used as a reverse proxy server to improve the performance and availability of Web sites that run on Oracle Application Server Standard Edition One.

> **Note:** For more information about the components included in J2EE and Web Services, refer to Section 3.1, "J2EE and Web Services Components".

4.2 Using an Existing Database for the Metadata Repository

You can install the OracleAS Metadata Repository in a new database or in an existing database.

If you want to install the OracleAS Metadata Repository in an existing database, then refer to Part III, "Installing OracleAS Metadata Repository Creation Assistant" for details.

4.3 Installing OracleAS Portal

This section describes the procedure for installing OracleAS Portal. It contains the following topics:

- Section 4.3.1, "Before You Begin"
- Section 4.3.2, "Basic Installation Summary"
- Section 4.3.3, "Advanced Installation Summary for OracleAS Portal with a New Metadata Repository"
- Section 4.3.4, "Advanced Installation Summary for OracleAS Portal with an Existing Metadata Repository"

4.3.1 Before You Begin

Before you begin installing Oracle Instant Portal for Oracle Application Server Standard Edition One, ensure that you have read both Chapter 1, "Product and Installation Overview" and Chapter 2, "System and Installation Requirements". These chapters contain important information with which you must be familiar before you begin the installation so you can avoid potential problems during the installation.

4.3.2 Basic Installation Summary

Table 4–1 provides a brief summary of the steps necessary to install OracleAS Portal with Identity Management and Metadata Repository with a basic installation. Of the two OracleAS Portal install types, you can only install a new Metadata Repository with the basic installation. If you want to use an existing database as the Metadata Repository, then you must use the advanced installation. For advanced installation instructions, refer to Section 4.3.4, "Advanced Installation Summary for OracleAS Portal with an Existing Metadata Repository". For a summary of basic installation, refer to Table 1–2

Table 4–1 Basic OracleAS Portal Installation

Step	Screen Title	Description
1	None.	Start Oracle Universal Installer. For more information, refer to Section 5.2, "Starting Oracle Universal Installer".
2	Welcome to the Oracle Application Server Installation	Specify the Oracle home, then click **Basic Installation** and select **OracleAS Portal with Identity Management and Metadata Repository** from the drop-down list. Provide the instance name, `ias_admin` password, global database name and database password. For more information, refer to: ■ Section 5.3, "Welcome Screen" ■ Section 1.4.2, "Oracle Home Directory" ■ Section 1.4.3, "Oracle Application Server Instances and Instance Names" ■ Section 1.4.4, "The ias_admin User and Restrictions on its Password" ■ Section 1.4.5, "Global Database Name and Restrictions on its Password"
3	Install	None. This screen shows the progress of the installation. For more information, refer to Section 5.14, "Install in Progress".
4	Configuration Assistants	None, unless you want to stop the installation of a particular configuration assistant. For more information, refer to Section 5.15, "Configuration Assistants".
5	End of Installation	None. This screen tells you whether or not your installation was successful, and provides a link to the product release notes. For more information, refer to Section 5.16, "Installation Complete".

4.3.3 Advanced Installation Summary for OracleAS Portal with a New Metadata Repository

Table 4–2 provides a brief summary of the steps necessary to install OracleAS Portal with a new Metadata Repository using the advanced installation.

Table 4–2 Advanced OracleAS Portal Installation

	Screen	Action
1	None.	Start Oracle Universal Installer. For more information, refer to Section 5.2, "Starting Oracle Universal Installer".
2	Welcome to the Oracle Application Server Installation	Click **Advanced Installation** and then click **Next**. For more information, refer to Section 5.3, "Welcome Screen".
3	Select a Product to Install	Select the OracleAS Portal product you want to install, and then click the **Next**. For more information, refer to Section 5.4, "Select a Product to Install".
4	Select Additional Languages	Select any additional languages you want to install and then click **Next**. For more information, refer to Section 5.5, "Select Additional Languages".

Table 4–2 (Cont.) Advanced OracleAS Portal Installation

	Screen	Action
5	Specify Port Configuration Method	Select whether you want to configure ports automatically or manually by specifying the location of a port configuration file. For more information, refer to Section 5.6, "Specify Port Configuration Method".
6	Specify Namespace in Internet Directory	Specify the distinguished name (DN) you want to designate as the namespace in Oracle Internet Directory where users and groups are administered. For more information, refer to Section 5.8, "Specify Namespace in Internet Directory".
7	Specify Database Identification	Specify the database name, character set, and file location. For more information, refer to Section 5.9, "Specify Database Configuration Options".
8	Specify Schema Passwords	Set the passwords for these privileged database schemas: `SYS`, `SYSTEM`, `SYSMAN`, and `DBSNMP`. You can set different passwords for each schema, or you can set the same password for all the schemas. For more information, refer to Section 5.10, "Specify Schema Passwords".
9	Specify Instance Names and `ias_admin` Password	Specify the Oracle Application Server and OracleAS Portal instance names and `ias_admin` password. For more information, refer to Section 5.11, "Specify Instance Names and ias_admin Password".
10	Summary	Verify that the installation parameters shown on the screen are correct. For more information, refer to Section 5.13, "Summary".
11	Install	None. This screen shows the progress of the installation. For more information, refer to Section 5.14, "Install in Progress".
12	Configuration Assistants	None, unless you want to stop the installation of a particular configuration assistant. For more information, refer to Section 5.15, "Configuration Assistants".
13	End of Installation	None. This screen tells you whether or not your installation was successful, and provides a link to the product release notes. For more information, refer to Section 5.16, "Installation Complete".

4.3.4 Advanced Installation Summary for OracleAS Portal with an Existing Metadata Repository

Table 4–3 provides a brief summary of the steps necessary to install OracleAS Portal with an existing Metadata Repository using the advanced installation.

Table 4–3 Advanced OracleAS Portal Installation

	Screen	Action
1	None.	Start Oracle Universal Installer. For more information, refer to Section 5.2, "Starting Oracle Universal Installer".
2	Welcome to the Oracle Application Server Installation	Click **Advanced Installation**, and then click **Next**. For more information, refer to Section 5.3, "Welcome Screen".
3	Select a Product to Install	Select the OracleAS Portal product you want to install, and then click **Next**. For more information, refer to Section 5.4, "Select a Product to Install".
4	Select Additional Languages	Select any additional languages you want to install, then click **Next**. For more information, refer to Section 5.5, "Select Additional Languages".
5	Specify Port Configuration Method	Select whether you want to configure ports automatically or manually by specifying the location of a port configuration file. For more information, refer to Section 5.6, "Specify Port Configuration Method".
6	Specify Repository	Specify the information for the database that contains the existing Metadata Repository. For more information, refer to Section 5.12, "Specify Repository".
7	Specify Namespace in Internet Directory	Specify the distinguished name (DN) you want to designate as the namespace in Oracle Internet Directory where users and groups are administered. For more information, refer to Section 5.8, "Specify Namespace in Internet Directory".
8	Specify Instance Names and `ias_admin` Password	Specify the Oracle Application Server and OracleAS Portal instance names and `ias_admin` password. For more information, refer to Section 5.11, "Specify Instance Names and ias_admin Password".
9	Summary	Verify that the installation parameters shown on the screen are correct. For more information, refer to Section 5.13, "Summary".
10	Install	None. This screen shows the progress of the installation. For more information, refer to Section 5.14, "Install in Progress".
11	Configuration Assistants	None, unless you want to stop the installation of a particular configuration assistant. For more information, refer to Section 5.15, "Configuration Assistants".
12	End of Installation	None. This screen tells you whether or not your installation was successful, and provides a link to the product release notes. For more information, refer to Section 5.16, "Installation Complete".

4.4 What Should I Do Next?

After the installation is finished and you exit Oracle Universal Installer, a browser will be started and the Welcome page will appear. Refer to Section 7.2, "Using the Oracle Application Server Welcome Page" for more information about the Welcome page.

At this point, you should:

- Refer to *Oracle Instant Portal Getting Started* for instructions and information about how to use Oracle Instant Portal

  Refer to Chapter 6 for instructions and information about postinstallation tasks that should be performed

- Refer to Part II for information about how to configure, administer, and manage Oracle Application Server Standard Edition One after it has been successfully installed

  For detailed information about the topics covered in Part II, refer to the *Oracle Application Server Administrator's Guide*.

5
Installation Screens

This chapter describes the various Oracle Universal Installer (OUI) installation screens for Oracle Application Server 10*g* Release 2 (10.1.2). It contains the following sections:

5.1 Setting the Mount Point for CD-ROM or DVD

The Oracle Application Server CD-ROMs are in RockRidge format. The DVD is in DVD format. To manually mount or unmount the disk, you must have root privileges. Ensure that you unmount the disk before removing it from the drive.

To mount the first disk, log in as the `root` user and follow the steps provided in the following section.

Mounting the First Disk on Linux

On most Linux systems, the disk mounts automatically when you insert it into the disk drive. To mount the first disk, follow these steps:

1. Insert Oracle Application Server Disk 1 into the disk drive.

2. To verify that the disk mounted automatically, enter the following command:
   - Red Hat:

     ```
     # ls /mnt/cdrom
     ```

   - SUSE Linux Enterprise Server:

     ```
     # ls /media/cdrom
     ```

3. If the command in step 2 fails to display the contents of the disk, then enter the following command:
   - Red Hat:

     ```
     # mount -t iso9660 /dev/cdrom /mnt/cdrom
     ```

   - SUSE Linux Enterprise Server:

     ```
     # mount -t iso9660 /dev/cdrom /media/cdrom
     ```

5.2 Starting Oracle Universal Installer

Before starting Oracle Universal Installer, ensure that the `/etc/oratab` file exists on the same computer where you need to perform the installation. If the `oratab` file does not exist of the computer, then refer to Section 5.2.1, "If the oratab File Does Not Exist"

In some cases, the `/etc/oratab` file may not have write permissions. In such cases, refer to Section 5.2.2, "If the oratab File Does Not Have Write Permissions"

To start Oracle Universal Installer:

1. If the computer does not mount CD-ROMs or DVDs automatically, then you need to set the mount point manually. Refer to Section 5.1, "Setting the Mount Point for CD-ROM or DVD" for details.
2. Log in as the `oracle` user.
3. CD-ROM users: Insert Oracle Application Server Disk 1 into the CD-ROM drive.

   DVD users: Insert the Oracle Application Server DVD into the DVD drive.
4. Run Oracle Universal Installer using the following command:

   Note:

   - Ensure that you are not logged in as `root` when you start the Oracle Universal Installer because only the `root` user has permissions to manage Oracle Application Server.
   - Do not start the installation inside the *`mount_point`* directory. If you do, then you may not be able to eject the installation disk. The `cd` command changes your current directory to your home directory.
   - The Oracle Universal Installer cannot display Korean or Chinese fonts on Linux systems because JDK 1.4.2_02 does not support these fonts.

   CD-ROM users:

   ```
   prompt> cd
   prompt> mount_point/runInstaller
   ```

DVD users:

```
prompt> cd
prompt> mount_point/application_server/runInstaller
```

5.2.1 If the oratab File Does Not Exist

If the `/etc/oratab` file does not exist on the computer, then `runInstaller` script would show the following error message:

```
Could not find file /etc/oratab, User would need to run "$TMP/rootpreoratab_
mm-dd-yyyy_hh:mm:ss.sh"  as root........
```

To run this file as root:

1. Change user to `root`.
2. Run `$TMP/rootpreoratab_mm-dd-yyyy_hh:mm:ss.sh`.
3. Exit the session.
4. Change the user back to the user performing the installation.
5. Run the installer as mentioned is step 4.

5.2.2 If the oratab File Does Not Have Write Permissions

If the `/etc/oratab` file does not have write permissions, then the following error message is displayed:

```
/etc/oratab does not have write permissions for current user.Please run chmod 777
/etc/oratab as root. After giving permissions, re-run runInstaller
```

To change the permissions for the `/etc/oratab` file:

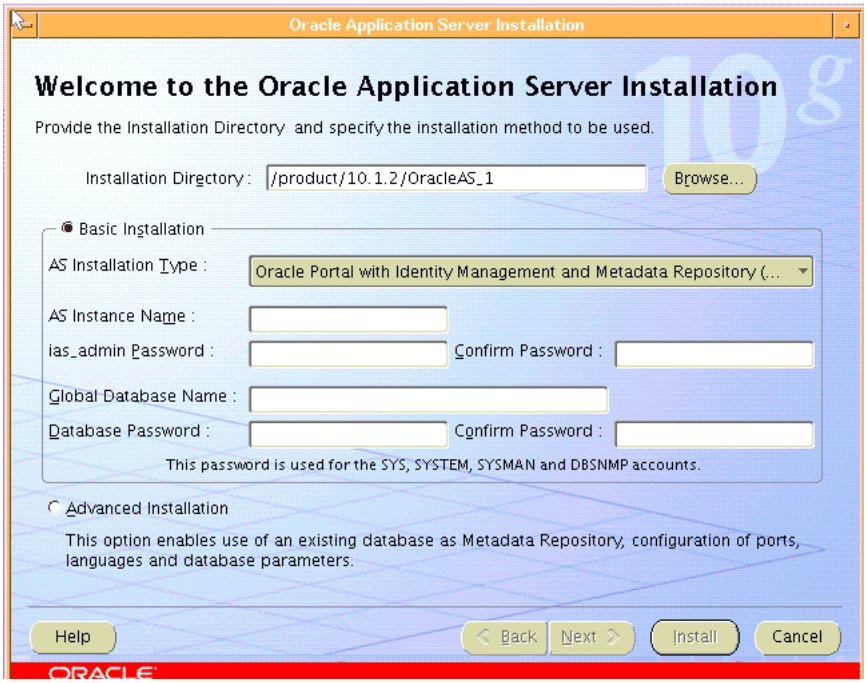
1. Change user to `root`.
2. Run the following command:

   ```
   chmod 777 /etc/oratab
   ```

3. Change the user back to the user performing the installation.
4. Run the installer as mentioned is step 4.

5.3 Welcome Screen

This is the first screen in the installation process. You need to specify the installation directory (or Oracle home) and whether you want to perform a basic or advanced installation.



Specify the Installation Directory

Specify the full path of the installation directory or Oracle home. This is the directory where you want to install the software. For more information about the Oracle home, refer to Section 1.4.2, "Oracle Home Directory" and Section 1.4.2.1, "Naming Your Oracle Home".

Select Basic or Advanced Installation

Select whether you want to perform a basic or advanced installation.

The basic installation prompts you to answer the questions on this screen. Default values for all the components will be used. If you want to perform a basic installation, then click **Basic Installation**. Skip to Section 5.3.1, "Completing the Basic Installation for J2EE and Web Services" or Section 5.3.2, "Completing the Basic Installation for OracleAS Portal with Identity Management and Metadata Repository", depending on which service you want to install.

The advanced installation provides you with a greater degree of customization and flexibility, allowing for the installation of additional languages, port configuration options, use of an existing database as the Metadata Repository (portal installation only), and database configuration (portal installation only). If you choose to customize your installation and do not want to accept the default values, then click **Advanced Installation**, then click **Next**. Skip to Section 5.4, "Select a Product to Install".

5.3.1 Completing the Basic Installation for J2EE and Web Services

To complete the basic installation for J2EE and Web Services:

1. Select **J2EE and Web Services** from the drop-down list.
2. Provide the J2EE and Web Services instance name and `ias_admin` password. For more information about the instance name, refer to Section 1.4.3. For more information about the `ias_admin` user and password, refer to Section 1.4.4.

After you have supplied the instance name and `ias_admin` password, click **Install** at the bottom of the window. The installation will begin.

After the installation is complete, refer to Chapter 6.

5.3.2 Completing the Basic Installation for OracleAS Portal with Identity Management and Metadata Repository

To complete the basic installation for OracleAS Portal with Identity Management and Metadata Repository:

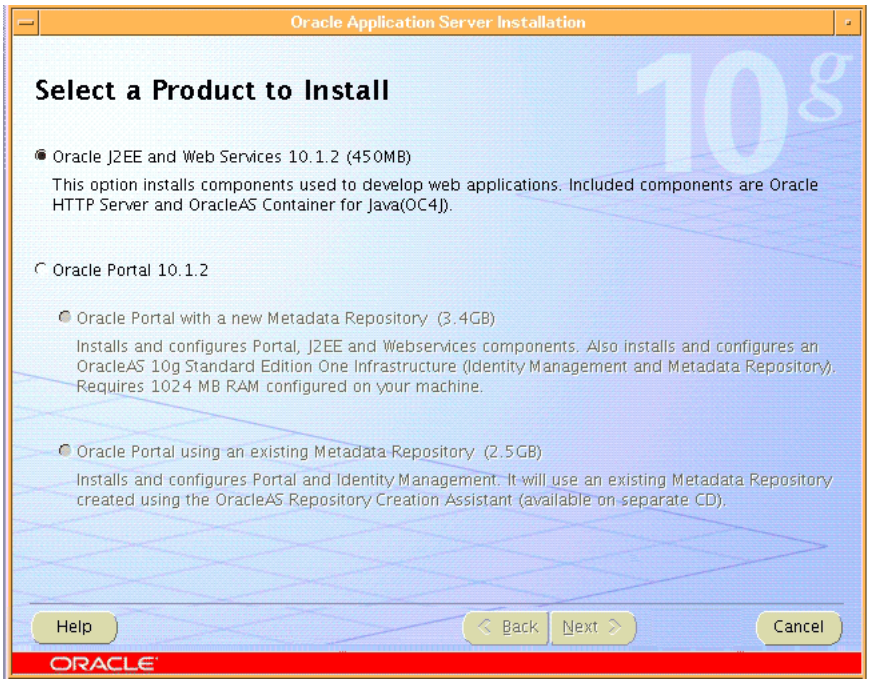
1. Select **OracleAS Portal with Identity Management and Metadata Repository** from the drop-down list.
2. Provide the OracleAS Portal instance name and `ias_admin` password. For more information about the instance name, refer to Section 1.4.3. For more information about the `ias_admin` user and password, refer to Section 1.4.4.
3. Provide the global database name and password. For more information about the global database name and password, refer to Section 1.4.5.

After you have supplied the necessary information, click **Install** at the bottom of the window. The installation will begin.

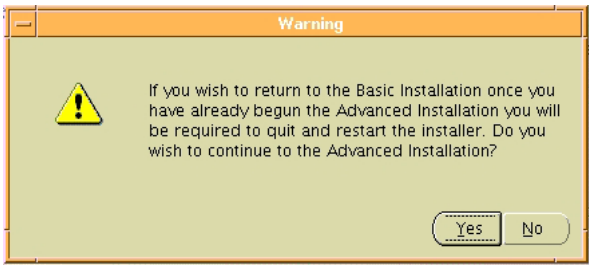
After the installation is complete, refer to Chapter 6.

5.4 Select a Product to Install

Select the product you want to install, then click **Next**.



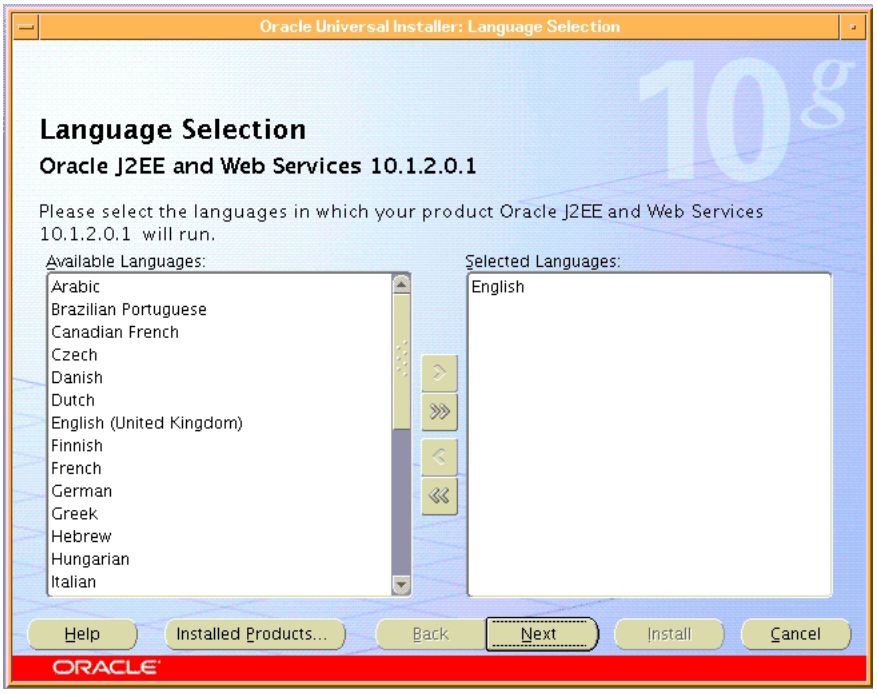
After you click **Next**, the following warning appears:



Click **Yes** to continue with the advanced installation.

5.5 Select Additional Languages

Select any additional languages you want to install.



Keep in mind that you are selecting languages for the products being installed, and not the installation itself.

Click **Next** when you finish selecting the languages.

5.6 Specify Port Configuration Method

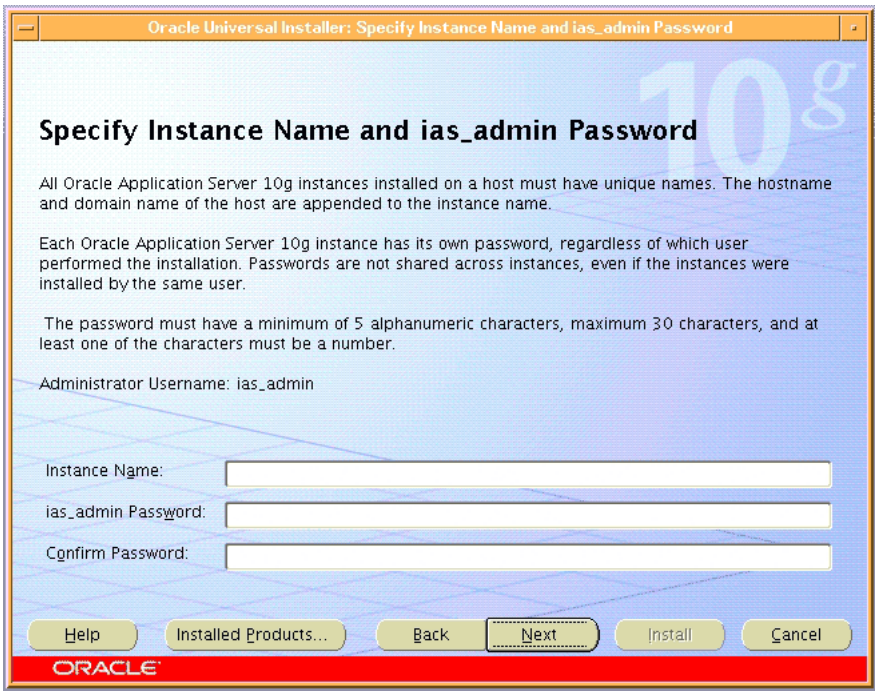
Select the manner in which you want to configure ports.

Click **Automatic** if you want to use all default port numbers. Refer to Appendix C for a list of all the default port numbers and ranges.

Click **Manual** if you want to custumize your port numbers. You must supply the full path and file name to an existing port configuration file containing the port numbers you want to use for each component. Typically, this port configuration file is called `staticports.ini`, although any name is valid as long as the format of the file is correct. Refer to Section 1.4.7.4, "Using Custom Port Numbers (the "Static Ports" Feature)"for more information about the `staticports.ini` file that is shipped with the product.

5.7 Specify Instance Name and ias_admin Password

Specify the Oracle Application Server instance name and `ias_admin` Password.



Instance Name

The instance name uniquely identifies this Oracle Application Server Standard Edition One instance.

For more information about instance names, refer to Section 1.4.3, "Oracle Application Server Instances and Instance Names".

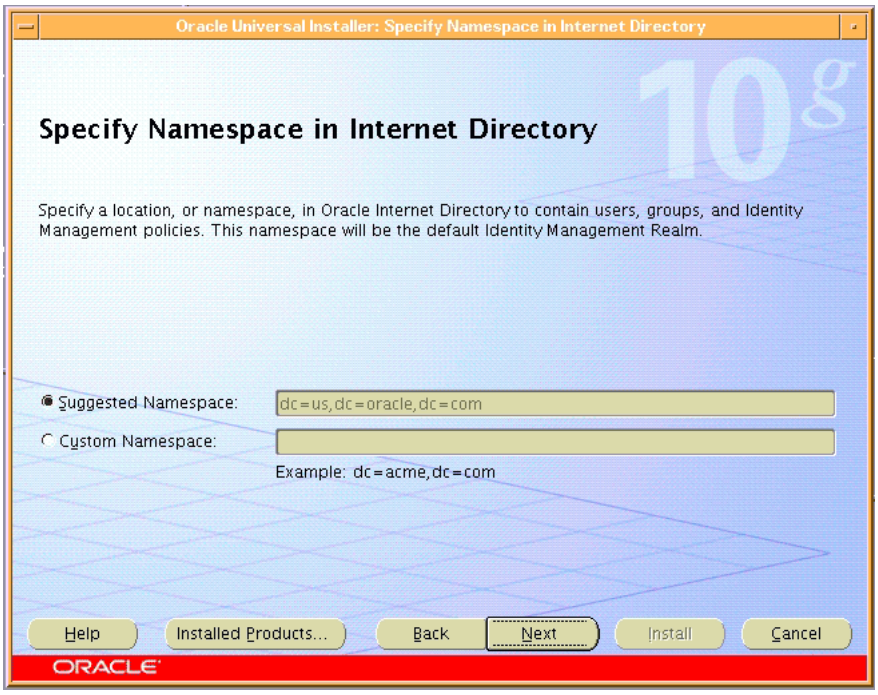
ias_admin Password

The `ias_admin` user is the administrative user for Oracle Application Server Standard Edition One instances. To manage Oracle Application Server Standard Edition One instances using Oracle Enterprise Manager Application Server Control, you log in as the `ias_admin` user.

For more information about `ias_admin` password, refer to Section 1.4.4, "The ias_admin User and Restrictions on its Password".

5.8 Specify Namespace in Internet Directory

The distinguished name (DN) that you specify on this screen will be designated as the namespace in Oracle Internet Directory where users and groups are administered.



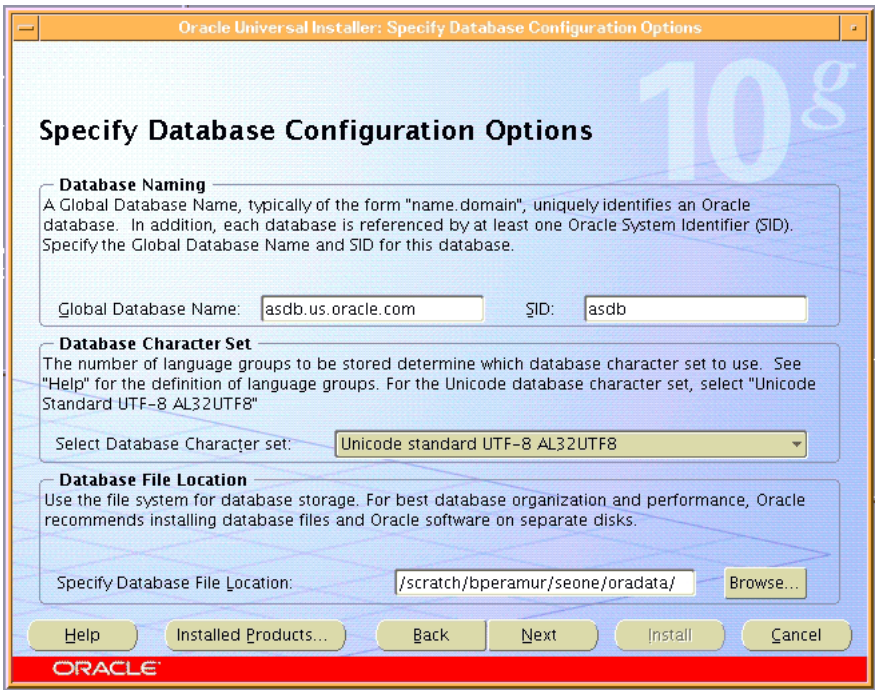
Select the suggested namespace if it meets your deployment requirements. If not, then enter a DN that you want in the custom namespace field. The installer determines the suggested namespace from the `/etc/hosts` file. Refer to Section 2.7, "The /etc/hosts File".

If you plan to integrate your Identity Management components with a third-party directory, then you should specify the DN of a namespace that matches the DN of the default namespace in the third-party directory.

> **See Also:** *Oracle Internet Directory Administrator's Guide* for details about integration with third-party directories

5.9 Specify Database Configuration Options

Specify the global database name, character set, and data files directory.



Global Database Name

Enter a name for the OracleAS Metadata Repository database. Append a domain name to the database name. This domain name for the global database name can be different from your network domain name.

The domain name portion of the global database name has the following naming restrictions:

- Can contain only alphanumeric, underscore (_), and pound (#) characters
- Must not be longer than 128 characters

The database name portion of the global database name has the following naming restrictions:

- Must contain alphanumeric characters only
- Must not be longer than eight characters
- Must not contain `PORT` or `HOST` in uppercase characters. If you want the name to contain host or port, then use lowercase characters.

Example: `asdb.mydomain.com`

> **Note:** Ensure that you do not enter two or more periods together, for example, `asdb..mydomain.com`. The installer does not check for this, and this will lead to errors later during the installation process.

SID

Enter the system identifier (SID) for the OracleAS Metadata Repository database. Typically this is the same as the global database name, but without the domain name. The SID must be unique across all databases.

SIDs have the following naming restrictions:

- Must contain alphanumeric characters only

- Must not be longer than eight characters
- Must not contain `PORT` or `HOST` in uppercase characters. If you want the name to contain host or port, then use lowercase characters.

Example: `asdb`

Database Character Set

Select the character set from the drop-down list.

> **Note:** If you use characters in the NE8ISO8859P10 or CEL8ISO8859P14 character sets, then ensure that your database uses the Unicode character set AL32UTF8. If you are installing a new database, then select **AL32UTF8** in the Specify Database Configuration Options screen.
>
> The reason for this is that Java does not support the `NE8ISO8859P10` or `CEL8ISO8859P14` character sets. If you configure the database to use a character set not supported by Java, then you will get an `Unsupported IANA character encoding` error in OracleAS Portal.

Database File Location

Enter the full path to the parent directory for the data files directory. This parent directory must already exist, and you must have write permissions in this directory.

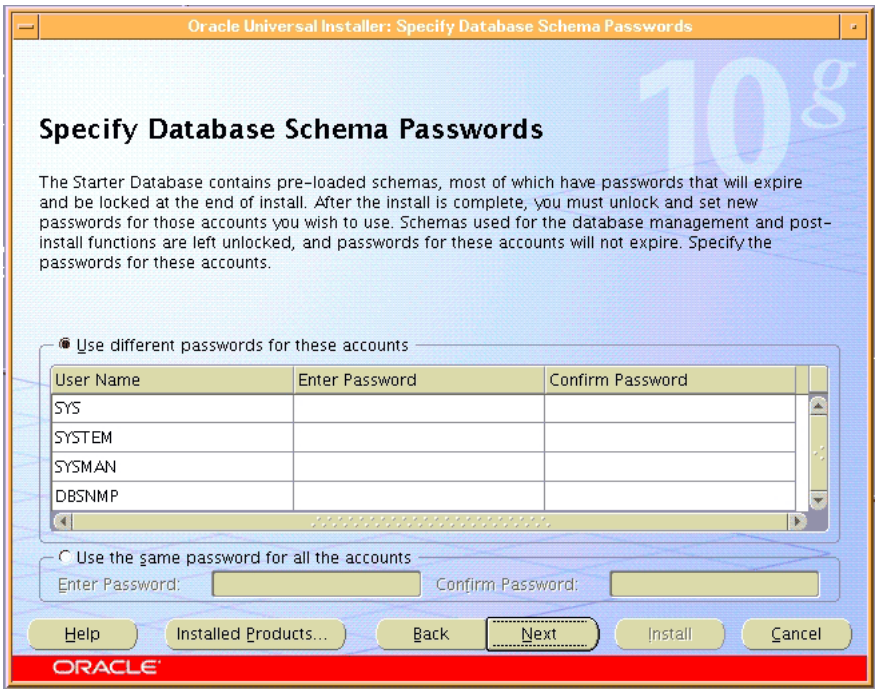
The installer will create a subdirectory in this parent directory, and the subdirectory will have the same name as the SID. The data files will be placed in this subdirectory.

For example, if you enter `/oracle/oradata`, and the SID is `asdb`, then the data files will be located in `/oracle/oradata/asdb`.

5.10 Specify Schema Passwords

Set the passwords for these privileged database administrative accounts (schemas): `SYS`, `SYSTEM`, `SYSMAN`, and `DBSNMP`.

You can specify a different password for each account or use the same password for each account.



To specify a Different Password for Each Account

Select **Use different passwords for these accounts**. Then, for each account listed in the table, enter a password in the Enter Password column and reenter the same password in the Confirm Password column.

To Specify the Same Password for All Accounts

Select **Use the same password for all accounts**, then enter a password in the Enter Password field and reenter the same password in the Confirm Password field.

Password Restrictions

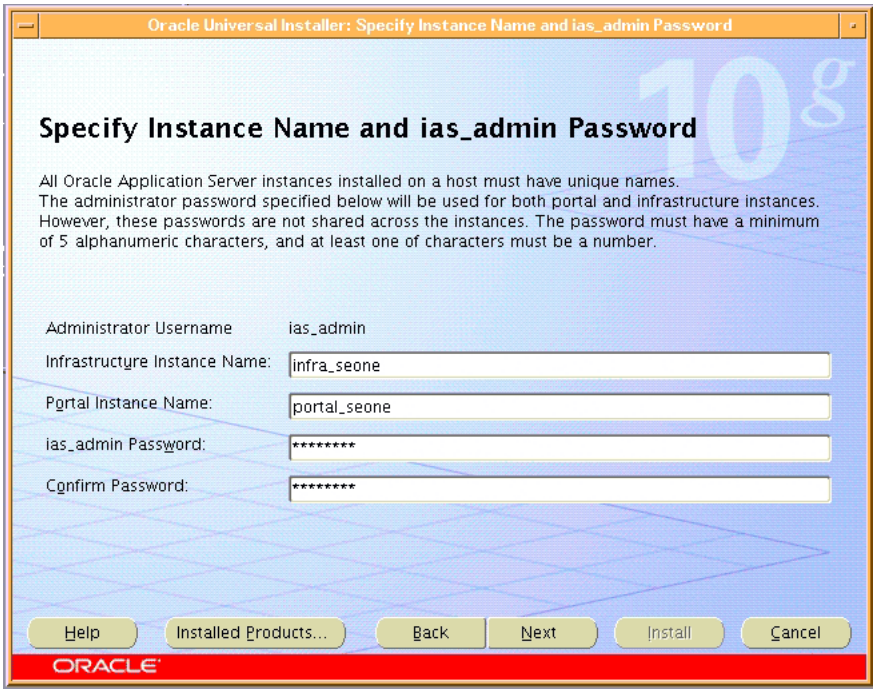
Database schema passwords have the following restrictions:

- Passwords must be shorter than 30 characters.
- Passwords can contain only alphanumeric characters from your database character set, the underscore (_), the dollar sign ($), and the number sign (#).
- Passwords must begin with an alphabetic character. Passwords cannot begin with a number, the underscore (_), the dollar sign ($), or the number sign (#).
- Passwords cannot be Oracle reserved words. The *Oracle SQL Reference* lists the reserved words. You can find this guide on Oracle Technology Network (`http://www.oracle.com/technology/documentation`), or you can just avoid using words that sound like they might be reserved words.
- Passwords cannot be the default passwords, which are `change_on_install` and `manager`.

For more information about these and other available schemas, refer to Appendix E, "OracleAS Metadata Repository Schemas".

5.11 Specify Instance Names and ias_admin Password

Specify the Oracle Application Server and OracleAS Portal instance names and the `ias_admin` password.



Infrastructure Instance Name

This instance name uniquely identifies the OracleAS Infrastructure instance. For more information about instance names, Section 1.4.3, "Oracle Application Server Instances and Instance Names".

Portal Instance Name

This instance name uniquely identifies the OracleAS Portal instance. The restrictions for the OracleAS Portal instance name are the same as the requirements for the infrastructure instance name. However, the two names must not be the same.

For more information about instance names, Section 1.4.3, "Oracle Application Server Instances and Instance Names".

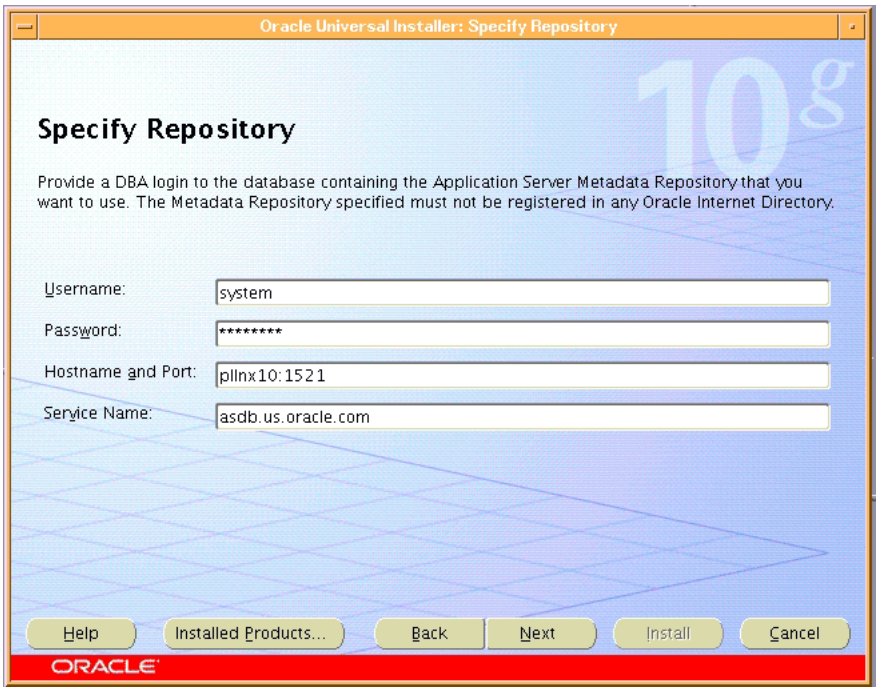
ias_admin Password

The `ias_admin` user is the administrative user for Oracle Application Server instances. To manage Oracle Application Server instances using Oracle Enterprise Manager, you log in as the `ias_admin` user.

For more information about `ias_admin` password, refer to Section 1.4.4, "The ias_admin User and Restrictions on its Password".

5.12 Specify Repository

Specify the information for the database that contains the existing Metadata Repository.



Note: The installer checks that the database contains the Metadata Repository. You could have installed the Metadata Repository previously through the installer, or you could have run the Oracle Application Server Metadata Repository Creation Assistant to install the Metadata Repository in an existing database.

All the fields on this screen are required and must contain valid entries.

Username

Log in as a DBA user.

Password

Enter the DBA user password.

Host name and Port

Specify the host name and port for the database. Use the format:

```
hostname:port
```

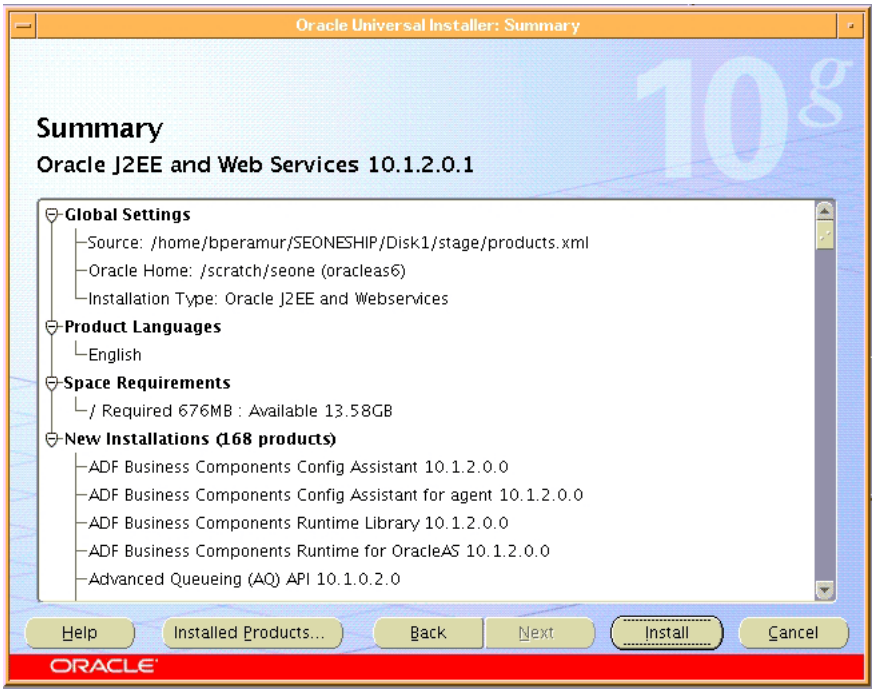
Service Name

Specify the service name for the database containing the Metadata Repository. Typically the service name is the same as the global database name.

If you are not sure about the name of database instance, then you can obtain it from the `SERVICE_NAMES` parameter in the initialization parameter file of the database. If the initialization parameter file does not contain the `SERVICE_NAMES` parameter, then the service name is the same as the global database name, which is specified in the `DB_NAME` and `DB_DOMAIN` parameters.

5.13 Summary

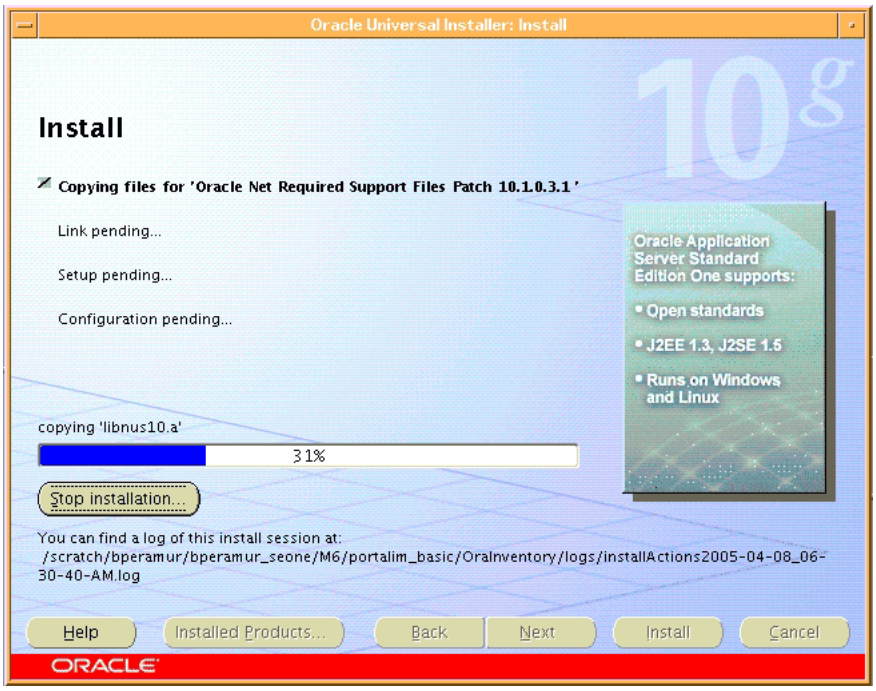
Check and verify that the installation parameters shown in this window are correct.



Click **Install** to begin the installation.

5.14 Install in Progress

This screen shows the progress of the installation.



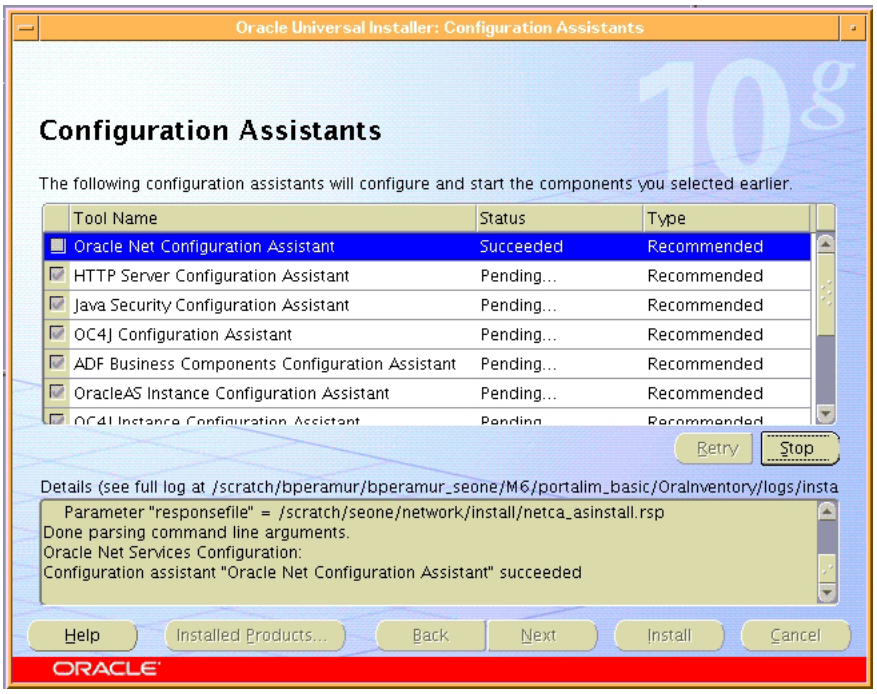
Click **Stop Installation** if you want to stop the installation. You will be asked to verify that you want to stop the installation.

This screen also provides the location of the install log, in case you want to view the contents of the log.

5.15 Configuration Assistants

This screen shows the name, status, and tool type for tools recommended to be run before completing the installation, along with optional configuration assistants that can be run at your discretion.

> **Note:** Recommended tools are run first, followed by optional tools. Recommended tools must be run in order. If a recommended tool fails or is canceled, then the user must correct the problem and successfully run that tool before proceeding to the next tool.



A tool may have one of the following states, as shown in the status column:

- Succeeded: The tool ran successfully.
- Failed: The tool ran, but failed.
- Pending: The tool is waiting to run.
- Cancelled: The tool was canceled by the user (by clicking **Stop**).
- In Progress: The tool is currently running.
- Skipped: A configuration assistant running before this tool was canceled or failed. Tools that follow a failed or canceled tool are skipped.

When you select a tool, its details are shown in the Details box. Details are displayed as the tool is running. If you want to stop a configuration assistant while it is running, then click **Stop**.

If all tools succeed in the first try, then OUI automatically proceeds to the next page. Otherwise, OUI remains on the Configuration Assistants page until all tools are successful. You can then click **Next** to proceed.

If one or more tools fail, then OUI does not proceed to the next page. Instead, you can read the details of failed tools, fix the problems, and try running the configuration assistant again. You should also consult the installation document of the product being installed for instructions on what to do if a tool fails. For all failed or skipped tools, OUI generates a list of tool names and the commands used to run them. You can copy and paste this information directly into a shell script to run these tools after installation is complete.

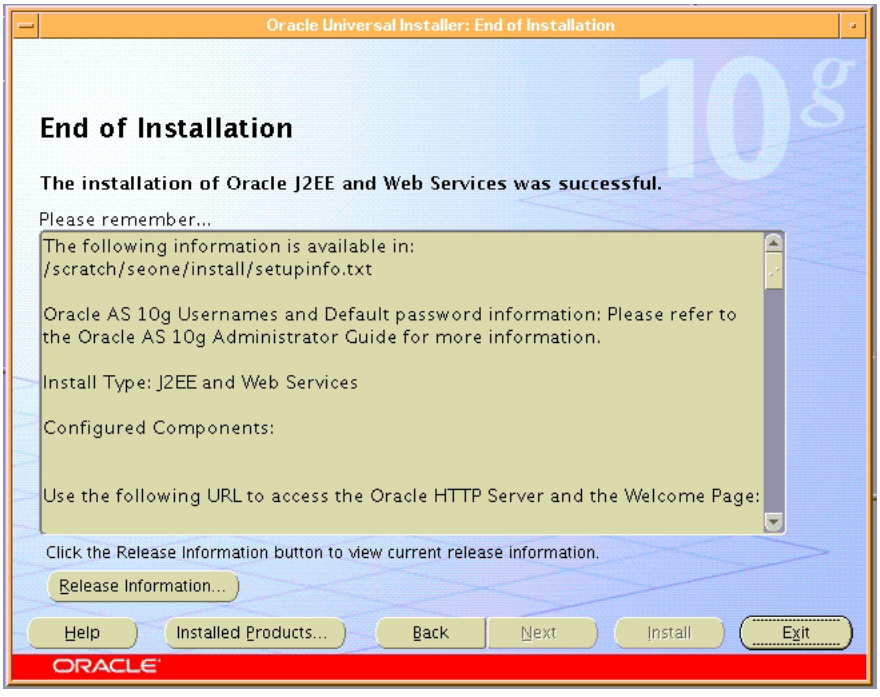
By default, the check box in the Retry column will be checked for all tools that failed or were skipped. To retry all checked configuration assistants, click **Retry**.

To continue without fixing the problem, click **Next**.

Note: The installation is considered successful even if all configuration assistants fail, irrespective of their type (Recommended or Optional). However, failing to successfully run all recommended tools results in an improperly configured product that may not function.

5.16 Installation Complete

This screen tells you whether or not your Oracle Application Server Standard Edition One installation was successful and displays some important information that you must remember about the products you have installed. For example, it might contain information about the URLs for particular Web applications. Write down this information so that you can remember it.



To view release notes for the products you have installed, click **Release Information** or refer to the documentation page on OTN at

http://www.oracle.com/technology/documentation

Click **Exit** to exit OUI.

Some Oracle products require additional configuration after you install the software. Some of these configuration assistants run automatically when the installation is complete. Other configuration assistants prompt you with a dialog box as soon as you click **Exit** so that you can decide whether or not to run the configuration assistant at this point in time.

If the software you are installing requires additional configuration assistants, then OUI displays a dialog box. The dialog box prompts you to run any additional configuration assistants required.

6

Postinstallation Tasks

This chapter covers the following sections:

6.1 Starting Oracle Application Server Instances After Installation

After installation, the components that you have configured get started automatically unless you configure the ports to values lower than 1024. If the ports are configured to values lower than 1024, then you must to start the ports manually.

You can view the Welcome page and the Application Server Control page using a browser. The URLs for these pages are shown on the last screen of Oracle Universal Installer. You can view the contents of the last screen in the file `$ORACLE_HOME/install/setupinfo.txt`.

You can use either scripts or Oracle Enterprise Manager Application Server Control to start and stop Oracle Application Server instances.

See Also: *Oracle Application Server Administrator's Guide* for details

6.2 Setting the Passwords for Oracle Application Server Components

By default, all passwords for Oracle Application Server components, with the exception of the OracleAS Metadata Repository schema passwords, are set to be the same as the Oracle Application Server instance password. For security reasons, you should change the passwords of the various components to have different values.

See Also: *Oracle Application Server Administrator's Guide* and the component guides in the Oracle Application Server Documentation Library for details about altering the passwords for the components you have installed

6.3 Other Postinstallation Tasks

This section covers the other postinstallation tasks that you need to perform. It contains the following topics:

6.3.1 NFS Installations

If you install Oracle Application Server on an NFS disk, then you need to modify the `LockFile` directive in the `$ORACLE_HOME/Apache/Apache/conf/httpd.conf` file so that it points to a local disk. This file is used by the Oracle HTTP Server component.

See Also: *Oracle HTTP Server Administrator's Guide* for details

6.3.2 Backup and Recovery

Back up the software files, configuration files, and OracleAS Metadata Repository files and set up your backup and recovery strategy after completing the installation. This enables you to restore a working environment in case something goes wrong. For details about performing a complete Oracle Application Server environment backup, refer to Chapter 14, "Backup and Recovery" or *Oracle Application Server Administrator's Guide*.

In addition, you should perform a full Oracle Application Server environment backup after each successful patch set upgrade and configuration change.

See Also: Chapter 14, "Backup and Recovery" and *Oracle Application Server Administrator's Guide* for more information

6.3.3 Enabling SSL

By default, most components are not configured for SSL. To enable SSL, refer to Chapter 13, "Enabling SSL" and the SSL section in the *Oracle Application Server Administrator's Guide*.

6.3.4 Operating System Locale and NLS_LANG Environment Variable

If you installed Oracle Application Server in a non-English language environment, then check the settings as described in the following sections:

6.3.4.1 Checking the Operating System Locale

To ensure that the default locale is configured correctly, verify that the `LC_ALL` or `LANG` environment variables have the required values. To check the current setting, run the `locale` command as follows:

```
prompt> locale
```

6.3.4.2 Checking the NLS_LANG Setting

To check the `NLS_LANG` setting:

1. Ensure that the value of the NLS_LANG environment variable is compatible with the default locale setting of the operating system. Refer to *Oracle Application Server Globalization Guide* for details, including a list of files that set this variable. You may need to edit the value of the NLS_LANG variable in these files.
2. Check that the NLS_LANG setting in the $ORACLE_HOME/opmn/conf/opmn.xml file is identical to the NLS_LANG environment variable.

   For example, the NLS_LANG setting in the opmn.xml file may be similar to the following:

```
<environment>
     <variable id="TMP" value="/tmp"/>
     <variable id="NLS_LANG" value="JAPANESE_JAPAN.JA16SJIS"/>
</environment>
```

6.4 Components that Require Postinstallation Tasks

If you plan to use Oracle Ultra Search in Oracle Application Server Standard Edition One, you need to perform some steps specific to this component after installation before you can use Oracle Ultra Search. For more information, refer to *Oracle Ultra Search Administrator's Guide*.

6.5 What to Do Next?

After installing Oracle Application Server Standard Edition One, refer to chapters in Part II, especially Chapter 7, "Getting Started" and *Oracle Application Server Administrator's Guide*.

Part II

Getting Started with Oracle Application Server Standard Edition One

This part provides information about administering, managing, and configuring Oracle Application Server Standard Edition One. It contains the following chapters:

7

Getting Started

This chapter describes the tasks that you need to perform after installing Oracle Application Server Standard Edition One. It contains the following sections:

- Section 7.1, "Setting Environment Variables"
- Section 7.2, "Using the Oracle Application Server Welcome Page"
- Section 7.3, "Checking the Port Numbers"
- Section 7.4, "Managing Components"
- Section 7.5, "Changing the ias_admin Password"

7.1 Setting Environment Variables

Log in as the user who installed Oracle Application Server Standard Edition One. To use Oracle Application Server Standard Edition One, you must set environment variables listed in Table 7–1.

Table 7–1 Oracle Application Server Environment Variables

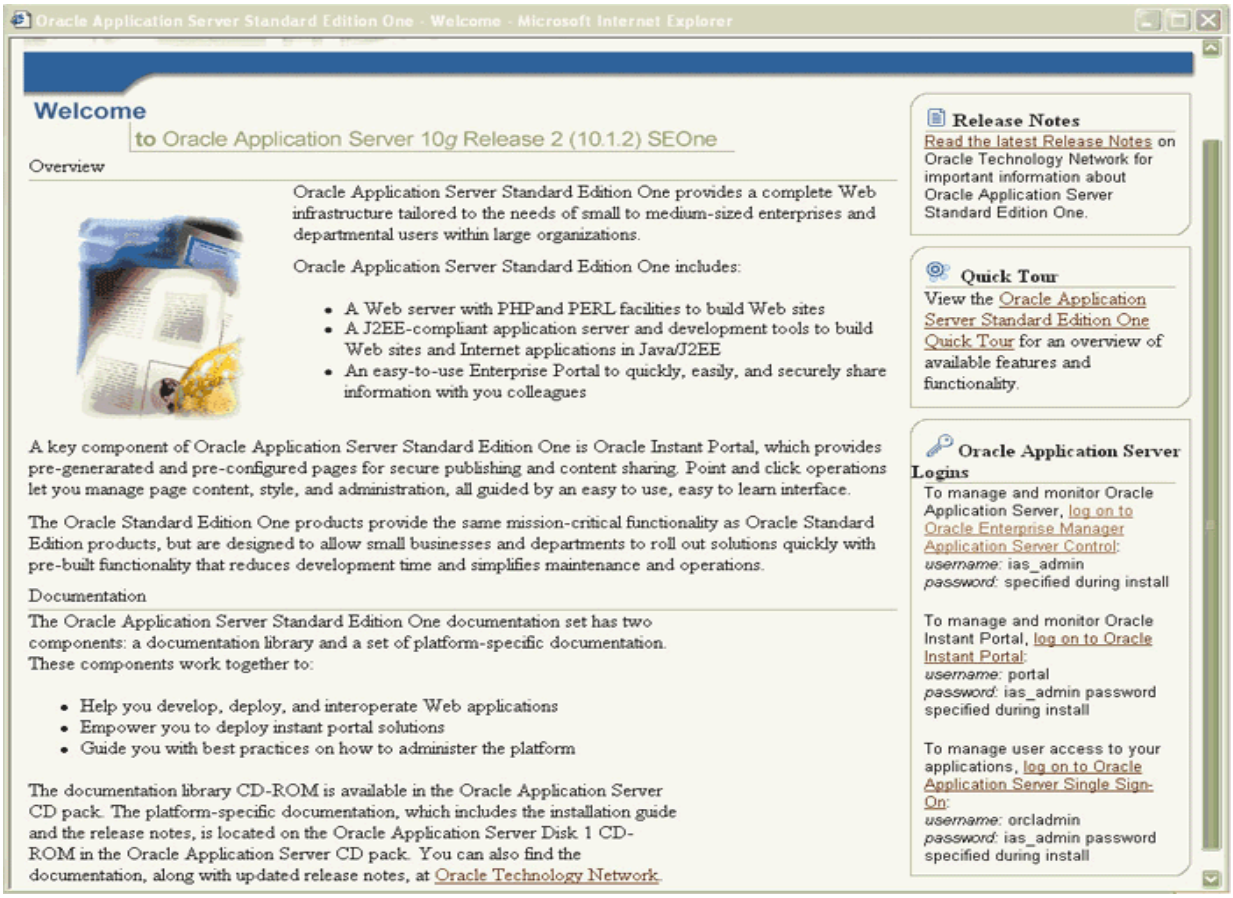
Environment Variable	Value
ORACLE_HOME	Set to the full path of the Oracle home of the installation. This is automatically set by Oracle Universal Installer.
ORACLE_SID (OracleAS Portal installations only)	Set to the OracleAS Metadata Repository SID. The default is orcl. This is automatically set by Oracle Universal Installer.
TEMP	Set to your temp directory (for example, /tmp).
TMP	Set to your temp directory (for example, /tmp).

7.2 Using the Oracle Application Server Welcome Page

The Oracle Application Server Welcome page is a quick access point to manage your application server as shown in Figure 7–1. This section includes the following information about the Welcome page:

- Section 7.2.1, "Accessing the Welcome Page"
- Section 7.2.2, "What's on the Welcome Page?"

Figure 7–1 Oracle Application Server Welcome Page



7.2.1 Accessing the Welcome Page

Locate the URL for accessing the Welcome page on the End of Installation screen text, which is stored in the `$ORACLE_HOME/install/setupinfo.txt` file.

If you cannot access the Welcome page, then perform the following steps:

1. Check `setupinfo.txt` to ensure you are using the correct URL.
2. Restart Oracle HTTP Server by using the following commands:

```
opmnctl stopproc ias-component=HTTP_Server
opmnctl startproc ias-component=HTTP_Server
```

7.2.2 What's on the Welcome Page?

The Welcome page contains an overview of the Oracle Application Server Standard Edition One product and documentation and the following:

- Link to the latest product release notes on Oracle Technology Network at `http://www.oracle.com/technology/documentation`
- Link to the Oracle Application Server Standard Edition One Quick Tour
- Link and login information for the Application Server Control Console
- Link and login information for Oracle Instant Portal
- Link and login information for Oracle Application Server Single Sign-On

7.3 Checking the Port Numbers

During installation, Oracle Application Server assigns port numbers to various components and services. Check these port numbers to ensure that a port number assignment does not conflict with a non-Oracle Application Server process. Refer to Chapter 10 for more information about changing port numbers.

Each component and service has an allotted port range. Oracle Application Server first checks the lowest port number in the port range for a component. If the port number is already in use, or is used by a currently running process or is listed in the `/etc/services` file. then Oracle Application Server Standard Edition One moves to the next highest port in the allotted port range and continues checking until a free port is found.

You can find the complete list of port numbers in the `$ORACLE_HOME/install/portlist.ini` file. Example 7–1 displays the `portlist.ini` file. In addition, the `$ORACLE_HOME/Apache/Apache/setinfo.txt` file also contains information about two important ports, the Application Server Control Console port and the HTTP Server port.

Example 7–1 Sample portlist.ini File

```
;OracleAS Components reserve the following ports at install time.
;As a post-installation step, you can reconfigure a component to
;use a different port.
;Those changes will not be visible in this file.

[System]
Host Name = seone-pc.us.oracle.com

[Ports]
Oracle HTTP Server port =  7777
Oracle HTTP Server Listen port = 7777
Oracle HTTP Server SSL port = 4443
Oracle HTTP Server Listen (SSL) port = 4443
Oracle Notification Server Request port = 6003
Oracle Notification Server Local port = 6100
Oracle Notification Server Remote port = 6200
Oracle HTTP Server Diagnostic port = 7200
Log Loader port = 44000
Java Object Cache port = 7000
DCM Discovery port = 7100
Enterprise Manager Agent Port = 1830
Application Server Control RMI port = 1850
Application Server Control port = 1810
Oracle Internet Directory port = 3060
Oracle Internet Directory (SSL) port = 3130
Enterprise Manager Console HTTP Port (seonedb) = 5500
Enterprise Manager Agent Port (seonedb) = 1831
```

The `portlist.ini` file contains port numbers for components that are not installed because Oracle Application Server reserves ports for all components during installation, even those that were not configured. These port numbers are used if you configure components after installation.

Note: The `portlist.ini` file is not updated if you modify port numbers after installation. When you start managing the application server, use the Application Server Control Console Ports Page for viewing port numbers because it displays the current port numbers. View the Ports page by clicking the ports link on the Application Server home page. The Ports page also contains links to pages that allow you to change port numbers.

7.4 Managing Components

This section provides information about managing components. It includes instructions for accessing component administration tools and postinstallation notes about components. Components are installed according to the service selected.

See Also: Section 1.3, "Installation Overview" for information about various services available with Oracle Application Server Standard Edition One

Some components are installed by default for every installation. These include the following:

- Section 7.4.1, "Oracle Process Manager and Notification Server (OPMN)"
- Section 7.4.2, "Distributed Configuration Management (DCM)"
- Section 7.4.3, "Oracle HTTP Server"
- Section 7.4.4, "Oracle Application Server Containers for J2EE (OC4J)"

7.4.1 Oracle Process Manager and Notification Server (OPMN)

OPMN manages and monitors most Oracle Application Server components. It is installed and configured as part of every middle tier and infrastructure installation and is essential for running Oracle Application Server. Use OPMN to start and stop the application server, monitor components, and configure event scripts.

See Also: *Oracle Process Manager and Notification Server Administrator's Guide* and Appendix F for more information about OPMN

7.4.2 Distributed Configuration Management (DCM)

DCM enables you to manage configuration information for application server instances, OracleAS Clusters, Oracle HTTP Server, Oracle Application Server Containers for J2EE (OC4J), Oracle Application Server Java Authentication and Authorization Service (JAAS) Provider (JAZN), and OPMN. You can use DCM to save and restore configuration information, deploy applications, and manage clusters.

DCM is installed and configured with every Oracle Application Server Standard Edition One installation. All DCM installations use a DCM repository. There are two types of DCM repositories:

- Database: This repository is located in OracleAS Metadata Repository of the DCM schema. It is used by OracleAS Portal installations.
- File-based: This repository is located in the file system of the Oracle home.

During installation, DCM creates a copy of your initial configuration with the `dcmctl saveInstance` command. If you need to return to the initial configuration, then you can use the `dcmctl restoreInstance` command.

> **See Also:** *Distributed Configuration Management Administrator's Guide* and Appendix E for more information about DCM commands

7.4.3 Oracle HTTP Server

Oracle HTTP Server is installed and configured with every middle tier and infrastructure installation. You can access Oracle HTTP Server at `http://hostname.domain:port`, where *`port`* is the Oracle HTTP Server Listener port number in the `portlist.ini` file.

7.4.4 Oracle Application Server Containers for J2EE (OC4J)

OC4J is a complete J2EE environment. Different OC4J instances are installed depending on the installation type you choose.

- When you install J2EE and Web Services only, the `home` OC4J instance is installed in the middle tier instance.
- When you install OracleAS Portal with an OracleAS Infrastructure, the `home` and `OC4J_Portal` instances are installed in the middle tier instance, and the `OC4J_SECURITY` instance is installed in the OracleAS Infrastructure instance.

> **See Also:** *Oracle Application Server Containers for J2EE User's Guide* for more information about OC4J

7.5 Changing the ias_admin Password

Use the `ias_admin` password to log in to Oracle Application Server Control Console. You can change the `ias_admin` user password by using one of the following methods:

- Section 7.5.1, "Using Application Server Control Console"
- Section 7.5.2, "Using the emctl Command-Line Tool"

> **Caution:** If you use OracleAS Infrastructure, then you must adhere to the Oracle Internet Directory password policy when setting the `ias_admin` password. For more information, refer to *Oracle Internet Directory Administrator's Guide*.

7.5.1 Using Application Server Control Console

To change the `ias_admin` user password:

1. Navigate to the Application Server home page and select **Preferences**.
2. Click **Change Password**. The Change Password page is displayed.
3. Change the password and click **OK** to reset the password for the current instance.

7.5.2 Using the emctl Command-Line Tool

To change the `ias_admin` user password:

1. Enter the following command in the Oracle home directory of your Oracle Application Server Standard Edition One installation:

   ```
   $ORACLE_HOME/bin/emctl set password old_password new_password
   ```

2. Restart Application Server Control Console using the following commands:

   ```
   $ORACLE_HOME/bin/emctl stop iasconsole
   $ORACLE_HOME/bin/emctl start iasconsole
   ```

8

Using the Administration Tools

The primary tool for managing Oracle Application Server Standard Edition One, as well as the entire Oracle environment, is Oracle Enterprise Manager Application Server Control.

This chapter provides information about administering Oracle Application Server Standard Edition One using Oracle Enterprise Manager Application Server Control. It contains the following sections:

8.1 Understanding Application Server Control Console

The main component of Oracle Enterprise Manager Application Server Control is Application Server Control Console, which enables you to manage individual Oracle Application Server instances.

Application Server Control Console organizes a wide variety of performance data and administrative functions into distinct, Web-based home pages for each application server component. You can monitor and administer a single Oracle Application Server instance, a farm of application server instances, or OracleAS Cluster.

The Web-based home pages are called *Application Server Control home pages*. These pages enable you to locate commonly used administrative functions using a Web browser and provide a high-level view of the Oracle Application Server Standard Edition One environment.

This section covers the following topics:

8.1.1 Introducing Application Server Control Home Pages

Oracle Application Server Standard Edition One provides a wide variety of software solutions designed to help you run all aspects of your business. As a result, you may want to manage Oracle Application Server Standard Edition One from different levels of detail. For example, you may want to manage a single application server instance or you may find it efficient to combine multiple instances into an OracleAS Cluster. At other times, you may want to manage a specific application server component.

Application Server Control home pages support these multiple levels of management. Each home page provides the information you need to monitor the performance and availability of Oracle Application Server Standard Edition One from a particular level of management. Application Server Control home pages also provide tools for configuring Oracle Application Server Standard Edition One components.

The following home pages are available when you use Application Server Control Console:

- Application Server Home page: Use the Application Server Home page to manage all aspects of an individual application server instance.

  For more information, refer to Section 8.1.3.

- OracleAS Farm page: Use the OracleAS Farm page to view a set of related application server instances on your network and to create clusters that speed up the configuration and deployment of your Web applications.

  For more information, refer to Section 8.1.4.

- Component home pages: Use a component home page to monitor or configure an individual component of the application server. For example, use the Oracle HTTP Server home page to monitor the performance of your Web server. Similarly, use the Oracle Containers for J2EE (OC4J) home page to deploy a custom Web-based application.

  For more information, refer to Section 8.1.5.

8.1.2 Displaying Application Server Control Console

The URL for the Application Server Control Console is included in the text file that is displayed at the end of the Oracle Application Server installation procedure. This text file is saved in the following location after the installation:

```
$ORACLE_HOME/install/setupinfo.txt
```

The Application Server Control Console URL typically includes the name of the host computer and the port number assigned to Application Server Control Console during the installation. For example:

```
http://mgmthost1.acme.com:1810
```

Note: The default port for Application Server Control Console is usually 1810. However, if this port is in use, then the installation procedure will assign another port. Refer to the `setupinfo.txt` file for the exact port number.

When you view Application Server Control Console for the first time, the information displayed on this page depends on the type of installation you performed. Table 8–1

describes the home pages that are be used as a starting point when you first access the Application Server Control Console.

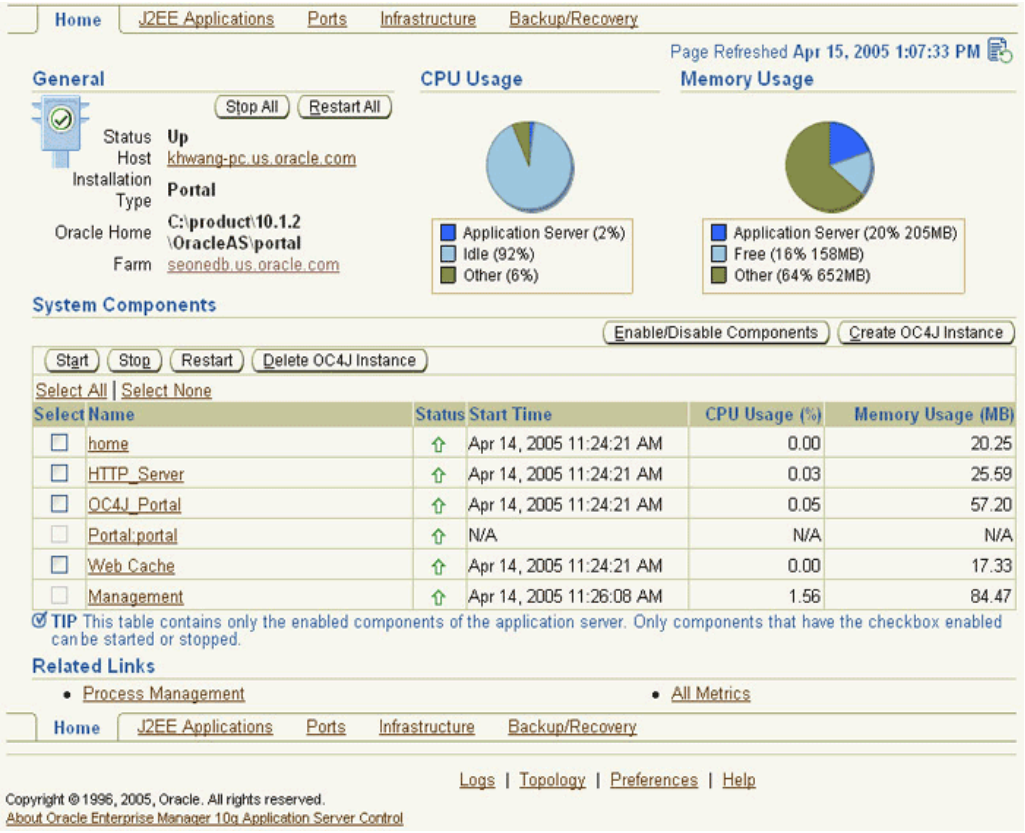
Table 8–1 Application Server Control Home Pages for Managing Oracle Application Server

Application Server Control Home Page	Description
Application Server Home page	Use this home page to monitor and configure a single application server instance. For more information, refer to Section 8.3.2. The Application Server home page is the first page you see if you have installed a single application server instance that does not use an OracleAS Metadata Repository.
OracleAS Farm page	Use this home page to view a list of all the application server instances that use a common OracleAS Metadata Repository. For more information, refer to Section 8.3.3. The Farm home page is the first page you see if you have installed one or more application server instances that use a common set of OracleAS Infrastructure or more specifically, a common OracleAS Metadata Repository.

8.1.3 Using the Application Server Home Page

Figure 8–1 displays the Application Server Home page. Using this page, you can start and stop the Oracle Application Server Standard Edition One instance, monitor the overall performance of the server, and review the components of the server. You can also configure individual components and examine their performance.

Figure 8–1 Application Server Home Page



The Application Server Home page contains a System Components table that lists the components installed with the application server. From this table, you can get a snapshot of how each component is performing. You can also display a home page for each component of the application server.

This Application Server Home page enables you to perform the following tasks:

- Click **Logs** at the top of the page to locate and search the various Oracle Application Server log files, as well as the Oracle Application Server Log Repository. For more information, refer to Chapter 11, "Viewing Log Files"
- Click **Topology** to view the Topology Viewer, which provides a graphical view of the application server processes managed by OPMN.

  For more information, refer to Section 8.1.6.1, "Reviewing the Application Server Component Topology".
- Click **Preferences** to change your password or set your viewing preference for the Topology Viewer (HTML or Java).
- Click **J2EE Applications** to display a list of the applications deployed on this instance of Oracle Application Server Standard Edition One.
- Click **Ports** to view a list of all the ports currently in use by the various Oracle Application Server Standard Edition One components. You can also modify many of the port assignments when necessary.
- Click **Infrastructure** to use Identity Management, Central Management, or the cluster capabilities of Oracle Application Server Standard Edition One.

- Click **Enable/Disable Components** to control whether or not the selected components should start automatically or affected by server-wide actions, such as **Start All** or **Restart All**.
- Click **Backup/Recovery** to perform a backup or recover your Oracle Application Server data and configuration files. For more information, refer to Chapter 14, "Backup and Recovery".

For more information, click **Help** after selecting an option on the Application Server Home page.

8.1.4 Using the Oracle Application Server Farm Home Page

Figure 8–2 displays the OracleAS Farm page. If your application server instance uses an OracleAS Metadata Repository, then the first page that is displayed for Application Server Control Console is the OracleAS Farm page.

> **See Also:** *Oracle Application Server Installation Guide* for your platform information about installing an OracleAS Metadata Repository

Figure 8–2 OracleAS Farm Page

The Oracle Application Server Farm home page displays a list of the standalone application server instances and OracleAS Clusters associated with your OracleAS Infrastructure. Standalone instances are application server instances that are not part of an OracleAS Cluster.

You can configure your application server instance to use OracleAS Infrastructure by clicking **Infrastructure** on the Application Server Home page. For more information, refer to Application Server Control online Help.

By using the Oracle Application Server Farm home page, you can drill down to the Application Server Home page for each instance.

8.1.5 Using Oracle Application Server Component Home Page

Component home pages vary from one component to another because each component has different monitoring and configuration requirements. However, most component home pages have the following common elements:

- A general information section that includes an icon to indicate the current state of the component and buttons for starting and stopping the component (if applicable)
- Status information, including CPU and memory usage information, that provides a snapshot of how the component is performing
- Component-specific information, such as a virtual hosts tab on the HTTP Server home page or a list of deployed applications on the OC4J home page
- Links to administrative functions, that enable you to modify the configuration of selected components. In many cases, this means you can use a graphical user interface to modify complex configuration files.

8.1.6 Performing Diagnostic Tasks Using Application Server Control Console

Application Server Control Console is designed to encourage a top-down approach to your monitoring and diagnostic activities. For example, you can start by reviewing the basic characteristics of your application server on the Application Server home page and then drill down to examine the performance of individual components of the server.

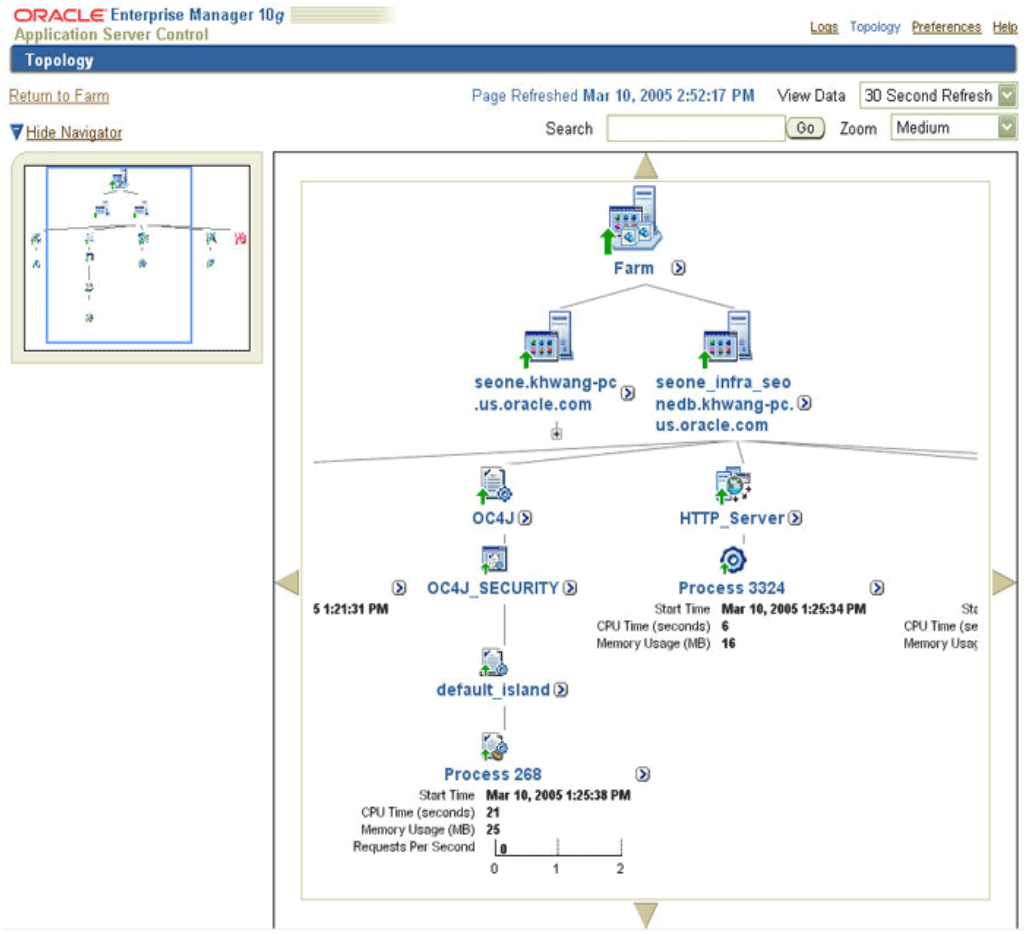
The following sections provide an outline of this monitoring methodology:

- Section 8.1.6.1, "Reviewing the Application Server Component Topology"
- Section 8.1.6.2, "Reviewing General Information and Resource Usage"
- Section 8.1.6.3, "Reviewing the Resources of the Application Server Host"
- Section 8.1.6.4, "Monitoring Application Server Components"
- Section 8.1.6.5, "Monitoring J2EE Applications"

8.1.6.1 Reviewing the Application Server Component Topology

Figure 8–3 displays the Topology Viewer. To access the Topology Viewer, click **Topology** at the top of any page in Application Server Control Console. The Topology Viewer provides a graphical, real-time representation of application server processes managed by OPMN. The viewer provides a graphical view of the component relationships of Oracle Application Server.

Figure 8–3 Topology Viewer



The Topology Viewer depicts each component of the application server as an icon. The position of each icon on the page and the connections between the icons represent the relationships between each component. Visual clues in the Topology Viewer help you quickly identify components that are down or performing poorly.

If you manage multiple application servers as part of an OracleAS Farm, then the viewer also shows the relationships between the application server instances, including any OracleAS Cluster that you have created.

You can perform the following tasks by using Topology Viewer:

- View the status of components
- Start, stop, or restart processes
- Monitor performance across the application server environment
- Drill down to component home pages for details

> **See Also:** "About Topology Viewer" in the *Application Server Control online Help*

8.1.6.2 Reviewing General Information and Resource Usage

Application Server Home page provides general information about the status of your server, including the name, location, and application server availability. The home page also provides high-level information about CPU and Memory usage. When

reviewing the home page, review the CPU Usage and Memory Usage charts for excessive CPU or Memory usage by the application server.

If you suspect that the application server is using too many resources, then review the list of components to confirm that each component is up and running and to review the resource usage by each component.

Consider disabling any components that you are not currently using as part of this application server instance. Disabled components are not started when you start the application server and as a result do not consume system resources.You can always enable a disabled application server component at a later time.

> **See Also:** "Disabling and Enabling Components" in the *Application Server Control online Help*

8.1.6.3 Reviewing the Resources of the Application Server Host

Many performance and configuration issues are directly related to a lack of resources on the host. Before you drill down to analyze the performance and resource usage of the individual application server components, review the resources and characteristics of the application server host.

Click the host name in the General section of the Application Server home page to display the Host home page. The Host home page provides a summary of the operating system, memory, and disk capacity. The Load section of the page provides a CPU chart that breaks down the CPU usage into different categories. The load metrics beneath the chart provide details about system memory usage.

> **See Also:** "About Memory Usage" in the *Application Server Control online Help* for information about how Enterprise Manager calculates the memory usage for your application server

At the bottom of the page, there are links to real-time performance metrics. For more information about CPU and memory usage on the system, click **All Metrics** to display a table listing the processes that are using the most resources on the host.

8.1.6.4 Monitoring Application Server Components

After you review the high-level performance metrics and the resources available on the application server host computer, you can start searching for potential issues within the individual application server components.

To diagnose problems with individual application server components, click the component name in the **System Components** table on the Application Server home page. This is a drill down technique that enables you to isolate problems in a particular component or area of the application server.

8.1.6.5 Monitoring J2EE Applications

The J2EE applications you deploy and maintain with Oracle Application Server Standard Edition One represent the most important aspects of your application server deployments. Application Server Home page provides a shortcut you can use to review the performance of your J2EE applications. Click **J2EE Applications** on the Application Server Home page to display a list of the applications deployed from the application server instance.

From this list of J2EE applications, you can navigate quickly to the OC4J instance or application page for information about the performance and availability of each application you have deployed.

See Also: *Application Server Control Console online Help* and the *Oracle Application Server Performance Guide* for more information

8.2 Software Technologies Available with Application Server Control

Application Server Control Console relies on various technologies to discover, monitor, and administer the Oracle Application Server Standard Edition One environment.

The topics covered in this section are:

- Section 8.2.1, "Available Technologies"
- Section 8.2.2, "Command-Line Tools"

8.2.1 Available Technologies

Table 8–2 provides a summary of the technologies leveraged by Application Server Control Console.

Table 8–2 Technologies Available wit Application Server Control

Technology	Description
Dynamic Monitoring Service (DMS)	The Application Server Control Console uses DMS to gather performance data about your Oracle Application Server components. Refer to *Oracle Application Server Performance Guide*.
Oracle Process Manager and Notification Server (OPMN)	OPMN manages Oracle HTTP Server, OC4J, and other Oracle Application Server processes. It channels all events from different component instances to all components interested in receiving them. For more information, refer to Section 7.4.1.1.
Distributed Configuration Management (DCM)	The Application Server Control Console uses DCM to make configuration changes and to propagate configuration changes and deployed applications across the cluster. For more information, refer to Section 7.4.1.2.
Oracle Management Agent	A local version of the Oracle Management Agent designed specifically to monitor and administer your application server components.
Oracle Management Watchdog Process	The process monitors the Management Agent and the Application Server Control Console to ensure both processes are running and available at all times.

8.2.2 Command-Line Tools

Oracle Application Server provides command-line interfaces for accessing several key management technologies. In addition command-line tools enable you to automate the management procedures with scripts and custom utilities.

The two most important administration command-line tools are:

- `opmnctl`

  This tool provides a command-line interface to Oracle Process Management Notification (OPMN). You can use `opmnctl` to:

  – Start and stop components, instances, and OracleAS Clusters

  – Monitor processes

  See Also: *Oracle Process Manager and Notification Server Administrator's Guide*

- `dcmctl`

  This tool provides a command-line interface to Distributed Configuration Management (DCM). You can use `dcmctl` to:

  – Create and remove OC4J instances and OracleAS Clusters

  – Deploy and undeploy OC4J applications

  – Archive and restore configuration information

  – Obtain configuration information

  See Also: *Distributed Configuration Management Administrator's Guide*

In addition to `opmnctl` and `dcmctl`, Oracle Application Server Standard Edition One provides many other command-line tools for performing specific tasks.

Note: Oracle Application Server Standard Edition One also provides a set of command-line and servlet-based tools to view the Oracle Application Server built-in performance metrics directly, outside of the Application Server Control Console. These built-in performance metrics are measured continuously using performance instrumentation inserted into the implementations of Oracle Application Server Standard Edition One components.

8.3 Managing OracleAS Metadata Repository Database with Database Control

Many features of Oracle Application Server depend on OracleAS Metadata Repository, which uses an Oracle Database instance to contain the OracleAS Metadata Repository. When you install the OracleAS Metadata Repository, you can choose to install a preconfigured instance of Oracle Database 10*g* for the OracleAS Metadata Repository.

See Also: *Oracle Application Server Installation Guide* for your platform

The OracleAS Metadata Repository database is shipped with Oracle Enterprise Manager 10*g* Database Control, which is available with Oracle Database 10*g*.

To display the Database Control:

1. Use a Web browser to access the Database Control URL, as shown in the following example:

   `http://`*`hostname`*`.`*`domain`*`:`*`port`*`/em`

   In this URL:

   - *`hostname`* is the name of the computer on which you installed Oracle Database
   - *`port`* is the port number reserved for the Database Control during installation

   If you do not know the correct port number to use, then look for the following line in the `portlist.ini` file, which is stored in the `install` directory of the OracleAS Metadata Repository Oracle home:

```
Enterprise Manager Console HTTP Port (db_name) = 5500
```

The installation reserves the first available port from the range 5500 to 5519. For example, if you installed Oracle Database on host `mgmt42`, and the Database Control uses port 5500, then enter the following URL:

```
http://mgmt42.acme.com:5500/em
```

Application Server Control displays the Database Control login page.

2. Log in to the database using the user name `SYS` and connect as `SYSDBA`.

   Use the password that you specified for the `SYS` account during the installation.

3. Application Server Control displays the Database Home page.

   From the Database Home page, you can review the current state of your database and access a wide range of monitoring and administration features.

> **See Also:** *Oracle 2 Day DBA* in the Oracle Database 10*g* documentation library for an introduction to database management with the Database Control Console

9

Starting and Stopping

This chapter describes various procedures for starting and stopping Oracle Application Server Standard Edition One and its components. It contains the following sections:

9.1 Starting and Stopping All Application Server Instances

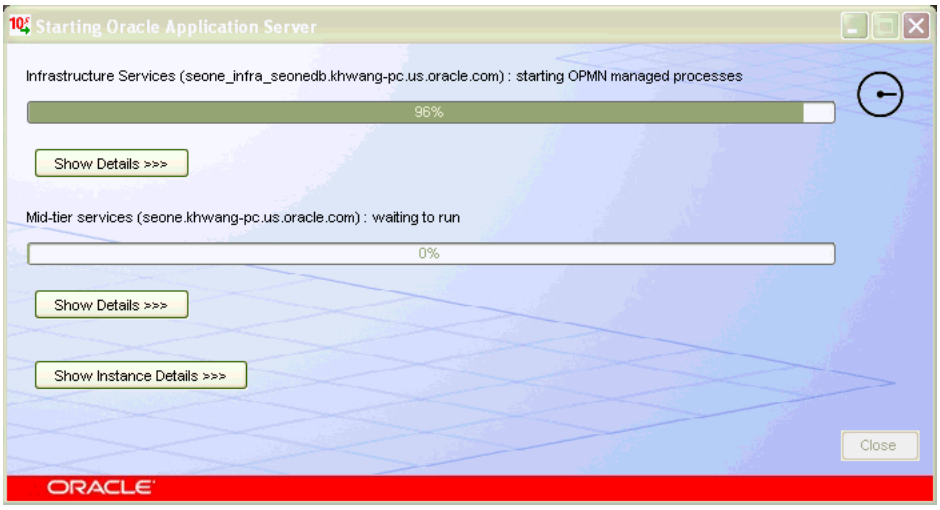
When you install Oracle Application Server Standard Edition One, two desktop directories are created, one each for the middle-tier and infrastructure instances. The names of these directories are in the following format:

```
ASSEOne_install_type_instancename
```

- **StartAll**: To start all Oracle Application Server instances, click this icon. This will not start Application Server Control Console.
- **StopAll**: To stop all Oracle Application Server Instances, click this icon. This will not stop Application Server Control Console.
- **StartAllEM**: To start Oracle Application Server Control Console , click this icon.
- **StopAllEM**: To stop Oracle Application Server Control Console, click this icon.

When you click the StartAll icon, the `startupconsole` is launched and the screen shown in Figure 9–1 is displayed.

Figure 9–1 Starting Oracle Application Server



The Starting Oracle Application Server screen displays two progress bars, one for OracleAS Infrastructure and the other for the middle tier. If you start all instances of Oracle Application Server Standard Edition One, then OracleAS Infrastructure will start automatically before starting the middle tier.

Click **Show Details** to view status information for each component being started. Click **Show Instance Details** to view the Oracle home, instance name, and version number of the instance being started.

Note: If you start all the instances of Oracle Application Server using the Oracle Application Server 10g - Start AllAS icon, then Application Server Control Console will not be started. To start the Application Sever Control Console, select the **Oracle Application Server 10g - Start AllEM** icon from the desktop directory.

To stop all Oracle Application Server Standard Edition One instances, navigate to the desktop directop for the respective Oracle home directory and click the **StopAll** icon. This stops all Oracle Application Server Standard Edition One instances.

9.2 Starting and Stopping OracleAS Infrastructure

This section describes how to start all processes in OracleAS Infrastructure. OracleAS Infrastructure can have the following components:

- OracleAS Metadata Repository
- Oracle Identity Management

OracleAS Infrastructure can have one or both of the components. You must start OracleAS Metadata Repository first if the infrastructure instance contains both components.

This section contains the following topics:

- Section 9.2.1, "Starting OracleAS Infrastructure Manually"
- Section 9.2.2, "Stopping OracleAS Infrastructure Manually"

9.2.1 Starting OracleAS Infrastructure Manually

To start OracleAS Infrastructure, you must start OracleAS Metadata Repository before you start Oracle Identity Management.

9.2.1.1 Starting OracleAS Metadata Repository

To start OracleAS Metadata Repository:

1. Set the `ORACLE_HOME` environment variable to the OracleAS Infrastructure Oracle home.
2. Set the `ORACLE_SID` environment variable to OracleAS Metadata Repository SID (default is `asdb`).
3. Start the Net Listener as follows:

   ```
   $ORACLE_HOME/bin/lsnrctl start
   ```

4. Start OracleAS Metadata Repository instance as follows:

   ```
   $ORACLE_HOME/bin/sqlplus /nolog
   SQL> connect SYS as SYSDBA
   SQL> startup
   SQL> quit
   ```

9.2.1.2 Starting Oracle Identity Management

To start Oracle Identity Management:

1. Start components:

   ```
   $ORACLE_HOME/opmn/bin/opmnctl startall
   ```

   This command starts OPMN and all OPMN-managed processes, such as DCM, Oracle HTTP Server, OC4J instances, and Oracle Internet Directory.

2. Start the Application Server Control Console as follows:

   ```
   $ORACLE_HOME/bin/emctl start iasconsole
   ```

9.2.2 Stopping OracleAS Infrastructure Manually

To stop OracleAS Infrastructure, you must first stop Oracle Identity Management before you stop OracleAS Infrastructure.

9.2.2.1 Stopping OracleAS Metadata Repository

To stop OracleAS Metadata Repository:

1. Set the `ORACLE_HOME` environment variable to the OracleAS Infrastructure Oracle home.
2. Set the `ORACLE_SID` environment variable to OracleAS Metadata Repository SID (default is `asdb`).
3. Stop OracleAS Metadata Repository instance as follows:

   ```
   $ORACLE_HOME/bin/sqlplus /nolog
   SQL> connect SYS as SYSDBA
   SQL> shutdown
   SQL> quit
   ```

4. Stop the Net Listener:

```
$ORACLE_HOME/bin/lsnrctl stop
```

9.2.2.2 Stopping Oracle Identity Management

You can stop Oracle Identity Management as follows:

1. Stop the Application Server Control Console as follows:

```
$ORACLE_HOME/bin/emctl stop iasconsole
```

2. Stop components as follows:

```
$ORACLE_HOME/opmn/bin/opmnctl stopall
```

This command stops OPMN and all OPMN-managed processes such as DCM, Oracle HTTP Server, OC4J instances, and Oracle Internet Directory.

9.3 Starting and Stopping the Middle Tier Instance

This section describes how to start all processes in a middle tier instance. For Oracle Application Server Standard Edition One, a middle tier can have the following instance types:

- J2EE and Web Services
- OracleAS Portal

This section contains the following topics:

- Section 9.3.1, "Starting the Middle Tier Manually"
- Section 9.3.2, "Stopping the Middle Tier Manually"

9.3.1 Starting the Middle Tier Manually

To start a middle tier instance:

1. If the middle tier instance uses OracleAS Infrastructure services, such as Oracle Identity Management or a OracleAS Metadata Repository, then ensure they are started.
2. Start components:

```
$ORACLE_HOME/opmn/bin/opmnctl startall
```

This command starts OPMN and all OPMN-managed processes such as DCM, Oracle HTTP Server, and OC4J instances.

3. Start the Application Server Control Console:

```
$ORACLE_HOME/bin/emctl start iasconsole
```

9.3.2 Stopping the Middle Tier Manually

To stop a middle tier instance:

1. Stop Application Server Control Console:

```
$ORACLE_HOME/bin/emctl stop iasconsole
```

2. Stop components:

   ```
   $ORACLE_HOME/opmn/bin/opmnctl stopall
   ```

   This command stops OPMN and all OPMN-managed processes such as DCM, Oracle HTTP Server, and OC4J instances.

9.4 Starting and Stopping Components

You can use the following tools to start, stop, restart, and view the status of components:

- `opmnctl`
- Application Server Control Console

These tools are completely compatible as they both use the OPMN technology for managing processes. For example, you can start a component using the `opmnctl` command and stop it using the Application Server Control Console.

Although the two tools can be used interchangeably, they offer different features. The `opmnctl` command enables you to start and stop subprocesses within components, as well as the entire component. For example, you can start and stop Web Cache, or you can start and stop only the Web Cache Admin subprocess. Application Server Control Console enables you to view components that cannot be started or stopped, but whose status depends on other components. For example, it displays the status of the Single Sign-On component, whose status depends on the HTTP Server.

9.4.1 Starting and Stopping Using opmnctl

You can start, stop, or restart a component by using the following `opmnctl` commands:

```
$ORACLE_HOME/opmn/bin/opmnctl stopproc ias-component=component
$ORACLE_HOME/opmn/bin/opmnctl startproc ias-component=component
$ORACLE_HOME/opmn/bin/opmnctl restartproc ias-component=component
```

You can start, stop, or restart the subprocess of a component, using the following commands:

```
$ORACLE_HOME/opmn/bin/opmnctl stopproc process-type=process
$ORACLE_HOME/opmn/bin/opmnctl startproc process-type=process
$ORACLE_HOME/opmn/bin/opmnctl restartproc process-type=process
```

You can check the status of components and processes, using the following command:

```
$ORACLE_HOME/opmn/bin/opmnctl status
```

> **See Also:** *Oracle Process Manager and Notification Server Administrator's Guide*. for more information about `opmnctl` command options

9.4.2 Starting and Stopping Using the Application Server Control Console

You can start, stop, restart, and view status of components on the Application Server home page as follows:

1. Open the Application Server home page from the Application Server Control Console. Scroll to the System Components section.

2. Select the check boxes in the Select column for the components that you want to start, stop, or restart.
3. Click **Start**, **Stop**, or **Restart** in the System Components section.

9.5 Enabling and Disabling Components

If you want a component to start every time the application server instance is started, then you must enable the component. If you disable a component, then it will not start when the application server instance is started.

You can enable and disable components by using Application Server Control Console. On the Application Server home page, click **Enable/Disable Components**. Components that are dependent on each other are grouped and are all enabled or disabled together.

Note: If you use the backup and recovery procedures documented in this book, then you must run `bkp_restore.pl -m config` after you enable or disable components so that these are registered with the OracleAS Backup and Recovery Tool.

9.6 Starting and Stopping the Oracle Application Server Standard Edition One Environment

This section describes the procedures for starting and stopping the Oracle Application Server Standard Edition One environment. You should follow these procedures when you need to completely shut down your Oracle Application Server Standard Edition One environment (for example, when preparing to perform a complete backup of your environment, or apply a patch).

9.6.1 Starting an Oracle Application Server Standard Edition One Environment

To start the Oracle Application Server Standard Edition One environment:

1. Start OracleAS Infrastructure.

   For more information, refer to Section 9.2.1.
2. Start middle-tier instances.

   For more information, refer to Section 9.2.2.

9.6.2 Stopping an Oracle Application Server Environment

You can stop all processes in an Oracle Application Server Standard Edition One environment as follows:

1. Stop middle-tier instances.
2. Stop OracleAS Infrastructure.

For more information about stopping middle tier or OracleAS Infrastructure instances, refer to Section 9.2.2, "Stopping OracleAS Infrastructure Manually" and Section 9.3.2, "Stopping the Middle Tier Manually", respectively.

10

Changing the HTTP Port and Listener Settings

This chapter describes how to change Oracle HTTP Server port numbers. It contains the following sections:

- Section 10.1, "Changing the HTTP Port on a Middle Tier Instance"
- Section 10.2, "Changing the HTTP Port on Identity Management"

For information about checking your port numbers, refer to Section 7.3.

You can also change the port numbers for other Oracle Application Server Standard Edition One components.

> **See Also:** "Chapter 4, Managing Ports" in *Oracle Application Server Administrator's Guide* for more information

10.1 Changing the HTTP Port on a Middle Tier Instance

This section describes how to change port numbers in middle tier instances and update any other affected components. It describes the procedure to change the Oracle HTTP Server Listen port (SSL or non-SSL).

When you change the Oracle HTTP Server Listen directive, the dependencies must also be set. For example, if you are using OracleAS Web Cache to improve the performance of your Oracle Application Server instance, then you must modify the OracleAS Web Cache origin server settings whenever you modify the Oracle HTTP Server Listen ports.

To ensure that port dependencies are modified correctly, you can use a single Java command to change the Oracle HTTP Server Listen port. The Java command automatically modifies the necessary configuration files within the Oracle home, and optionally restarts the required components within the Oracle home.

The following sections describe how to define the `portconfig` command and then use it to modify the Oracle HTTP Server Listen SSL or non-SSL port:

- Section 10.1.1, "Enabling Oracle HTTP Server to Run As root for Ports Set to Less Than 1024 on UNIX Systems"
- Section 10.1.2, "Using the portconfig Command to Change the Oracle HTTP Server Listen Port"

10.1.1 Enabling Oracle HTTP Server to Run As root for Ports Set to Less Than 1024 on UNIX Systems

If you are on a UNIX system and you are changing the Listen port to a number less than 1024, then perform this procedure before you change the Oracle HTTP Server Listen port.

By default, Oracle HTTP Server runs as a non-root user, which is the user that installed Oracle Application Server. On UNIX systems, if you change the Oracle Application Server SSL listen port number to a value less than 1024, then you must enable Oracle Application Server to run as root, as follows:

1. Log in as root.
2. Run the following commands in the middle tier Oracle home:

```
cd $ORACLE_HOME/Apache/Apache/bin
chown root .apachectl
chmod 6750 .apachectl
```

10.1.2 Using the portconfig Command to Change the Oracle HTTP Server Listen Port

To change the Oracle HTTP Server SSL or non-SSL port:

1. Set the `ORACLE_HOME` environment variable to the home directory of the Oracle Application Server instance where the Oracle HTTP Server resides.

   The following is an example of the command to do this:

   ```
   setenv $ORACLE_HOME /dev0/private/oracle/appserv1/
   ```

2. Set the `LD_LIBRARY_PATH` environment variable to `$ORACLE_HOME/lib32` and the `LD_LIBRARY_PATH_64` environment variable to `$ORACLE_HOME/lib`.
3. Create an alias to represent the `portconfig` command. For example:

   ```
   alias portconfig '$ORACLE_HOME/jdk/bin/java -cp
   $ORACLE_HOME/sysman/webapps/emd/WEB-INF/lib/emd.jar:
   $ORACLE_HOME/dcm/lib/dcm.jar:
   $ORACLE_HOME/sso/bin/ssoreg.sh
   oracle.sysman.ias.sta.tools.PortConfigCmdLine \!*'
   ```

4. Use the newly created `portconfig` command as follows:

   ```
   portconfig -oracleHome $ORACLE_HOME
   -oldPort old_port
   -newPort new_port
   [-sso -url http://sso_host:port -user http_server_admin_user
     [-site name_of_sso_partner_application]
     [-admin mod_osso_admin_user]
     [-vHost path_to_mod_osso_configuration_file]]
   [-webCache]
   {-start | -restart}
   ```

   For example:

   ```
   portconfig -oracleHome $ORACLE_HOME -oldPort 7777 -newPort 7778 -webCache
   ```

   Table 10–1 describes the arguments that you can you use with the `portconfig` command to automatically change the Oracle HTTP Server Listen port.

Table 10–1 Arguments for the portconfig Command

Argument	Description
`-oracleHome`	The Oracle home of the Oracle Application Server instance. The `portconfig` command modifies only components that are part of the selected Oracle home. You can use an environment variable to represent the Oracle home.
`-oldPort`	The old (current) value of the Oracle HTTP Server Listen port.
`-newPort`	The new value for the Oracle HTTP Server Listen port.
`-webCache`	Use this optional argument if you are using OracleAS Web Cache to improve the performance and reliability of your Web server. When this argument is included on the command line, the dependent OracleAS Web Cache port assignment is changed automatically. Specifically, the port number of the origin server is updated automatically, so it points to the new Oracle HTTP Server Listen port. **Note:** The `portconfig` command updates the OracleAS Web Cache instance only if it resides in the current Oracle home.
`-start`	When you use this optional argument, the `portconfig` command performs the configuration changes, and then stops and starts the application server instance. The Oracle Application Server instance must be stopped and started, or restarted, before the port changes takes effect. **Note:** During startup, all enabled components of the application server are started, even those that were originally down before you ran the `portconfig` command to change the Oracle HTTP Server Listen port. Each time you run the command, you can use the `-restart` or `-start` options, but not both.
`-restart`	When you use this optional argument, the `portconfig` command performs the configuration changes, and then restarts the application server instance. The Oracle Application Server instance must be restarted, or stopped and started, before the port changes takes effect. With this option, only running components are restarted after the configuration changes are complete. Components that were down before you ran the `portconfig` command to change the Oracle HTTP Server Listen port remain down. Each time you run the command, you can use the `-restart` or `-start` options, but not both.
`-debug`	Use this optional argument if you want to display debugging information as the command is processed. This argument is useful if you are troubleshooting a problem or working with Oracle Support.
`-sso`	Use this optional argument when the Listen port you are changing is protected by OracleAS Single Sign-On. When you use this argument, the `portconfig` command re-registers `mod_osso` with the new Oracle HTTP Server Listen port value. When you use the `-sso` argument, you must include the `-url` and `-user` arguments. In addition, you can optionally use the `-site`, `-admin` and `-vHost` arguments. For more information about registering `mod_osso`, refer to Configuring and Administering Partner Applications in *Oracle Application Server Single Sign-On Administrator's Guide*.

Table 10–1 (Cont.) Arguments for the portconfig Command

Argument	Description
`-url`	This argument is required when you use the `-sso` argument. Use this argument to provide the new Oracle HTTP Server URL. It uses the new Listen port. For example: `http://sso42.acme.com:7778` This URL is passed as the `-mod_osso_url` parameter in the `ssoreg.sh` and `ssoreg.bat` scripts.
`-user`	This argument is required when you use the `-sso` argument. Use this argument to enter the name of the account that is used to start Oracle HTTP Server. On UNIX systems, this is usually `root`. The value provided with this argument is passed as the `-u` parameter in the `ssoreg.sh` and `ssoreg.bat` scripts.
`-site`	This argument is optional, and is used only when you use the `-sso` argument. Use this argument to enter the site name of OracleAS Single Sign-On partner application. The site name is displayed by the OracleAS Single Sign-On administration pages. The value of this argument is passed as the `-site_name` parameter in the `ssoreg.sh` and `ssoreg.bat` scripts. If the `-site` argument is not specified, then the application server instance name is passed to `ssoreg.sh` and `ssoreg.bat` scripts as the value of the `-site_name` parameter.
`-admin`	This argument is optional, and is used only when you use the `-sso` argument. Use this argument to enter the account name of the `mod_osso` administrator. This value is displayed in the OracleAS Single Sign-On administration pages. This value is similar to the distinguished name (dn) of the user who installed Oracle Application Server. The value of this argument is passed as the `-admin_info` parameter in the `ssoreg.sh` and `ssoreg.bat` scripts.
`-vHost`	This argument is optional, and is used only when you use the `-sso` argument. Use this argument to enter the path to the `osso.conf` file for the virtual host being configured. For example: `$ORACLE_HOME/Apache/Apache/conf/osso/`*`vh_name`*`/osso.conf` Use this argument only when you are registering an HTTP virtual host with the OracleAS Single Sign-On server. The value of this argument is passed as the `-config_file` parameter, along with the `-virtualhost` parameter, in the `ssoreg.sh` and `ssoreg.bat` scripts.

5. Restart the application server instance as follows:

```
$ORACLE_HOME/bin/emctl stop iasconsole
$ORACLE_HOME/opmn/bin/opmnctl stopall
$ORACLE_HOME/opmn/bin/opmnctl startall
$ORACLE_HOME/bin/emctl start iasconsole
```

10.2 Changing the HTTP Port on Identity Management

You must change infrastructure ports for Oracle Identity Management installations.

This section describes how to change the Oracle HTTP Server listen port on Oracle Identity Management installation. When you change this port number, you also effectively change the Single Sign-On (SSO) port number. This means you must update any middle tier instances that use the Single Sign-On port.

Step 1: Prepare the Middle Tier Instances

On each middle tier instance that uses Oracle Identity Management, stop the middle tier instance as follows:

1. On the Application Server home page of the Application Server Control Console, click **Stop All**.
2. Leave the Application Server Control Console running.

It is important that you leave the Application Server Control Console running in each of the middle tier instances while you perform this procedure.

Step 2: Prepare the Infrastructure Instances

To prepare the infrastructure instance:

1. Ensure that Oracle Identity Management and its associated OracleAS Metadata Repository are running on the infrastructure whose port number you are changing.
2. Ensure that any middle tier instances that use different Metadata Repositories for their product metadata and DCM repositories are up.

Step 3: Modify the Oracle HTTP Server Listen and Port Directives

To change both the non-SSL Listen and Port directives to the new port number:

1. Navigate to the Application Server home page, and click **Ports**.
2. On the Ports Page, locate the Oracle HTTP Server Listen port and click the icon in the Configure column.
3. On the Server Properties Page:
   - Enter the new port number in the Default Port field. This is for the Port directive.
   - Enter the new port number in the Listening Port column. This is for the Listen directive. There may be more than one listening port listed. The only way to tell which is the non-SSL listen port is to choose the one with the old non-SSL listen port value.
4. Click **Apply**.
5. On the Confirmation Page, click **No** to restart later.

Note: You can manually update the port numbers in the `httpd.conf` file. Update the non-SSL listen and port directives that are not enclosed in an SSL virtual host container with the same new port number. Save the file, and then run the following command:

```
dcmctl updateConfig -ct ohs
```

To change both the SSL Listen and SSL Port directives to the new port number:

1. Edit the following file:

(UNIX) *$ORACLE_HOME*/Apache/Apache/conf/ssl.conf

2. Update the SSL `Listen` and SSL `Port` directives with the new port number. The value for `Listen` and `Port` must be the same port number.
3. Save and close the file.
4. Run the following command:

```
dcmctl updateConfig -ct ohs
```

Step 4: Enable Oracle HTTP Server to Run As root for Ports Less Than 1024 on UNIX

By default, Oracle HTTP Server runs as a non-root user, which is the user that installed Oracle Application Server. On UNIX systems, if you change the Oracle Application Server non-SSL listen port number to a value less than 1024, then you must enable Oracle HTTP Server to run as `root`, as follows:

1. Log in as `root`.
2. Run the following commands in the middle tier Oracle home:

```
cd $ORACLE_HOME/Apache/Apache/bin
chown root .apachectl
chmod 6750 .apachectl
```

Step 5: Update the Application Server Control Console

Update the Application Server Control Console with the new port number as follows:

1. Edit the following file:

(UNIX) *$ORACLE_HOME*/sysman/emd/targets.xml

2. Update each occurrence of the old Oracle HTTP Server listen port number with the new port number.
3. Save and close the file.
4. Reload the Application Server Control Console as follows:

```
emctl reload
```

Step 6: Update SSO

If SSO is configured to use the non-SSL Oracle HTTP Server listen port in the installation where you are changing the port, then ensure that the `LD_LIBRARY_PATH` and `LD_LIBRARY_PATH_64` environment variables contains `$ORACLE_HOME/lib`.

If SSO is configured to use the SSL Oracle HTTP Server listen port in the installation where you are changing the port, then run the following command in the SSO Oracle home:

$ORACLE_HOME/sso/bin/ssocfg.sh https *hostname new_port_number*

where:

hostname is the host on which SSO is running and *new_port_number* is the new SSL Oracle HTTP Server listen port number.

Step 7: Reregister mod_osso

To reregister `mod-osso`:

1. Ensure that the `LD_LIBRARY_PATH` and environment variables are set.
2. If you are changing the non-SSL Listen port, then reregister `mod_osso` to take care of the default partner applications by running the following command in the Oracle Identity Management Oracle home:

```
$ORACLE_HOME/jdk/bin/java -jar $ORACLE_HOME/sso/lib/ossoreg.jar
-oracle_home_path middle_tier_oracle_home
-site_name middle_tier_hostname:new_http_port_number
-config_mod_osso TRUE
-mod_osso_url mod_osso_url
-u user
```

> **Note:** *user* is the user that starts Oracle HTTP Server. By default, this is the user that installed Oracle Application Server. If you have changed the Oracle HTTP Server listen port number to a value less than 1024, then this user is `root`.

For example, to change the Oracle HTTP Server listen port to 7779 on host `myhost`:

```
$ORACLE_HOME/jdk/bin/java -jar $ORACLE_HOME/sso/lib/ossoreg.jar
-oracle_home_path /disk1/oracleas
-site_name myhost:7779
-config_mod_osso TRUE
-mod_osso_url http://myhost.mydomain:7779
-u oracle
```

3. If you are changing the SSL listen port, then reregister `mod_osso` to take care of the default partner applications by running the following command in the Oracle Identity Management Oracle home:

```
$ORACLE_HOME/jdk/bin/java -jar $ORACLE_HOME/sso/lib/ossoreg.jar
-oracle_home_path middle_tier_oracle_home
-site_name middle_tier_hostname:new_https_port_number
-config_mod_osso TRUE
-mod_osso_url mod_osso_url
-virtualhost -u user
```

> **Note:** In the preceding command, *user* is the user that starts Oracle HTTP Server. By default, this is the user that installed Oracle Application Server. If you have changed the Oracle HTTP Server listen port number to a value < 1024, then this user is root.

For example, to change the Oracle HTTP Server listen port to 4445 on host `myhost`:

```
$ORACLE_HOME/jdk/bin/java -jar $ORACLE_HOME/sso/lib/ossoreg.jar
-oracle_home_path /disk1/oracleas
-site_name myhost:4445
-config_mod_osso TRUE
-mod_osso_url https://myhost.mydomain:4445
-virtualhost -u oracle
```

4. Reregister any additional partner applications that you configured or modified.

   See Also: *Oracle Application Server Single Sign-On Administrator's Guide* for more information about registering `mod_osso`

Step 8: Update DAS

If you have DAS configured, and DAS uses the SSL and non-SSL port numbers, then update the DAS URL entry in Oracle Internet Directory:

Note: You can find out what port DAS uses with the following command:

```
ldapsearch -h oid_host -p oid_port -D "cn=orcladmin"
-w "password" -b
"cn=OperationURLs,cn=DAS,cn=Products,cn=OracleContext"
-s base "objectclass=*" orcldasurlbase
```

---

1. Create a file named `mod.ldif` with the following contents (you can create the file in any directory):

   ```
   dn:cn=OperationURLs,cn=DAS,cn=Products,cn=OracleContext
   changetype:modify
   replace:orcldasurlbase
   orcldasurlbase:http://hostname:new_http_port_number/
   ```

   Note the slash at the end of the *orcldasurlbase* URL.

2. Run the following command:

   ```
   ldapmodify -D cn=orcladmin -w password -p oid_port -f mod.ldif
   ```

Step 9: Restart the Identity Management Instance

Restart the Identity Management instance as follows:

```
emctl stop iasconsole
opmnctl stopall
opmnctl startall
emctl start iasconsole
```

Step 10: Update the Middle Tier Instances to Use the New Port Number

After you change the Oracle HTTP Server non-SSL port on the Identity Management installation, you must update all middle tier instances to use the new port number as follows.

1. Update each middle tier instance by using the Change Identity Management Wizard in the Application Server Control Console.

   On each middle tier instance that uses Identity Management:

   a. Navigate to the Application Server home page for the middle tier instance by using the Application Server Control Console.

   b. Click **Infrastructure**.

   c. On the Infrastructure Page, in the Identity Management section, click **Change**.

d. Follow the steps in the wizard.

e. When the wizard is finished, navigate to the Application Server Home Page and start the middle tier instance by clicking **Start All**.

2. Refresh the Oracle Internet Directory cache in your applications as follows:

a. Log in to the Portal.

b. Click the **Global Settings** link.

c. Click the **SSO/OID** tab.

d. Check the refresh Oracle Internet Directory cache settings, and click **Apply.**

11 Viewing Log Files

Oracle Application Server Standard Edition One components generate log files containing messages that record all types of events, including startup and shutdown information, errors, warning messages, and access to information about HTTP requests.

This chapter describes how to view and manage log files to assist in monitoring system activity and in diagnosing system problems. It contains the following sections:

11.1 Introducing Oracle Application Server Standard Edition One Logging

Application Server Control Console enables you to list and search log files across Oracle Application Server components. You can view log files from the Application Server Control Console pages or download a log file to your local client and view the log files using another tool.

This section contains the following topics:

11.1.1 Understanding Log File Data and Naming

Several Oracle Application Server Standard Edition One components use the Oracle Diagnostic Logging (ODL) technique. ODL ensures that the log file naming and log file content formats conform to the Oracle standard. ODL writes the diagnostic messages in XML. Components that do not use ODL write their diagnostic messages using a component-specific text format.

You can view log files of any format by using Application Server Control Console. You can also download log files to your local client and view them by using a text editor or another file-viewing utility.

11.1.1.1 Log File Messages by Component

Table 11–1 lists the supported message formats for each Oracle Application Server Standard Edition One component.

Table 11–1 Diagnostic Message Format By Component

Component	Default Format	ODL Support	Location
Oracle ADF (ADF)	ODL	Yes	*$ORACLE_HOME*/bc4j/logs/*OC4J_Name*
DCM	ODL	Yes	*$ORACLE_HOME*/dcm/logs
Application Server Control	Text	No	*$ORACLE_HOME*/sysman/log
HTTP Server	Text	Yes	*$ORACLE_HOME*/Apache/Apache/logs/error_log.*time*
Log Loader	ODL	Yes	*$ORACLE_HOME*/diagnostics/logs
OC4J *instance_name*	Text	Yes	*$ORACLE_HOME*/j2ee/*instance_name*/log *$ORACLE_HOME*/j2ee/*instance_name*/application-deployments/*application_name*/application.log
Oracle Internet Directory	Text	No	*$ORACLE_HOME*/ldap/log
OPMN	Text	No	*$ORACLE_HOME*/opmn/logs *$ORACLE_HOME*/opmn/logs/*component_type~...*
Port Tunneling	Text	No	*$ORACLE_HOME*/iaspt/logs
Single Sign-On	Text	No	*$ORACLE_HOME*/sso/log
Universal Installer	Text	No	*$ORACLE_HOME*/cfgtoollogs/

11.1.2 Using a Log Repository

Application Server Control Console enables you to view diagnostic messages from a log repository. A log repository:

- Stores error logs, but does not store access logs.
- Contains diagnostic messages collected from multiple log files across components.
- Consolidates Oracle Application Server Standard Edition One log file data, which enables you to use Application Server Control Console to easily search and view log file data generated by multiple components.
- Speeds up the diagnostic process and reduces the resources required to support Oracle Application Server.

A log repository is updated by the Oracle Application Server Log Loader component. For more information, refer to Section 11.3

11.1.3 Configuring Component Logging Options

You can configure logging options to manage and limit the logging information that Oracle Application Server Standard Edition One components generate and save.

Note: You cannot configure logging options directly from Application Server Control Console. To configure component logging options you need to use the Application Server Control Console Advanced Server Properties page. This page enables you to edit the values in configuration files.

The logging configuration options include:

- Specifying Log File Names and Pathnames
- Limiting Log File Size
- Using Log File Archiving
- Setting Component Logging Levels

The logging configuration options are component dependent. All components do not support the logging configuration options. For more information about setting logging configuration options, refer to the Oracle Application Server Standard Edition One component documentation.

11.2 Listing and Viewing Log Files with Application Server Control

You can use the Application Server Control Console to list log files. On the Application Server Control Console, click the **Logs** link to display the View Logs page.

This section contains the following:

11.2.1 Listing Log Files

To list log files, perform the following steps:

1. Click **Move** or **Move All** to move the selected or all available components to the Selected Components box.
2. Click **Search** to list the log files for the selected components.
3. After the search returns, the Results section shows log file information such as the name of the component associated with a log file and a link to the log file.

Figure 11–1 shows the Application Server Control Console View Logs page after a search.

Figure 11–1 Application Server Control View Logs Search Results

When you click the Logs link, Application Server Control Console displays the View Logs page and runs a search for the log files of the component. You can then view the log files by selecting the Log File links shown in the Results section.

11.2.2 Listing Log Files for Selected Components

Selecting the **Logs** link on Application Server Control Console shows the View Logs page. To list the log files of selected components, perform the following steps:

1. Select the components whose log files you want to view from the **Available Components** list and use **Move** to move the selected component to the **Selected Components** list (some browsers support double clicking to move components between the boxes).
2. Click **Search** to list the log files for the selected components.
3. After the search results are returned, the Results section shows log file information such as the name of the component associated with a log file and a link to the file.

Figure 11–1 shows the View Logs page Results after a search is performed.

11.2.3 Listing Log Files from Oracle Application Server Standard Edition One Components Pages

By selecting a system component link on the Application Server Control Console main page, you can view the component log files by selecting the **Logs** link. When you click this link, the Application Server Control Console shows the View Logs page and runs a search for the log files of the component. Therefore, by clicking the **Logs** link for pages associated with a component runs a log file search for that component. You can then view the log files by selecting the **Log File** links shown in the **Results** section.

When you click the **Logs** link from a component page, the log file pages include a **Return to** link at the bottom of each page. The **Return to** link returns you to the component page from which you selected the **Logs** link.

11.2.4 Using Log Files Advanced Search

On the View Logs page, click **Advanced Search** to display the View Logs Advanced Search page. The Advanced Search page lists log files for Oracle Application Server components and filters the search for log files by certain log file attributes.

On the View Logs Advanced Search page, you can list the log files using a search filter by performing the following steps:

1. Click the **Move** or **Move All** to move the selected or all available components to the Selected Components box.
2. Select a field from the Log File Attribute list.
3. Click **Add Row** to add a row for the selected log file attribute.
4. Enter the desired search value in the **Value** field.
5. If you want to select additional fields with values, then click **Add Another Row** and enter additional values.
6. Click **Search** to perform the search. When the search returns, the **Results** section displays the log files with matching fields.

To obtain more information about filtering using the log file attributes, click the information icon next to the Log File Attribute list.

11.2.5 Viewing Log File Details and Log File Contents

By clicking **Search** from either the View Logs Simple Search or Advanced Search page, the View Logs page shows the search output at the bottom of the page in the **Results** section. You can sort the output by selecting column headings. For example, to sort results by size, select the **Size (bytes)** column heading (multiple selections on a column heading toggle ascending and descending sort).

To view log file contents, click the link shown in the Log File column.

When you select a log file link, the Log File page shows the contents of the selected log file. The Log File pages provide the following features:

- The Refresh list determines whether the file view is updated manually or automatically. Select **Automatically** when you want to refresh the page at regular intervals. The Log File page scrolls to the bottom when a page refreshes.
- Selecting the refresh icon next to the **Page Refreshed** date, on either the top or the bottom of the page, initiates manual refresh. Each refresh displays the log entries added since the last refresh.
- Selecting the **Log File** link enables you to use browser features to display, print, or download the log file.

11.3 Using Oracle Application Server Standard Edition One Log Loader

The Oracle Application Server Standard Edition One **Log Loader** component initializes and updates messages in the Log Repository. A Log Repository stores diagnostic messages from multiple log files across Oracle Application Server Standard

Edition One components. After the Log Loader starts, at regular intervals, it reads the contents of log files incrementally and stores the contents to the Log Repository.

This section describes the following topics:

11.3.1 Starting and Stopping Log Loader

You can use the controls on the Application Server Control Console Log Loader page to start and stop the Log Loader.

Note: By default, when Oracle Application Server is installed, the Log Loader is stopped.

To start the log loader, perform the following steps:

1. On the Application Server Control Console page, click the **Logs** link.
2. On the View Logs page, click the **Search Log Repository** link.
3. Click **Log Loader** .
4. On the Log Loader page, click **Start**. The confirmation page is displayed.

   If the log loader is already running, then click **Stop** to stop it.
5. Click **Start** or **Start and Load Existing Logs**.

   Click **Start and Load Existing Logs** to start and initialize the log repository with the existing log messages.

11.3.2 Enabling and Disabling Log Loader

On the Log Loader page, click **Enable** to enable the Log Loader. When you first install Oracle Application Server Standard Edition One, the Log Loader is enabled. When you disable the Log Loader, its log files are not displayed in the component lists on the View Logs page.

11.3.3 Updating the Log Configuration

When the Log Loader starts, it loads configuration information about the component log files to use as source for the diagnostic messages. These messages are stored in the Log Repository, which includes information about the location and format of the log files. The instance is reconfigured after the Log Loader is started. For example, when a new component is added, click **Update Log Configuration** to update the Log Loader configuration. Updating the log configuration allows the Log Loader to reread configuration files to locate and load all the component log files in to the log repository.

11.3.4 Setting Log Loader Properties

You can set Log Loader properties from the Log Loader page. To navigate to the Log Loader page:

1. Click the **Logs** link on any Application Server Control Console page.
2. On the View Logs page, click the **Search Log Repository** link.
3. Click **Log Loader** on the View Logs page.
4. Click the **Log Loader Properties** link in the Administration section.

   The Log Loader Properties page includes fields showing the current values for the Log Loader properties.

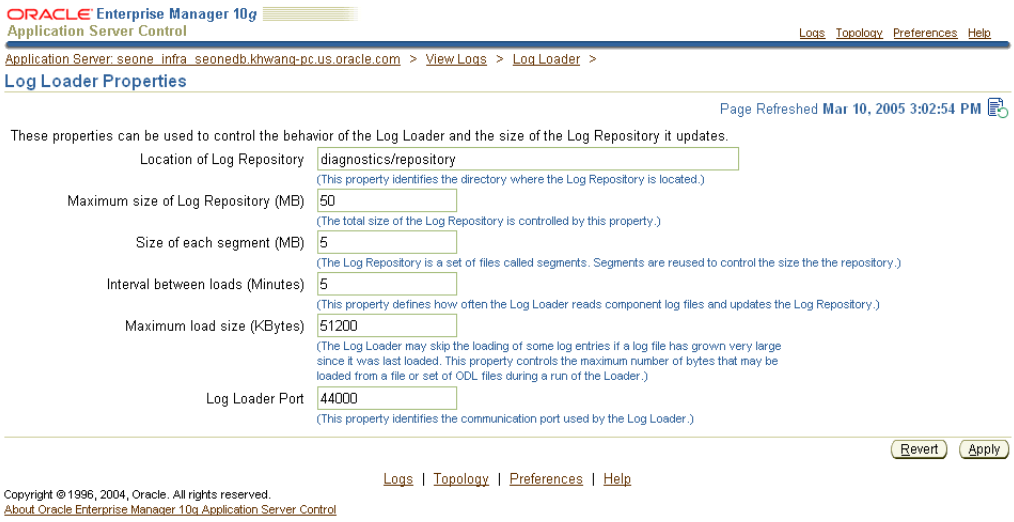
To change the Log Loader properties:

1. Enter updated values in the appropriate fields on the Log Loader Properties page.
2. Click **Apply** to apply the new values.

Figure 11–2 shows the Application Server Control Console Log Loader Properties page.

The Application Server Control Console online Help includes detailed information about the Log Loader Properties fields.

Figure 11–2 Log Loader Properties Page



11.3.5 Understanding Log Loader Diagnostic Messages

The Log Loader logs its diagnostic messages, including errors to its log file. Diagnostic messages might include errors encountered due to an incorrect configuration, or errors that occur while the Log Loader is reading data from a log file or is writing data to the log repository.

The common Log Loader problems include the following:

- Errors in the Log Loader configuration file (`$ORACLE_HOME/diagnostics/config/logloader.xml`). Errors in the configuration file may prevent the Log Loader from running. Such errors need to be corrected before the Log Loader can work properly.

- Configuration errors that occur when the registration file of a component contains errors. The registration file is located at

  ```
  $ORACLE_HOME/diagnostics/config/registration/*.xml
  ```

  Errors in the registration files do not prevent the Log Loader from running but may prevent the contents of certain log files from being loaded in the repository. Typically, there are two common types of registration file errors:

  – XML syntax errors that prevent the file from being parsed. If such errors are encountered, then the Log Loader completely ignores the contents of the file.

  – A wrong path specified for a configuration file. If the Log Loader cannot find a log file at the specified path, then it issues a Warning level diagnostic message. This does not always indicate an error. For example, it is possible that the component that generates that log was not active when the Log Loader started and the log file had not been created. The Log Loader continues to look for the log file and starts reading messages when the log file is created.

- Errors may occur while the Log Loader is reading messages from a log file. If the log file includes contents that cannot be read or parsed, then the Log Loader issues a log message indicating that it cannot read some of the contents of the file. In this case, the Log Loader attempts to recover from the error and continue to read the Log File.

- Errors may occur when writing messages to the repository, for example, a disk error. This type of error may indicate a problem that may require attention from the system administrator.

- The Log Loader produces an error message when it skips reading log files because a log file exceeds the currently specified maximum load size. The maximum load size can be specified on the Log Loader properties page.

  In this case, the Log Loader logs an error message in the following format:

  ```
  Size of data to be read from log /logfile exceeds threshold of x bytes.
  Skipping y_skipped bytes and moving to end of log.
  ```

  This message indicates the size of data to be read exceeds the specified maximum load size *x*, and that the Log Loader is skipping to the end of the log file. The error message provides information about the name of the log file */logfile*, and the number of bytes skipped *y_skipped*.

12

Changing Network Configurations

This chapter describes procedures for changing the network configuration of an Oracle Application Server Standard Edition One host.

It contains the following sections:

- Section 12.1, "Changing Your Host Name, Domain Name, or IP Address"
- Section 12.2, "Moving Between Off-Network and On-Network"
- Section 12.3, "Changing Between a Static IP Address and DHCP"

12.1 Changing Your Host Name, Domain Name, or IP Address

This section provides information about updating Oracle Application Server Standard Edition One when changing the host name, domain name, or IP address of a host.

Depending on your network requirements, you may need to change the host name, domain name, or IP address of the host at some point. Depending on your installation type, you may perform some or all of these operations.

Table 12–1 summarizes the installation types that support host name, domain name, and IP address changes, and provides pointers to the appropriate procedures.

Table 12–1 Supported Procedures for Host name, Domain Name, and IP Address Changes

Installation Type	Changing the Hostname or Domain Name	Changing the IP Address
Middle tier	Supported Refer to Section 12.1.1, "Changing the Host Name or Domain Name of a J2EE and Web Services Installation"	Supported Change the address in your operating system. No updates to Oracle Application Server are required.
Infrastructure: Identity Management and Metadata Repository	Not supported	Supported Refer to Section 12.1.2, "Changing the IP Address of an Infrastructure Containing a Metadata Repository"

Table 12–1 (Cont.) Supported Procedures for Host name, Domain Name, and IP Address Changes

Installation Type	Changing the Hostname or Domain Name	Changing the IP Address
Infrastructure: Metadata Repository only	Not supported	Supported Refer to Section 12.1.2, "Changing the IP Address of an Infrastructure Containing a Metadata Repository"
Infrastructure: Identity Management only Applies to Identity Management installations with the following components configured: ▪ Oracle Internet Directory only ▪ OracleAS Single Sign-On, Oracle Delegated Administration Services, and (optionally) Oracle Directory Integration and Provisioning ▪ Oracle Internet Directory, OracleAS Single Sign-On, Oracle Delegated Administration Services, and (optionally) Oracle Directory Integration and Provisioning	Supported Refer to *Oracle Application Server Administrator's Guide*	Supported Refer to *Oracle Application Server Administrator's Guide*
OracleAS Certificate Authority	Supported Refer to *Oracle Application Server Administrator's Guide*	Supported Simply change the address in your operating system. No updates to Oracle Application Server are required

12.1.1 Changing the Host Name or Domain Name of a J2EE and Web Services Installation

This section describes the procedure for changing the host name, domain name, or both, of a host where J2EE and Web Services is installed. The procedure contains the following:

- Things to Know Before You Start
- Task 1: Prepare the Host
- Task 2: Change the Host Name
- Task 3: Run the chgiphost Script
- Task 4: Restart the Environment
- Task 6: Manually Update the Host Name in Files

Things to Know Before You Start

Review the following items before you start:

- If the middle-tier instance is registered with Oracle Internet Directory, then you must supply the `cn=orcladmin` password during the procedure.
- Consider changing the log level before running the `chgiphost` script so you can view more detailed information. For more information about changing the log level, refer to Section 12.1.3.1, "Setting the Log Level for chgiphost".
- If your previous host name is a string that is likely to appear in a configuration file, then you may encounter problems when the `chgiphost` command tries to

update the configuration files. Refer to Section 12.1.3.2, "Customizing the chgiphost Script" for information about how to avoid this problem.

- Write down the current host name and IP address before you begin. You will be prompted for these values.
- Oracle recommends that you perform a backup of your environment before you start this procedure. For more information about backing up your environment, refer to Chapter 14, "Backup and Recovery".

Task 1: Prepare the Host

Prepare the host for the change by removing instances and stopping all processes:

1. If the host contains an instance that stores the file-based repository used by an OracleAS File-based Farm, then you must remove all instances from that farm, even if they reside on other hosts. This is because the repository ID will change when you change the host name. So you must remove all instances from the farm, you must change the host name (which will change the repository ID), then add the instances back to the farm at the end of this procedure using the new repository ID.

   To remove an instance from an OracleAS File-based Farm, run the following command in the instance Oracle home:

   ```
   $ORACLE_HOME/dcm/bin/dcmctl leavefarm
   ```

2. If the host contains a J2EE and Web Cache instance that is part of an OracleAS File-based Farm (that uses a repository on another host) or an OracleAS Database-based Farm, then remove the instance from the farm as follows:

   ```
   $ORACLE_HOME/dcm/bin/dcmctl leavefarm
   ```

   You can add the instance back to the farm at the end of the procedure.

3. If the host contains a middle-tier instance that is part of an OracleAS Web Cache cluster, then remove the instance from the cache cluster. You can add the instance back into the cluster at the end of the procedure.

   See Also: *Oracle Application Server Web Cache Administrator's Guide* for instructions on removing caches from a cache cluster

4. Shut down each middle-tier instance on the host by running the following commands in each Oracle home:

   ```
   $ORACLE_HOME/bin/emctl stop iasconsole
   $ORACLE_HOME/opmn/bin/opmnctl stopall
   ```

5. If the middle-tier instance was part of an OracleAS File-based Farm, then ensure the DCM daemon is running in the file-based repository instance. This applies whether the repository instance is on the same host or a different host.

   To verify if the DCM daemon is running, run the following command in the file-based repository Oracle home:

   ```
   $ORACLE_HOME/opmn/bin/opmnctl status
   ```

   To start the DCM daemon:

   ```
   $ORACLE_HOME/opmn/bin/opmnctl startproc ias-component=dcm-daemon
   ```

6. Ensure that Oracle Application Server processes will not start automatically after restarting the host by disabling any automated startup scripts you may have set up, such as the `/etc/init.d` scripts.
7. Ensure that Oracle Internet Directory that the middle tier is using is running.

Task 2: Change the Host Name

To update your operating system with the new host name, domain name, or both:

> **Note:** Refer to your operating system documentation for more information about how to perform the following steps. You can also change the IP address, if required.

1. Make the updates to your operating system to properly change the host name, domain name, or both.
2. Restart the host, if necessary for your operating system.
3. Verify that you can ping the host from another host in your network. Ensure to ping using the new host name to ensure everything is resolving properly.

Task 3: Run the chgiphost Script

You need to run the `chgiphost` script for each middle tier instance on the host. Ensure to complete the steps entirely for one middle-tier instance before you move on to the next.

To run the command:

1. Log in to the host as the user that installed the middle-tier instance.
2. Ensure that the `ORACLE_HOME` environment variable is set to the middle tier Oracle home.
3. Set the `LD_LIBRARY_PATH` environment variables to the proper values, as shown in Table 7–1. The actual environment variables and values that you have to set depend on the type of your UNIX operating system.
4. Run the following commands in the middle tier Oracle home:

```
cd $ORACLE_HOME/chgip/scripts
./chgiphost.sh -mid
```

Table 12–2 describes the prompts that are displayed when you run the `chgiphost` script.

Note that the prompts may provide values in parentheses. You can enter a different value, or press the return key to accept the suggested value.

Table 12–2 Prompts and Actions for chgiphost -mid

Prompt	Action
`Enter fully qualified hostname (hostname.domainname) of destination`	Enter the new fully qualified host name. This may be a new host name, domain name, or both.
`Enter valid IP Address of destination`	If you changed the IP address of the host, then enter the new IP address. Otherwise, enter the current IP address.
`Enter valid IP Address of source`	If you changed the IP address of the host, then enter the old IP address. Otherwise, enter the current IP address.
`OIDAdmin Password:`	Enter the `cn=orcladmin` password for the Oracle Internet Directory in which this middle-tier instance is registered.

5. Verify that the tool ran successfully by checking for errors in the files in the following directory:

   $ORACLE_HOME/chgip/log

Task 4: Restart the Environment

Restart the middle-tier instances and restore the configuration back to the way it was before you started the procedure.

1. Start each middle-tier instance on your host by running the following commands in each Oracle home directory:

   $ORACLE_HOME/opmn/bin/opmnctl startall
   $ORACLE_HOME/bin/emctl start iasconsole

2. If you removed any instances from an OracleAS Web Cache cluster at the beginning of this procedure, then add them back to the cache cluster. Refer to *Oracle Application Server Web Cache Administrator's Guide* for instructions on adding caches to a cache cluster.
3. If the host contained an instance that stored the file-based repository used by an OracleAS File-based farm, then:
   a. Obtain the new repository ID for the new farm by running the following command in the Oracle home of that instance:

      $ORACLE_HOME/dcm/bin/dcmctl getRepositoryID

   b. Re-create the OracleAS File-based Farm by adding that instance to the new farm using the new repository ID obtained in the preceding step. The `repository_ID` variable is of the form *hostname*:*port*.

      $ORACLE_HOME/dcm/bin/dcmctl joinfarm -r *repository_ID*

   c. Add all instances on other hosts back to the new farm using the command in the preceding step.
4. If you remove any J2EE and Web Cache instances from an OracleAS File-based Farm (that uses a repository on another host) at the beginning of this procedure, then add each one back as follows:

   $ORACLE_HOME/dcm/bin/dcmctl joinfarm -r *repository_ID*

In the preceding command, `repository_ID` is the `hostname:port value` returned by running the following command in the File-base repository Oracle home:

```
$ORACLE_HOME/dcm/bin/dcmctl getRepositoryID
```

5. If you removed any J2EE and Web Cache instances from an OracleAS Database-based Farm at the beginning of this procedure, then add each one back as follows:

```
$ORACLE_HOME/dcm/bin/dcmctl joinfarm
```

6. If you disabled any processes for automatically starting Oracle Application Server at the beginning of this procedure, then enable them.

Task 6: Manually Update the Host Name in Files

If you edited a file and entered the host name as part of a user-defined parameter such as the Oracle home path, then the host name is not automatically updated by running the `chgiphost.sh` script. To update the host name in such cases, you need to edit the files manually. For example, the `plsql.conf` file may contain an NFS path including the host name, such as `/net/dsun1/private/...`.

The `chgiphost.sh` script also does not edit the host name references in the documentation files. You will need to manually edit these files to update the host name. Examples of such files are the following files in the *`$ORACLE_HOME`*`/Apache/Apache/htdocs` directory.

- `index.html.de`
- `index.html.es_ES`
- `index.html.fr`
- `index.html.it`
- `index.html.ja`
- `index.html.ko`
- `index.html.pt_BR`
- `index.html.zh_CN`
- `index.html.zh_TW`

12.1.2 Changing the IP Address of an Infrastructure Containing a Metadata Repository

This section describes how to change the IP address of a host that contains an OracleAS Portal installation with Identity Management and new Metadata Repositorys. The procedure contains the following:

- Things to Know Before You Start
- Task 1: Shut Down Middle-Tier Instances
- Task 2: Prepare Your Host
- Task 3: Change the IP Address
- Task 4: Update the Infrastructure
- Task 5: Restart Your Environment

Things to Know Before You Start

Review the following items before you start the procedure:

- Write down the old IP address before you begin. You will be prompted for this during the procedure.
- Oracle recommends that you perform a backup of your environment before you start this procedure. For more information about backing up your environment, refer to Chapter 14.

Task 1: Shut Down Middle-Tier Instances

Shut down all middle-tier instances that use the infrastructure installation.

Task 2: Prepare Your Host

Prepare your host for the change by stopping all processes. To stop all processes:

1. Set the `ORACLE_HOME` and `ORACLE_SID` environment variables.
2. Shut down the infrastructure:

```
emctl stop iasconsole
opmnctl stopall
lsnrctl stop

sqlplus /nolog
SQL> connect SYS as SYSDBA
SQL> shutdown
SQL> quit
```

3. Verify that all Oracle Application Server processes have stopped.
4. Ensure that Oracle Application Server processes will not start automatically after a restarting the host by disabling any automated startup scripts you may have set up, such as the `/etc/init.d` scripts.

Task 3: Change the IP Address

Update your operating system with the new IP address, restart the host, and verify that the host is functioning properly on your network. Consult your operating system documentation for more information about how to do this.

1. Make the updates to your operating system to properly change the IP address.
2. Restart the host, if required by your operating system.
3. Verify that you can ping the host from another host in your network. Ensure that to ping using the new IP address to ensure everything is resolving properly.

Task 4: Update the Infrastructure

Update the infrastructure on your host with the new IP address.

1. Log in to the host as the user that installed the infrastructure.
2. Set the `ORACLE_HOME` and `ORACLE_SID` environment variables.
3. Set the `LD_LIBRARY_PATH` environment variables to the proper values, as shown in Table 7–1. The actual environment variables and values that you have to set depend on the type of your UNIX operating system.
4. Start the database:

```
sqlplus /nolog
SQL> connect SYS as SYSDBA
```

```
SQL> startup
SQL> quit

lsnrctl start
```

5. Start OPMN:

```
opmnctl start
```

6. Start Oracle Internet Directory:

```
opmnctl startproc ias-component=OID process-type=OID
```

7. Run the following commands in the infrastructure Oracle home:

```
cd $ORACLE_HOME/chgip/scripts
./chgiphost.sh -infra
```

The `chgiphost` script prompts for the old and new IP addresses.

8. Verify that the tool ran successfully by checking for errors in the files in the following directory:

```
$ORACLE_HOME/chgip/log
```

Task 5: Restart Your Environment

Finish starting the infrastructure and start any middle tier instances that use it.

1. Finish starting the infrastructure:

```
opmnctl startall
emctl start iasconsole
```

2. If a middle-tier instance is on the same host as the infrastructure, then you need to run the `chgiphost` script on the middle tier instance before restarting the middle tier processes.
3. If you disabled any processes for automatically starting Oracle Application Server at the beginning of this procedure, then enable them.

12.1.3 Special Topics for Changing Your Host Name or Domain Name

This section contains the following special topics that apply to changing the host name or domain name of an Oracle Application Server host:

- Section 12.1.3.1, "Setting the Log Level for chgiphost"
- Section 12.1.3.2, "Customizing the chgiphost Script"
- Section 12.1.3.3, "Recovering from Errors When Changing Your Host Name"

12.1.3.1 Setting the Log Level for chgiphost

By default, the console log level for the `chgiphost` script is `SEVERE`. This causes only critical information to be printed while running `chgiphost`. If you want to view additional progress information, then set the console log level to `CONFIG` as follows:

1. Edit the following file:

```
$ORACLE_HOME/chgip/config/chgip.log.properties
```

2. Change the `java.util.logging.ConsoleHandler.level` parameter to `CONFIG`:

   ```
   java.util.logging.ConsoleHandler.level = CONFIG
   ```

12.1.3.2 Customizing the chgiphost Script

By default, the `chgiphost` script updates key configuration files in the Oracle home with the new host name. If either of the following cases apply to your installation, then you may want to consider customizing the behavior of the `chgiphost` script:

- You have created additional configuration files that contain the host name and want to the `chgiphost` script to update those files.

  In order to update these files, add their full path name to the following file before running `chgiphost`:

  ```
  $ORACLE_HOME/chgip/config/hostname.lst
  ```

- Your old host name is very short (one or two letters) or is a string that is likely to appear in a configuration file

  Before running `chgiphost`, examine each of the files listed in `hostname.lst` to determine if the old host name exists in any settings in those files. If you find a match, then you can correct those settings after you run `chgiphost`.

- Your Oracle home contains the host name in its full path.

  In this case, the `chgiphost` script may not update your configuration files properly. You can avoid this problem by using a Java utility called FileFixer, which searches for specific text strings in a file by matching regular expressions, and updates them to their new values. Note that FileFixer searches for patterns one line at a time. It cannot match patterns across lines.

  To use FileFixer:

  1. Make a copy of the following file:

     ```
     $ORACLE_HOME/chgip/config/hostname_short_sample.lst.xml
     ```

  2. Edit your copy of the file to specify the regular expression matching required for your old and new host names. The file contains an example of how to do this.

  3. Specify the file when running the `chgiphost` script:

     ```
     chgiphost option -hostnameShortXml full_path_to_your_xml_file
     ```

     For example, if you named your file `/mydir/my_sample.lst.xml`, and you are updating a middle-tier installation, then run `chgiphost` as follows:

     ```
     chgiphost -mid -hostnameShortXml /mydir/my_sample.lst.xml
     ```

12.1.3.3 Recovering from Errors When Changing Your Host Name

This section describes how to recover from typical errors you might encounter when using the `chgiphost.sh` script. It contains the following scenarios:

- Scenario 1: You Specified the Wrong Destination Name
- Scenario 2: You Encountered an Error when Running chgiphost.sh

Scenario 1: You Specified the Wrong Destination Name

Suppose you ran the `chgiphost.sh` script but specified the wrong destination name. In this case, you can remedy the error by running `chgiphost.sh` again. Here are the details.

Suppose the current source host name is loire985, the incorrect destination host name you specified is mqa985, and the correct destination host name is sqb985. Initially, you ran `chgiphost.sh` with source = loire985 and destination = mqa985.

To recover from this error:

1. Run `chgiphost.sh` with source = `mqa985` and destination = `sqb985`.
2. Run `chgiphost.sh` again with source = `loire985` and destination = `sqb985`.

Scenario 2: You Encountered an Error when Running chgiphost.sh

For example, you will get an error message if you enter the wrong password for Oracle Internet Directory. In this case, you should run `chgiphost.sh` again, with the same source and destination host names as before, and ensure to supply the correct password when prompted.

If you encounter an error when running `chgiphost.sh`, then you should fix the error and run `chgiphost.sh` again.

12.2 Moving Between Off-Network and On-Network

This section provides procedures for moving an Oracle Application Server Standard Edition One host on and off the network. You may use DHCP or a static IP address when on the network. You can use these procedures, for example, if you installed Oracle Application Server Standard Edition One on your laptop and want to plug in to different networks to use it.

To move an Oracle Application Server Standard Edition One host on and off the network, the following restrictions apply:

- The host must contain an infrastructure and middle-tier instance, or a J2EE and Web Cache instance that does not use an infrastructure, that is, the entire Oracle Application Server environment must be on the host.
- DHCP must be used in loopback mode. Refer to *Oracle Application Server Installation Guide* for more information.
- Only IP address change is supported; the host name must remain unchanged.
- Hosts in DHCP mode should not use the default host name (`localhost.localdomain`). The hosts should be configured to use a standard host name and the loopback IP should resolve to that host name.
- A loopback adapter is required for all off-network installations (DHCP or static IP). Refer to *Oracle Application Server Installation Guide* for more information.

12.2.1 Moving from Off-Network to On-Network (Static IP Address)

This procedure assumes you have installed Oracle Application Server on a host that is off the network, using a standard host name (not `localhost`), and want to move on the network and use a static IP address. The IP address may be the default loopback IP, or any standard IP address.

To move onto the network, you can simply plug the host into the network. No updates to Oracle Application Server are required.

12.2.2 Moving from Off-Network to On-Network (DHCP)

This procedure assumes you have installed on a host that is off the network, using a standard host name (not `localhost`), and want to move on the network and use DHCP. The IP address of the host can be any static IP address or loopback IP address, and should be configured to the host name.

To move onto the network, connect the host to the network using DHCP and configure the host name to the loopback IP address only.

12.2.3 Moving from On-Network to Off-Network (Static IP Address)

If your host is on the network, using a static IP address, and you want to move it off the network, then:

1. Configure the `/etc/hosts` file so that the IP address and host name can be resolved locally.
2. Take the host off the network.

   You do not need to change the host name or IP address.

12.2.4 Moving from On-Network to Off-Network (DHCP)

If your host is on the network, using DHCP in loopback mode, and you want to move it off the network, then:

1. Configure the `/etc/hosts` file so the IP address and host name can be resolved locally.
2. Take the host off the network.

   You do not need to change the host name or IP address.

12.3 Changing Between a Static IP Address and DHCP

This section provides procedures for changing from a static IP address to DHCP, and from DHCP to a static IP address. You might use these if you install on a static IP address but then decide you want to use DHCP so you can be more mobile, or if you are using DHCP and must plug in to a network using a static IP address.

To change between a static IP address and DHCP, the following assumptions and restrictions apply:

- The entire Oracle Application Server environment, including the infrastructure and middle-tier instances, must be on the host.
- DHCP must be used in loopback mode. Refer to Chapter 2, "System and Installation Requirements" for more information.
- Only IP address change is supported. The host name must remain unchanged.
- Hosts in DHCP mode should not use the default host name (`localhost.localdomain`). The hosts should be configured to use a standard host name and the loopback IP should resolve to that host name.

This section contains the following topics:

- Section 12.3.1, "Changing from a Static IP Address to DHCP"
- Section 12.3.2, "Changing from DHCP to a Static IP Address"

12.3.1 Changing from a Static IP Address to DHCP

To change a host from a static IP address to DHCP:

1. Configure the host to have a host name associated with the loopback IP address before you convert the host to DHCP.
2. Convert the host to DHCP. There is no need to update Oracle Application Server Standard Edition One.

12.3.2 Changing from DHCP to a Static IP Address

To change a host from DHCP to a static IP address configure the host to use a static IP address.

You do not need to update Oracle Application Server Standard Edition One.

13

Enabling SSL

This chapter provides instructions for enabling Secure Sockets Layer (SSL) in Oracle Application Server Standard Edition One. It contains the following sections:

13.1 SSL Communication Paths in the Infrastructure

When you install Identity Management, you are prompted to select a mode for Oracle Internet Directory. The default mode is the dual mode, which allows some components to access Oracle Internet Directory using non-SSL connections. If you chose SSL mode during installation, then all installed components must use SSL when connecting to the directory.

> **Note:** Before you begin SSL configuration, determine the Oracle Internet Directory mode. Start the `oidadmin` tool and view the SSL mode in Oracle Directory Manager. Navigate to the Directory Server and select **View Properties** and then **SSL Settings**.

This section identifies all the SSL communication paths used in the OracleAS Infrastructure and provides cross-references to the configuration instructions in component guides in the Oracle Application Server documentation library.

Following are the communication paths through OracleAS Infrastructure and the related SSL configuration instructions:

- **Oracle HTTP Server to the OC4J_SECURITY instance**

  To configure Apache Jserv Protocol (AJP) communication over SSL, you must configure how `mod_oc4j` communicates with the `iaspt` daemon. To do this, follow the instructions in the "Configuring mod_oc4j to Use SSL" section of *Oracle HTTP Server Administrator's Guide*,.

- **Oracle HTTP Server to iaspt (Port Tunneling) and then to the OC4J_SECURITY instance**

  To configure this connection path for SSL, follow the instructions in the "Understanding Port Tunneling" section of *Oracle HTTP Server Administrator's Guide*.

- **OC4J_SECURITY instance to Oracle Internet Directory**

  To configure this connection path for SSL, follow the instructions in *Oracle Application Server Single Sign-On Administrator's Guide*. This guide explains how to configure SSL communication between:

  – The browser and the OracleAS Single Sign-On server in the "Enable SSL on the Single Sign-On Middle Tier"section

  – The OracleAS Single Sign-On server and the Oracle Internet Directory server in the "Configuring SSL Between the Single Sign-On Server and Oracle Internet Directory" section

  Oracle Delegated Administration Services is SSL-enabled after you configure the Oracle HTTP Server for SSL. The Oracle Delegated Administration Services communication to Oracle Internet Directory is always SSL-enabled. You do not have to perform any configuration tasks to accomplish this.

- **OC4J_SECURITY instance to the Metadata Repository database and Oracle Internet Directory to the Metadata Repository database**

  If Oracle Internet Directory is configured to accept SSL connections on the specified SSL port, then you need to specify only the SSL protocol and SSL port in the JDBC URL requesting an application, as follows:

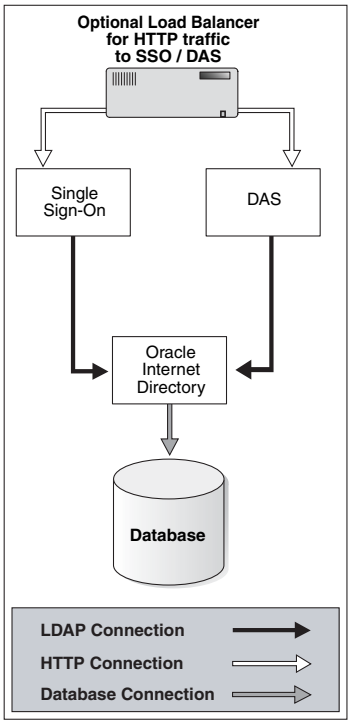
  ```
  ldaps://host:sslport/...
  ```

  Note: When you are using a secure connection, you must add an `s` to the name of the protocol. For example, use `ldaps` instead of `ldap`.

  If Oracle Internet Directory is not configured to accept SSL connections on the SSL port, then you must modify the configuration.

  See Also: *Oracle Internet Directory Administrator's Guide*, section titled "Secure Sockets Layer (SSL) and the Directory"

Figure 13–1 Identity Management Components and SSL Connection Paths



13.2 Common SSL Configuration Tasks for the Infrastructure

This section provides references to the component guides in Oracle Application Server documentation library that provide instructions for configuring SSL for individual components. It contains the following topics:

- Section 13.2.1, "Configuring SSL for OracleAS Single Sign-On and Oracle Delegated Administration Services"
- Section 13.2.2, "Configuring SSL for Oracle Internet Directory"
- Section 13.2.3, "Configuring SSL in the Identity Management Database"

13.2.1 Configuring SSL for OracleAS Single Sign-On and Oracle Delegated Administration Services

Follow the instructions in *Oracle Application Server Single Sign-On Administrator's Guide* to configure SSL communication between:

- The browser and the OracleAS Single Sign-On server (section titled "Enable SSL on the Single Sign-On Middle Tier")
- The OracleAS Single Sign-On server and the Oracle Internet Directory server (section titled "Configuring SSL Between the Single Sign-On Server and Oracle Internet Directory")

Oracle Delegated Administration Services is SSL-enabled after you configure the Oracle HTTP Server for SSL (as described in "Enable SSL on the Single Sign-On Middle Tier"). The Oracle Delegated Administration Services communication to Oracle Internet Directory is always SSL-enabled. You do not have to perform any configuration tasks to accomplish this.

13.2.2 Configuring SSL for Oracle Internet Directory

Instructions for configuring SSL communication in Oracle Internet Directory are provided in the following guides:

- *Oracle Internet Directory Administrator's Guide*, section titled "Secure Sockets Layer (SSL) and the Directory"
- *Oracle Internet Directory Administrator's Guide*, section titled "Configuring SSL Parameters"
- *Oracle Internet Directory Administrator's Guide*, section titled "Limitations of the Use of SSL in 10*g* (10.1.2)"

13.2.3 Configuring SSL in the Identity Management Database

Follow the instructions in *Oracle Application Server Single Sign-On Administrator's Guide*, section titled "Reconfigure the Identity Management Infrastructure Database" to configure SSL in the Identity Management database.

13.3 SSL Communication Paths in the Middle Tier

This section identifies all SSL communication paths used in the Oracle Application Server middle tier installation types and provides cross-references to the configuration instructions for component guides in Oracle Application Server documentation library.

Following is a list of communication paths through the Oracle Application Server middle tier and the related SSL configuration instructions:

- **External Clients or Load Balancer to Oracle HTTP Server**

  To configure Oracle HTTP Server for SSL, follow the instructions in *Oracle HTTP Server Administrator's Guide*, section titled "Enabling SSL."

- **External Clients or Load Balancer to OracleAS Web Cache**

  To configure OracleAS Web Cache for SSL, follow the instructions in the *Oracle Application Server Web Cache Administrator's Guide*, section titled "Configuring OracleAS Web Cache for HTTPS Requests".

- **OracleAS Web Cache to Oracle HTTP Server**

  To configure OracleAS Web Cache for SSL, follow the instructions in the *Oracle Application Server Web Cache Administrator's Guide*, section titled in "Configuring OracleAS Web Cache for HTTPS Requests".

- **Oracle HTTP Server to OC4J Applications (AJP)**

  To configure the AJP communication over SSL, you must configure how mod_oc4j communicates with the `iaspt` daemon. To do this, follow the instructions in the *Oracle HTTP Server Administrator's Guide*, section titled "Configuring mod_oc4j to Use SSL."

- **Oracle HTTP Server to iaspt and then to OC4J**

  To configure this connection path for SSL, follow the instructions in the *Oracle HTTP Server Administrator's Guide*, section titled "Understanding Port Tunneling."

- **OC4J (the JAAS Provider) to Oracle Internet Directory**

  To configure the JAAS Provider, follow the instructions in *Oracle Application Server Containers for J2EE Security Guide*. To configure the JAAS provider for SSL, set `SSL_ONLY_FLAG` to `true`.

- **OC4J to the database (ASO)**

  If Oracle Internet Directory is configured to accept SSL connections on the SSL port specified, then you need to only specify the SSL protocol and SSL port in the JDBC URL requesting an application, as follows:

  ```
  ldaps://host:sslport/...
  ```

  Note that when you are using a secure connection, you must add an s to the name of the protocol. For example, use `ldaps` instead of `ldap`.

  If Oracle Internet Directory is not configured to accept SSL connections on the SSL port, then you must modify the configuration. Refer to *Oracle Internet Directory Administrator's Guide*, section titled "Secure Sockets Layer (SSL) and the Directory."

- **ORMI (Oracle Remote Method Invocation, a custom wire protocol) over HTTP and HTTP over SSL**

  ORMI over SSL is not supported. To configure similar functionality, you can configure ORMI over HTTP, and then configure HTTP for SSL.

  Refer to the *Oracle Application Server Containers for J2EE Services Guide*, section titled "Configuring ORMI Tunnelling Through HTTP" for instructions on how to configure ORMI or HTTP.

- **SSL into Standalone OC4J (HTTPS)**

  To configure this connection path for SSL, follow the instructions in the *Oracle Application Server Containers for J2EE Security Guide*, section titled "Configuring SSL in OC4J", which explains how to use SSL to secure communication between clients and an OC4J instance.

- **OracleAS Portal Parallel Page Engine (the servlet in the OC4J_PORTAL instance) to OracleAS Web Cache (HTTPS)**

  To configure this connection path for SSL, follow the instructions in the *Oracle Application Server Containers for J2EE Security Guide*, section titled "Configuring SSL in OC4J."

13.4 Common SSL Configuration Tasks for the Middle Tier

This section identifies some commonly used SSL configurations in the Oracle Application Server middle-tier installation types, and provides cross-references to the configuration instructions in component guides in the Oracle Application Server documentation library.

13.4.1 Enabling SSL in OracleAS Web Cache

OracleAS Web Cache is part of all Oracle Application Server middle-tier installations. To configure OracleAS Web Cache for SSL, follow the instructions in chapter "Configuring OracleAS Web Cache for HTTPS Requests" in the *Oracle Application Server Web Cache Administrator's Guide*.

13.4.2 Enabling SSL in the Oracle HTTP Server

Oracle HTTP Server is part of all Oracle Application Server middle-tier installations. To configure Oracle HTTP Server for SSL, follow the instructions in the *Oracle HTTP Server Administrator's Guide*, section titled "Enabling SSL."

13.4.3 Enabling SSL in OracleAS Portal

OracleAS Portal uses several components for HTTP communication, such as the Parallel Page Engine, Oracle HTTP Server, and OracleAS Web Cache. Each of these components may function as a client or server. As a result, each component in the middle tier may be configured individually to use the HTTPS protocol instead of HTTP.

These components interact with OracleAS Portal through the following distinct network hops:

- Between the client browser and the entry point of the OracleAS Portal environment. The entry point can be OracleAS Web Cache or a network edge hardware device such as a reverse proxy or SSL accelerator
- Between OracleAS Web Cache and the Oracle HTTP Server of the Oracle Application Server middle tier
- Between the client browser and the Oracle HTTP Server of the OracleAS Single Sign-On or Oracle Internet Directory (or infrastructure) tier
- A loop back connection between the Parallel Page Engine (PPE) on the middle tier and OracleAS Web Cache or the front-end reverse proxy
- Between the Parallel Page Engine (PPE) and the Remote Web Provider that provides Portlet content
- Between the OracleAS Portal infrastructure and the Oracle Internet Directory server

The following sections in the *Oracle Application Server Portal Configuration Guide* provide an overview of the most common SSL configurations for OracleAS Portal and instructions for implementing them:

- SSL to OracleAS Single Sign-On: Follow the instructions in the *Oracle Application Server Portal Configuration Guide* to configure a secure connection to OracleAS Single Sign-On.
- SSL to OracleAS Web Cache: Follow the instructions in the *Oracle Application Server Portal Configuration Guide* to configure a secure connection to OracleAS Web Cache.
- SSL throughout OracleAS Portal: Follow the instructions in the *Oracle Application Server Portal Configuration Guide* to configure secure connections throughout OracleAS Portal.
- External SSL with non-SSL within Oracle Application Server: Follow the instructions in *Oracle Application Server Portal Configuration Guide* to configure OracleAS Portal such that the site is externally accessible through SSL URLs, with Oracle Application Server running in the non-SSL mode.

Note: For general information about securing OracleAS Portal, refer to the *Oracle Application Server Portal Configuration Guide* (Chapter 6, Securing OracleAS Portal).

13.4.4 Configuring SSL for Application Server Control

To configure SSL for Application Server Control, refer to *Oracle Application Server Administrator's Guide*.

14

Backup and Recovery

This chapter describes how to back up and recover the Oracle Application Server Standard Edition One configuration files and OracleAS Metadata Repository. It contains the following sections:

- Section 14.1, "Comparison of Backup and Recovery Services"
- Section 14.2, "Backup and Recovery Using Application Server Control"
- Section 14.3, "Backup and Recovery Using OracleAS Backup and Recovery Tool"
- Section 14.4, "Backup Procedures"

14.1 Comparison of Backup and Recovery Services

There are two methods for performing back up and recovery, through Application Server Control Console and using OracleAS Backup and Recovery Tool. It is important to note, however, that Application Server Control Console backs up configuration files and OracleAS Metadata Repository only. You must use OracleAS Backup and Recovery Tool to perform a full environment backup. Table 14–1 summarizes the differences between the two backup and recovery methods.

Table 14–1 Comparison of Backup and Recovery Services

File/Data Type	Backed up by Application Server Control Console	Backed up by OracleAS Backup and Recovery Tool
Oracle Software Files Static files such as libraries and binaries. They reside in the middle-tier and infrastructure Oracle homes. These files change only after applying Oracle product patches or installation/reinstallation of the software.	No	Yes
Oracle Configuration Files Configuration files for various components such as OracleAS Portal or J2EE. They reside in the middle-tier and infrastructure Oracle homes. These files change frequently, typically after a configuration change or deployment of a new application.	Yes	Yes

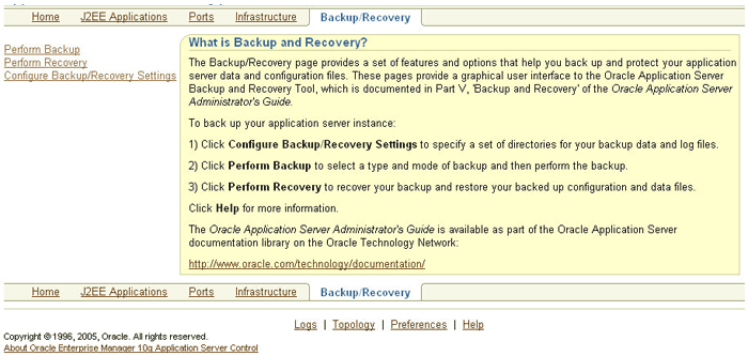
Table 14–1 (Cont.) Comparison of Backup and Recovery Services

File/Data Type	Backed up by Application Server Control Console	Backed up by OracleAS Backup and Recovery Tool
OracleAS Metadata Repository Files These are the datafiles and control files that make up your Metadata Repository. They reside in the infrastructure Oracle home. These files change constantly during regular operations of Oracle Application Server Standard Edition One.	Yes	Yes

14.2 Backup and Recovery Using Application Server Control

On Application Server Control Console, as shown in Figure 14–1, click **Backup/Recovery** to access the Backup and Recovery page:

Figure 14–1 Backup and Recovery Page

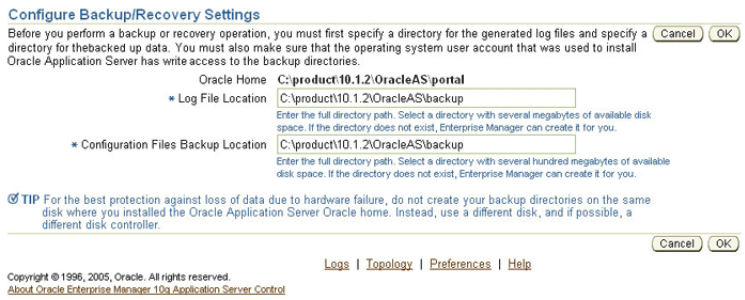


Before you can perform a backup or recovery, you need to configure your backup and recovery settings. You only need do this the first time you access this page. Your configuration settings are saved for all subsequent backup and recovery operations. You can access this page to change your settings at any time.

14.2.1 Configuring the Backup and Recovery Settings

On the Backup and Recovery page, as shown in Figure 14–2, click the **Configure Backup/Recovery Settings** link to open the Configure Backup/Recovery Settings page.

Figure 14–2 Configuring Backup and Recovery Settings



For both OracleAS Infrastructure and middle tier instances, you must provide the following information:

- **Log File Location**

  The backup and recovery procedure generates a log, which is useful for any type of troubleshooting. In the Log File Location field, specify the full path to the directory where you want the log file to be located. If the specified directory does not already exist, it is created for you.

- **Configuration Files Backup Location**

  Enter the full path to the directory where you want your backed up data to be located. It is recommended that you either specify a location independent from where your Oracle Application Server Standard Edition One files are located, or move them to such a location immediately after the backup. If the specified directory does not already exist, it is created for you.

  If you are backing up an OracleAS Infrastructure instance, you are also prompted for the following information:

  – **Metadata Repository Database Backup Location**

    Enter the full path to the location of your Metadata Repository database. The default location is:

    INFRA_ORACLE_HOME`/oradata/seone`

    For example:

    `/product/10.1.2/OracleAS/infra/oradata/seone`

  – **Metadata Repository SID**

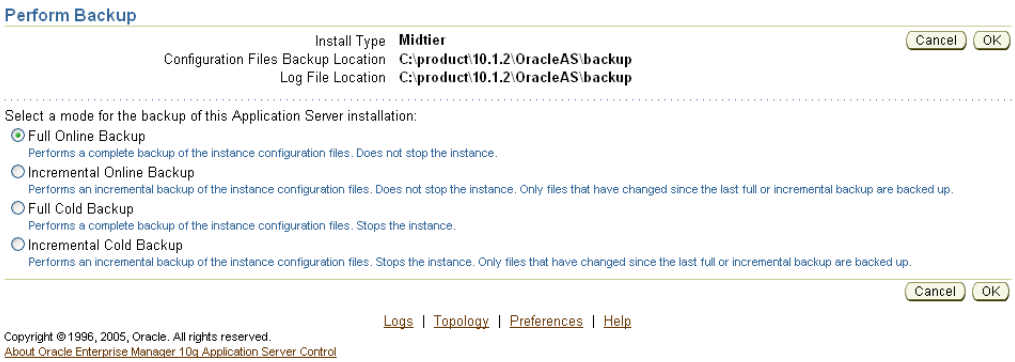
    Specify the database Service ID (SID). The default is `seone`.

Click **OK** when you are finished specifying your backup and recovery settings.

14.2.2 Performing a Backup

On the Backup and Recovery page, click the **Perform Backup** link to open the Perform Backup page (Figure 14–3).

Figure 14–3 Perform Backup



On this page, you can select one of the following backup types:

- **Full Online Backup**

A complete backup of all the configuration files for this Oracle Application Server Standard Edition One instance. This option does not stop the instance.

- **Incremental Online Backup**

  An incremental backup of all the configuration files for this Oracle Application Server Standard Edition One instance. In an incremental backup, only the files that have changed since the last full or incremental backup are backed up. This option does not stop the instance.

- **Full Cold Backup**

  A complete backup of all the configuration files for this Oracle Application Server Standard Edition One instance. This option stops the instance.

- **Incremental Cold Backup**

  An incremental backup of all the configuration files for this Oracle Application Server Standard Edition One instance. This option stops the instance.

After you select the type of backup you want to perform, click **OK** to begin the backup.

14.2.3 Performing a Recovery

On the Backup and Recovery page, click the **Perform Recovery** link to open the Perform Recovery page (Figure 14–4).

Figure 14–4 Perform Recovery

Select one of the available backups from the list of available backups, then click **OK** to perform the recovery.

14.3 Backup and Recovery Using OracleAS Backup and Recovery Tool

OracleAS Backup and Recovery Tool is used to perform configuration file and Metadata Repository backup and recovery. In addition, you can use it to set up your own configuration file and Metadata Repository backup and recovery scripts.

This section contains the following topics:

- Section 14.3.1, "Obtaining OracleAS Backup and Recovery Tool"
- Section 14.3.2, "Configuring the OracleAS Backup and Recovery Tool"
- Section 14.3.3, "Customizing the Tool for Your Configuration Files"
- Section 14.3.4, "OracleAS Backup and Recovery Tool Usage Summary"

14.3.1 Obtaining OracleAS Backup and Recovery Tool

OracleAS Backup and Recovery Tool can be obtained from either the Oracle Application Server Standard Edition One installation or the OracleAS Metadata Repository Creation Assistant CD-ROM.

From the Oracle Application Server Standard Edition One Installation

Oracle Application Server Backup and Recovery Tool is installed as part of an Oracle Application Server Standard Edition One installation. The tool is located in the `Oracle_Home/backup_restore` directory. Table 14–2 lists the files that may reside in the `backup_restore` directory.

Table 14–2 OracleAS Backup and RecoveryTool Files

File	Description
`config/config.inp`	The main configuration file that contains parameters for customizing the tool for your environment
`config/config_`*`component`*`_files.inp`	Component configuration files, each contains a list of configuration files for a particular component. These specify which files to back up when performing a configuration file backup.
`*.tmpl`	Templates for scripts for performing database backup and recovery operations using RMAN. When you initially configure the tool, a customized `.dat` file is created from each `.tmpl` file.
`*.sql`	SQL scripts used by the tool to check the repository database.

Note: Paths are relative to the root of the OracleAS Backup and Recovery Tool directory.

See Also: *Oracle Application Server Installation Guide* for information about installing Oracle Application Server

From the OracleAS Metadata Repository Creation Assistant CD-ROM

If you are running RepCA in an existing database, then you must install the OracleAS Backup and Recovery Tool manually. Before you install the OracleAS Backup and Recovery Tool, review the following notes:

- You must install the tool on the same host as its corresponding installation. You can install the tool in the Oracle home directory of its corresponding installation, or you can install it into a directory outside of the Oracle home.
- The tool is a Perl script that requires a Perl 5.6.1 interpreter, or later. You can obtain the interpreter from the Perl site, `http://www.perl.org`, or you can use the Perl interpreter that ships with Oracle Application Server:

  `$ORACLE_HOME``/perl/bin/perl`

- The tool requires that Java Runtime Environment (JRE) be installed. You can download JRE at

  `http://java.sun.com/j2se/desktopjava/jre/index.jsp`.

To install the OracleAS Backup and Recovery Tool:

1. Log in as the user who installed Oracle Application Server Standard Edition One.

2. Extract the contents of the `backup_restore.jar` file, which is located in the directory:

   `CD_ROM/stage/Components/oracle.iappserver.backup_restore/10.1.2.0.0/1/DataFiles/backup_restore.jar`.

   For example, to install it in the Oracle home, use the following commands:

   ```
   cd $ORACLE_HOME
   jar xvf CD_ROM/utilities/backup/backup_restore.jar
   ```

   If you install OracleAS Metadata Repository Creation Assistant, then the file `backup_restore.jar` is automatically extracted for you and put in `$ORACLE_HOME/utilities/backup` directory.

   Once you have obtained the `backup_restore.jar`, extract its contents into the Oracle home of the RepCA installation. For example:

   ```
   /> cd $ORACLE_HOME
   /> $ORACLE_HOME/> jar xvf utilities/backup/backup_restore.jar
   ```

3. Ensure that the `bkp_restore.pl` file has execute permission, for example:

   ```
   chmod 755 $ORACLE_HOME/backup_restore/bkp_restore.sh
   ```

Familiarize yourself with the OracleAS Backup and Recovery Tool files, which are described in the Table 14–2. Instructions for editing the configuration files are in subsequent steps.

14.3.2 Configuring the OracleAS Backup and Recovery Tool

To configure the OracleAS Backup and Recovery Tool:

> **Note:** You must follow these steps for each installation in your environment.

1. The tool creates log files and backup files, and you must create the following directories to hold these:

   a. **Log file directory**: (middle tier and infrastructure) This directory holds log files created by the tool. This directory should have several megabytes of free space.

   b. **Configuration file backup directory**: (middle tier and infrastructure) This directory holds configuration file backups. This directory should have several hundred megabytes of free space.

   c. **Database backup directory**: (Infrastructure only) This directory holds datafile and control files backups of the Metadata Repository, as well as archived redo logs. This directory should have several gigabytes of free space.

   Recommendations for creating these directories are as follows:

   - Create your backup directories on a file system on a separate disk and, if possible, a separate disk controller, than your Oracle Application Server Oracle home. This is the best method for recovering data in the event of a hardware failure.
   - Ensure your backup directories are writable by the user who installed Oracle Application Server.

For example, to create a log file directory, configuration file backup directory, and database backup directory on `/disk1`:

```
mkdir -p /disk1/backups/log_files
mkdir -p /disk1/backups/config_files
mkdir -p /disk1/backups/db_files
cd /disk1/backups
chmod 755 log_files config_files db_files
chown OracleAS_user log_files config_files db_files
```

2. Open `config.inp` and modify the parameters as described in Table 14–3. Notice that some of the instructions are different for middle-tier and infrastructure installations.

Table 14–3 Parameters in config.inp

Parameter	Value
`oracle_home`	Specify the full path of the Oracle home.
`log_path`	Specify the full path of the log file directory.
`config_files_list`	Do not insert a value for this; leave it as `config_files_list=DO_NOT_SET`. This parameter is updated with the appropriate list of configuration files for your installation when you run `bkp_restore.pl -m configure`.
`config_backup_path`	Specify the full path of the configuration file backup directory.
`install_type`	Do not insert a value for this; leave it as `install_type=DO_NOT_SET`. This parameter is updated with the appropriate value for your installation when you run the following script: `bkp_restore.pl -m configure`.
`dbid`	Do not insert a value for this; leave it as `dbid=DO_NOT_SET`. For OracleAS Portal installations, this value is updated when you run `bkp_restore.pl -m configure`. By default, the tool obtains the `dbid` from the Metadata Repository. Alternatively, you can supply a `dbid` in special cases involving migrating a Metadata Repository from one host to another, such as for disaster recovery. For J2EE and Web Services installation, this value does not change.

Table 14–3 (Cont.) Parameters in config.inp

Parameter	Value
pfile	**J2EE and Web Services Installation:** Leave this line commented out. **OracleAS Portal:** If required, then specify an alternative pfile to use when starting up the database. Otherwise, leave the line commented out and the default spfile is used: *$ORACLE_HOME*/dbs/spfileSID.ora Ensure that you leave the pfile entry commented out if you want to use the default because blank values are not allowed in this file. If the spfileorcl.ora file is not present at the default location, then the following file is used as pfile: *$ORACLE_HOME*/dbs/initSID.ora If you want to use a different pfile, then specify an alternative pfile name for starting up the database.
database_backup_path	**J2EE and Web Services Installation:** Do not insert a value for this; leave it as database_backup_path=VALUE_NOT_SET. **OracleAS Portal Installation:** Specify the full path of the database backup directory.

3. Set the ORACLE_HOME environment variable to the Oracle Application Server Oracle home.
4. If this is an infrastructure installation, then:
   a. Set the ORACLE_SID environment variable to the Metadata Repository SID. The default is orcl.
   b. Ensure the Metadata Repository is started.
5. Configure the tool by running it with the -m configure option. For example:

   ```
   ./bkp_restore.sh -m configure
   ```

   For RepCA installations, run the following after specifying the correct version of perl.exe:

   ```
   bkp_restore.pl -m configure
   ```

   This command updates parameters in config.inp and, in the case of infrastructure installations, creates customized .dat files, which are used to backup, restore, and recover the Metadata Repository.

14.3.3 Customizing the Tool for Your Configuration Files

OracleAS Backup and Recovery Tool backs up all of the Oracle Application Server configuration files that are necessary to reconstruct an Oracle Application Server installation.

The tool determines the configuration files that exist in the installation. Although it is not necessary to customize the tool, you can customize the tool by:

- Adding Files to a Backup

  You may want to add your own local configuration files or any other files you need to back up regularly, such as log files.

- Excluding Files from a Backup

  You may want to exclude files from being backed up.

Adding Files to a Backup

To add files, such as Oracle Application Server component specific log files to a backup, add entries to the `config_misc_files.inp` file as follows:

- To specify a particular file:

  `${OH}/directorypath/file`

- To specify an entire directory:

  `${OH}/directorypath/`

- To use wildcards:

  `${OH}/directorypath/*.html`

You can add as many entries as you like. The `config_misc_files.inp` file is always included in the `config_files_list` parameter in `config.inp`, so there is no need to edit `config.inp`.

Note that you do not need to specify a key file in `config_misc_files.inp`.

Excluding Files from a Backup

You can exclude files from a backup in either of the following ways:

- You can remove the file entry from its `config_component.inp` file.
- If you have a situation where a `config_component.inp` file specifies an entire directory to back up, and you want to exclude a specific file from that directory, then you can add an entry for that file to `config_exclude_files.inp`. The tool backs up the entire directory except for the file you specify. You cannot specify directories or use wildcards in `config_exclude_files.inp`. Only single file entries are allowed.

  Note that you do not need to specify a key file in `config_exclude_files.inp`.

14.3.4 OracleAS Backup and Recovery Tool Usage Summary

This section describes the usage of OracleAS Backup and Recovery Tool.

It contains the following topics:

- Section 14.3.4.1, "Prerequisites for Running the Tool"
- Section 14.3.4.2, "OracleAS Backup and Recovery Tool Syntax"
- Section 14.3.4.3, "Usage Examples"

14.3.4.1 Prerequisites for Running the Tool

Before running the OracleAS Backup and Recovery Tool:

- Log in as the user that installed Oracle Application Server Standard Edition One.
- Ensure the `ORACLE_HOME` environment variable is set.

- If you are performing a database backup, then ensure that the `ORACLE_SID` environment variable is set. The default is `orcl`.

14.3.4.2 OracleAS Backup and Recovery Tool Syntax

The syntax for the OracleAS Backup and Recovery Tool is:

```
bkp_restore.sh [-defsv] -m mode [args
```

It accepts the options described in the following table:

Item	Description
`-d`	Print a trace without executing
`-e`	Specify an environment file (default is config.inp)
`-f`	Force log file, database backup, and configuration file directories to be created if they are required by the current command and do not exist
`-n`	Suppress prompts so the tool can be run in batch mode
`-s`	Run in silent mode
`-v`	Run in verbose mode

Use the `-m` option to specify which mode to run. Some modes take arguments.

Table 14–4 describes the OracleAS Backup and Recovery Tool modes and their arguments. All modes and arguments are case-sensitive.

Table 14–4 Oracle Application Server Backup and Recovery Tool Modes and Arguments

Mode and Arguments	Description

`backup_cold`	Performs a complete cold backup of the Metadata Repository.
	■ Opens `config.inp` (or the alternative file specified with the `-e` option) and retrieves `log_path`.
	■ Shuts down the database, starts it in mounted mode, but does not open it.
	■ Performs a backup of the datafiles and control files using RMAN. The commands are in `backup_cold.dat`.
	■ Stores the backup in the directory specified in `backup_cold.dat`. (This is usually set to the `database_backup_path` in `config.inp`.)
	■ Stores a log file in `log_path`.
	■ Opens the database.
	For a DCM file-based Metadata Repository:
	■ Executes the `dcmctl exportrepository` command to perform a backup of the file-based repository.
	■ Stores the backup in the directory, specified by `config_backup_path` parameter in `config.inp`.
	If both a metadata repository and a file based repository coexist in an application server instance, then the `backup_cold` option backs both of them up as a set. This would be the case where a file based repository exists in an infrastructure install.
	To check whether a particular OracleAS instance hosts a file based repository or a database, use the following command:
	`$ORACLE_HOME/dcm/bin/dcmctl whichfarm`
	`Repository Type: Database (host) => Hosts a database repository`
	`Repository Type: Distributed File Based (host) => Hosts a file based repository`

`backup_cold_incr` `-l` *`incr_backup_level`*	Performs an incremental backup of the Metadata Repository. Works the same as `backup_cold`, except: ■ The `-l` option specifies the increment level (`0 - 4`). ■ Uses the `backup_cold_incr`*`level`*`.dat file` There are two types of incremental backups, cumulative and differential. The tool uses the default type, which is differential. For more information, refer to *Oracle Database Backup and Recovery Basics* in the Oracle Database 10*g* Documentation Library.

Table 14–4 (Cont.) Oracle Application Server Backup and Recovery Tool Modes and Arguments

Mode and Arguments	Description

`backup_config`	Performs a full configuration backup. The backup includes the configurations for DCM managed components and non-DCM managed components.
	■ Opens `config.inp` (or the alternative file specified with the `-e` option) and retrieves `config_files_list`, `config_backup_path`, and `log_path`.
	■ Creates an archive for configuration of DCM managed components:
	1. `dcmctl createarchive -archive` *`archive name`*
	2. `dcmctl exportarchive -archive` *`archive_name`* `-f` *`unique name in config_backup_path`*
	3. `dcmctl removearchive -archive` *`archive name`*
	■ Attempts to open each file in `config_files_list`. Exits with an error if it cannot open all of the files.
	■ For each file in `config_files_list`, checks if the first entry (the key file) exists. If the key file does not exist, then it is treated as a fatal error. Otherwise, backs up all files in the list. If any other files do not exist, then logs an error and continues.
	■ Excludes files listed in `config_exclude_files.inp`.
	■ When finished, stores the backup in `config_backup_path/config_bkp_`*`timestamp`*`.jar` and `config_backup_path/dcm_archive_`*`timestamp`*`.jar` for DCM-managed components.
	■ If any errors are encountered, then creates a log file in *`log_path`*`/config_bkp_`*`timestamp`*.
	Process Prerequisites:
	If the DCM repository type is a database, then the following processes should be up:
	■ The OID process must to be up. The command `opmnctl startproc ias-component=OID` can be used to start this process. The OID process exists on infrastructure (IM + MR) or IM installation. Before starting the OID process, the OPMN process must be up. The command `opmnctl start` can be used to bring it up.
	■ The database needs to be up and running.
	■ The listener process must be up.
	To check whether a particular OracleAS instance hosts a file based repository or a database repository, use the following command:
	`$ORACLE_HOME``/dcm/bin/dcmctl whichfarm`
	`Repository Type: Database (host) => Hosts a database repository`
	`Repository Type: Distributed File Based (host) => Hosts a file based repository`

`backup_config_incr`	Performs an incremental configuration file backup. Works the same as `backup_config`, except: ■ Backs up all configuration files that have changed since the last full or incremental configuration file backup. For process prerequisites, refer to the `backup_config` option.

Table 14–4 (Cont.) Oracle Application Server Backup and Recovery Tool Modes and Arguments

Mode and Arguments	Description

`backup_online`	Performs an online backup of the Metadata Repository. If you are running this command on an infrastructure, then ensure that the Metadata Repository is up before running the following command.
	■ Opens `config.inp` (or the alternative file specified with the `-e` option) and retrieves `log_path`.
	■ Assumes the database is open.
	■ Performs a backup of the datafiles and control files using RMAN. The commands are in `backup_online.dat`.
	■ Stores the backup in the directory specified in `backup_online.dat`. (This is usually set to the `database_backup_path` in `config.inp`.)
	■ Stores a log file in `log_path`.
	■ Leaves the database open.
	For a DCM file-based Metadata Repository:
	■ Executes the `dcmctl exportrepository` command to perform a backup of the file-based repository.
	■ Stores the backup in the directory, specified by `config_backup_path` parameter in the `config.inp` file.
	If both a metadata repository and a file based repository coexist in an application server instance, then the `backup_cold` option backs both of them up as a set. This would be the case where a file based repository exists in an infrastructure installation.
	To check whether a particular OracleAS instance hosts a file based repository or a database, use the following command:
	`$ORACLE_HOME/dcm/bin/dcmctl whichfarm`
	`Repository Type: Database (host) => Hosts a database repository`
	`Repository Type: Distributed File Based (host) => Hosts a file based repository`

`backup_online_incr` `-l incr_backup_level`	Performs an incremental online backup of the Metadata Repository. Works the same as `backup_online`, except: ■ The `-l` option specifies the increment level (`0 - 4`). ■ Uses the `backup_online_incr`*`level`*`.dat file` There are two types of incremental backups, cumulative and differential. The tool uses the default type, which is differential. For more information, refer to *Oracle Database Backup and Recovery Basics* in the Oracle Database 10*g* Documentation Library.
`configure` `[-i dbid]`	Configures the tool. When using this on an infrastructure, ensure the Metadata Repository is up before you run this command. ■ Updates `config_files_list` and `install_type` in `config.inp` with the appropriate information for your installation. ■ If using this on an infrastructure, then update the configuration file with the database id (`dbid`) and creates customized `*.dat` files from the database backup `*.tmpl` files. By default, it queries the Metadata Repository for the `dbid`. If you use the `-i` option, then you can supply the `dbid` (this is used for migrating the Metadata Repository from one node to another, such as for Disaster Recovery).

Table 14–4 (Cont.) Oracle Application Server Backup and Recovery Tool Modes and Arguments

Mode and Arguments	Description
`configure_nodb`	Same as `configure` but does not perform the infrastructure configuration. Note: You should use `configure` for all middle-tier and infrastructure installations. `configure_nodb` applies to disaster recovery strategies described in *Oracle Application Server High Availability Guide*.
`help`	Prints a usage message.
`list_changed_config`	Lists any configuration files that have changed since the last full or incremental backup. This command checks the modification date of each file. It doesn not check the actual contents of the file. It writes the list of files to a log file and prints the name of the log file.

Table 14–4 (Cont.) Oracle Application Server Backup and Recovery Tool Modes and Arguments

Mode and Arguments	Description
`restore_config`	Restores configuration files.
`[-t config_bkp_`*`timestamp`*`]`	■ Opens `config.inp` (or the alternative file specified with the `-e` option) and retrieves `config_backup_path` and `log_path`.

`[-n]`	■ If the `-t` option is supplied and it is the timestamp from a full backup, then it restores that full backup.
	■ If the `-t` option is supplied and it is the timestamp from an incremental backup, then it restores the full backup and all incremental backups up to and including the specified incremental backup.
	■ If the `-t` option is not supplied, then it displays a list of configuration file backups in `config_backup_path` and exits. You can then rerun the command and supply one of these files with the `-t` option.
	■ Restores all files from the configuration file backup to the Oracle home, preserving owner, group, permissions, and timestamp.
	■ If any errors are encountered, then it creates a log file in *`log_path`*`/config_rst_`*`timestamp`*.
	■ Restore configuration for DCM managed components
	`dcmctl importarchive -f <`*`location in config_backup_path that contains dcm archive`*`>`
	`dcmctl applyarchiveto -archive <`*`archive name`*`> [-cluster <`*`cluster_name`*`>]`
	`dcmctl removearchive -archive <`*`archive name`*
	
	The `-n` option suppresses prompts so you can use the tool in batch mode.
	For the process prerequisites, refer to the `backup_config` option.
	Do not run `restore_config` on multiple nodes in a J2EE cluster in parallel. Doing so causes `restore_config` failures. Run `restore_config` on one node at a time.

`restore_db`	This command is deprecated. Use `restore_repos` instead.

Table 14–4 (Cont.) Oracle Application Server Backup and Recovery Tool Modes and Arguments

Mode and Arguments	Description

`restore_repos`
`[-u` *`timestamp`*`]`
`[-c] [-n]`
	Restores and recovers the OracleAS Metadata Repository and DCM file based repository from the available cold and online backups. The command performs the following operations:
	■ Opens `config.inp` (or the alternative file specified with the `-e` option) and retrieves `log_path`.
	■ Restores the control files and datafiles, and performs recovery using RMAN. The commands are in `restore_repos.dat`.
	■ Stores a log file in `log_path`.
	■ Leaves the database open.
	By default, this command restores and recovers the database to its most recent state. You can use the `-u` option (to restore and recover the database to its state at a particular point in time. The format for the timestamp is MM/DD/YYYY_HR24:MIN:SEC For example:
	On UNIX:
	`bkp_restore.sh -m restore_repos -u 07/26/2003_13:45:06`
	By default, this command does not restore the control file. You can use the `-c` option to restore the control file.
	If you use the `-u` or `-c` option, then ensure to do a full backup right away because all past backups are invalidated.
	The `-n` option suppresses prompts so you can use the tool in batch mode.
	Refer to Section 20.2.4, "Restoring and Recovering the Metadata Repository" in *Oracle Application Server Administrator's Guide* for more information.
	This command performs the following operations to restore a file-based repository:
	■ Check for timestamp input. If not provided, then list the available backup timestamps corresponding to the file-based repository.
	■ Run `dcmctl importrepository -file` *`location in config_backup_path that stores the repository backup>`*
	On UNIX:
	`bkp_restore.sh -m restore_repos -t 2004-05-10_18-33-12`
	If both the metadata repository and a file based repository coexist in an application server instance, then the `restore_repos` option restores both of them as a set. This would be the case where DCM uses a file based repository in an infrastructure installation.

14.3.4.3 Usage Examples

This section contains usage examples for the OracleAS Backup and Recovery Tool.

- Configure the tool using the default `config.inp` file:

  ```
  bkp_restore.sh -m configure
  ```

- Configure the tool using a configuration file called `myconfig.inp`:

  ```
  bkp_restore.sh -m configure -e myconfig.inp
  ```

- Perform a full configuration file backup:

  ```
  bkp_restore.sh -v -m backup_config
  ```

- Perform a full configuration file backup using an environment file called `myconfig.inp`:

  ```
  bkp_restore.sh -v -m backup_config -e myconfig.inp
  ```

- Perform an incremental configuration file backup:

  ```
  bkp_restore.sh -v -m backup_config_incr
  ```

- Restore configuration files.

  ```
  bkp_restore.sh -m restore_config -t 2004-09-21_06-12-45
  ```

- Perform a full cold backup of the Metadata Repository:

  ```
  bkp_restore.sh -m backup_cold
  ```

- Perform a level 2 incremental cold backup of the Metadata Repository:

  ```
  bkp_restore.sh -m backup_cold_incr -l 2
  ```

- Perform a full online backup of the Metadata Repository:

  ```
  bkp_restore.sh -m backup_online
  ```

- Perform a level 0 incremental online backup of the Metadata Repository:

  ```
  bkp_restore.sh -m backup_online_incr -l 0
  ```

- Restore the Metadata Repository to its most recent state:

  ```
  bkp_restore.sh -m restore_repos
  ```

- Restore the Metadata Repository to its state at a particular time:

  ```
  bkp_restore.sh -m restore_repos -u 07/26/2003_13:45:06
  ```

- Flashback the Metadata Repository to its state at a particular time:

  ```
  bkp_restore.sh -m flashback_repos -u 07/26/2003_13:45:06
  ```

- Restores the file-based repository to its state at a particular time:

  ```
  bkp_restore.sh -m restore_repos -t  2004-05-10_18-33-12
  ```

- Perform a cold backup of an Oracle Application Server Standard Edition One instance:

  ```
  bkp_restore.sh -m backup_instance_cold
  ```

- Perform an incremental cold backup of an Oracle Application Server Standard Edition One instance:

  ```
  bkp_restore.sh -m backup_instance_cold_incr -l <level>
  ```

- Perform an online backup of an Oracle Application Server Standard Edition One instance:

  ```
  bkp_restore.sh -m backup_instance_online
  ```

- Perform an online incremental backup of an Oracle Application Server Standard Edition One instance:

  ```
  bkp_restore.sh -m backup_instance_online_incr -l <level>
  ```

- Restore an Oracle Application Server Standard Edition One instance to its state at a particular time:

```
bkp_restore.sh -m restore_instance -t 07/26/2003_13:45:06 -c
```

14.4 Backup Procedures

This section describes the backup procedures in detail. There is some data interdependency between the configuration files in your Oracle Application Server middle-tier installations, the Distributed Management Repository, the Identity Management metadata, and the Oracle Application Server Metadata Repository in the infrastructure. To maintain configuration data consistency, you should take a backup of each of your Oracle Application Server instances (middle-tier and infrastructure) at the same time. While taking a backup of one instance, ensure that no configuration changes are made in any of the other instances.

It contains the following topics:

14.4.1 Enabling Block Change Tracking

To increase performance on incremental database backups, enable block change tracking using the following command:

```
alter database enable block change tracking using file file_name;
```

If the `db_create_file_dest` parameter is set in the `spfile` or `init.ora` file of the database, then the following command can be used:

```
alter database enable block change tracking;
```

Once you enable block change tracking, incremental database backup will use block change tracking.

> **See Also:** *Backup and Recovery Basics* in the *Oracle Database 10g Release 1 (10.1) Documentation Library* for information about block change tracking

14.4.2 Enabling ARCHIVELOG Mode

By default, the Metadata Repository does not have `ARCHIVELOG` mode enabled. You must enable `ARCHIVELOG` mode, which enables the archiving of online redo logs. This enables to perform the recovery strategies in this book.

> **See Also:** *Oracle Database Administrator's Guide 10g Release 1 (10.1.2)* for more information about the parameters in this section, and setting up archive logging in general

To enable ARCHIVELOG mode:

1. Run the following SQL query to check if the flashback_recovery_area is setup:

   ```
   SQL> show parameters db_recovery
   ```

   If the flashback_recovery_area is setup, the query returns:

   ```
   Name                           Type         Value
   db_recovery_file_dest          string       /private2/AS1012Installs/AS1012Infra/
                                               flash_recovery_area
   db_recovery_file_dest_size     big integer  2G
   ```

   If the flashback_recovery_area is setup, then the destination specified by the db_recovery_file_dest parameter is used as the archivelog destination, and you do not need to specify the destination directory for your archives in the following step.

2. Specify the destination directory for your archives by including the initialization parameter LOG_ARCHIVE_DEST_n in the initialization file. If spfile is being used, then the following command can be issued:

   ```
   alter system set log_archive_dest_n="LOCATION= backup directory" scope=spfile;
   ```

   In the log_archive_dest_n parameter, n equals a number of 1 to 10.

   If pfile is used, then the following initialization file needs to be edited:

   ```
   INFRA_ORACLE_HOME/database/initSID.ora
   ```

   Change the LOG_ARCHIVE_DEST_n parameter to:

   ```
   LOG_ARCHIVE_DEST_n = '/disk1/oraHome/archive'
   ```

   (Optional) The default file name format for archive logs is:

   ```
   %t_%s.dbf
   ```

   You can change the LOG_ARCHIVE_FORMAT. If you need to use a different format, then include the initialization parameter LOG_ARCHIVE_FORMAT in the initialization file, for example:

   ```
   LOG_ARCHIVE_FORMAT = arch_%t_%s_%r.arc
   ```

   In the preceding example, t represents the thread number, r represents the reset log ID, and s represents the log sequence number.

3. Ensure the ORACLE_HOME and ORACLE_SID (the default is orcl) environment variables are properly set.

4. Ensure nobody is using the database.

5. Perform a clean, normal shutdown of the database instance.

   ```
   INFRA_ORACLE_HOME/bin/sqlplus /nolog
   SQL> connect sys/password as sysdba
   SQL> shutdown
   ```

6. Start up the instance and mount, but do not open the database.

   ```
   SQL> startup mount;
   ```

7. Enable database ARCHIVELOG mode.

```
SQL> alter database archivelog;
```

8. Shut down and restart the database instance.

```
SQL> shutdown
SQL> startup
```

9. Verify the database is now in `ARCHIVELOG` mode.

   Execute the following command and verify that Database log mode is Archive Mode and Automatic archival is Enabled.

```
SQL> archive log list;
Database log mode              Archive Mode
Automatic archival             Enabled
Archive destination            /disk1/oraHome/archive
Oldest on-line log sequence    997
Next log sequence to archive   999
Current log sequence           999
```

14.4.3 Creating a Record of Your Oracle Application Server Standard Edition One Configuration

In the event you need to restore and recover your Oracle Application Server Standard Edition One environment, it is important to have all the necessary information at your disposal. This is especially true in the event of a hardware loss that requires you to reconstruct all or part of your Oracle Application Server Standard Edition One environment on a new disk or host.

You should maintain an up-to-date record of your Oracle Application Server Standard Edition One environment that includes the information listed in this section. You should keep this information both in hardcopy and electronic form. The electronic form should be stored on a host or e-mail system that is completely separate from your Oracle Application Server Standard Edition One environment.

Your Oracle Application Server Standard Edition One hardware and software configuration record should include:

- The following information for each host in your environment:
  - Host name
  - Virtual host name (if any)
  - Domain name
  - IP address
  - Hardware platform
  - Operating system release level and patch information
- The following information for each Oracle Application Server installation in your environment:
  - Installation type (For example: Infrastructure or J2EE and Web Cache)
  - Host on which the installation resides
  - User name, userid number, group name, groupid number, environment profile, and type of shell for the operating system user that owns the Oracle home (`/etc/passwd` and `/etc/group` entries)
  - Directory structure, mount points, and full path for *`ORACLE_HOME`*

  - Amount of disk space used by the installation
  - Port numbers used by the installation

> **Note:** The *$ORACLE_HOME*/install/portlist.ini file contains the port numbers assigned during installation. However, this file is not updated if you change port numbers after installation, so you need to keep track of those changes manually.

- The following information for the Metadata Repository:
  - Database version and patch level
  - Base language
  - Character set
  - Global database name
  - SID

14.4.4 Performing an Instance Backup

This section describes how to perform various Oracle Application Server Standard Edition One instance backups. An instance level backup backs up all the required components in an application server instance: configuration files, repositories (database or file-based) for the infrastructure and mid-tier.

You can use the Application Server Control Console to manage backup and recovery of an application server instance. Using the Control Console, you can perform all of the following commands instead of entering commands on the command line. For instructions on how to use the Application Server Control Console to backup an application server instance, refer to the online help.

Performing a Cold Backup of an Oracle Application Server Standard Edition One Instance

Use the following command to perform a cold backup of an Oracle Application Server Standard Edition One instance:

```
bkp_restore.sh -m backup_instance_cold
```

Performing an Incremental Cold Backup of an Oracle Application Server Standard Edition One Instance

Use the following command to perform an incremental cold backup of an Oracle Application Server Standard Edition One instance:

```
bkp_restore.sh -m backup_instance_cold_incr -l <level>
```

Performing an Online Backup of an Oracle Application Server Standard Edition One Instance

Use the following command to perform an online backup of an Oracle Application Server Standard Edition One instance:

```
bkp_restore.sh -m backup_instance_online
```

Performing an Incremental Online Backup of an Oracle Application Server Standard Edition One Instance

Use the following command to perform an incremental online backup of an Oracle Application Server Standard Edition One instance:

```
bkp_restore.sh -m backup_instance_online_incr -l <level>
```

14.4.5 Performing a Complete Environment Backup

This section describes how to perform a complete Oracle Application Server environment backup. A complete Oracle Application Server environment backup includes:

- Identity Management metadata
- Oracle Application Server Metadata Repository

Both can be stored in the same database or different databases.

There are two modes for backing up the databases: cold backup and online backup.

- Before performing a cold backup on an open database, the Backup and Recovery Tool performs a clean shutdown and rolls back any ongoing changes to the database. As a result, a cold backup is a copy of the database at a consistent state. A consistent backup can be restored without recovery.
- An online backup does not require shutting down the repository database. There is no need to bring down your business applications, providing a higher degree of continuous availability. It is a snapshot or point-in-time image of the database. When you use the OracleAS Backup and Recovery Tool to restore an online backup, any ongoing changes to the database occurring during the time of the online backup is recovered by applying the redo logs.

Refer to the *Oracle Database Backup and Recovery Advanced User's Guide*, Section 2, "RMAN Backup Types" for more information.

This section contains the following steps:

Task 1: Shut Down Your Oracle Application Server Standard Edition One Environment

If this is the first backup after installing the Oracle Application Server Standard Edition One, then you should take the following steps to shut down the Oracle Application Server Standard Edition One Environment and perform a cold backup of the database where the Identity Management metadata and the Oracle Application Server Metadata Repository are stored. If you are performing a complete Oracle Application Server environment backup after a major change, then like a rolling-software upgrade, you can perform either a cold backup or an online backup of the

database. If you choose the online backup so that your business applications remain up and running, then you can skip this task and proceed with Task 2 and Task 3.

1. Stop the middle-tier instances.

   Refer to Section 9.3.2 for instructions.

2. Stop the infrastructure.

   Refer to Section 9.2.2 for instructions.

Task 2: Back Up the Middle Tier

To back up the middle-tier:

1. Back up the middle-tier Oracle home.

   Perform a complete backup of all files in the middle-tier Oracle home using your preferred operating system command, such as `tar` or `cpio`.

   Ensure to perform this backup as `root` because some of the files in the Oracle home are owned by `root`. It is important to perform the backup so that file owners, groups, permissions, and timestamps are preserved.

   For example:

   ```
   cd MID_TIER_ORACLE_HOME
   tar cvf full_path_of_backup_file
   ```

2. Back up the middle-tier configuration files.

   If the DCM repository type is a database, then the following processes must be up:

   - The OPMN process must be up. The `opmnctl start` command can be used to bring it up.
   - The OID process must to be up. The command `opmnctl startproc ias-component=OID` can be used to start this process. The OID process exists on infrastructure (IM + MR) or IM installation.
   - The database needs to be up and running.
   - The listener process must be up.

   Perform a backup of all configuration files in the middle-tier Oracle home. You can perform this step using your own procedure or the OracleAS Backup and Recovery Tool. Following is an example of how to do this using the OracleAS Backup and Recovery Tool:

   ```
   bkp_restore.sh -m backup_config
   ```

   > **See Also:** Chapter 18, "Oracle Application Server Backup and Recovery Tool" in *Oracle Application Server Administrator's Guide* for more information

   The reason for doing a configuration file backup immediately after backing up the entire Oracle home is that it provides a snapshot of your initial configuration files, in case you start to reconfigure your system and then you want to restore the configuration files to their original state.

   The configuration files are stored in jar files located in the directory specified by the `config_backup_path` parameter in the config.inp file. Two jar files are created, one for DCM-managed components and one for all the other components.

The jar files are kept in sync by the timestamp incorporated in each jar file name. For example:

```
config_bkp_2005-05-10_18-33-15.jar
dcm_archive_2005-05-10_18-33-15.jar
```

Task 3: Back Up the Infrastructure

1. Perform a cold database backup of the Metadata Repository.

   You can perform this step using your own procedure or the OracleAS Backup and Recovery Tool. Following is an example of how to do this using the OracleAS Backup and Recovery Tool:

   ```
   bkp_restore.sh -m backup_cold
   or
   bkp_restore.sh -m backup_online
   ```

   Note that the tool leaves the database running when finished. Shut down the database before continuing with the rest of these steps.

   > **See Also:** Chapter 18, "Oracle Application Server Backup and Recovery Tool" in *Oracle Application Server Administrator's Guide* for more information

2. Back up the infrastructure Oracle home.

   > **Note:** If your infrastructure is split and has Identity Management in one Oracle home, and the Metadata Repository in another Oracle home, then perform this step on both Oracle homes. If your Identity Management is split between Oracle Internet Directory in one Oracle home and Single Sign-On, Delegated Administration Service, and so on in another Oracle home, then you also should perform this step on each of those Oracle homes.

   Perform a complete backup of all files in the infrastructure Oracle home using your preferred operating system command, such as `tar` or `cpio`.

   Ensure that you perform this backup as `root` because some of the files in the Oracle home are owned by root. It is important to perform the backup so that file owners, groups, permissions, and timestamps are preserved.

   For example:

   ```
   cd INFRA_ORACLE_HOME
   tar cvf full_path_of_backup_file
   ```

3. Back up the infrastructure configuration files.

   > **Note:** If your infrastructure is split and has Identity Management in one Oracle home, and the Metadata Repository in another Oracle home, then perform this step on both Oracle homes. If your Identity Management is split between Oracle Internet Directory in one Oracle home and Single Sign-On, Delegated Administration Service, and so on in another Oracle home, then you also should perform this step on each of those Oracle homes.

If the DCM repository type is a database, then the following processes must be up:

- The OPMN process must be up. The command `opmnctl start` can be used to bring it up.
- The OID process must to be up. The command `opmnctl startproc ias-component=OID` can be used to start this process. The OID process exists on infrastructure (IM + MR) or IM installation.
- The database needs to be up and running.
- The listener process must be up.

Perform a backup of all configuration files in the infrastructure Oracle home. You can perform this step using your own procedure or the OracleAS Backup and Recovery Tool. Following is an example of how to do this using the OracleAS Backup and Recovery Tool:

```
bkp_restore.sh -m backup_config
```

> **See Also:** Chapter 18, "Oracle Application Server Backup and Recovery Tool" in *Oracle Application Server Administrator's Guide* for more information

The reason for doing a configuration file backup immediately after backing up the entire Oracle home is that it provides a snapshot of your initial configuration files. You can use this if you start to reconfigure your system and then want to restore the configuration files to their original state.

Task 4: Back Up the Oracle System Files

On each host in your Oracle Application Server environment:

1. Make a backup of your Oracle system files using your preferred operating system command, such as `tar` or `cpio`.

   Consult your operating system-specific documentation to determine which directory contains your Oracle system files. For example, on UNIX systems, they may be in the `/etc` directory.

2. If the `oraInventory` directory resides outside the Oracle Application Server Oracle home, then make a backup of it using your preferred operating system command, such as `tar` or `cpio`.

   If you are not sure of the location of your `oraInventory` directory, then you can find it in the `oraInst.loc` file. For example, on UNIX systems, look in `/etc/oraInst.loc`.

Task 5: Start Your Oracle Application Server Environment

1. Start the infrastructure.

   Refer to Section 9.2.1 for instructions.

2. Start the middle-tier instances.

   Refer to Section 9.3.1 for instructions.

For More Information...

For more information about any of these tasks, refer to:

- Section 14.2, "Backup and Recovery Using Application Server Control"

- Section 14.3, "Backup and Recovery Using OracleAS Backup and Recovery Tool"
- Chapter 18, "Oracle Application Server Backup and Recovery Tool" in *Oracle Application Server Administrator's Guide*

14.4.6 Performing a Configuration and Metadata Backup

Once you have performed a complete Oracle Application Server environment backup, you should perform subsequent configuration and metadata backups after every administrative change, or, if this is not possible, on a regular basis.

> **See Also:** Appendix G, "Examples of Administrative Changes" in *Oracle Application Server Administrator's Guide* to learn more about administrative changes

These backups can be performed online (while Oracle Application Server is up and running), and should include the following:

- Configuration Files
- Identity Management metadata
- OracleAS Metadata Repository

This section describes how to perform a configuration and metadata backup of your Oracle Application Server environment. It contains the following steps:

- Task 1: Back Up the Infrastructure
- Task 2: Back Up the Middle-Tier
- For More Information...

Task 1: Back Up the Infrastructure

1. Perform a full or incremental backup of the configuration files.

   You can perform this step using your own procedure or the OracleAS Backup and Recovery Tool. For example, to do this using the tool:

   - On UNIX systems:

```
bkp_restore.sh -m backup_config
or
bkp_restore.sh -m backup_config_incr
```

   > **See Also:** Chapter 18, "Oracle Application Server Backup and Recovery Tool" in *Oracle Application Server Administrator's Guide* for more information

2. Perform a full or incremental database backup of the OracleAS Metadata Repository.

   You can perform this step using your own procedure or the OracleAS Backup and Recovery Tool. Following is an example of how to do this using the OracleAS Backup and Recovery Tool:

```
bkp_restore.sh -m backup_online
or
bkp_restore.sh -m backup_online_incr -l 2
```

> **See Also:** Chapter 18, "Oracle Application Server Backup and Recovery Tool" in *Oracle Application Server Administrator's Guide* for more information

Task 2: Back Up the Middle-Tier

Perform a full or incremental backup of the configuration files in the middle-tier. You can perform this step using your own procedure, Application Server Control Console, or the OracleAS Backup and Recovery Tool. Following is an example of how to do this using the OracleAS Backup and Recovery Tool:

For a full backup:

```
bkp_restore.sh -m backup_config
```

or

For an incremental backup:

```
bkp_restore.sh -m backup_config_incr
```

> **See Also:** Chapter 18, "Oracle Application Server Backup and Recovery Tool" in *Oracle Application Server Administrator's Guide* for more information

For More Information...

For more information about either task, see:

- Section 14.2, "Backup and Recovery Using Application Server Control"
- Section 14.3, "Backup and Recovery Using OracleAS Backup and Recovery Tool"
- Chapter 18, "Oracle Application Server Backup and Recovery Tool" in *Oracle Application Server Administrator's Guide*

Part III

Installing OracleAS Metadata Repository Creation Assistant

This part contains information about installing Oracle Application Server Metadata Repository Creation Assistant (OracleAS Metadata Repository Creation Assistant). It contains the following chapters:

15

OracleAS Metadata Repository Overview and Requirements

You can install OracleAS Metadata Repository in an existing database by using Oracle Application Server Metadata Repository Creation Assistant instead of using the installer to create a new database for OracleAS Metadata Repository. This chapter provides an overview of OracleAS Metadata Repository Creation Assistant and outlines the system requirements necessary for using this tool.

Notes:

- This guide does not cover upgrading an existing OracleAS Metadata Repository. For upgrade instructions, refer to the *Oracle Application Server Upgrade and Compatibility Guide*.
- You cannot load the OracleAS Metadata Repository into a database that contains an Oracle E-Business Suite instance. This is currently not supported.

This chapter contains the following sections:

15.1 OracleAS Metadata Repository Creation Assistant Overview

You can run OracleAS Metadata Repository Creation Assistant to perform the following operations:

- Load the OracleAS Metadata Repository in an existing database
- Register the OracleAS Metadata Repository with Oracle Internet Directory

- Remove OracleAS Metadata Repository schemas and tablespaces from a database
- Deregister the OracleAS Metadata Repository from Oracle Internet Directory

This section contains the following topics:

15.1.1 Where is the OracleAS Metadata Repository Creation Assistant?

Oracle Application Server Metadata Repository Creation Assistant is available on a separate CD-ROM shipped with the product.

In order to convert your existing database in an OracleAS Metadata Repository, you must use the Oracle Application Server Metadata Repository Creation Assistant tool on this CD-ROM.

15.1.2 Support for Different Database Storage Types

OracleAS Metadata Repository Creation Assistant can load the OracleAS Metadata Repository in a single node database on the following storage management options:

- Data files created as regular files on the operating system
- Oracle-managed files
- Raw devices

15.1.3 Support for Local and Remote Databases

When you run OracleAS Metadata Repository Creation Assistant, you need to specify the target database, which is the database on which you want to perform an operation (such as loading, registering, removing, or deregistering the OracleAS Metadata Repository). The database can be running on the same computer as OracleAS Metadata Repository Creation Assistant (local database), or on a different computer (remote database).

For remote databases, the operating system of the computer running the database can be different from the operating system of the computer running OracleAS Metadata Repository Creation Assistant. For example, you can run OracleAS Metadata Repository Creation Assistant on a Windows computer to load the OracleAS Metadata Repository on a database running on a Linux computer.

15.2 Steps for Running OracleAS Metadata Repository Creation Assistant

Before you can run OracleAS Metadata Repository Creation Assistant, you have to install it first.

1. Install OracleAS Metadata Repository Creation Assistant.

   You have to run the installer from the OracleAS Metadata Repository Creation Assistant CD-ROM. If you are using the Oracle Application Server DVD, then the installer is in the `repca` directory.

   During the installation, you specify the directory where you want to install OracleAS Metadata Repository Creation Assistant.

2. Run OracleAS Metadata Repository Creation Assistant from the installed directory.

15.3 Requirements for the Computer Running OracleAS Metadata Repository Creation Assistant

Table 15–1 lists the requirements for the computer where you run OracleAS Metadata Repository Creation Assistant.

Table 15–1 Requirements for the Computer Running OracleAS Metadata Repository Creation Assistant

Item	Requirement
Operating system	HP-UX 11i (11.11) PA-RISC HP-UX 11i (11.23) PA-RISC Red Hat Enterprise Linux AS/ES 2.1 Red Hat Enterprise Linux AS/ES 3.0 SUSE Linux Enterprise Server 8 SUSE Linux Enterprise Server 9 For the most current list of supported operating systems, check the Oracle*MetaLink* site (`http://metalink.oracle.com`).
Disk space	For installing OracleAS Metadata Repository Creation Assistant, you need at least 600 MB. **Note:** Each time you run OracleAS Metadata Repository Creation Assistant to perform the loading operation, you need approximately 10 MB of disk space for log files. For disk space required for the database, refer to Section 15.5.5, "Disk Space Needed for SYSTEM and UNDO Tablespaces" and Section 15.5.6, "Disk Space Needed for OracleAS Metadata Repository Tablespaces".
Memory	512 MB
Virtual memory	1535 MB
Display	256 colors

15.4 Installing OracleAS Metadata Repository Creation Assistant

To install OracleAS Metadata Repository Creation Assistant, follow the instructions summarized in Table 15–2:

Table 15–2 Installing OracleAS Metadata Repository Creation Assistant

	Screen	Action
1	None	Insert the OracleAS Metadata Repository Creation Assistant CD-ROM or the Oracle Application Server DVD. Note: If your computer does not mount CD-ROMs or DVD automatically, then you need to set the mount point manually. Start the installer. CD-ROM: Run `runInstaller` to start the installer. DVD: Navigate to the `repca` directory and run `runInstaller` to start the installer.
2	Welcome	None. Click **Next**.

Table 15–2 (Cont.) Installing OracleAS Metadata Repository Creation Assistant

	Screen	Action
3	Specify File Locations	In the Name field, enter a name for this OracleAS Metadata Repository Creation Assistant installation. The name of the Oracle home directory must be 128 characters or fewer, and can contain only alphanumeric characters and the underscore character. Example: `repca10_1_2`.
4	Launch Repository Creation Assistant	Select "Yes" if you want to run OracleAS Metadata Repository Creation Assistant immediately after installation. Otherwise, select "No." In either case, you can always run OracleAS Metadata Repository Creation Assistant anytime after installation.
5	Summary	Verify that the installation parameters shown on the screen are correct, then click "Install" to start the installation.
6	Install	None. This screen shows the progress of the installation.
7	Configuration Assistants	None, unless you want to stop the installation of a particular configuration assistant.
8	End of Installation	None. This screen tells you whether or not your installation was successful, and provides some information about how to run OracleAS Metadata Repository Creation Assistant.

15.5 Requirements for the Database

The database where you want to install the OracleAS Metadata Repository must meet requirements in the areas listed in Table 15–3.

> **Tip:** Run the prerequisite check tool (refer to Section 15.5.1, "Running the Prerequisite Check Tool") before running OracleAS Metadata Repository Creation Assistant. This tool checks many of the database requirements for you. Although OracleAS Metadata Repository Creation Assistant also checks the requirements for you, the prerequisite check tool is easier to use because it checks the requirements regardless of whether the requirement is met or not. After running the prerequisite check tool, you can set up the environment to meet the installation requirements, instead of going through the cycle of working on the requirement, then rerunning OracleAS Metadata Repository Creation Assistant each time a requirement is not met.
>
> Because you may need to restart the database to comply with a requirements, it is advisable to run the prerequisite check tool, and then run OracleAS Metadata Repository Creation Assistant so that OracleAS Metadata Repository installation is successful in the first attempt.
>
> Table 15–3 lists the items checked by the prerequisite check tool.

Table 15–3 Database Requirements

Item	Checked for you?
Supported Database Versions	Yes
Notes for Standard Edition Databases	No
Swap Space Requirement	No

Table 15–3 (Cont.) Database Requirements

Item	Checked for you?
Disk Space Needed for SYSTEM and UNDO Tablespaces	Checked for you if these tablespaces are not set to autoextend.
Disk Space Needed for OracleAS Metadata Repository Tablespaces	No
Initialization Parameters	Some are not checked.
Database Options	Yes
PL/SQL Packages	Yes
DBMS_LDAP Package	Yes
Knowledge Base Required (Oracle Database 10g Only)	Yes
Password File Authentication	No
Schemas and Tablespaces	Yes
Registration with Oracle Internet Directory	No

15.5.1 Running the Prerequisite Check Tool

OracleAS Metadata Repository Creation Assistant comes with a prerequisite check tool, located in the `$ORACLE_HOME/repca/prereq` directory, where `ORACLE_HOME` is where you installed OracleAS Metadata Repository Creation Assistant. This tool checks most of the database requirements for you. Table 15–3 lists the items checked by the tool.

You should run this tool before running OracleAS Metadata Repository Creation Assistant.

> **Tip:** You can run this tool several times, until your database meets all the requirements.

Usage:

```
DBPrereqChecker.sh -DBHOST dbhost -DBPORT dbport -DBNAME dbname
 -SYSPWD syspassword [-LOGDIR logdir] [-HELP]
```

Table 15–4 Parameters for DBPrereqChecker

Parameter	Description
`-DBHOST` *dbhost*	Specifies the name of the computer running the database.
`-DBPORT` *dbport*	Specifies the port on which the database listener is listening.
`-DBNAME` *dbname*	Specifies the service name of the database.
`-SYSPWD` *syspassword*	Specifies the password of the `SYS` user.
`-LOGDIR` *logdir*	Specifies the directory where you want the log file to be written. Ensure that you have write permission for the directory. The name of the log file is `RepcaPrerequisiteCheck.log`. The log file contains information about which requirements were met and which were not. If this parameter is not specified, then the tool writes to the console.

Table 15–4 (Cont.) Parameters for DBPrereqChecker

Parameter	Description
-HELP	Displays the help for the tool.

Example:

```
/> DBPrereqChecker.sh -DBHOST mydb.mydomain.com -DBPORT 1521
      -DBNAME orcl1.mydomain.com -SYSPWD topsecret -LOGDIR /tmp
```

15.5.2 Supported Database Versions

You can install the OracleAS Metadata Repository in the database versions http://metalink.oracle.com.

To check the release of your database, query the PRODUCT_COMPONENT_VERSION view:

```
/> sqlplus "sys/password as sysdba"
SQL> select version from product_component_version where product like 'Oracle%9i%'
     or product like 'Oracle%Database%';
```

password specifies the password for the SYS user.

15.5.3 Notes for Standard Edition Databases

If you are using the Standard Edition of a supported database, then you must run the sdopatch.sql script as part of the postinstallation procedure of the database, before you run OracleAS Metadata Repository Creation Assistant.

15.5.4 Swap Space Requirement

You must have at least 512 MB of available swap space on the computer running the database.

15.5.5 Disk Space Needed for SYSTEM and UNDO Tablespaces

Table 15–5 lists the free space requirements for the SYSTEM and UNDO tablespaces:

Table 15–5 Free Space Required for the SYSTEM and UNDO Tablespaces

Tablespace	Free Space Required
SYSTEM	367,001,600 bytes
UNDO	367,001,600 bytes

If these tablespaces are set to autoextend, then OracleAS Metadata Repository Creation Assistant cannot check the space for you because the tablespaces may use up available space in the file system, and OracleAS Metadata Repository Creation Assistant cannot check the free space on your file system. You have to perform the checks yourself.

If these tablespaces are not set to autoextend, then OracleAS Metadata Repository Creation Assistant can check the free space for you, because OracleAS Metadata Repository Creation Assistant can query the database to find out how much space is available in the tablespace.

15.5.6 Disk Space Needed for OracleAS Metadata Repository Tablespaces

Ensure that you have at least 1.15 GB of disk space for the OracleAS Metadata Repository tablespaces. This is in addition to the space needed for the `SYSTEM` and `UNDO` tablespaces (refer to the previous section).

15.5.7 Initialization Parameters

During installation, the database must have its initialization parameters set to the values specified.

- Table 15–6 lists the parameters that are not checked by OracleAS Metadata Repository Creation Assistant. You have to check these parameters yourself.

Table 15–6 Parameters That You Have to Check Yourself

Parameter	Required Value	Parameter Class	Notes
`nls_length_semantics`	`BYTE`	Dynamic	**Note:** Oracle Application Server Metadata Repository Creation Assistant does not check this parameter. You have to check it manually. The `CHAR` value for this parameter is not supported.
`compatible`	`9.2.0.0.0` or higher	Static	**Note:** Oracle Application Server Metadata Repository Creation Assistant does not check this parameter. You have to check it manually. Do not set this parameter to a value lower than `9.2.0.0.0`.

- Table 15–7 lists the parameters that are checked by OracleAS Metadata Repository Creation Assistant. If OracleAS Metadata Repository Creation Assistant finds parameters that do not meet the requirements, then it displays an alert. You need to change the value of the parameter before OracleAS Metadata Repository Creation Assistant can continue.

After installation, you can change the values of most of these parameters to optimize performance, if necessary.

> **Notes:** The value of the `db_block_size` parameter must be 8192 or greater. This parameter is set when the database was created and cannot be changed. If your database has a lower value for this parameter, then it means that you cannot use this database for the metadata repository.

Table 15–7 Initialization Parameters: Required Values (Checked by OracleAS Metadata Repository Creation Assistant)

Parameter	Required Values	Parameter Class	Notes
`db_block_size`	8192 or greater	Not changeable. See "Notes" column.	You cannot change the value of this parameter once the database has been created.

Table 15–7 (Cont.) Initialization Parameters: Required Values (Checked by OracleAS Metadata Repository Creation Assistant)

Parameter	Required Values	Parameter Class	Notes
aq_tm_ processes	1 or greater	Dynamic	You can change the value of this parameter after installation.
open_cursors	300 or greater	Dynamic	You can change the value of this parameter after installation.
job_queue_ processes	1 or greater	Dynamic	You can change the value of this parameter after installation.
db_cache_size	Greater than 144 MB	Dynamic	You can change the value of this parameter after installation.
shared_pool_ size	Greater than 175 MB	Dynamic	You can change the value of this parameter after installation.
java_pool_size	Greater than 120 MB	Static	You can change the value of this parameter after installation.
pga_aggregate_ target	Greater than 96 MB	Dynamic	You can change the value of this parameter after installation.
query_rewrite_ enabled	TRUE	Dynamic	Do not change this parameter after installation, because Oracle Application Server Wireless requires this value.
sessions	400 or greater	Static	You can change the value of this parameter after installation.
undo_ management	AUTO	Static	You can change the value of this parameter after installation.
_system_trig_ enabled	true	Dynamic	This is an internal Oracle parameter. Set it to true to enable system triggers.
db_create_ file_dest	The directory where Oracle Application Server Metadata Repository Creation Assistant should create the data files for OracleAS Metadata Repository	Dynamic	This initialization parameter is needed only if you are installing the OracleAS Metadata Repository in a database that uses Oracle-managed files.

Checking Parameter Values

To check the values of the initialization parameters using SQL*Plus, you can use the show parameters command:

```
/> sqlplus "sys/password as sysdba"
SQL> show parameters parameter_name
```

password specifies the password for the SYS user.

Alternatively, you can check the values by querying the V$PARAMETER view:

```
/> sqlplus "sys/password as sysdba"
SQL> select name,value from v$parameter;
```

Changing Parameter Values

The method that you use to change the value of a parameter depends on whether the parameter is static or dynamic, and on whether your database uses a parameter file or a server parameter file.

Refer to the *Oracle Database Administrator's Guide* for your database for details on parameter files, server parameter files, and how to change parameter values.

If your database uses a parameter file, then you can change the parameter values using two different methods:

- You can edit the parameter file and restart the database. This method works for both static and dynamic parameters.
- To change the values of dynamic parameters, you can use the alter system command, but the new values persist only until the database is shut down. For example:

  ```
  /> sqlplus "sys/password as sysdba"
  SQL> alter system set aq_tm_processes=9;
  ```

If your database uses a server parameter file, then use the alter system command to change the parameter values. For static parameters, set the scope to spfile. You have to restart the database for the new value to take effect. For dynamic parameters, you can set the scope to spfile, memory, or both. For the values to persist, set the scope to spfile or both. For example:

```
/> sqlplus "sys/password as sysdba"
SQL> alter system set aq_tm_processes=9 scope=both;
```

Changing Values of Internal Parameters

To change the values of internal Oracle parameters such as _system_trig_enabled, you have to enclose the parameter name in double quotes:

```
/> sqlplus "sys/password as sysdba"
SQL> alter system set "_system_trig_enabled"=true;
```

If the parameter name is not enclosed in double quotes, then you will get an error:

```
/> sqlplus "sys/password as sysdba"
SQL> alter system set _system_trig_enabled=true;
                      *
ERROR at line 1: ORA-00911: invalid character
```

15.5.8 Database Options

Table 15–8 provides the options that must be enabled for the database.

Table 15–8 Required Database Options

Required Option	How to Check if the Option is Installed in the Database
Java	prompt> **sqlplus "sys/*password* as sysdba"** SQL> **select count(*) from dba_objects** **where object_type like 'JAVA%' and** **owner = 'SYS' and status = 'VALID';** The count returned should be greater than 0.
Intermedia	prompt> **sqlplus "sys/*password* as sysdba"** SQL> **select count(name) from sys.props$** **where name = 'EXPORT_VIEWS_VERSION';** The count returned should be greater than 0.
Oracle Text	prompt> **sqlplus "sys/*password* as sysdba"** SQL> **select count(*) from dba_views** **where owner = 'CTXSYS' and** **view_name = 'CTX_VERSION';** The count should be greater than 0.

15.5.9 PL/SQL Packages

The database must have the following PL/SQL packages installed:

DBMS_DDL

DBMS_LOCK

DBMS_OUTPUT

DBMS_REPUTIL

DBMS_SQL

DBMS_STATS

DBMS_UTILITY

UTL_FILE

UTL_RAW

To check if a package is installed in the database, query the ALL_OBJECTS view. The following example checks for the DBMS_DDL package:

```
prompt> sqlplus "sys/password as sysdba"
SQL> select count(object_name) from all_objects
     where object_name like 'DBMS_DDL%' and
       status = 'VALID';
```

Run the query for each package. Replace DBMS_DDL with the name of the package. The count returned should be greater than 0.

15.5.10 DBMS_LDAP Package

Check that your database contains the DBMS_LDAP package, and that the package is valid. You need to reinstall the package if it is not valid.

1. Check that the version of the DBMS_LDAP package is 2. The following SQL command must return 0.

```
/> sqlplus "sys/password as sysdba"
SQL> select dbms_ldap_utl.check_interface_version('2') from dual;

DBMS_LDAP_UTL.CHECK_INTERFACE_VERSION('2')
------------------------------------------
                                         0
```

If the command returns a different value, or if it returns an error such as:

```
The DBMS_LDAP package supplied with this database doesn't support the
version 2 interface used by 904 components.
```

then you need to reload the package. Refer to "Reloading the DBMS_LDAP Package" at the end of this section.

2. Check that the `DBMS_LDAP` package is valid. The following SQL command must return 9.

   a. Create a file containing the following lines. You can name the file anything you like (for example, `test_ldap.sql`).

```
select count(*) from dba_objects where
( object_name = 'DBMS_LDAP' and
object_type = 'PACKAGE' and
status = 'VALID' and owner = 'SYS'
) OR
( object_name = 'DBMS_LDAP' and
object_type = 'PACKAGE BODY' and
status = 'VALID' and owner = 'SYS'
) OR
( object_name = 'DBMS_LDAP_UTL' and
object_type = 'PACKAGE' and
status = 'VALID' and owner = 'SYS'
) OR
( object_name = 'DBMS_LDAP_UTL' and
object_type = 'PACKAGE BODY' and
status = 'VALID' and owner = 'SYS'
) OR
( object_name = 'DBMS_LDAP' and
object_type = 'SYNONYM' and
status = 'VALID' and owner = 'PUBLIC'
) OR
( object_name = 'DBMS_LDAP_UTL' and
object_type = 'SYNONYM' and
status = 'VALID' and owner = 'PUBLIC'
) OR
( object_name = 'DBMS_LDAP_API_FFI' and
object_type = 'PACKAGE' and
status = 'VALID' and owner = 'SYS'
) OR
( object_name = 'DBMS_LDAP_API_FFI' and
object_type = 'PACKAGE BODY' and
status = 'VALID' and owner = 'SYS'
) OR
( object_name = 'DBMS_LDAP_API_LIB' and
object_type = 'LIBRARY' and
status = 'VALID' and owner = 'SYS'
);
```

   b. Run the file in SQL*Plus. For example, if you named the file `test_ldap.sql`, the command would look like the following:

```
/> sqlplus "sys/password as sysdba"
SQL> @test_ldap.sql

  COUNT(*)
----------
         9
```

If the command returns a value other than 9, then you need to reload the package.

Reloading the DBMS_LDAP Package

1. Check that the following files exist in the `$ORACLE_HOME/rdbms/admin` directory:
   - `catldap.sql`
   - `dbmsldap.sql`
   - `prvtldap.plb`
   - `prvtldh.plb`
2. Using SQL*Plus, run `catldap.sql` as the SYS user.

```
prompt> cd $ORACLE_HOME/rdbms/admin
prompt> sqlplus "sys/password as sysdba"
SQL> @catldap.sql
```

15.5.11 Knowledge Base Required (Oracle Database 10*g* Only)

If you plan to install OracleAS Metadata Repository on Oracle Database 10*g*, and you plan to use OracleAS Portal, then the database must have the Oracle Text supplied knowledge base. The knowledge base is a hierarchical tree of concepts used for indexing themes and performing `ABOUT` queries.

OracleAS Metadata Repository Creation Assistant checks if your database contains the knowledge base. If your database does not contain it, then OracleAS Metadata Repository Creation Assistant displays the following warning:

```
"Knowledge base not found.
OracleAS RepCA was not able to find the Oracle Text Supplied Knowledge Base in the
database specified.
If you are planning to use this repository for installing OracleAS Portal, you
have to install Oracle Text Supplied Knowledge Base. Oracle Text Supplied
Knowledge Base can be installed in the database using Oracle Database 10g
Companion CD.
If you are not planning to use this repository for installing OracleAS Portal, you
may continue further.
Do you want to continue?"
```

If you do not plan to use OracleAS Portal, then enter **`Y`** to continue. Otherwise, enter **`N`**.

If you want to check to see if the knowledge base is installed on your database, then you can run the following query:

```
create or replace procedure Check_KB (l_return_value OUT varchar) is
   ORA20000_TEXT_EXCEPTION exception;
   pragma exception_init (ORA20000_TEXT_EXCEPTION, -20000);
   l_test_table constant varchar2(30) := 'WWSRC_INSO_TEST';
   l_test_table_index constant varchar2(30) := 'WWRSC_INSO_TEST_INDEX';
```

```
   procedure drop_test_table ( p_test_table in varchar2 ) is
   begin
      for c1 in ( select table_name from user_tables
                  where table_name = p_test_table )
      loop
         execute immediate 'drop table '||c1.table_name;
      end loop;
   end drop_test_table;

   begin
      l_return_value := 'TRUE';
      drop_test_table(l_test_table);
      execute immediate 'create table '||l_test_table||'( id number, content blob,
           query_id number, theme varchar2(2000), weight number,
           CONSTRAINT wwsrc_inso_test_pk PRIMARY KEY(id) )';
      execute immediate 'insert into '||l_test_table||'(id, content)
                      values(1, empty_blob())';
      begin
         execute immediate 'create index '||l_test_table_index||' on '||
              l_test_table||'(content) indextype is ctxsys.context
              PARAMETERS(''filter CTXSYS.INSO_FILTER'')';
         ctx_doc.themes( index_name => l_test_table_index, textkey => '1',
                   restab => l_test_table );
         exception when ORA20000_TEXT_EXCEPTION then
         if (instr(sqlerrm,'DRG-11446') > 0) then
            l_return_value := 'FALSE';
         else
            l_return_value := 'FALSE';
         end if;
      end;

      drop_test_table(l_test_table);
      exception when others then
         drop_test_table(l_test_table);
         l_return_value := 'FALSE';
   end;
/
```

If the knowledge base is not installed, then the following error is displayed when searching in OracleAS Portal with the Oracle Text Enable Themes and Gists option selected:

```
Error: The Oracle Text Installation is not complete. Knowledge base file or files
are missing. (WWWS-32026)
```

If your database does not have knowledge base installed, then you can install it from the Oracle Database 10*g* Companion CD-ROM. Refer to the *Oracle Database Companion CD Installation Guide* for details.

15.5.12 Password File Authentication

The database must be set up to use password file authentication. For more information about password file authentication, refer to the *Oracle Database Administrator's Guide*.

Password file authentication is required only for running OracleAS Metadata Repository Creation Assistant. It is not required once the metadata repository has been installed.

You can check if the database is set up to use password file authentication, in one of the following ways.

- Look up the value of the `remote_login_passwordfile` initialization parameter by running the following command in SQL*Plus:

```
/> sqlplus "sys/password as sysdba"
SQL> show parameters remote_login_passwordfile
NAME                           TYPE       VALUE
------------------------------ ---------- ------------
remote_login_passwordfile      string     EXCLUSIVE
```

  The value of the `remote_login_passwordfile` initialization parameter must be either `EXCLUSIVE` or `SHARED`. If the parameter has a different value or if it is not defined, then the database is not set up for password file authentication.

- Try connecting to the database as `sysdba` through a SQL*Net connection.

```
/> sqlplus "sys/password@sqlnet_dbname as sysdba"
```

  `sqlnet_dbname` denotes the entry for the database in the `tnsnames.ora` file. If the database is not set up for password authentication, then you will not be able to connect.

  If you are sure that the database is set up for password file authentication, but you get the following error:

  `ORA-01017 error, Invalid user name/password; logon denied`

  then a possible cause is that you changed the `SYS` password when setting up the password file (the value specified in the *`password`* parameter actually sets the password for the `SYS` user). If this is the case, then you just need to change the SYS password to something that you can remember.

  You can still log in as SYS if you have the `sysdba` operating system privilege. For the password, you can specify anything. The `sysdba` operating system privilege overrides the password.

```
/> sqlplus "sys/badPassword as sysdba"
SQL> alter user sys identified by newPassword;
SQL> exit
```

  Now when you connect to the database with `sys/`*`newPassword@sqlnet_dbname`* `as sysdba`, it should work.

To set up a database for password file authentication:

1. Create a password file using the `orapwd` command (all on one line).

```
prompt> $ORACLE_HOME/bin/orapwd file=fullpath_to_pwfile password=password
entries=maxUsers
```

   Values you need to provide:

   `fullpath_to_pwfile` - Enter the full path to the file where the password information will be written. The file name must be `.orapw`*`sid`*. Typically, the password file is stored in the `$ORACLE_HOME/dbs` directory.

   password - Set the password for the `SYS` user.

> **Note:** The value that you specify for `password` parameter sets the password for the `SYS` user. If you specify a different value from the current `SYS` password, then you are changing the `SYS` password.

maxUsers - Specify the maximum number of users that the file can contain.

The following example sets the password file for a database whose name is mydb:

```
/> cd oracle/ora92/bin
/> oracle/ora92/bin orapwd
    file=/> oracle/ora92/database/PWDmydb.ora
    password=topsecret entries=9
```

2. Set the `remote_login_passwordfile` initialization parameter to `EXCLUSIVE`. You can set it to `SHARED` if you want to use the same password file for multiple databases. If you have a Real Application Clusters database, then you must set the parameter to `EXCLUSIVE`.
3. Restart the database.

15.5.13 Schemas and Tablespaces

OracleAS Metadata Repository Creation Assistant installs the schemas and tablespaces listed in Table 15–9 in your existing database. Ensure that the database does not contain schemas and tablespaces of the same name.

15.5.13.1 List of Schemas and Tablespaces

Table 15–9 lists the OracleAS Metadata Repository schemas and tablespaces that OracleAS Metadata Repository Creation Assistant will create in your database.

Table 15–9 Schemas and Tablespaces

Component	Schema	Tablespace	Default Database File
OracleAS Certificate Authority	OCA	OCATS	oca.dbf
OracleAS Discoverer	DISCOVERER5	DISCO_PTM5_META	discopltm1.dbf
OracleAS Discoverer	DISCOVERER5	DISCO_PTM5_CACHE	discopltc1.dbf
OracleAS PartnerConnect	B2B	B2B_RT	b2b_rt.dbf
OracleAS PartnerConnect	B2B	B2B_DT	b2b_dt.dbf
OracleAS PartnerConnect	B2B	B2B_IDX	b2b_idx.dbf
OracleAS PartnerConnect	B2B	B2B_LOB	b2b_lob.dbf
OracleAS Portal	PORTAL	PORTAL	portal.dbf
OracleAS Portal	PORTAL	PORTAL_DOC	ptldoc.dbf
OracleAS Portal	PORTAL	PORTAL_IDX	ptlidx.dbf
OracleAS Portal	PORTAL	PORTAL_LOG	ptllog.dbf
OracleAS Portal	PORTAL_APP	PORTAL	portal.dbf
OracleAS Portal	PORTAL_DEMO	PORTAL	portal.dbf
OracleAS Portal	PORTAL_PUBLIC	PORTAL	portal.dbf
OracleAS Single Sign-On	ORASSO	IAS_META	ias_meta01.dbf
OracleAS Single Sign-On	ORASSO_PA	IAS_META	ias_meta01.dbf

Table 15–9 (Cont.) Schemas and Tablespaces

Component	Schema	Tablespace	Default Database File
OracleAS Single Sign-On	ORASSO_DS	IAS_META	ias_meta01.dbf
OracleAS Single Sign-On	ORASSO_PS	IAS_META	ias_meta01.dbf
OracleAS Single Sign-On	ORASSO_PUBLIC	IAS_META	ias_meta01.dbf
OracleAS Syndication Server	DSGATEWAY	DSGATEWAY_TAB	oss_sys01.dbf
OracleAS Web Clipping Support	WCRSYS	WCRSYS_TS	wcrsys01.dbf
OracleAS Wireless	WIRELESS	IAS_META	ias_meta01.dbf
OracleAS UDDI Registry	UDDISYS	UDDISYS_TS	uddisys01.dbf
Distributed Configuration Management (DCM)	DCM	DCM	dcm.dbf
Oracle Internet Directory	ODS	OLTS_ATTRSTORE	attrs1_oid.dbf
Oracle Internet Directory	ODS	OLTS_BATTRSTORE	battrs1_oid.dbf
Oracle Internet Directory	ODS	OLTS_CT_STORE	gcats1_oid.dbf
Oracle Internet Directory	ODS	OLTS_DEFAULT	gdefault1_oid.dbf
Oracle Internet Directory	ODS	OLTS_SVRMGSTORE	svrmg1_oid.dbf
Oracle Ultra Search	WKSYS	IAS_META	ias_meta01.dbf
Oracle Ultra Search	WKPROXY	IAS_META	ias_meta01.dbf
Oracle Ultra Search	WK_TEST	IAS_META	ias_meta01.dbf
Oracle Workflow	OWF_MGR	IAS_META	ias_meta01.dbf
Metadata Repository Version	INTERNET_APPSERVER_REGISTRY	IAS_META	ias_meta01.dbf

15.5.13.2 Schema Name Already In Use

If OracleAS Metadata Repository Creation Assistant finds even one schema of the same name in the existing database, then it asks for confirmation before it drops and re-creates the schema with new data.

If you want to save the data in the schema, then do not proceed. Back up the data you want to save, restore it under a different schema, and rerun OracleAS Metadata Repository Creation Assistant. This time, you can tell it to drop and re-create the schema.

To get a list of existing schema names in the database, query the ALL_USERS view:

```
/> sqlplus "sys/password as sysdba"
SQL> select username from all_users;
```

password specifies the password for the SYS user.

Refer to Appendix B if you want to run OracleAS Metadata Repository Creation Assistant to remove schemas and tablespaces used by OracleAS Metadata Repository.

15.5.13.3 Tablespace Name Already In Use

If OracleAS Metadata Repository Creation Assistant finds even one tablespace of the same name in the existing database, then it cannot continue. It displays an error dialog box. In this case:

1. Dismiss the error dialog box and exit OracleAS Metadata Repository Creation Assistant.
2. Back up the data in the tablespace (if desired).
3. Drop the tablespace.
4. Rerun OracleAS Metadata Repository Creation Assistant.

To get a list of existing tablespace names in the database, query the V$TABLESPACE view:

```
/> sqlplus "sys/password as sysdba"
SQL> select name from v$tablespace;
```

password specifies the password for the SYS user.

> **Note:** If you run OracleAS Metadata Repository Creation Assistant and cancel it before it completes, then it might have created some of the tablespaces listed in Table 15–9 in your database. You have to drop these tablespaces before you can rerun OracleAS Metadata Repository Creation Assistant.
>
> Refer to Appendix B if you want to run OracleAS Metadata Repository Creation Assistant to remove schemas and tablespaces used by OracleAS Metadata Repository.

To drop a tablespace, you can run SQL statements manually. You can also run OracleAS Metadata Repository Creation Assistant to remove OracleAS Metadata Repository tablespaces and schemas. For more information, refer to Appendix B.

To run SQL statements manually, perform the following steps. The order of the tasks is important. If you delete the data files first, then you cannot drop the tablespace. If the tablespace exists, then you cannot rerun OracleAS Metadata Repository Creation Assistant.

1. Use SQL*Plus and log in to the database as the SYS user.

   ```
   /> sqlplus "sys/password as sysdba"
   ```

2. Drop the schemas in the tablespace.

   ```
   SQL> drop user schema_name cascade;
   ```

3. Drop the tablespace.

   ```
   SQL> drop tablespace tablespace_name including contents cascade constraints;
   SQL> exit;
   ```

4. Delete the data files (the .dbf files) associated with the tablespace.

15.5.13.4 Tablespace Sizes

If you are using files (as opposed to raw devices) for tablespaces, then select the size for each tablespace that OracleAS Metadata Repository Creation Assistant will create.

OracleAS Metadata Repository Creation Assistant offers three size options for each tablespace (refer to Table 15–10). These sizes represent light usage, moderate usage, and heavy usage of the component. If you have applications that use a component heavily, then you should select the biggest size for the tablespaces of the component.

You should select the minimum size for components that you do not plan on using with this repository.

The tablespace sizes are initial sizes. Extensive use of the component may increase the size of the tablespaces because they are set to AUTOEXTEND.

Table 15–10 Initial Sizes for Tablespaces

		Initial Sizes (in MB)		
Component	**Tablespace**	**Small**	**Medium**	**Large**
OracleAS Certificate Authority	OCA	15	35	55
OracleAS Discoverer	DISCO_PTM5_META	5	10	15
OracleAS Discoverer	DISCO_PTM5_CACHE	5	10	15
OracleAS PartnerConnect	B2B_RT	50	75	90
OracleAS PartnerConnect	B2B_DT	60	75	90
OracleAS PartnerConnect	B2B_IDX	20	40	60
OracleAS PartnerConnect	B2B_LOB	20	40	60
OracleAS Portal	PORTAL	75	100	150
OracleAS Portal	PORTAL_DOC	25	40	50
OracleAS Portal	PORTAL_IDX	30	50	60
OracleAS Portal	PORTAL_LOG	30	50	60
OracleAS Single Sign-On Oracle Ultra Search Oracle Workflow INTERNET_APPSERVER_REGISTRY (schema for storing information about the OracleAS Metadata Repository version)	IAS_META	200	300	500
OracleAS Syndication Server	DSGATEWAY_TAB	25	35	45
OracleAS UDDI	UDDISYS_TS	35	50	65
OracleAS Web Clipping Support	WCRSYS_TS	35	45	55
Distributed Configuration Management (DCM)	DCM	50	100	200
Oracle Internet Directory	OLTS_ATTRSTORE	10	15	20
Oracle Internet Directory	OLTS_BATTRSTORE	10	15	20
Oracle Internet Directory	OLTS_CT_STORE	10	15	20
Oracle Internet Directory	OLTS_DEFAULT	10	15	20
Oracle Internet Directory	OLTS_SVRMGSTORE	10	15	20

If your existing database uses ASM, Oracle-managed files, or raw devices, then you do not need to select the sizes for the tablespaces. However, you need to verify that the sizes of the storage devices are adequate for the components (refer to Table 15–11). If you are planning on using a component extensively, then ensure that the storage device for the tablespace has even more space available.

Table 15–11 Minimum Size for System Tablespaces

Tablespace	Minimum Size
DRSYS tablespace	64 MB
SYSTEM tablespace	1024 MB
TEMP tablespace	128 MB
UNDOTBS1 tablespace	256 MB
UNDOTBS2 tablespace	256 MB

For information about using raw devices, refer to the database documentation.

15.5.14 Registration with Oracle Internet Directory

For registration to be successful, check the following points:

- Ensure that the existing database is not already registered with Oracle Internet Directory. You cannot register a database that is already registered with Oracle Internet Directory.
- Ensure that another database with the same SID is not already registered with Oracle Internet Directory.

To check if a database is already registered with Oracle Internet Directory, you have to look in Oracle Internet Directory:

1. Connect to Oracle Internet Directory using Oracle Directory Manager.
   a. Start up Oracle Directory Manager.

      ```
      prompt> $ORACLE_HOME/bin/oidadmin
      ```

   b. In the Connect screen, enter the connect information. Log in as the Oracle Internet Directory superuser (`cn=orcladmin`).
2. Check to see if your database is registered with Oracle Internet Directory. Expand these entries: **Entry Management** > **cn=OracleContext**.

   If your database is registered with Oracle Internet Directory, then you would see an entry called cn=*your_database_name*.

   To remove the registration, refer to step 2 in Section G.8.3, "Manual Steps: Cleaning Up a Failed Registration or Deregistering OracleAS Metadata Repository".
3. Check to see if your database has a metadata repository that is registered with Oracle Internet Directory. Expand these entries:

   Entry Management > **cn=OracleContext** > **cn=Products** > **cn=IAS** > **cn=IAS Infrastructure Databases**

   If your database has a metadata repository that is registered with Oracle Internet Directory, then you would see an entry called `orclReferenceName=`*`your_database_name`*.

   To remove the registration, refer to step 3 in Section G.8.3, "Manual Steps: Cleaning Up a Failed Registration or Deregistering OracleAS Metadata Repository".

15.6 Requirements for Oracle Internet Directory

To register the OracleAS Metadata Repository with Oracle Internet Directory, the Oracle Internet Directory must be version 9.0.4 or later. Note that Oracle Internet Directory version 9.2.x is not supported.

To check the Oracle Internet Directory version, run the following command:

```
/> oidldapd -version
```

The `oidldapd` command can be found in the `$ORACLE_HOME/bin` directory, where `ORACLE_HOME` is the directory where you installed Oracle Internet Directory.

15.7 Starting OracleAS Metadata Repository Creation Assistant

To start OracleAS Metadata Repository Creation Assistant:

1. Check that you have installed OracleAS Metadata Repository Creation Assistant. Refer to Section 15.4, "Installing OracleAS Metadata Repository Creation Assistant" for details.
2. Ensure the listener for the existing database and the database itself are up and running.
3. If the `NLS_LANG` environment variable is set to a non-English locale, then unset it or set it to `american_america.us7ascii`.

   ```
   prompt> unsetenv NLS_LANG
    - or -
   prompt> setenv NLS_LANG american_america.us7ascii
   ```

   If `NLS_LANG` is set to a non-English locale, then OracleAS Metadata Repository Creation Assistant will fail to load the Workflow schema.

   You can set `NLS_LANG` back to its original value after running OracleAS Metadata Repository Creation Assistant.
4. Start up OracleAS Metadata Repository Creation Assistant from the Oracle home for OracleAS Metadata Repository Creation Assistant (this is the directory where you installed OracleAS Metadata Repository Creation Assistant):

   ```
   prompt> cd $ORACLE_HOME_RepCA
   prompt> runRepca.sh
   ```

15.8 Which Section to Read Next?

This section describes the procedures for using Oracle Application Server Metadata Repository Creation Assistant.

Loading Operations

For loading operations, select the option that matches your database type and storage option from Table 15–12.

Table 15–12 Which Section to Read Next

Database Storage Type	Section to Read
Data files created as regular files on the operating system	Section 16.1, "Installing in a Database that Uses the File System"
Raw devices	Section 16.2, "Installing in a Database that Uses Raw Devices"
Oracle-managed files	Section 16.3, "Installing in a Database that Uses Oracle-Managed Files"

Registration Only Operations

If you just want to register the OracleAS Metadata Repository with Oracle Internet Directory, then refer to Chapter 17, "Registering OracleAS Metadata Repository with Oracle Internet Directory".

Removal or Deregistration Operations

For more information about deregistering and removing OracleAS Metadata Repository, refer to Appendix B, "Deregistering and Removing OracleAS Metadata Repository".

16

Loading OracleAS Metadata Repository into an Existing Database

This chapter describes how to install or load OracleAS Metadata Repository in an existing database. It contains the following sections:

16.1 Installing in a Database that Uses the File System

To install OracleAS Metadata Repository in an existing database that uses the file system for its data files:

1. Ensure that the database meets the requirements listed in Section 15.5, "Requirements for the Database".
2. Start up Oracle Application Server Metadata Repository Creation Assistant. Refer to Section 15.7, "Starting OracleAS Metadata Repository Creation Assistant" for details.
3. Follow the screens:

Table 16–1 Installing OracleAS Metadata Repository in a Database that Uses the Regular File System

	Screen	Action
1.	Welcome	Click **Next**.
2.	Specify Oracle Home	**Oracle Home**: Enter the full path of the Oracle home directory for the database. Ensure that you use the conventions of the computer that is running the database (for example, use the proper slashes). **Log File Directory**: Enter the full path of the directory where you want OracleAS Metadata Repository Creation Assistant to write its log files. This path is on the computer where you are running OracleAS Metadata Repository Creation Assistant. Note that once you click **Next** to move to the next screen, you cannot change the log file directory. If you click **Back** to return to this screen, then the Log File Directory field becomes read-only. This is to prevent OracleAS Metadata Repository Creation Assistant from writing log files in different directories. Click **Next**.
3.	Select Operation	Select **Load** if you want to load the OracleAS Metadata Repository into the database but without registering it with Oracle Internet Directory. Select this option if you do not have an Oracle Internet Directory yet. Click **Next**.
4.	Specify Database Connection Information	Enter connect information for the existing database. **SYS Password**: Enter the password for the SYS user. **Single node instance**: Select this option, and complete the fields under it: ■ **Hostname**: Enter the name of the computer that is running the database. If your middle tier instances are located in a different domain, then you need to append the domain name to the host name. ■ **Port**: Enter the port number for the database. ■ **Service Name**: Enter the service name of the database. Note that the service name must include the database domain name. Example: `asdb.mydomain.com` Click **Next**.
5.	Specify Storage Options	Select **Regular or Cluster File System**.

Table 16–1 (Cont.) Installing OracleAS Metadata Repository in a Database that Uses the Regular File

	Screen	Action
6.	Specify Tablespace Information	Specify where OracleAS Metadata Repository Creation Assistant should create files for the tablespaces, and the tablespace sizes. The directory you specify must meet the following criteria: ▪ The directory already exists on the computer running the database, which is not necessarily the computer where you are running OracleAS Metadata Repository Creation Assistant. ▪ The directory is writable. ▪ The directory has enough free space. ▪ The path to the directory is correct and is consistent with the operating system that is running the database. **Use Same Directory for All Tablespaces**: Select this option if you want to place all the files for all the tablespaces in the same directory. Specify the directory in the field following this option. **Use Individual Directories for Each Tablespace**: Select this option if you want to place the files for the tablespaces in different directories. **Tablespaces**: Expand the list to view the tablespaces for each component. Select a tablespace to view or edit its associated datafile or size. **Size**: Select the largest size for a tablespace if you have applications that use the component heavily. If not, then select the smallest size. **Filename**: Enter the file name for the database file. Example: `portal.dbf` **Directory**: Enter the directory where you want to put the database file for the tablespace. Ensure that the path to the directory is correct and is consistent with the operating system that is running the database. Example (UNIX): `/opt/oracle/dbfiles/` Click **Next**.
7.	Warning: Check Disk Space	This warning dialog box appears if your SYSTEM and UNDO tablespaces are set to autoextend. Check that the file system that contains the SYSTEM and UNDO tablespaces have enough disk space, as specified in the warning dialog box.
8.	Loading Repository	OracleAS Metadata Repository Creation Assistant creates and populates the tablespaces and schemas.
9.	Success	Click **OK** to exit OracleAS Metadata Repository Creation Assistant.

4. Perform postinstallation steps. Refer to Section 16.5, "Postinstallation Steps".

16.2 Installing in a Database that Uses Raw Devices

This section describes how to install the OracleAS Metadata Repository in a database that uses raw devices.

1. Ensure that the database meets the requirements listed in Section 15.5, "Requirements for the Database".
2. Create raw devices for the OracleAS Metadata Repository.

   Refer to Table 15–11 for a list of tablespaces for which you have to create raw devices, and their minimum sizes.

   The command to create raw devices is specific to the volume manager you are using. For example, if you are using VERITAS Volume Manager, the command is `vxassist`.

3. (optional) Create a file to map the tablespaces to the raw devices, and set the `DBCA_RAW_CONFIG` environment variable to point to this file.

   OracleAS Metadata Repository Creation Assistant reads this file and populates the Specify Tablespace Information screen with the data. You just need to confirm the data on that screen.

   If you do not create this file, then you can still run OracleAS Metadata Repository Creation Assistant to install OracleAS Metadata Repository in a database that uses raw devices. On the Specify Tablespace Information screen, it leaves the fields blank, and you have to enter the data manually.

   The steps in detail:

   a. Create a file to map the tablespaces to your raw devices.

      Each line in the file has the following format:

      ```
      tablespace_name=raw_device_file_path
      ```

      You can use the following sample file, replacing the raw device file paths with your values. Append `1` to the tablespace names, as shown in the following sample file:

      ```
      PORTAL1=/dev/vx/rdsk/oracle/mydb_raw_portal_128m
      PORTAL_DOC1=/dev/vx/rdsk/oracle/mydb_raw_portal_doc_64m
      PORTAL_IDX1=/dev/vx/rdsk/oracle/mydb_raw_portal_idx_64m
      PORTAL_LOG1=/dev/vx/rdsk/oracle/mydb_raw_portal_log_64m
      IAS_META1=/dev/vx/rdsk/oracle/mydb_raw_ias_meta_256m
      DISCO_PTM5_META1=/dev/vx/rdsk/oracle/mydb_raw_disco_meta_64m
      DISCO_PTM5_CACHE1=/dev/vx/rdsk/oracle/mydb_raw_disco_cache_64m
      DCM1=/dev/vx/rdsk/oracle/mydb_raw_dcm_256m
      WCRSYS_TS1=/dev/vx/rdsk/oracle/mydb_raw_clip_64m
      OCATS1=/dev/vx/rdsk/oracle/mydb_raw_oca_64m
      UDDISYS_TS1=/dev/vx/rdsk/oracle/mydb_raw_uddi_64m
      OLTS_ATTRSTORE1=/dev/vx/rdsk/oracle/mydb_raw_olts_attr_128m
      OLTS_BATTRSTORE1=/dev/vx/rdsk/oracle/mydb_raw_olts_battr_64m
      OLTS_CT_STORE1=/dev/vx/rdsk/oracle/mydb_raw_olts_ct_store_256m
      OLTS_DEFAULT1=/dev/vx/rdsk/oracle/mydb_raw_olts_default_128m
      OLTS_SVRMGSTORE1=/dev/vx/rdsk/oracle/mydb_raw_olts_svrmgstore_64m
      DSGATEWAY_TAB1=/dev/vx/rdsk/oracle/mydb_raw_synd_64m
      b2b_dt1=/dev/vx/rdsk/oracle/mydb_raw_b2b_dt_256m
      b2b_rt1=/dev/vx/rdsk/oracle/mydb_raw_b2b_rt_256m
      b2b_lob1=/dev/vx/rdsk/oracle/mydb_raw_b2b_lob_256m
      b2b_idx1=/dev/vx/rdsk/oracle/mydb_raw_b2b_idx_256m
      ```

      Refer to Section 15.5.13, "Schemas and Tablespaces" for a list of tablespaces and schemas in the OracleAS Metadata Repository.

   b. Set the `DBCA_RAW_CONFIG` environment variable to the full path of the file.

      For example, if you save the file as `/opt/oracle/repca/tablespace_map.txt`, then you would set the environment variable as follows:

      ```
      setenv DBCA_RAW_CONFIG /opt/oracle/repca/tablespace_map.txt
      ```

4. Start up OracleAS Metadata Repository Creation Assistant. Refer to Section 15.7, "Starting OracleAS Metadata Repository Creation Assistant" for details.

5. Follow the screens:

Table 16–2 Installing OracleAS Metadata Repository in a Database that Uses Raw Devices

	Screen	Action
1.	Welcome	Click **Next**.
2.	Specify Oracle Home	**Oracle Home**: Enter the full path of the Oracle home directory for the database. Ensure that you use the conventions of the computer that is running the database (for example, use the proper slashes). **Log File Directory**: Enter the full path of the directory where you want OracleAS Metadata Repository Creation Assistant to write its log files. This path is on the computer where you are running OracleAS Metadata Repository Creation Assistant. Note that once you click **Next** to move to the next screen, you cannot change the log file directory. If you click **Back** to return to this screen, then the Log File Directory field becomes read-only. This is to prevent OracleAS Metadata Repository Creation Assistant from writing log files in different directories. Click **Next**.
3.	Select Operation	Select **Load** if you want to load the OracleAS Metadata Repository into the database but without registering it with Oracle Internet Directory. Select this option if you do not have an Oracle Internet Directory yet. Click **Next**.
4.	Specify Database Connection Information	Enter connect information for the existing database. **SYS Password**: Enter the password for the `SYS` user. **Single node instance**: Select this option, and complete the fields under it: ■ **Hostname**: Enter the name of the computer that is running the database. If your middle tier instances are located in a different domain, then you need to append the domain name to the host name. ■ **Port**: Enter the port number for the database. ■ **Service Name**: Enter the service name of the database. Note that the service name must include the database domain name. Example: `asdb.mydomain.com` Click **Next**.
5.	Specify Storage Options	Select **Raw Device**.
6.	Specify Tablespace Information	If you create a mapping file and set the `DBCA_RAW_CONFIG` environment variable to point to this file, then this screen displays the values read from the file. Refer to step 3 on page 16-4 for details. Correct the values, if necessary, and click **Next**. If you do not create a mapping file, or if the `DBCA_RAW_CONFIG` environment variable is unset, then you have to enter the information in this screen manually. Click **Next**.
7.	Warning: Check Disk Space	This warning dialog box appears if your `SYSTEM` and `UNDO` tablespaces are set to autoextend. Check that the file system that contains the `SYSTEM` and `UNDO` tablespaces have enough disk space, as specified in the warning dialog box.

Table 16–2 (Cont.) Installing OracleAS Metadata Repository in a Database that Uses Raw Devices

	Screen	Action
8.	Specify Login for Oracle Internet Directory	Enter the Username and Password to log in to Oracle Internet Directory. The user must belong to the iAS Admins group. You can use the simple name (for example, `jdoe`) or the DN (for example, `cn=orcladmin`) of the user. If your Oracle Internet Directory contains more than one realm, then you need to enter the realm that contains the specified user. **Note:** If you log in as the Oracle Internet Directory superuser (`cn=orcladmin`), then the realm value is not used because the superuser does not belong to any realm. The realm value is used only if you log in using a simple name. Click **Next**.
9.	Loading Repository	OracleAS Metadata Repository Creation Assistant creates and populates the tablespaces and schemas.
10.	Success	Click **OK** to exit OracleAS Metadata Repository Creation Assistant.

6. Perform postinstallation steps. Refer to Section 16.5, "Postinstallation Steps".

16.3 Installing in a Database that Uses Oracle-Managed Files

To install the OracleAS Metadata Repository in a database that uses Oracle-managed files, perform these steps:

1. Ensure that the database meets the requirements listed in Section 15.5, "Requirements for the Database".

   In particular, ensure that the `db_create_file_dest` initialization parameter specifies the directory where OracleAS Metadata Repository Creation Assistant should create the data files for the OracleAS Metadata Repository. For example:

   ```
   prompt> sqlplus "sys/password as sysdba"
   SQL> alter system set db_create_file_dest ='/u03/oradata';
   ```

   If this initialization parameter is not set, then you will get an error.

2. Start up OracleAS Metadata Repository Creation Assistant. Refer to Section 15.7, "Starting OracleAS Metadata Repository Creation Assistant" for details.

3. Follow the screens:

Table 16–3 Installing OracleAS Metadata Repository on a Database that Uses Oracle-Managed Files

	Screen	Action
1.	Welcome	Click **Next**.
2.	Specify Oracle Home	**Oracle Home**: Enter the full path of the Oracle home directory for the database. Ensure that you use the conventions of the computer that is running the database (for example, use the proper slashes). **Log File Directory**: Enter the full path of the directory where you want OracleAS Metadata Repository Creation Assistant to write its log files. This path is on the computer where you are running OracleAS Metadata Repository Creation Assistant. Note that once you click **Next** to move to the next screen, you cannot change the log file directory. If you click **Back** to return to this screen, then the **Log File Directory** field becomes read-only. This is to prevent OracleAS Metadata Repository Creation Assistant from writing log files in different directories. Click **Next**.
3.	Select Operation	Select **Load** if you want to load the OracleAS Metadata Repository into the database but without registering it with Oracle Internet Directory. Select this option if you do not have an Oracle Internet Directory yet. Select **Load and Register** if you want to load the OracleAS Metadata Repository into the database and register it with Oracle Internet Directory. Click **Next**.
4.	Specify Database Connection Information	Enter connect information for the existing database. **SYS Password**: Enter the password for the `SYS` user. **Single node instance**: Select this option, and complete the fields under it: ▪ **Hostname**: Enter the name of the computer that is running the database. If the middle tier instances are located in a different domain, then you need to append the domain name to the host name. ▪ **Port**: Enter the port number for the database. ▪ **Service Name**: Enter the service name of the database. Note that the service name must include the database domain name. Example: `asdb.mydomain.com` Click **Next**.
5.	Specify Storage Options	Select **Oracle-Managed Files**.
6.	Directory for Oracle-Managed Files	This screen shows the directory where OracleAS Metadata Repository Creation Assistant will create the data files for OracleAS Metadata Repository. This value is read from the `db_create_file_dest` initialization parameter. If this parameter is not set, then you will get an error message. If you want OracleAS Metadata Repository Creation Assistant to create the data files in a different directory, then edit the `db_create_file_dest` initialization parameter to specify the desired directory (using SQL*Plus or other database administration tool), go back one screen, and click **Next** to move forward until you return to this screen. You should refer to the new value of the parameter. Click **Next**.
7.	Specify Tablespace Information	This screen displays the tablespaces that OracleAS Metadata Repository Creation Assistant needs to create. In the **Size** column, select the appropriate size for the tablespaces. Select the largest size for a tablespace if you have applications that use the component heavily. If not, then select the smallest size. Click **Next**.

Table 16–3 (Cont.) Installing OracleAS Metadata Repository on a Database that Uses Oracle-Managed

	Screen	Action
8.	Warning: Check Disk Space	This warning dialog box appears if your `SYSTEM` and `UNDO` tablespaces are set to autoextend. Check that the file system that contains the `SYSTEM` and `UNDO` tablespaces have enough disk space, as specified in the Warning dialog box.
9.	Loading Repository	OracleAS Metadata Repository Creation Assistant creates and populates the tablespaces and schemas.
10.	Success	Click **OK** to exit OracleAS Metadata Repository Creation Assistant.

4. Perform postinstallation steps. Refer to Section 16.5, "Postinstallation Steps".

16.4 Harmless Errors in the Log File

You may ignore the following errors in the log file because they are harmless:

- SP2-0332 Errors
- SP2-0606 Errors

16.4.1 SP2-0332 Errors

If the log file shows an SP2-0332 error in the following context, then you may ignore it:

```
ERROR at line 1:
ORA-04043: object OID_METRIC_TYPE does not exist
Type created.
Type created.
Package created.
Package body created.
SP2-0332: Cannot create spool file.
Procedure created.
PL/SQL procedure successfully completed.
```

16.4.2 SP2-0606 Errors

If the log file shows an SP2-0606 error in the following context, then you may ignore it:

```
ERROR at line 1:
ORA-04043: object OID_METRIC_TYPE does not exist
Type created.
Type created.
Package created.
Package body created.
SP2-0606: Cannot create SPOOL file "LOGS/oidimeta.log"
Procedure created.
PL/SQL procedure successfully completed.
```

16.5 Postinstallation Steps

After installing the OracleAS Metadata Repository in your database, you need to perform these steps:

- Update sqlnet.ora File
- Copy ldap.ora File to the Database Oracle Home

- Unlock the DCM Schema and Set Its Password
- Create Instance for Oracle Ultra Search

16.5.1 Update sqlnet.ora File

Configure SQL*Net settings so that the ORASSO_PS schema in the OracleAS Metadata Repository can be contacted. To do this, update the $ORACLE_HOME/network/admin/sqlnet.ora file (ORACLE_HOME specifies the database home where you installed the OracleAS Metadata Repository) by adding LDAP to the NAMES.DIRECTORY_PATH entry as follows:

```
NAMES.DIRECTORY_PATH= (LDAP, TNSNAMES, ONAMES, HOSTNAME)
```

If you do not perform this configuration, then errors are displayed in OracleAS Portal when using the OracleAS Single Sign-On administration portlet. The error is caused by the DB link used by OracleAS Portal to connect to the ORASSO_PS schema for external application functionality. The DB link is resolved using the SQL*Net settings configured in the database home where the OracleAS Metadata Repository resides.

16.5.2 Copy ldap.ora File to the Database Oracle Home

This procedure is applicable only if you **loaded and registered** the OracleAS Metadata Repository with Oracle Internet Directory. If you loaded only the OracleAS Metadata Repository without registering it with Oracle Internet Directory, then you can skip this step.

- If your database is version 9.2.0.6 (or higher in the 9.2.x series), then copy the file *Repository_Creation_Assistant_OH*/network/admin/ldap.ora to *Database_OH*/network/admin/ldap.ora *Database_OH*.

  Repository_Creation_Assistant_OH is the Oracle home for OracleAS Metadata Repository Creation Assistant.

  Database_OH is the Oracle home for your database.

- If your database is version 10.1.0.4 (or higher in the 10.1.x series), then copy the file *Repository_Creation_Assistant_OH*/network/admin/ldap.ora to *Database_OH*/ldap/admin/ldap.ora.

  Repository_Creation_Assistant_OH is the Oracle home for OracleAS Metadata Repository Creation Assistant.

  Database_OH is the Oracle home for your database.

16.5.3 Unlock the DCM Schema and Set Its Password

Unlock the dcm schema and set its password. This step is required only if (1) you want to use the metadata repository *only* for database clustering of J2EE and Web Services middle tier instances *and* (2) you did not register the metadata repository with Oracle Internet Directory.

1. Set the ORACLE_HOME environment variable to point to the full path of the directory where the database is installed.
2. Set the ORACLE_SID environment variable to the SID of the database.
3. Unlock the dcm schema and set its password using SQL*Plus.

   The following alter user command sets the password to welcome1, but you can set it to any value.

```
%ORACLE_HOME%/bin/sqlplus "sys/password as sysdba"
SQL> alter user dcm identified by welcome1 account unlock;
```

16.5.4 Create Instance for Oracle Ultra Search

Oracle Application Server uses the Oracle Ultra Search that comes with the database. If you loaded the OracleAS Metadata Repository in a 9.2.0.6 database, then Oracle Ultra Search that comes with this version of the database does not include a default instance. This means that you will have to create an Oracle Ultra Search instance. For details on how to create an instance, refer to the section "Creating an Instance" in the chapter "Understanding the Oracle Ultra Search Administration Tool" in the *Oracle Ultra Search Administrator's Guide*.

If you do not create an Oracle Ultra Search instance, then you will get an error when you try the following:

1. Log in to OracleAS Portal.
2. Navigate to the Oracle Ultra Search Administration page. You will get the following error:

   ```
   "Error: No Ultra Search instances have been assigned to user
   "ORCLADMIN" for administration. Contact the Ultra Search
   administrator for your organization."
   ```

16.6 If Loading Failed

If loading failed, then you have to remove the OracleAS Metadata Repository objects that were loaded before the failure occurred. To remove the objects:

1. Run OracleAS Metadata Repository Creation Assistant, and select the remove option. You can remove the objects using the wizard or the script. Refer to Appendix B for details.
2. Perform this step only if the Oracle Internet Directory schemas in the database are loaded by OracleAS Metadata Repository. If your database already contains Oracle Internet Directory schemas when you run OracleAS Metadata Repository Creation Assistant, then you can skip this step.

   In this step, you delete the Oracle Internet Directory objects from your database. You have to do this as a separate step because the remove operation in OracleAS Metadata Repository Creation Assistant does not remove the Oracle Internet Directory objects from your database.

   To delete the Oracle Internet Directory objects, refer to Section B.7, "Removing Oracle Internet Directory Objects".

16.7 Reinstalling OracleAS Metadata Repository in the Same Database

This section is applicable only for 9.2.0.6 databases. It does not apply for 10*g* databases.

If you want to remove and reinstall OracleAS Metadata Repository in your 9.2.0.6 database, then follow these steps:

1. Remove OracleAS Metadata Repository from your database using OracleAS Metadata Repository Creation Assistant.
2. Perform this step only if the Oracle Internet Directory schemas in your database were loaded by OracleAS Metadata Repository. If your database already contains

Oracle Internet Directory schemas when you run OracleAS Metadata Repository Creation Assistant, then you can skip this step.

In this step, you delete the Oracle Internet Directory objects from your database. You have to do this as a separate step because the remove operation in OracleAS Metadata Repository Creation Assistant does not remove the Oracle Internet Directory objects from your database.

For more information about deleting Oracle Internet Directory objects, refer to Section B.7, "Removing Oracle Internet Directory Objects".

3. Reinstall OracleAS Metadata Repository in the database.

Using a Reinstalled OracleAS Metadata Repository

Note the following points before using the reinstalled OracleAS Metadata Repository:

- You cannot install Oracle Internet Directory against this OracleAS Metadata Repository. The installer gives an error message that Oracle Internet Directory is already configured with a database, Oracle Internet Directory can be installed only once for each database instance.
- You can install middle tiers to use this OracleAS Metadata Repository and Oracle Internet Directory.

17

Registering OracleAS Metadata Repository with Oracle Internet Directory

This chapter describes how to use Oracle Application Server Metadata Repository Creation Assistant to register OracleAS Metadata Repository with Oracle Internet Directory, if you had to deregister the two components previously.

The chapter contains the following contents:

17.1 Registering with Oracle Internet Directory

Notes:

- You can only register the OracleAS Metadata Repository with supported versions of Oracle Internet Directory. Refer to Section 15.6, "Requirements for Oracle Internet Directory" for details.
- You cannot use Oracle Application Server Metadata Repository Creation Assistant to register a metadata repository from Release 2 (9.0.2) with an Oracle Internet Directory from 10*g* (9.0.4).
- If Oracle Application Server Metadata Repository Creation Assistant finds the same service name already registered with Oracle Internet Directory, then it will just display an error message saying that the service name is already registered with the Oracle Internet Directory. In order to continue, you need to remove the registration first.

To register the OracleAS Metadata Repository with Oracle Internet Directory:

1. Start up Oracle Application Server Metadata Repository Creation Assistant. Refer to Section 15.7, "Starting OracleAS Metadata Repository Creation Assistant".
2. Follow the screens mentioned in Table 17–1:

Table 17–1 Registering OracleAS Metadata Repository with Oracle Internet Directory

	Screen	Action
1.	Welcome	Click **Next**.
2.	Specify Oracle Home	**Oracle Home**: Enter the full path of the Oracle home directory for the database. Ensure that you use the conventions of the computer that is running the database (for example, use the proper slashes). **Log File Directory**: Enter the full path of the directory where you want Oracle Application Server Metadata Repository Creation Assistant to write its log files. This path is on the computer where you are running Oracle Application Server Metadata Repository Creation Assistant. Note that once you click **Next** to move to the next screen, you cannot change the log file directory. If you click **Back** to return to this screen, then the **Log File Directory** field becomes read-only. This is to prevent Oracle Application Server Metadata Repository Creation Assistant from writing log files in different directories. Click **Next**.
3.	Select Operation	Select **Register**. Click **Next**.
4.	Specify Database Connection Information	Enter connect information for the database. **DBA Username** and **Password**: Enter the username and password to log in to the database. The user must have DBA privileges. Select **Single Node Instance** or **Real Application Clusters database**, depending on your database type, and complete the appropriate fields. Fields for **Single Node Instance**: ■ **Hostname**: Enter the name of the computer that is running the database. If your middle tier instances are located in a different domain, you need to append the domain name to the host name. ■ **Port**: Enter the port number for the database. ■ **Service Name**: Enter the service name of the database. Note that the service name must include the database domain name. Example: `asdb.mydomain.com` Fields for **Real Application Clusters Database**: ■ **Hostname and Port**: Enter the names of all the computers running the Real Application Clusters database and the port numbers used by the listener. Use the format *host*:*port*, and separate each *host*:*port* with a comma character: `hostname1:port1, hostname2:port2, hostname3:port3, ...` If your middle tier instances are located in a different domain, then you need to append the domain name to the hostname. Example 1 (same domain): `myhost:1521, myhost2:1521` Example 2 (different domain): `myhost.mydomain.com:1521, myhost2.mydomain.com:1521` ■ **Service Name**: Enter the service name of the database. The service name must include the database domain name. The service name must be the same for all instances in the cluster. Example: `asdb.mydomain.com` Click **Next**.

Table 17–1 (Cont.) Registering OracleAS Metadata Repository with Oracle Internet Directory

	Screen	Action
5.	Specify Oracle Internet Directory Connection	**Internet Directory Hostname**: Enter the name of the computer that is running Oracle Internet Directory. If your middle tier instances are located in a different domain, then you need to append the domain name to the hostname. **Internet Directory Port**: Enter the port number for Oracle Internet Directory. **Use SSL to Connect to Oracle Internet Directory for Registration Purposes**: Select this option if you want Oracle Application Server Metadata Repository Creation Assistant to connect to Oracle Internet Directory using SSL when performing the registration. Click **Next**.
6.	Specify Login for Oracle Internet Directory	Enter the Username and Password to log in to Oracle Internet Directory. The user must belong to the iAS Admins group. You can use the simple name (for example, `jdoe`) or the DN (for example, `cn=orcladmin`) of the user. If your Oracle Internet Directory contains more than one realm, then you need to enter the realm that contains the specified user. **Note:** If you log in as the Oracle Internet Directory superuser (`cn=orcladmin`), then the realm value is not used because the superuser does not belong to any realm. The realm value is used only if you log in using a simple name. Click **Next**.
7.	Specify Oracle Context	Specify the location in Oracle Internet Directory where you want to register the OracleAS Metadata Repository. **Root Oracle Context (cn=OracleContext)**: Select this option to register OracleAS Metadata Repository in the root Oracle context. **Custom Oracle Context**: Select this option to register OracleAS Metadata Repository in a specific realm in Oracle Internet Directory. Enter the DN of the realm in the provided field. Click **Next**.
8.	Success	Click **OK** to exit Oracle Application Server Metadata Repository Creation Assistant.

17.2 Postregistration Step

After registering the OracleAS Metadata Repository with Oracle Internet Directory, you need to copy the `ldap.ora` file from the Oracle Application Server Metadata Repository Creation Assistant home to the database home. Refer to Section 16.5.2, "Copy ldap.ora File to the Database Oracle Home" for details.

17.3 If You Exit Before Registration Is Completed, or If Registration Fails

If you exit Oracle Application Server Metadata Repository Creation Assistant before the registration is completed or if the registration fails, then you must perform the following manual steps before you run Oracle Application Server Metadata Repository Creation Assistant again to re-register.

1. Remove repository entries from Oracle Internet Directory. Refer to Appendix B.3, "Deregistering and Removing OracleAS Metadata Repository Using the Wizard".
2. Reset all schema passwords to their default values.

```
 sqlplus "sys/password as sysdba"
SQL> alter user schema_name identified by schema_password;
```

3. Lock all schema passwords.

```
sqlplus "sys/password as sysdba"
SQL> alter user schema_name account lock password expire;
```

Once these steps are done, you can restart Oracle Application Server Metadata Repository Creation Assistant to register the database.

Part IV

Appendixes

This part contains the following appendixes:

A

Deinstallation and Reinstallation

This appendix guides you through the deinstallation and reinstallation process for Oracle Application Server.

A.1 Deinstalling Oracle Application Server Standard Edition One

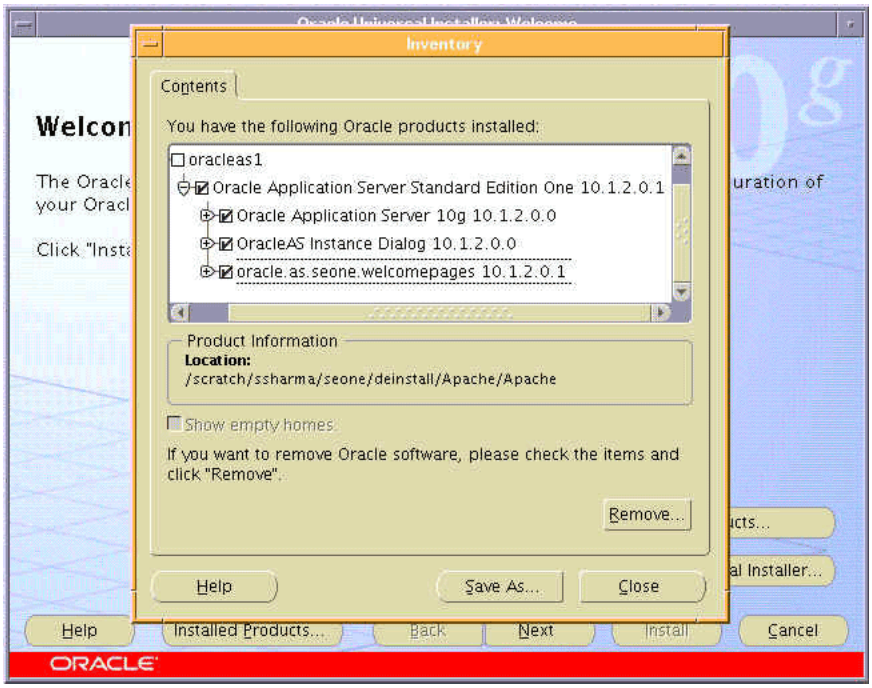
Follow these high-level steps to deinstall Oracle Application Server Standard Edition One (the details are provided in later sections):

1. Start Oracle Universal Installer using the following command:

   ```
   $ORACLE_HOME/oui/bin/runInstaller -deinstall
   ```

   You will see the screen shown in Figure A–1.

Figure A–1 Inventory Box for Deinstalling the Selected Oracle Home



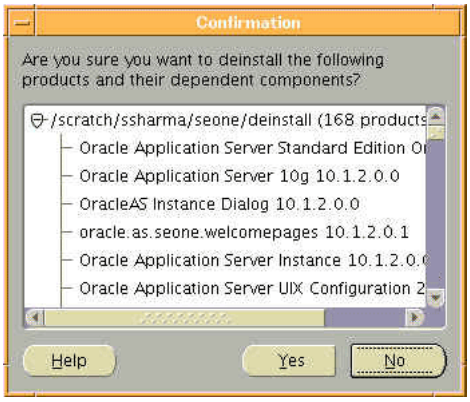
Select the Oracle home directory you need to deinstall and click **Remove** to continue.

If you are deinstalling a J2EE and Web Services only installation, then skip to Step 3.

If you are deinstalling an OracleAS Portal installation, then continue to Step 2.

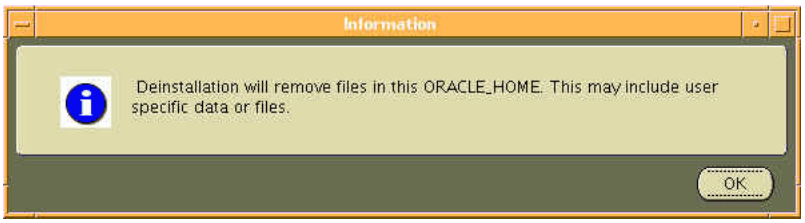
2. A Confirmation box is displayed as shown in Figure A–2. It lists the Oracle home you need to deinstall. Click **Yes** to confirm the deinstallation.

Figure A–2 Confirmation Box



3. The deinstallation will continue for a short time, before the screen shown in Figure A–3 appears. It warns that files and data in the Oracle home are about to be deinstalled.

Figure A–3 Deinstallation Warning Message About Removing Files in the Oracle Home



If you are deinstalling a J2EE and Web Services only installation, then click **OK** and go to Step 4.

If you are deinstalling an OracleAS Portal installation, then you will see the warning message twice. This is because there are two Oracle homes created for an OracleAS Portal installation, one for OracleAS Portal and one for OracleAS Infrastructure.

For more information, refer to Section 1.4.2, "Oracle Home Directory". In both cases, click **OK** to continue.

4. The deinstallation will continue to run until it is complete. A log of the deinstallation can be viewed at the location mentioned in the following file:

   `/etc/oraInst.loc`

5. Run the Deinstall tool on middle tier instances. For more information, refer to Section A.3.2, "Deinstalling the Middle-Tier with the Deconfig Tool"
6. Deinstall OracleAS Infrastructure instances. For more information, refer to Section A.3.3, "Deinstalling OracleAS Infrastructure Using the Deconfig Tool"
7. Clean up any remaining files.

Note:

- If you use Oracle Application Server Metadata Repository Creation Assistant (OracleAS Metadata Repository Creation Assistant) to install the OracleAS Metadata Repository on an existing database, and you want to remove the OracleAS Metadata Repository, then select the **Remove** option in OracleAS Metadata Repository Creation Assistant. You can also use OracleAS Metadata Repository Creation Assistant to remove the registration from Oracle Internet Directory.
- If you remove an infrastructure instance, then all middle-tier instances that depend on that infrastructure will no longer work. If you want to keep the middle-tier instances, then you can configure them to use services from another infrastructure. Refer to the *Oracle Application Server Administrator's Guide* for details.

Items to Remove or Clean Up

To deinstall Oracle Application Server 10*g* Release 2 (10.1.2) instances, you have to clean up the items listed in Table A–1. The procedures are described later in this appendix.

Table A–1 Items to Deinstall

Item to Clean Up	Tool to Use
Files from the Oracle home directory	Installer If the installer does not remove all the files, then you can remove the remaining files using the `rm` command.
Entries for the deleted instance in the Inventory directory	Installer
Instance name from Farm page	Installer
Entries for the deleted instance in the `/etc` directory	You have to remove the entries manually. Refer to: ■ Step 7 on page A-6 if you are deinstalling middle tiers. ■ Step 4 on page A-7 if you are deinstalling OracleAS Infrastructure.
Entries for the deleted instance in Oracle Internet Directory	Deconfig tool

The installer does not permit custom deinstallation of individual components.

A.2 Deinstalling OracleAS Metadata Repository Creation Assistant

If you no longer need OracleAS Metadata Repository Creation Assistant, then you can deinstall it using the procedure described in this section.

Remember that you need OracleAS Metadata Repository Creation Assistant if you want to remove or deregister OracleAS Metadata Repository.

1. Log in as the operating system user who installed OracleAS Metadata Repository Creation Assistant.
2. Start the Oracle Universal Installer.

   ```
   prompt> $ORACLE_HOME/oui/bin/runInstaller
   ```

   `ORACLE_HOME` refers to the directory where you installed OracleAS Metadata Repository Creation Assistant.
3. Follow these steps in the installer.
   a. Welcome screen: Click **Deinstall Products**.
   b. Inventory screen: Select the OracleAS Metadata Repository Creation Assistant installation that you want to deinstall, and click **Remove**.
   c. Confirmation screen: Verify the components selected for deinstallation. Click **Yes** to continue.
   d. Deinstallation Progress screen: Monitor the progress of the deinstallation.
   e. Exit the installer when the deinstallation is complete.
4. Delete any remaining files in the Oracle home directory.

   ```
   prompt> rm -rf $ORACLE_HOME
   ```

A.3 Deconfig Tool

The Deconfig tool is used to begin the deinstallation procedure. This tool removes entries in OracleAS Metadata Repository and Oracle Internet Directory for the Oracle Application Server Standard Edition One instance that you want to deinstall.

A.3.1 Running the Deconfig Tool

To run the Deconfig tool, run the Perl interpreter on the `$ORACLE_HOME/bin/deconfig.pl` script. Use the Perl interpreter provided with Oracle Application Server Standard Edition One.

```
prompt> cd $ORACLE_HOME/bin
prompt> $ORACLE_HOME/perl/bin/perl deconfig.pl [-u oid_user]
          [-w password] [-r realm] [-dbp sys_db_password]
```

If you run it without any parameters, then the tool prompts you for the necessary information.

Table A–2 Optional Parameters for deconfig.pl

Parameter	Description
-u *oid_user*	Specify the Oracle Internet Directory user. You can specify the Oracle Internet Directory user using the simple name or the DN of the user. For example, the simple name can be `jdoe@mycompany.com`, which corresponds to the DN `cn=jdoe,l=us,dc=mycompany,dc=com`. The Oracle Internet Directory user needs to have privileges for deinstalling the components that are configured in the Oracle Application Server instance that you want to deinstall. These privileges are the same as for installing and configuring the component. For example, if you are deinstalling an OracleAS Infrastructure instance that is running Oracle Delegated Administration Services and Oracle Application Server Single Sign-On, ensure that the user has privileges to configure these components. For a list of components and groups that grant the privileges, refer to Section 6.3, "Groups Required to Configure or Deinstall Components". If you want to run the tool as the Oracle Internet Directory superuser, then ensure that you use `cn=orcladmin`, and not just `orcladmin`. These are two different users. If you want more details about these users, then refer to Section 6.1, "Default Users in Oracle Internet Directory".
-w *password*	Specify the password for the Oracle Internet Directory user.
-r *realm*	Specify the realm in which to authenticate the user. This value is required only if your Oracle Internet Directory has more than one realm.
-dbp *sys_db_password*	Specify the password for the SYS user in the database. This is the OracleAS Metadata Repository database used by Oracle Internet Directory. This value is required only if you are deinstalling an Identity Management-only instance that has Oracle Internet Directory configured. If you specify this parameter and it is not needed, then the password value is simply not used.
-h or -help	Display help for the Deconfig tool.

The Deconfig tool writes its log file to the `$ORACLE_HOME/cfgtoollogs/DeconfigureWrapper.log` file.

A.3.2 Deinstalling the Middle-Tier with the Deconfig Tool

This section describes how to deinstall middle tier instances with the Deconfig tool.

1. Log in as the operating system user who installed the instance you want to deinstall.
2. Stop all processes associated with the instance you want to deinstall.

   For more information about stopping processes, refer to Chapter 9 or the *Oracle Application Server Administrator's Guide*.
3. Navigate to the middle tier Oracle home and run the Deconfig tool.

   ```
   prompt> cd $ORACLE_HOME/bin
   prompt> $ORACLE_HOME/perl/bin/perl deconfig.pl [parameters]
   ```

   Refer to Section A.3 for parameter details.
4. Start the installer.

   ```
   prompt> $ORACLE_HOME/oui/bin/runInstaller
   ```

5. Follow these steps in the installer.
   a. Welcome screen: Click **Deinstall Products**.
   b. Inventory screen: Select the instance you want to deinstall, and click **Remove**.
   c. Confirmation screen: Verify the components selected for deinstallation. Click **Yes** to continue.
   d. Deinstallation Progress screen: Monitor the progress of the deinstallation.
   e. Exit the installer when the deinstallation is complete.
6. Delete any remaining files in the Oracle home directory of the deleted instance.

   ```
   prompt> rm -rf $ORACLE_HOME
   ```

7. Remove the line for the deinstalled middle tier from the `/etc/oratab` file.

   Towards the end of the file, you should see lines that specify the Oracle home directory. Remove the line for the Oracle home that you deinstalled. For example, if your Oracle home is `/private1/j2ee`, the line would look like the following:

   ```
   *:/private1/j2ee:N
   ```

Note that OracleAS Portal entries in Oracle Internet Directory are not removed by the Deconfig tool or the installer.

A.3.3 Deinstalling OracleAS Infrastructure Using the Deconfig Tool

This section describes how to deinstall OracleAS Infrastructure instances.

1. Log in as the operating system user who installed the instance you want to deinstall.
2. Stop all processes associated with the instance that you want to deinstall.
3. Run the Deconfig tool.

   ```
   prompt> cd $INFRA_ORACLE_HOME/bin
   ```

```
prompt> $INFRA_ORACLE_HOME/perl/bin/perl deconfig.pl [parameters]
```

> **Note:** For parameter details, refer to Section A.3, "Deconfig Tool". If you are deinstalling an instance that includes the Oracle Internet Directory or Oracle Application Server Single Sign-On components, then you need to run the Deconfig tool as the Oracle Internet Directory superuser (`cn=orcladmin`). If the instance does not include Oracle Internet Directory or Oracle Application Server Single Sign-On, then you need to run the tool as a user with the proper privileges, as shown in Table 6–4.

4. Remove lines for the deinstalled infrastructure instance from the `/etc/oratab` file.

   Towards the end of the file, you should see lines that specify the Oracle home directory. If you are deinstalling an infrastructure instance that contains a metadata repository, then there will be two lines in the file:

   - one line that begins with a `*`
   - one line that begins with the database SID

   You need to remove these lines.

   For example, if the infrastructure instance is installed in `/private1/infra`, and it includes a metadata repository whose SID is `asdb`, the lines would look like the following:

   ```
   asdb:/private1/infra:N
   *:/private1/infra:N
   ```

5. Start the Oracle Universal Installer.

   ```
   prompt> $ORACLE_HOME/oui/bin/runInstaller
   ```

6. Follow these steps in the installer.

   a. Welcome screen: Click **Deinstall Products**.

   b. Inventory screen: Select the instance you want to deinstall, and click **Remove**.

   c. Confirmation screen: Verify the components selected for deinstallation. Click **Yes** to continue.

   d. Deinstallation Progress screen: Monitor the progress of the deinstallation.

   e. Exit the installer when the deinstallation is complete.

7. Delete any remaining files in the Oracle home directory of the deleted instance.

   ```
   prompt> rm -rf $ORACLE_HOME
   ```

A.4 Harmless Errors in the Log File

If you get the `unable to delete file` and `unable to find make file` errors in the `oraInstall`*`timestamp`*`.err` file after you deinstall J2EE and Web Services or OracleAS Portal instances, then these are harmless error messages.

```
Ignoring Exception during de-install
oracle.sysman.oii.oiil.OiilDeinstallException:
```

```
An error occurred during runtime. oracle.sysman.oii.oiil.OiilDeinstallException:
An error occurred during runtime.
...
Ignoring Exception during de-install
oracle.sysman.oii.oiil.OiilDeinstallException:
Unable to delete file
/home/j2ee/sysman/emd/targets.xml
oracle.sysman.oii.oiil.OiilDeinstallException: Unable to delete file
/home/j2ee/sysman/emd/targets.xml
at instantiateFileEx.deinstallAction(instantiateFileEx.java:935)
...
Ignoring Exception during de-installoracle.sysman.oii.oiil.OiilDeinstallException:
Unable to find make file:
/home/j2ee/network/lib/ins_net_client.mk
oracle.sysman.oii.oiil.OiilDeinstallException: Unable to find make file:
/home/j2ee/network/lib/ins_net_client.mk
at ssmakeux.deinstallAction(ssmakeux.java:246)
...
```

A.5 Cleaning Up Oracle Application Server Processes

If you forgot to shut down Oracle Application Server processes before starting the installation, then you have to terminate the processes because the files for these processes are deleted. To check for processes that are still running, run the `ps` command:

```
prompt> ps -ef
```

To terminate a process, use the `kill` command:

```
prompt> kill -9 process_id
```

You can determine the *`process_id`* from the `ps` command.

If you need to shut down the `dcmctl` shell process, then you can try exiting the shell by typing `exit`.

A.6 Reinstallation

The installer does not allow reinstallation of an Oracle Application Server Standard Edition One instance in a directory that already contains an Oracle Application Server Standard Edition One instance. To reinstall Oracle Application Server Standard Edition One in the same directory, you have to deinstall and then install it.

A.7 Troubleshooting

Refer to Section G.4, "Deinstallation Problems and Solutions" for help with common deinstallation problems.

B

Deregistering and Removing OracleAS Metadata Repository

You can use Oracle Application Server Metadata Repository Creation Assistant (OracleAS Metadata Repository Creation Assistant) to remove OracleAS Metadata Repository tablespaces and schemas from your database and deregister it from Oracle Internet Directory.

This appendix describes how to use OracleAS Metadata Repository Creation Assistant to remove OracleAS Metadata Repository tablespaces and schemas from the database. It contains the following sections:

Use the Wizard or the Script?

You can deregister and remove the OracleAS Metadata Repository using the wizard or the `cleanMR` script. Note that the script performs the removal operation only; it does not deregister the OracleAS Metadata Repository for you.

B.1 Deregistering an Oracle Internet Directory Database

If the database is an Oracle Internet Directory database, then you cannot deregister it. OracleAS Metadata Repository Creation Assistant displays an error and does not continue with the deregistration.

An Oracle Internet Directory database is a database that is in use by Oracle Internet Directory. For example:

- If you install OracleAS Portal with a new Metadata Repository, then the database is an Oracle Internet Directory database.

- If you register Oracle Internet Directory with a Metadata Repository (created using the installer or OracleAS Metadata Repository Creation Assistant), then the database is an Oracle Internet Directory database.

B.2 Checking If Middle Tiers Are Using the OracleAS Metadata Repository

If the database is not an Oracle Internet Directory database, then OracleAS Metadata Repository Creation Assistant then checks if there are any middle tiers using the OracleAS Metadata Repository database that you want to remove or deregister.

If it finds that middle tiers are using the OracleAS Metadata Repository, then it displays a warning. If you continue with the deregistration or removal, then the middle tiers will no longer be functional.

B.3 Deregistering and Removing OracleAS Metadata Repository Using the Wizard

This section describes how to use the wizard to deregister and remove the OracleAS Metadata Repository.

If you just want to deregister the OracleAS Metadata Repository from Oracle Internet Directory, then refer to Section B.5, "Deregistering the OracleAS Metadata Repository".

If you just want to remove the OracleAS Metadata Repository, then refer to Section B.4, "Removing the OracleAS Metadata Repository".

To deregister and remove the OracleAS Metadata Repository, follow these steps:

1. Stop all Oracle Application Server instances that are using the OracleAS Metadata Repository that you want to remove or deregister.

   Although you have shut down the Oracle Application Server instances, it is possible that the database still shows some OracleAS Metadata Repository schemas as being active. You can check this by running the following query against the database:

   ```
   prompt> sqlplus "sys/password as sysdba"
   SQL> select schemaname from v$session;
   ```

   password specifies the password for the SYS user.

   If you see any OracleAS Metadata Repository schemas in `schemaname`, then those schemas are still active. The OracleAS Metadata Repository schemas are listed in Table 15–9.

   If you are sure the instances are shut down, then restart the database to clear the session information.

   If you do not do this, then OracleAS Metadata Repository Creation Assistant detects that some sessions from Oracle Application Server instances are still active, and displays a warning.

2. Start up OracleAS Metadata Repository Creation Assistant. Refer to Section 15.7, "Starting OracleAS Metadata Repository Creation Assistant" for details.

3. Follow these screens:

Table B–1 Deregistering and Removing OracleAS Metadata Repository

	Screen	Action
1.	Welcome	Click **Next**.
2.	Specify Oracle Home	**Oracle Home**: Enter the full path of the Oracle home directory for the database. Ensure that you use the conventions of the computer that is running the database (for example, use the proper slashes). **Log File Directory**: Enter the full path of the directory where you want OracleAS Metadata Repository Creation Assistant to write its log files. This path is on the computer where you are running OracleAS Metadata Repository Creation Assistant. Note that once you click **Next** to move to the next screen, you cannot change the log file directory. If you click **Back** to return to this screen, then the **Log File Directory** field becomes read-only. This is to prevent OracleAS Metadata Repository Creation Assistant from writing log files in different directories. Click **Next**.
3.	Select Operation	Select **Remove**. Click **Next**.
4.	Select Remove Option	**Deregister and Remove**: Select this option to remove the OracleAS Metadata Repository tablespaces and schemas from your database, and deregister it from Oracle Internet Directory. Click **Next**.
5.	Specify Database Connection Information	Enter connect information for the existing database. **SYS Password**: Enter the password for the SYS user. Select either **Single Node Instance** or **Real Application Clusters Database**, depending on the type of your database, and complete the appropriate fields. Fields for **Single Node Instance**: ■ **Hostname**: Enter the name of the computer that is running the database. If your middle tier instances are located in a different domain, then you need to append the domain name to the hostname. ■ **Port**: Enter the port number for the database. ■ **Service Name**: Enter the service name of the database. Note that the service name must include the database domain name. Example: `asdb.mydomain.com` Fields for **Real Application Clusters Database**: ■ **Hostname and Port**: Enter the names of all the computers running the Real Application Clusters database and the port numbers used by the listener. Use the format *host*:*port*, and separate each *host*:*port* with a comma character: `hostname1:port1, hostname2:port2, hostname3:port3, ...` If your middle tier instances are located in a different domain, then you need to append the domain name to the hostname. Example 1 (same domain): `myhost:1521, myhost2:1521` Example 2 (different domain): `myhost.mydomain.com:1521, myhost2.mydomain.com:1521` ■ **Service Name**: Enter the service name of the database. The service name must include the database domain name. The service name must be the same for all instances in the cluster. Example: `asdb.mydomain.com` Click **Next**.

Table B–1 (Cont.) Deregistering and Removing OracleAS Metadata Repository

	Screen	Action
6.	Specify Oracle Internet Directory Connection	Enter connect information for the Oracle Internet Directory from which you want to deregister the OracleAS Metadata Repository. **Internet Directory Hostname**: Enter the name of the computer that is running Oracle Internet Directory. If your middle tier instances are located in a different domain, then you need to append the domain name to the hostname. **Internet Directory Port**: Enter the port number for Oracle Internet Directory. **Use SSL to Connect to Oracle Internet Directory for Deregistration Purposes**: Select this option if you want OracleAS Metadata Repository Creation Assistant to connect to Oracle Internet Directory using SSL when performing the deregistration. Click **Next**.
7.	Specify Login for Oracle Internet Directory	Enter the user name and password to log in to Oracle Internet Directory. The user must belong to the iAS Admins group. You can use the simple name (for example, `jdoe`) or the DN (for example, `cn=orcladmin`) of the user. If your Oracle Internet Directory contains more than one realm, then you need to enter the realm that contains the specified user. **Note:** If you log in as the Oracle Internet Directory superuser (`cn=orcladmin`), then the realm value is not used because the superuser does not belong to any realm. The realm value is used only if you log in using a simple name. Click **Next**.
8.	Specify Oracle Context	Specify the location in Oracle Internet Directory from which you want to deregister the OracleAS Metadata Repository. **Root Oracle Context (cn=OracleContext)**: Select this option to deregister OracleAS Metadata Repository from the root Oracle context. **Custom Oracle Context**: Select this option to deregister OracleAS Metadata Repository from a specific realm in Oracle Internet Directory. Enter the DN of the realm in the provided field. **NOTE:** Once you click **Next** on this screen, it is important that you **do not cancel** the operation. If you cancel the operation before it completes, then you will not be able to register or deregister the database. If you do cancel it, then you will have to perform some manual steps to clean up the database before you can proceed. Refer to Section B.8, "Cleaning up the Database If You Canceled a Deregistration Operation". Click **Next**.
9.	Success	Click **OK** to exit OracleAS Metadata Repository Creation Assistant.

B.4 Removing the OracleAS Metadata Repository

This section describes how to use the wizard to remove the OracleAS Metadata Repository.

If you just want to deregister the OracleAS Metadata Repository from Oracle Internet Directory, then refer to Section B.5, "Deregistering the OracleAS Metadata Repository".

If you want to deregister and remove the OracleAS Metadata Repository, then refer to Section B.3, "Deregistering and Removing OracleAS Metadata Repository Using the Wizard".

To remove the OracleAS Metadata Repository, follow these steps:

1. Stop all Oracle Application Server instances that are using the OracleAS Metadata Repository that you want to remove.

Although you have shut down the Oracle Application Server instances, it is possible that the database still shows some OracleAS Metadata Repository schemas as being active. You can check this by running the following query against the database:

```
prompt> sqlplus "sys/password as sysdba"
SQL> select schemaname from v$session;
```

password specifies the password for the SYS user.

If you see any OracleAS Metadata Repository schemas in `schemaname`, then those schemas are still active. The OracleAS Metadata Repository schemas are listed in Table 15–9.

If you are sure the instances are shut down, then restart the database to clear the session information.

If you do not do this, then OracleAS Metadata Repository Creation Assistant will detect that some sessions from Oracle Application Server instances are still active, and it will display a warning.

2. Start up OracleAS Metadata Repository Creation Assistant. Refer to Section 15.7, "Starting OracleAS Metadata Repository Creation Assistant" for details.
3. Follow these screens:

Table B–2 Removing OracleAS Metadata Repository

	Screen	Action
1.	Welcome	Click **Next**.
2.	Specify Oracle Home	**Oracle Home**: Enter the full path of the Oracle home directory for the database. Ensure that you use the conventions of the computer that is running the database (for example, use the proper slashes). **Log File Directory**: Enter the full path of the directory where you want OracleAS Metadata Repository Creation Assistant to write its log files. This path is on the computer where you are running OracleAS Metadata Repository Creation Assistant. Note that once you click **Next** to move to the next screen, you cannot change the log file directory. If you click **Back** to return to this screen, then the **Log File Directory** field becomes read-only. This is to prevent OracleAS Metadata Repository Creation Assistant from writing log files in different directories. Click **Next**.
3.	Select Operation	Select **Remove**. Click **Next**.

Table B–2 (Cont.) Removing OracleAS Metadata Repository

	Screen	Action
4.	Select Remove Option	**Remove**: Select this option to remove the OracleAS Metadata Repository tablespaces and schemas from your database. Click **Next**.
5.	Specify Database Connection Information	Enter connect information for the existing database. **SYS Password**: Enter the password for the SYS user. Select either **Single Node Instance** or **Real Application Clusters Database**, depending on the type of your database, and complete the appropriate fields. Fields for **Single Node Instance**: ■ **Hostname**: Enter the name of the computer that is running the database. If your middle tier instances are located in a different domain, then you need to append the domain name to the hostname. ■ **Port**: Enter the port number for the database. ■ **Service Name**: Enter the service name of the database. Note that the service name must include the database domain name. Example: `asdb.mydomain.com` Fields for **Real Application Clusters Database**: ■ **Hostname and Port**: Enter the names of all the computers running the Real Application Clusters database and the port numbers used by the listener. Use the format *host*:*port*, and separate each *host*:*port* with a comma character: `hostname1:port1, hostname2:port2, hostname3:port3, ...` If your middle tier instances are located in a different domain, then you need to append the domain name to the hostname. Example 1 (same domain): `myhost:1521, myhost2:1521` Example 2 (different domain): `myhost.mydomain.com:1521, myhost2.mydomain.com:1521` ■ **Service Name**: Enter the service name of the database. The service name must include the database domain name. The service name must be the same for all instances in the cluster. Example: `asdb.mydomain.com` Click **Next**.
6.	Success	Click **OK** to exit OracleAS Metadata Repository Creation Assistant.

B.5 Deregistering the OracleAS Metadata Repository

This section how to use the wizard to deregister the OracleAS Metadata Repository from Oracle Internet Directory. The OracleAS Metadata Repository objects are not removed from the database.

If you just want to remove the OracleAS Metadata Repository, then refer to Section B.4, "Removing the OracleAS Metadata Repository".

If you want to deregister and remove the OracleAS Metadata Repository, then refer to Section B.3, "Deregistering and Removing OracleAS Metadata Repository Using the Wizard".

1. Stop all Oracle Application Server instances that are using the OracleAS Metadata Repository that you want to deregister.

   Although you have shut down the Oracle Application Server instances, it is possible that the database still shows some OracleAS Metadata Repository

schemas as being active. You can check this by running the following query against the database:

```
prompt> sqlplus "sys/password as sysdba"
SQL> select schemaname from v$session;
```

password specifies the password for the SYS user.

If you see any OracleAS Metadata Repository schemas in `schemaname`, then those schemas are still active. The OracleAS Metadata Repository schemas are listed in Table 15–9.

If you are sure the instances are shut down, then restart the database to clear the session information.

If you do not do this, then OracleAS Metadata Repository Creation Assistant will detect that some sessions from Oracle Application Server instances are still active, and it will display a warning.

2. Start up OracleAS Metadata Repository Creation Assistant. Refer to Section 15.7, "Starting OracleAS Metadata Repository Creation Assistant" for details.
3. Follow these screens:

Table B–3 Deregistering OracleAS Metadata Repository

	Screen	Action
1.	Welcome	Click **Next**.
2.	Specify Oracle Home	**Oracle Home**: Enter the full path of the Oracle home directory for the database. Ensure that you use the conventions of the computer that is running the database (for example, use the proper slashes). **Log File Directory**: Enter the full path of the directory where you want OracleAS Metadata Repository Creation Assistant to write its log files. This path is on the computer where you are running OracleAS Metadata Repository Creation Assistant. Note that once you click **Next** to move to the next screen, you cannot change the log file directory. If you click **Back** to return to this screen, then the **Log File Directory** field becomes read-only. This is to prevent OracleAS Metadata Repository Creation Assistant from writing log files in different directories. Click **Next**.
3.	Select Operation	Select **Remove**. Click **Next**.
4.	Select Remove Option	Select **Deregister**. Click **Next**.

Table B–3 (Cont.) Deregistering OracleAS Metadata Repository

	Screen	Action
5.	Specify Database Connection Information	Enter connect information for the existing database. **DBA Username** and **Password**: Enter the username and password to log in to the database. The user must have DBA privileges. Select either **Single Node Instance** or **Real Application Clusters Database**, depending on the type of your database, and complete the appropriate fields. Fields for **Single Node Instance**: ■ **Hostname**: Enter the name of the computer that is running the database. If your middle tier instances are located in a different domain, then you need to append the domain name to the hostname. ■ **Port**: Enter the port number for the database. ■ **Service Name**: Enter the service name of the database. Note that the service name must include the database domain name. Example: `asdb.mydomain.com` Fields for **Real Application Clusters Database**: ■ **Hostname and Port**: Enter the names of all the computers running the Real Application Clusters database and the port numbers used by the listener. Use the format *host*:*port*, and separate each *host*:*port* with a comma character: `hostname1:port1, hostname2:port2, hostname3:port3, ...` If your middle tier instances are located in a different domain, then you need to append the domain name to the hostname. Example 1 (same domain): `myhost:1521, myhost2:1521` Example 2 (different domain): `myhost.mydomain.com:1521, myhost2.mydomain.com:1521` ■ **Service Name**: Enter the service name of the database. The service name must include the database domain name. The service name must be the same for all instances in the cluster. Example: `asdb.mydomain.com` Click **Next**.
6.	Specify Oracle Internet Directory Connection	**Internet Directory Hostname**: Enter the name of the computer that is running Oracle Internet Directory. If your middle tier instances are located in a different domain, then you need to append the domain name to the hostname. **Internet Directory Port**: Enter the port number for Oracle Internet Directory. **Use SSL to Connect to Oracle Internet Directory for Deregistration Purposes**: Select this option if you want OracleAS Metadata Repository Creation Assistant to connect to Oracle Internet Directory using SSL when performing the deregistration. Click **Next**.

Table B–3 (Cont.) Deregistering OracleAS Metadata Repository

	Screen	Action
7.	Specify Login for Oracle Internet Directory	Enter the user name and password to log in to Oracle Internet Directory. The user must belong to the iAS Admins group. You can use the simple name (for example, `jdoe`) or the DN (for example, `cn=orcladmin`) of the user. If your Oracle Internet Directory contains more than one realm, then you need to enter the realm that contains the specified user. **Note:** If you log in as the Oracle Internet Directory superuser (`cn=orcladmin`), then the realm value is not used because the superuser does not belong to any realm. The realm value is used only if you log in using a simple name. Click **Next**.
8.	Specify Oracle Context	Specify the location in Oracle Internet Directory from which you want to deregister the OracleAS Metadata Repository. **Root Oracle Context (cn=OracleContext)**: Select this option to deregister OracleAS Metadata Repository from the root Oracle context. **Custom Oracle Context**: Select this option to deregister OracleAS Metadata Repository from a specific realm in Oracle Internet Directory. Enter the DN of the realm in the provided field. **NOTE:** Once you click **Next** on this screen, it is important that you **do not cancel** the operation. If you cancel the operation before it completes, then you will not be able to register or deregister the database. If you do cancel it, then you will have to perform some manual steps to clean up the database before you can proceed. Refer to Section B.8, "Cleaning up the Database If You Canceled a Deregistration Operation". Click **Next**.
9.	Success	Click **OK** to exit OracleAS Metadata Repository Creation Assistant.

Schemas Locked and Passwords Expired After Deregistration

If you are only deregistering the OracleAS Metadata Repository (without removing the OracleAS Metadata Repository objects), then OracleAS Metadata Repository Creation Assistant locks the schemas and expires the passwords of the schemas. This means that if you want to reuse the schemas, you have to:

- Unlock the schema. You can do this using the `alter user` SQL statement. For example:

```
prompt> sqlplus "sys/password as sysdba"
SQL> alter user PORTAL account unlock;
```

- Change the password for the schema. You can also do this using the `alter user` SQL statement. For example:

```
prompt> sqlplus "sys/password as sysdba"
SQL> alter user PORTAL identified by new_password;
```

For a list of schemas, refer to Table 15–9.

B.6 Removing OracleAS Metadata Repository Using the cleanMR Script

Note: The script only removes the OracleAS Metadata Repository. It does not deregister the OracleAS Metadata Repository. If you want to deregister the OracleAS Metadata Repository, then you have to use the wizard.

The `cleanMR` script is located in the *`$ORACLE_HOME`*`/repca/clean` directory, where *`ORACLE_HOME`* specifies the directory where you installed OracleAS Metadata Repository Creation Assistant.

You must run `cleanMR` on the computer that is running the database.

Stop All Oracle Application Server Instances Before Running the Script

Before running the script, stop all Oracle Application Server instances that are using the OracleAS Metadata Repository that you want to remove.

Although you have shut down the Oracle Application Server instances, it is possible that the database still shows some OracleAS Metadata Repository schemas as being active. You can check this by running the following query against the database:

```
prompt> sqlplus "sys/password as sysdba"
SQL> select schemaname from v$session;
```

password specifies the password for the SYS user.

If you see any OracleAS Metadata Repository schemas in `schemaname`, then those schemas are still active. The OracleAS Metadata Repository schemas are listed in Table 15–9.

If you are sure the instances are shut down, restart the database to clear the session information.

If you do not do this, you may get some errors that you are trying to drop a user that is currently connected to the database.

Syntax for cleanMR

```
prompt> cleanMR -HOST db_host -PORT db_port -SERVICE_NAME service_name
        [-DBUSER dbuser] -DBPASSWD password [-DBROLE dbrole]
```

Table B–4 Parameters for cleanMR

Parameter	Optional or Required	Description
`-HOST` *`db_host`*	Required	Specifies the name of the computer running the database.
`-PORT` *`db_port`*	Required	Specifies the port number on which the database listener is listening.
`-SERVICE_NAME` *`service_name`*	Required	Specifies the service name of the database.
`-DBUSER` *`dbuser`*	Optional	Specifies the database user that the script will use to connect to the database. If not specified, then the default user is SYS.
`-DBPASSWD` *`password`*	Required	Specifies the password for DBUSER.
`-DBROLE` *`dbrole`*	Optional	Specifies the database user role. If not specified, then the default role is SYSDBA.

Example:

```
cleanMR -HOST myhost -PORT 1521 -SERVICE_NAME asdb -DBPASSWD topsecret
```

Notes

- The script does not remove the ODS schema, and it does not remove these tablespaces: OLTS_ATTRSTORE, OLTS_BATTRSTORE, OLTS_CT_STORE, OLTS_DEFAULT, OLTS_SVRMGSTORE. These objects pertain to Oracle Internet Directory.

  If you are sure you want to remove these objects, then refer to Section B.7, "Removing Oracle Internet Directory Objects".

- The script does not remove data files.

If You See ORA-2000, ORU-10027 Errors

If you see the following errors from the cleanMR script:

```
ORA-20000: ORU-10027: buffer overflow, limit of 2000 bytes
ORA-06512: at "SYS.DBMS_OUTPUT", line 35
ORA-06512: at "SYS.DBMS_OUTPUT", line 198
ORA-06512: at "SYS.DBMS_OUTPUT", line 139
ORA-06512: at line 201
```

then you need to rerun the script to remove the remaining objects that were not removed the first time.

B.7 Removing Oracle Internet Directory Objects

Be sure that you want to remove Oracle Internet Directory objects before you run the repca_cleanOID.sql script. If your database contains Oracle Internet Directory objects before you load OracleAS Metadata Repository, then you must check that you are not using these objects in the Oracle Internet Directory that you need.

The Oracle Internet Directory objects are:

- Schema: ODS
- Tablespace: OLTS_ATTRSTORE
- Tablespace: OLTS_BATTRSTORE
- Tablespace: OLTS_CT_STORE
- Tablespace: OLTS_DEFAULT
- Tablespace: OLTS_SVRMGSTORE

You can run the script as follows (*ORACLE_HOME* specifies the directory where you installed OracleAS Metadata Repository Creation Assistant):

```
prompt> cd ORACLE_HOME/repca/clean
prompt> sqlplus "sys/password as sysdba"
SQL> @repca_cleanOID.sql
```

B.8 Cleaning up the Database If You Canceled a Deregistration Operation

If you canceled a deregistration operation before it completed, then you will not be able to register or deregister the database. You have to perform these clean-up steps first:

1. Remove the database registration entries from Oracle Internet Directory manually. Refer to Section G.8.3, "Manual Steps: Cleaning Up a Failed Registration or Deregistering OracleAS Metadata Repository" for details.

2. Edit the registration entry in the database by running the following statements in SQL*Plus.

```
prompt> sqlplus "sys/password as sysdba"
SQL> execute dbms_ias_version.set_component_loading (
    component_id=>'MRC',
    component_name=>'Oracle Application Server Metadata Repository Version',
    schema_name=>'SYS' );
SQL> execute dbms_ias_version.set_component_valid( component_id=>'MRC' );
```

C

Default Port Numbers

By default, the installer assigns port numbers to components from a set of default port numbers. This appendix contains a list of these port numbers. It contains the following topics:

- Section C.1, "Method of Assigning Default Port Numbers"
- Section C.2, "Default Port Numbers"

> **Note:** If you want to use a different set of port numbers, then you have to create a file called `staticports.ini`, in which you list the port numbers that you want to use. Refer to Section 1.4.7.4, "Using Custom Port Numbers (the "Static Ports" Feature)" for details.

C.1 Method of Assigning Default Port Numbers

The installer assigns default port numbers to each component using the following method:

1. The installer checks if the default port number is in use. If it is not in use, then the installer assigns it to the component.
2. If the default port number is already in use by an Oracle product or by any running application, then the installer tries the lowest number in the port number range. It keeps trying the port numbers in the range until it finds one that is available.

C.2 Default Port Numbers

Table C–1 lists the default port numbers for components.

The last column, Name in staticports.ini, specifies the component name as it appears in the `staticports.ini` file, which enables you to override the default port numbers. Refer to Section 1.4.7.4, "Using Custom Port Numbers (the "Static Ports" Feature)"for details.

Table C–1 Default Port Numbers and Ranges (Grouped by Component)

Component	Default Port	Port Number Range	Name in staticports.ini
Oracle Process Manager and Notification Server (OPMN)			
Oracle Notification Server Request Port	6003	6003 - 6099	`Oracle Notification Server Request port`
Oracle Notification Server Local Port	6100	6100 - 6199	`Oracle Notification Server Local port`
Oracle Notification Server Remote Port	6200	6200 - 6299	`Oracle Notification Server Remote port`
Oracle Application Server Containers for J2EE (OC4J)			
OC4J AJP	3301	3301 - 3400	Not settable through `staticports.ini`
OC4J RMI	3201	3201 - 3300	Not settable through `staticports.ini`
JMS	3701	3701 - 3800	Not settable through `staticports.ini`
IIOP	3401	3401 - 3500	Not settable through `staticports.ini`
IIOPS1	3501	3501 - 3600	Not settable through `staticports.ini`
IIOPS2	3601	3601 - 3700	Not settable through `staticports.ini`
Oracle HTTP Server			
Oracle HTTP Server Listener (OracleAS Web Cache **not** configured)	middle tier: 80 infrastructure: 7777	7777 - 7877	`Oracle HTTP Server Listen port`
Oracle HTTP Server Listener (SSL)	middle tier: 443 infrastructure: 4443	4443 - 4543	`Oracle HTTP Server Listen (SSL) port`
Oracle HTTP Server Listener (non-SSL, OracleAS Web Cache configured)	middle tier: 80 infrastructure: 7777	7777 - 7877	`Oracle HTTP Server port`
Oracle HTTP Server Listener (SSL, OracleAS Web Cache configured)	middle tier: 443 infrastructure: 4443	4443 - 4543	`Oracle HTTP Server SSL port`
Java Object Cache	7000	7000 - 7099	`Java Object Cache port`
DCM Java Object Cache	7100	7100 - 7199	`DCM Java Object Cache port`
SOAP server	9998	9998 - 9999	Not settable through `staticports.ini`
Port Tunneling	7501	7501 - 7599	Not settable through `staticports.ini`
Oracle HTTP Server Diagnostic port	7200	7200 - 7299	`Oracle HTTP Server Diagnostic port`
OracleAS Portal			
OracleAS Portal	--	--	Uses the same port as Oracle HTTP Server.

Table C–1 (Cont.) Default Port Numbers and Ranges (Grouped by Component)

Component	Default Port	Port Number Range	Name in staticports.ini
OracleAS Single Sign-On			
Oracle Application Server Single Sign-On	--	--	Uses the same port as Oracle HTTP Server.
OracleAS Web Cache			
OracleAS Web Cache - HTTP Listener	80	7777 - 7877	`Web Cache HTTP Listen port`
OracleAS Web Cache - HTTP Listener (SSL)	443	4443 - 4543	`Web Cache HTTP Listen (SSL) port`
OracleAS Web Cache Administration	4000	4000 - 4300	`Web Cache Administration port`
OracleAS Web Cache Invalidation	4001	4000 - 4300	`Web Cache Invalidation port`
OracleAS Web Cache Statistics	4002	4000 - 4300	`Web Cache Statistics port`
Oracle Enterprise Manager Application Server Control			
Application Server Control	1810	1810 - 1829	`Application Server Control port`
Oracle Management Agent	1830	1830 - 1849	`Oracle Management Agent port`
Application Server Control - RMI	1850	1850 - 1869	`Application Server Control RMI port`
Application Server Control - SSL	1810	1810 - 1829	This port number is assigned after installation, when you configure Application Server Control for SSL. See the Oracle Application Server Administrator's Guide for details.
Application Server Control Console HTTP port (orcl)	5500		Not settable through `staticports.ini`
Application Server Control Agent port (`orcl`)	1831		Not settable through `staticports.ini`
Log Loader	44000	44000 - 44099	`Log Loader port`
Oracle Internet Directory			
Oracle Internet Directory	3060	3060 - 3129	`Oracle Internet Directory port`
Oracle Internet Directory (SSL)	3130	3130 - 3199	`Oracle Internet Directory (SSL) port`

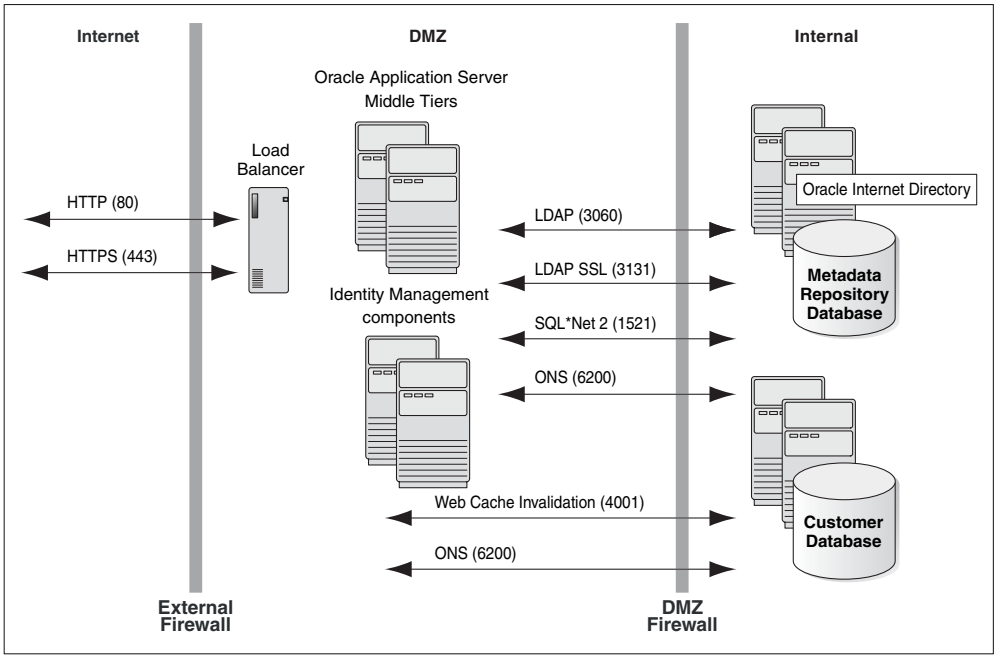
D

Ports to Open in Firewalls

This appendix shows the ports that you have to open in a firewall if you are installing and running Oracle Application Server in such environments.

If you plan to install Oracle Application Server behind firewalls, then you need to open certain ports in the firewall during installation (and also during run time) as shown in Figure D–1.

Figure D–1 Ports That Must be Opened in the Firewall When Installing Oracle Application Server Standard Edition One Behind Firewalls



To open these ports:

1. Edit the `staticports.ini` file before you begin the installation, and specify the following ports for the following components:
   - LDAP: port 3060
   - LDAP SSL: port 3131
   - SQL*Net 2: port 1521
   - Oracle Notification Server: port 6200
   - Web Cache Invalidation: port 4001

Note: The port numbers listed here are the default ports for the components. You may have different ports in your environment.

2. Perform an advanced installation, and provide the full path to the `staticports.ini` file on the Port Configuration Options screen.

   For more information about the Port Configuration Options screen, refer to Section 5.6.

Note: You must perform an advanced installation to specify custom ports. Port customization is not available with the basic installation.

E

OracleAS Metadata Repository Schemas

OracleAS Metadata Repository is an Oracle database that is pre-seeded with additional schemas to support Oracle Application Server Standard Edition One. This appendix provides information about these schemas. It contains the following sections:

- Section E.1, "OracleAS Metadata Repository Schema Descriptions"
- Section E.2, "Schemas, Tablespaces, and Default Datafiles"

E.1 OracleAS Metadata Repository Schema Descriptions

This section lists OracleAS Metadata Repository schemas and describes their content.

The schemas are divided into three categories:

- Oracle Identity Management Schemas

  These schemas are used by Oracle Identity Management components such as OracleAS Single Sign-On and Oracle Internet Directory.

- Product Metadata Schemas

  These schemas are used by middle tier application components such as OracleAS Portal and OracleAS Wireless.

- Management Schema

  This is a single schema that is used by Distributed Configuration Management (DCM).

There is one additional schema that does not fall into the previously listed categories, `INTERNET_APPSERVER_REGISTRY`. This schema contains release numbers for OracleAS Metadata Repository schemas.

E.1.1 Oracle Identity Management Schemas

Table E–1 lists the schemas used by Oracle Identity Management components, sorted alphabetically by component.

Table E–1 Identity Management Schemas

Component	Schema	Description
Oracle Internet Directory	`ODS`	For internal use
OracleAS Certificate Authority	`OCA`	For internal use
OracleAS Single Sign-On	`ORASSO`	For internal use

Table E–1 (Cont.) Identity Management Schemas

Component	Schema	Description
OracleAS Single Sign-On	ORASSO_DS	For internal use
OracleAS Single Sign-On	ORASSO_PA	For internal use
OracleAS Single Sign-On	ORASSO_PS	For internal use
OracleAS Single Sign-On	ORASSO_PUBLIC	For internal use

E.1.2 Product Metadata Schemas

Table E–2 lists the schemas used by middle tier application components, sorted alphabetically by component.

Table E–2 Product Metadata Schemas

Component	Schema	Description
Oracle Ultra Search	WK_TEST	Oracle Ultra Search default instance schema—contains the document information and document index of the default Oracle Ultra Search instance
Oracle Ultra Search	WKPROXY	Oracle Ultra Search proxy database user—does not contain any data
Oracle Ultra Search	WKSYS	Oracle Ultra Search metadata repository—contains metadata information about data sources, crawler configuration, crawling schedules, trace logs, attribute mappings, authentication, and user privileges of Oracle Ultra Search instances
OracleAS Web Clipping	WCRSYS_TS	Web Clipping Repository for support with Wireless contains clipping definitions, user customizations, and PL/SQL packages for their access
OracleAS Wireless	WIRELESS	Contains user content (folders, services, links, notifications, presets), user customization data, groups, roles, transient user information, style sheets, logical device definitions, Java transformers (serialized), adapters, location data, configuration data, process runtime state, and application metrics
Oracle Workflow	OWF_MGR	Contains design-time and runtime workflow tables, queues, PL/SQL code, directory service database views and local tables, and metadata for workflow processes and business events
OracleAS Discoverer	DISCOVERER5	Contains metadata for Discoverer Portlet Provider, portlet definitions for user portlets, and cached data obtained by running scheduled Discoverer queries. Has RESOURCE and CONNECT privileges
OracleAS Portal	PORTAL	Contains Portal database objects and code. This schema also represents the proxy user account that mod_plsql uses to connect to the database through the credentials provided in the corresponding DAD.
OracleAS Portal	PORTAL_APP	Used for authentication of external JSP applications
OracleAS Portal	PORTAL_DEMO	Demonstration code

Table E–2 (Cont.) Product Metadata Schemas

Component	Schema	Description
OracleAS Portal	PORTAL_PUBLIC	All lightweight users are mapped to this schema by default. All procedures publicly accessible through the Web are granted execute to PUBLIC, which makes them accessible through this schema.
OracleAS UDDI Registry	UDDISYS	Contains UDDI entities such as business entities, business services, binding templates, tModels, and publisher assertions, taxonomy structures like North American Industry Classification System (NAICS), Universal Standard Products and Services Codes (UNSPSC), and ISO 3166 Geographic Taxonomy (ISO 3166), UDDI replication/subscription related internal tables, and other administration-related views and tables.
N/A	DSGATEWAY	N/A

Note:

- Beginning with Oracle Application Server 10*g* Release 2 (10.1.2), the IP schema contains no data. It has been replaced by the B2B schema and is provided only for backward compatibility.
- Beginning with Oracle Application Server 10*g* Release 2 (10.1.2), the DSGATEWAY schema is not used. It is provided for backward compatibility.

E.1.3 Management Schema

Table E–3 lists the schema used by Distributed Configuration Management (DCM).

Table E–3 Management Schema

Component	Schema	Description
Distributed Configuration Management (DCM)	DCM	Contains configuration information for OC4J and Oracle HTTP Server instances, application server instances, OracleAS Clusters, and farms
Application Server Control	OEM_REPOSITORY	Repository for Database Control

E.2 Schemas, Tablespaces, and Default Datafiles

Table E–4 lists the tablespace and default datafile for each OracleAS Metadata Repository schema. It is sorted alphabetically by component.

Table E–4 Metadata Repository Tablespaces and Default Datafiles

Component	Schema	Tablespace	Default Datafile
Distributed Configuration Management (DCM)	DCM	DCM	dcm.dbf
Metadata Repository Version	INTERNET_APPSERVER_REGISTRY	IAS_META	ias_meta01.dbf
Oracle Internet Directory	ODS	OLTS_ATTRSTORE	attrs1_oid.dbf
Oracle Internet Directory	ODS	OLTS_BATTRSTORE	battrs1_oid.dbf
Oracle Internet Directory	ODS	OLTS_CT_STORE	gcats1_oid.dbf

Table E–4 (Cont.) Metadata Repository Tablespaces and Default Datafiles

Component	Schema	Tablespace	Default Datafile
Oracle Internet Directory	ODS	OLTS_DEFAULT	gdefault1_oid.dbf
Oracle Internet Directory	ODS	OLTS_SVRMGSTORE	svrmg1_oid.dbf
Oracle Ultra Search	WK_TEST	SYSAUX	sysaux01.dbf
Oracle Ultra Search	WKPROXY	SYSAUX	sysaux01.dbf
Oracle Ultra Search	WKSYS	SYSAUX	sysaux01.dbf
Oracle Workflow	OWF_MGR	IAS_META	ias_meta01.dbf
OracleAS Discoverer	DISCOVERER5	DISCO_PTM5_META	discopltm1.dbf
OracleAS Discoverer	DISCOVERER5	DISCO_PTM5_CACHE	discopltc1.dbf
OracleAS PartnerConnect	B2B	B2B_RT	b2b_rt.dbf
OracleAS PartnerConnect	B2B	B2B_DT	b2b_dt.dbf
OracleAS PartnerConnect	B2B	B2B_IDX	b2b_idx.dbf
OracleAS PartnerConnect	B2B	B2B_LOB	b2b_lob.dbf
OracleAS Portal	PORTAL	PORTAL	portal.dbf
OracleAS Portal	PORTAL	PORTAL_DOC	ptldoc.dbf
OracleAS Portal	PORTAL	PORTAL_IDX	ptlidx.dbf
OracleAS Portal	PORTAL	PORTAL_LOG	ptllog.dbf
OracleAS Portal	PORTAL_APP	PORTAL	portal.dbf
OracleAS Portal	PORTAL_DEMO	PORTAL	portal.dbf
OracleAS Portal	PORTAL_PUBLIC	PORTAL	portal.dbf
OracleAS Single Sign-On	ORASSO	IAS_META	ias_meta01.dbf
OracleAS Single Sign-On	ORASSO_DS	IAS_META	ias_meta01.dbf
OracleAS Single Sign-On	ORASSO_PA	IAS_META	ias_meta01.dbf
OracleAS Single Sign-On	ORASSO_PS	IAS_META	ias_meta01.dbf
OracleAS Single Sign-On	ORASSO_PUBLIC	IAS_META	ias_meta01.dbf
OracleAS UDDI Registry	UDDISYS	UDDISYS_TS	uddisys01.dbf
OracleAS Web Clipping Support	WCRSYS	WCRSYS_TS	wcrsys01.dbf
OracleAS Wireless	WIRELESS	IAS_META	ias_meta01.dbf
OracleAS Syndication Server	DSGATEWAY	DSGATEWAY_TAB	oss_sys01.dbf

Note:

- Beginning with Oracle Application Server 10*g* Release 2 (10.1.2), the IP schema does not contain any data. It has been replaced by the B2B schema and is provided only for backward compatibility.
- Beginning with Oracle Application Server 10*g* Release 2 (10.1.2), the DSGATEWAY schema is not used. It is provided for backward compatibility.

F

Configuration Assistants

This appendix lists the configuration assistants and the location of their log files. It contains the following sections:

- Section F.1, "Oracle Application Server Standard Edition One Configuration Assistants"
- Section F.2, "Troubleshooting Configuration Assistants"

F.1 Oracle Application Server Standard Edition One Configuration Assistants

Table F–1 lists the Oracle Application Server configuration assistants in alphabetical order. Different installations use different configuration assistants depending on installation type and configuration options you selected.

Table F–1 Oracle Application Server Configuration Assistants

Configuration Assistant	Description	Log File Location
ADF Configuration Assistant	Integrates Oracle Application Development Framework Runtime Libraries with Oracle Enterprise Manager Application Server Control. This configuration assistant requires the `$ORACLE_HOME/jlib/emConfigInstall.jar` file.	`$ORACLE_HOME/oraInventory/logs/installActions`*`timestamp`*`.log`
Application Server Control Configuration Assistant	Starts the Oracle Management Agent and the Application Server Control to deploy applications through the Oracle Enterprise Manager Application Server Control.	`$ORACLE_HOME/cfgtoollogs/configtools`*`timestamp`*`.log`
Database Configuration Assistant	Configures the OracleAS Metadata Repository for OracleAS Infrastructure.	`$ORACLE_HOME/cfgtoollogs/configtools`*`timestamp`*`.log`
Database Migration Assistant	Migrates the 9.0.2 infrastructure database to a 10*g* Release 2 (10.1.2) infrastructure database. Before running this migration assistant, ensure that the database is up and running.	`$ORACLE_HOME/assistants/dbma/logs`

Table F–1 (Cont.) Oracle Application Server Configuration Assistants

Configuration Assistant	Description	Log File Location

Database-managed OracleAS Cluster Assistant	Enables cluster configuration for selected databases.	`$ORACLE_HOME/config/infratool_dcm_repository.log`
		
		`$ORACLE_HOME/cfgtoollogs/infratool_dcm_repository.log`

DCM Repository Backup Assistant	Enables you to back up your DCM repository.	`$ORACLE_HOME/dcm/logs`
Delegated Administration Service Configuration Assistant	Sets up the Oracle Delegated Administration Services URL in Oracle Internet Directory and adds the necessary access control privileges to the DAS entity. Before running this configuration assistant, ensure that the Infrastructure Instance Configuration Assistant was run successfully.	`$ORACLE_HOME/cfgtoollogs/dasca.log`
Directory Integration Platform Configuration Assistant	Registers and starts the directory integration server when configured with Oracle Internet Directory. Before running this configuration assistant, ensrue that Oracle Internet Directory is configured correctly.	`$ORACLE_HOME/cfgtoollogs/dipca.log`

File-Based Farm Repository Configuration Assistant	Configures a file-based repository for Oracle Application Server components.	`$ORACLE_HOME/config/infratool_filebased_repository.log`
		
		`$ORACLE_HOME/cfgtoollogs/infratool_filebased_repository.log`

HTTP Server Configuration Assistant	Configures Oracle HTTP Server, registers it with Oracle Enterprise Manager Application Server Control, and adds an entry to the `$ORACLE_HOME/sysman/emd/targets.xml` file.	`$ORACLE_HOME/Apache/Apache/logs`
		
		`$ORACLE_HOME/Apache/Apache/httpd.log`
		
		`$ORACLE_HOME/cfgtoollogs/configtools`*`timestamp`*`.log`

Infrastructure Database Registration Assistant	Registers the OracleAS Metadata Repository with Oracle Internet Directory.	`$ORACLE_HOME/cfgtoollogs/infratool_ldaporacfg.log`

Table F–1 (Cont.) Oracle Application Server Configuration Assistants

Configuration Assistant	Description	Log File Location
Infrastructure Instance Configuration Assistant	Updates the `$ORACLE_HOME/config/ias.properties` file, registers the instance with Oracle Internet Directory, and creates the `ldap.ora` file with Oracle Internet Directory credentials in the `$ORACLE_HOME/network/admin` file. Before running this configuration assistant, check that: ■ the `LD_LIBRARY_PATH` environment variable includes `$ORACLE_HOME/lib32` and `$ORACLE_HOME/network/lib` ■ the `LD_LIBRARY_PATH_64` environment variable includes `$ORACLE_HOME/lib` ■ the `PATH` environment variable includes `$ORACLE_HOME/lib` and `$ORACLE_HOME/network/lib` Before running this configuration assistant, check that the `PATH` environment variable includes the `$ORACLE_HOME/lib` directory.	`$ORACLE_HOME/config/infratool_instance_jazn.log` `$ORACLE_HOME/cfgtoollogs/infratool_instance_jazn.log`
Infrastructure `mod_osso` Configuration Assistant.	Registers mod_osso, plugs mod_osso into Oracle HTTP Server, and provides integration with Oracle Application Server Single Sign-On to authenticate users. The registration enables Oracle HTTP Server installed with OracleAS Infrastructure to act as a partner application to Oracle Application Server Single Sign-On. Applications that run under Oracle HTTP Server can register and protect their URL with mod_osso. When the URL is requested, mod_osso authenticates the user with Oracle Application Server Single Sign-On to allow access to the URL.	`$ORACLE_HOME/config/infratool_mod_osso.log` `$ORACLE_HOME/cfgtoollogs/ infratool_mod_osso.log`
Infrastructure Schema Configuration Assistant	Registers the infrastructure schemas with Oracle Internet Directory. Before running this configuration assistant, check that: ■ the `LD_LIBRARY_PATH` environment variable includes `$ORACLE_HOME/lib32` and `$ORACLE_HOME/network/lib` ■ the `LD_LIBRARY_PATH_64` environment variable includes `$ORACLE_HOME/lib` ■ the `PATH` environment variable includes `$ORACLE_HOME/lib` and `$ORACLE_HOME/network/lib` ■ the Internet Directory Configuration Assistant and the Database Configuration Assistant were run successfully ■ the `PATH` environment variable includes the `$ORACLE_HOME/lib` directory ■ the Internet Directory Configuration Assistant and the Database Configuration Assistant were run successfully	`$ORACLE_HOME/config/schemaload.log` `$ORACLE_HOME/cfgtoollogs/schemaload.log`

Table F–1 (Cont.) Oracle Application Server Configuration Assistants

Configuration Assistant	Description	Log File Location
Infrastructure Upgrade Instance Configuration Assistant	Removes ACL entries on the `SSO` schema. Before running this configuration assistant, check that: ■ the `LD_LIBRARY_PATH` environment variable includes `$ORACLE_HOME/lib32` and `$ORACLE_HOME/network/lib` ■ the `LD_LIBRARY_PATH_64` environment variable includes `$ORACLE_HOME/lib` Before running this configuration assistant, check that the `PATH` environment variable includes the `$ORACLE_HOME/lib` directory.	`$ORACLE_HOME/config/infratool_infra_upgrade.log`
Internet Directory Configuration Assistant	Starts up Oracle Internet Directory, loads the LDAP schemas, and sets up the Identity Management realm. Before running this configuration assistant, check that the database was created successfully, the listener is up and running, and the `tnsnames.ora` file is configured.	`$ORACLE_HOME/cfgtoollogs/oidca.log`
Java Security Configuration Assistant	Changes the default password, and sets or reassigns new passwords for JAAS security.	`$ORACLE_HOME/cfgtoollogs/jaznca.log`
OC4J Configuration Assistant	Integrates OC4J with Application Server Control. It performs the following steps: ■ Add entries to the `targets.xml` file. ■ Add entries to the `iasadmin.properties` file. This configuration assistant requires the `deploy.ini` file.	`$ORACLE_HOME/cfgtoollogs/configtools`*`timestamp`*`.log`
OC4J Instance Configuration Assistant	Configures OC4J instances for deployed Oracle Application Server applications.	`$ORACLE_HOME/cfgtoollogs/configtools`*`timestamp`*`.log`

OPMN Configuration Assistant	Starts OPMN and OPMN-managed processes.	`$ORACLE_HOME/cfgtoollogs/configtools`*`timestamp`*`.log`
		`$ORACLE_HOME/cfgtoollogs/ipm.log`
		`$ORACLE_HOME/cfgtoollogs/ons.log`

OPMN Configuration Assistant - start DAS instance	Starts Oracle Delegated Administration Services instance through OPMN.	`$ORACLE_HOME/cfgtoollogs/configtools`*`timestamp`*`.log`
		`$ORACLE_HOME/cfgtoollogs/ipm.log`
		`$ORACLE_HOME/cfgtoollogs/ons.log`

Table F–1 (Cont.) Oracle Application Server Configuration Assistants

Configuration Assistant	Description	Log File Location

OPMN Configuration Assistant - start OCA	Starts Oracle Application Server Certificate Authority through OPMN.	`$ORACLE_HOME/cfgtoollogs/configtools`*`timestamp`*`.log`
		
		`$ORACLE_HOME/cfgtoollogs/ipm.log`
		
		`$ORACLE_HOME/cfgtoollogs/ons.log`

OPMN Configuration Assistant - start Oracle HTTP Server	Starts Oracle HTTP Server through OPMN.	`$ORACLE_HOME/cfgtoollogs/configtools`*`timestamp`*`.log`
		
		`$ORACLE_HOME/cfgtoollogs/HTTP_Server~1`

Oracle Application Server Certificate Authority Configuration Assistant	Configures a self-signed certificate authority, integrated with Oracle Application Server Single Sign-On for authentication. Before running this configuration assistant, check that Oracle Internet Directory, OracleAS Metadata Repository, Oracle Application Server Single Sign-On, and the Repository API are configured.	`$ORACLE_HOME/cfgtoollogs/oca_install.log`

OracleAS File-Based Farm Repository Configuration Assistant	Configures a file-based farm repository.	`$ORACLE_HOME/config/infratool_filebased_repository.log`
		
		`$ORACLE_HOME/cfgtoollogs/infratool_filebased_repository.log`

OracleAS Instance Configuration Assistant	Adds an entry for the instance to the `$ORACLE_HOME/config/target2add.xml` file.	`$ORACLE_HOME/cfgtoollogs/configtools`*`timestamp`*`.log`
OracleAS Randomize Password Configuration Assistant	Changes the default password of all schemas.	None

Oracle mod_osso Configuration Assistant	Registers mod_osso during installation, plugs mod_osso into Oracle HTTP Server, and provides integration with Oracle Application Server Single Sign-On to authenticate users. The registration enables Oracle HTTP Server installed with the Oracle Application Server middle tier to act as a partner application to Oracle Application Server Single Sign-On.
	
	Applications running under Oracle HTTP Server can register and protect their URL with mod_osso. When the URL is requested, mod_osso authenticates the user with Oracle Application Server Single Sign-On to allow access to the URL.
		`$ORACLE_HOME/config/j2ee_mod_osso.log`
		
		`$ORACLE_HOME/cfgtoollogs/j2ee_mod_osso.log`

Oracle Net Configuration Assistant	Configures the database listener and the middle tiers to use LDAP naming by default.	`$ORACLE_HOME/cfgtoollogs/installActions`*`timestamp`*`.log`

Table F–1 (Cont.) Oracle Application Server Configuration Assistants

Configuration Assistant	Description	Log File Location
Portal Configuration Assistant	Configures OracleAS Portal. Before running this configuration assistant, check that the OracleAS Infrastructure is up and running.	`$ORACLE_HOME/cfgtoollogs/install.log`
Register DCM Plug-Ins With Oracle Enterprise Manager Configuration Assistant	Registers DCM plug-ins with Oracle Enterprise Manager.	`$ORACLE_HOME/cfgtoollogs/configtools`*`timestamp`*`.log` `$ORACLE_HOME/dcm/logs/dcmctl_logs`
Replication Configuration Assistant	For ASR replica installations, it writes the new Oracle Internet Directory metadata to the master Oracle Internet Directory. For LDAP replica installations, it configures LDAP-based replication between the master Oracle Internet Directory and the new Oracle Internet Directory replica with default configuration. It then starts the Oracle Internet Directory replication server and helps configure Oracle Internet Directory replication. Before running this configuration assistant, check that the Oracle Internet Directory servers for the master and the new replica are up and running.	`$ORACLE_HOME/ldap/log/remtool.log`
Single Sign-On Configuration Assistant	Configures Oracle Application Server Single Sign-On. Before running this configuration assistant, check that Oracle Internet Directory, OracleAS Metadata Repository, and the Repository API are configured.	`$ORACLE_HOME/sso/log/ssoca.log` `$ORACLE_HOME/sso/log/ssoreg.log`
Ultra Search Configuration Assistant	Performs the following tasks: ■ Deploys and configures Oracle Ultra Search within the Oracle Application Server middle tier. ■ Creates Oracle Ultra Search back-end application entities and Oracle Ultra Search administration privilege groups. ■ Creates application entities for the Oracle Ultra Search middle tier. ■ Upgrades and cleans up Oracle Ultra Search metadata in the OracleAS Metadata Repository.	`$ORACLE_HOME/cfgtoollogs/ultrasearch_config.log`
Unlock Metadata Repository Schemas Configuration Assistant	Unlocks the schemas in the OracleAS Metadata Repository. This configuration assistant is run for Identity Management installations.	`$ORACLE_HOME/config/infratool_unlock_schema.log`

Table F–1 (Cont.) Oracle Application Server Configuration Assistants

Configuration Assistant	Description	Log File Location
Use Infrastructure Configuration Assistant	Updates the `$ORACLE_HOME/config/ias.properties` file, registers the instance with Oracle Internet Directory, and creates the `ldap.ora` file with Oracle Internet Directory credentials in the `$ORACLE_HOME/network/admin` directory. Before running this configuration assistant, check that the `PATH` environment variable includes the `$ORACLE_HOME/lib` and `ORACLE_HOME` directories.	`$ORACLE_HOME/config/j2ee_instance_jazn.log` `$ORACLE_HOME/cfgtoollogs/j2ee_instance_jazn.log`
Use Metadata Repository Configuration Assistant	Configures OracleAS Metadata Repository for the Oracle Application Server middle tier. This includes the ability to expand J2EE and Web Services middle tiers to a larger installation type. Before running this configuration assistant, check that: ■ the `LD_LIBRARY_PATH` environment variable includes `$ORACLE_HOME/lib32` and `$ORACLE_HOME/network/lib` ■ the `LD_LIBRARY_PATH_64` environment variable includes `$ORACLE_HOME/lib` Before running this configuration assistant, check that the `PATH` environment variable includes the `$ORACLE_HOME/lib` directory.	`$ORACLE_HOME/config/infratool_midtier_upgrade.log`
Web Cache Configuration Assistant	Configures OracleAS Web Cache and registers it with Oracle Enterprise Manager Application Server Control.	`$ORACLE_HOME/cfgtoollogs/configtools`*timestamp*`.log`
Wireless Configuration Assistant	Configures Oracle Application Server Wireless.	`$ORACLE_HOME/wireless/logs/wireless_CA.out` `$ORACLE_HOME/cfgtoollogs/wireless_CA.out`
Oracle Application Server Wireless SDK Configuration Assistant	Configures the Wireless Development Kit.	`$ORACLE_HOME/wireless/logs/wdk_ca.out` `$ORACLE_HOME/cfgtoollogs/wdk_ca.out`

F.2 Troubleshooting Configuration Assistants

If you encounter any problems with a configuration assistant, refer to Section G.6 for troubleshooting information.

G

Troubleshooting

This appendix describes solutions to common problems that you might encounter when installing Oracle Application Server Standard Edition One. It contains the following sections:

G.1 Log Files

The installer writes the following log files:

- *oraInventory_location*/logs/installActions*timestamp*.log
- *oraInventory_location*/logs/oraInstall*timestamp*.err
- *oraInventory_location*/logs/oraInstall*timestamp*.out

G.2 General Troubleshooting Tips

If you encounter an error during installation, then:

- Read the Oracle Application Server Release Notes for the latest updates. The release notes are available with the platform-specific documentation. 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 Chapter 2, "System and Installation Requirements".
- If you entered incorrect information about one of the installation screens, then return to that screen by clicking **Back** until you see the screen.

- If a configuration assistant failed, then check the log file for that configuration assistant. Section F.1, "Oracle Application Server Standard Edition One Configuration Assistants" lists the configuration assistants and the location of their log files. If you do not see log files from some configuration assistants in the `$ORACLE_HOME/cfgtoollogs` directory, then exit the installer. This causes the installer to copy the log files to that directory.
- If an error occurred while the installer is copying or linking files, then:
  1. Note the error and review the installation log files.
  2. Remove the failed installation by following the steps in Appendix A, "Deinstallation and Reinstallation".
  3. Correct the issue that caused the error.
  4. Restart the installation.

G.3 Installation Problems and Solutions

This section describes common installation problems and solutions:

- Section G.3.1, "Location of Log Files"
- Section G.3.2, "Linking Failed, ORA Errors"
- Section G.3.3, "Prerequisite Checks Fail at the Start of Installation"
- Section G.3.4, "Message About Installing in a Non-Empty Directory"
- Section G.3.5, "Messages About SHMMAX and SEMMSL"
- Section G.3.6, "Installer Disappears After Running the Preinstallation Checks"
- Section G.3.7, "Unable to Clean Up a Failed Installation"
- Section G.3.8, "Forgot the Password for the cn=orcladmin Account"
- Section G.3.9, "cn=orcladmin Account Becomes Locked"
- Section G.3.10, "User Interface Does Not Display in the Desired Language, or Does Not Display Properly"
- Unable to Run Oracle Application Server Standard Edition One On-Network and Off-Network
- Section G.3.11, "Unable to Run Oracle Application Server Standard Edition One On-Network and Off-Network"
- Section G.3.12, "Configuration Assistant Failures: General"
- Section G.3.13, "OracleAS Randomize Password Configuration Assistant Failures"
- Section G.3.14, "Database Configuration Assistant (DBCA) Failures"
- Section G.3.15, "Harmless Error Message from Database Configuration Assistant (DBCA)"
- Section G.3.16, "OPMN Configuration Assistant - Start HTTP Server Failures"
- Section G.3.17, "OPMN Configuration Assistant - Start DAS Instance Failures"

G.3.1 Location of Log Files

Following are two sets of log files:

- The installer writes the following log files:

  - *oraInventory_location*/logs/installActions*timestamp*.log
  - *oraInventory_location*/logs/oraInstall*timestamp*.err
  - *oraInventory_location*/logs/oraInstall*timestamp*.out
  - *$Oracle_Home*/install/make.log
- The configuration assistants write log files in the $ORACLE_HOME/cfgtoollogs directory.

  Note that if you want to access the log files created by the configuration assistants, you need to exit the installer first. The log files are inaccessible if the installer is still in use.

G.3.2 Linking Failed, ORA Errors

Problem

Linking failed, and ORA errors were displayed during installation

Solution

Exit the installer and check the log files for any error message. In particular, check the $ORACLE_HOME/install/make.log file.

Remove the failed installation. Before reinstalling Oracle Application Server, ensure that your computer meets all the requirements listed in Chapter 2, "System and Installation Requirements".

Check especially the following requirements:

- Check that the kernel parameters are set to the proper values. Note that if you change the value of a kernel parameter, you must exit the installer and restart your computer for the new value to take effect.
- Check that you are installing Oracle Application Server in a valid directory. For example, you cannot install Oracle Application Server in a database Oracle home. Refer to Table 2–1 for a complete list.

G.3.3 Prerequisite Checks Fail at the Start of Installation

Problem

The prerequisite checks that are run at the start of installation failed

Solution

If the prerequisite checks display warnings about missing operating system patches or patch bundles, then the patch may actually be missing, or it may have been superseded. If your computer contains the patch that supersedes it, then you can ignore the warning.

G.3.4 Message About Installing in a Non-Empty Directory

Problem

The installer displays a message that you are installing into a non-empty directory.

Solution

If you started an installation and went beyond the Specify File Locations screen, but did not complete the installation, then the installer has already created the Oracle home directory that you specified. If you later try to install again in the same directory, which contains some files created by the installer, then the installer gives a warning that the directory is not empty.

Steps to take:

1. In the warning dialog box, click **No** to return to the Specify File Locations screen.
2. In the Specify File Locations screen, click **Installed Products**. This displays the Inventory screen.

   If your Oracle home is listed in the Inventory screen, then you have to deinstall the Oracle home. Refer to Appendix A, "Deinstallation and Reinstallation" for details.

   If your Oracle home is not listed in the Inventory screen, then you can just delete the files from the Oracle home and continue with the installation.

G.3.5 Messages About SHMMAX and SEMMSL

Problem

The installer displays messages about SHMMAX and SEMMSL when installing the OracleAS Metadata Repository

Solution

Check the following in the `/etc/system` file:

- The installer does not recognize commented-out entries in the `/etc/system` file for kernel parameters. It reads the commented-out entries and fails if the commented lines are following the required values. You have to remove such lines from the file.
- The installer ignores entries in the file that have syntax errors. Ensure that the lines for the required kernel parameters do not have any syntax errors.
- The installer does not read very large values (greater than 2 GB) correctly. It interprets the very large values as small values. Ensure that the values for the required kernel parameters are under 2 GB.

G.3.6 Installer Disappears After Running the Preinstallation Checks

Problem

The installer disappears after running preinstallation checks

Solution

The directory that is the mount point of the CD-ROM or DVD was mounted with incorrect permissions, and this caused the `pwd` command to not work correctly. When you run `pwd`, it returns `cannot determine current directory`.

To fix:

1. Unmount the CD-ROM.
2. Change permissions of the mount directory to 755.
3. Remount the CD-ROM.

The installer should now run correctly.

G.3.7 Unable to Clean Up a Failed Installation

If your installation was not successful, then you have to deinstall it first before you can install Oracle Application Server Standard Edition One again. Refer to Appendix A, "Deinstallation and Reinstallation" for instructions.

G.3.8 Forgot the Password for the cn=orcladmin Account

Problem

You forgot the password for the `cn=orcladmin` account.

Solution

You can reset the password in the database. The DSE root attribute name is `orclsupassword`.

Note that after a certain number of failed attempts to connect, the `cn=orcladmin` account becomes locked. In this case, you have to unlock the account. Refer to the next section, Section G.3.9, "cn=orcladmin Account Becomes Locked", for instructions on how to unlock the account.

G.3.9 cn=orcladmin Account Becomes Locked

Problem

The `cn=orcladmin` account becomes locked after ten failed attempts to connect. This is controlled by the password policy. Ten failed attempts is the default value.

Solution

If you know the `cn=orcladmin` password, then you can unlock the account by running the following command:

```
prompt> $ORACLE_HOME/bin/oidpasswd connect=dbsid unlock_su_acct=true
```

where *dbsid* is the SID for the database. For example:

```
prompt> $ORACLE_HOME/bin/oidpasswd connect=asdb unlock_su_acct=true
OID DB user password: enter_ODS_password
OID superuser account unlocked successfully.
```

The command prompts for the password of the ODS schema. By default, the ODS password is the same as for the `cn=orcladmin` and `ias_admin` accounts, which you entered during installation.

To change the password policy, refer to the *Oracle Internet Directory Administrator's Guide*.

G.3.10 User Interface Does Not Display in the Desired Language, or Does Not Display Properly

Problem

Messages do not appear in the desired language, or messages are not displayed correctly

Solution

If you are serving non-English content, then ensure that you add all the languages that you need during installation. To add languages during installation, select the required languages in the Select Languages screen. To see which languages are installed by default, refer to Section 5.5, "Select Additional Languages" or Section 1.4.6, "Language and Locale Settings".

G.3.11 Unable to Run Oracle Application Server Standard Edition One On-Network and Off-Network

Problem

You installed Oracle Application Server when the computer was connected to the network, and now you want to run it off-network

Solution

If you want to run Oracle Application Server on-network as well as off-network, then you need to install a loopback adapter. On computers with static IP address, when you go off-network, your Ethernet adapter will be down (`ipconfig` shows cable disconnected) and `ipconfig` cannot resolve that IP.

G.3.12 Configuration Assistant Failures: General

This section describes general tips for troubleshooting configuration assistant failures. Refer to the next sections for specific configuration assistant failures.

> **See Also:** Appendix F, "Configuration Assistants"for details about configuration assistant

Problem

Configuration assistant failed

Solution

Configuration assistants fail from a variety of causes. Some things you can check are:

- Check that the listener, database, and Oracle Internet Directory associated with the OracleAS Infrastructure are up and running. If not, then start them up and click **Retry** to rerun the configuration assistant that failed.
- Check the log files for the failed configuration assistant to determine the problem. The log files are located in the `$ORACLE_HOME/cfgtoollogs` directory.

  Fix the problem indicated in the log file, and click **Retry** to rerun the failed configuration assistant.

G.3.13 OracleAS Randomize Password Configuration Assistant Failures

Before rerunning OracleAS Randomize Password Configuration Assistant, you need to perform these steps:

1. Start Oracle Directory Manager.
2. Enter the Oracle Internet Directory hostname, port, user name, and password.
3. Expand **Entry Management**, **cn=OracleContext, cn=Products**, **cn=IAS**, and then **cn=IAS Infrastructure Databases**.
4. Select **orclreferencename=***your_globaldb_name*.

5. For each schema under the *your_globaldb_name* tree, there is an `orclreferencename` entry. For the `orclreferencename` entry:

   - Change the value of the `orclpassword` attribute to the schema name. For example, if `wireless` is the schema name, change the `orclpassword` attribute value to `wireless`.
   - Change `orclflexattribute1` to **false**.

   Click **Apply**.

   Perform these steps for all the schemas except `ODS` and `OEM_REPOSITORY`.

6. Using SQL*Plus, log in to the database where the OracleAS Randomize Password Configuration Assistant failure is occurring, and run the following script.

   ```
   prompt> sqlplus "sys/password as sysdba"
   SQL> @ORACLE_HOME/assistants/dbca/admin/unlock.sql
   ```

   password specifies the password for the SYS user.

7. Rerun the OracleAS Randomize Password Configuration Assistant.

G.3.14 Database Configuration Assistant (DBCA) Failures

Problem

DBCA fails with the following error:

```
Open wallet failedoracle.net.config.ServiceAliasException
at oracle.net.config.ServiceAlias.<init>(Compiled Code)
at oracle.net.config.Service.<init>(Compiled Code)
at oracle.net.config.DatabaseService.<init>(Compiled Code)
at oracle.sysman.assistants.util.NetworkUtils.registerDBWithDirSrvc(NetworkUtils.j
ava:1137)
at oracle.sysman.assistants.dbca.backend.DirServiceStep.executePreReqImpl(Compiled
Code)
at oracle.sysman.assistants.dbca.backend.PrerequisiteStep.executeImpl(Prerequisite
Step.java:149)
at oracle.sysman.assistants.dbca.backend.Step.execute(Compiled Code)
at oracle.sysman.assistants.dbca.backend.PostDBCreationStep.executeImpl(Compiled
Code)
at oracle.sysman.assistants.dbca.backend.Step.execute(Compiled Code)
at oracle.sysman.assistants.dbca.backend.Host$ModeRunner.run(Compiled Code)
at java.lang.Thread.run(Thread.java:466)
ERROR :oracle.sysman.assistants.util.NetAPIException
```

Solution

This error occurs if the `TNS_ADMIN` environment variable is set. The `TNS_ADMIN` environment variable should not be set (refer to TNS_ADMIN on page 2-21). If it is set, then unset it and rerun DBCA by clicking **Retry** on the Configuration Assistants screen.

G.3.15 Harmless Error Message from Database Configuration Assistant (DBCA)

If you see the following error copying OC4J configuration files message in your log file, then the message is harmless and can be ignored.

```
Nov 25, 2004 9:07:30 PM oracle.sysman.emcp.EMConfig updateReposVars
INFO: Updating file
```

```
/AS1012Installs/AS1012Infra/sysman/emdrep/config/repository.variables ...
Nov 25, 2004 9:07:35 PM oracle.sysman.emcp.EMConfig addPortEntries
INFO: Updating file /AS1012Installs/AS1012Infra/install/portlist.ini ...
Nov 25, 2004 9:07:35 PM oracle.sysman.emcp.EMConfig updateEmdProps
INFO: Updating file /AS1012Installs/AS1012Infra/sysman/config/emd.properties ...
Nov 25, 2004 9:07:35 PM oracle.sysman.emcp.EMConfig updateConfigFiles
INFO: targets.xml file is updated successfully
Nov 25, 2004 9:07:35 PM oracle.sysman.emcp.EMConfig updateEmomsProps
INFO: Updating file
/AS1012Installs/AS1012Infra/sysman/config/emoms.properties ...
Nov 25, 2004 9:07:35 PM oracle.sysman.emcp.EMConfig updateConfigFiles
INFO: emoms.properties file is updated successfully
Nov 25, 2004 9:07:40 PM oracle.sysman.emcp.EMConfig copyOC4JDir
WARNING: Error copying OC4J config files from
/AS1012Installs/AS1012Infra/oc4j/j2ee/OC4J_DBConsole to
/AS1012Installs/AS1012Infra/oc4j/j2ee/OC4J_DBConsole_hostname.domain_portaldb
Nov 25, 2004 9:07:40 PM oracle.sysman.emcp.EMConfig startOMS
INFO: Starting the DBConsole ...
Nov 25, 2004 9:08:26 PM oracle.sysman.emcp.EMConfig perform
INFO: DBConsole is started successfully
```

G.3.16 OPMN Configuration Assistant - Start HTTP Server Failures

Problem

The OPMN Configuration Assistant - Start HTTP Server fails when you re-run it.

Solution

The problem is that Oracle HTTP Server is already running. Before re-running the configuration assistant, stop Oracle HTTP Server with the following command:

```
prompt> $ORACLE_HOME/opmn/bin/opmnctl stopproc ias-component=HTTP_Server
```

Then re-run the OPMN Configuration Assistant - Start HTTP Server.

G.3.17 OPMN Configuration Assistant - Start DAS Instance Failures

Problem

The OPMN Configuration Assistant - Start DAS Instance fails when you re-run it.

Solution

The problem is that the Oracle Delegated Administration Services instance is already running. Before re-running the configuration assistant, stop the Oracle Delegated Administration Services instance with the following command:

```
prompt> $ORACLE_HOME/opmn/bin/opmnctl stopproc ias-component=OC4J
```

Then re-run the OPMN Configuration Assistant - Start DAS Instance.

G.4 Deinstallation Problems and Solutions

This section describes common problems related to deinstallation:

- Section G.4.1, "Obsolete Partner URLs Still Remain on the Oracle Application Server Single Sign-On Administration Screen"

G.4.1 Obsolete Partner URLs Still Remain on the Oracle Application Server Single Sign-On Administration Screen

Problem

After deinstallation, some partner application entries that are obsolete remain on the Oracle Application Server Single Sign-On Administration screen.

Solution

Run the command to deregister the entries for the obsolete partner applications. The command is similar to the command for registration, except that the `-update_mode` parameter is set to `DELETE`.

Ensure your `LD_LIBRARY_PATH` environment variable contains `$ORACLE_HOME/lib32`, and that your `LD_LIBRARY_PATH_64` environment variable contains `$ORACLE_HOME/lib`. Then run the command (all on one line):

```
prompt> $ORACLE_HOME/jdk/bin/java
 -jar $ORACLE_HOME/sso/lib/ossoreg.jar
 -oracle_home_path $ORACLE_HOME
 -site_name hostname.domain
 -config_mod_osso TRUE
 -mod_osso_url http://hostname.domain:port
 -u userid
 -update_mode DELETE
```

For `-site_name` *hostname.domain*, specify the computer where the middle tier is installed. Include also the domain name.

For `-mod_osso_url http://`*hostname.domain:port*, specify the computer where the middle tier is installed, and the port number on which Oracle HTTP Server is listening.

For `-u` *userid*, specify the operating system user who can start up the middle-tier processes.

For a detailed explanation of the parameters, refer to chapter 4 of the *Oracle Application Server Single Sign-On Administrator's Guide*.

G.4.2 Unable to Reuse Instance Name of a Deleted Instance

Problem

You get an error when you try to name a new Oracle Application Server instance using the name of an instance that you deleted.

Solution

The name of the deleted instance must be removed from Oracle Internet Directory before you can reuse it. To remove entries for a deleted instance from Oracle Internet Directory, perform these steps:

1. Start up Oracle Directory Manager. Oracle home refers to the home where you installed Oracle Internet Directory.

```
prompt> $ORACLE_HOME/bin/oidadmin
```

2. In the Connect screen, enter the Oracle Internet Directory connect information. Log in as the Oracle Internet Directory superuser (`cn=orcladmin`).
3. Expand **Entry Management** > **cn=OracleContext** > **cn=Products** > **cn=IAS** > **cn=IAS Instances**.
4. Under **cn=IAS Instances**, select the instance that you want to delete.
5. From the menu, select **Edit > Delete**.
6. Expand **Entry Management** > **cn=OracleContext** > **cn=Groups**.
7. Select **cn=IASAdmins**.
8. In the Properties tab, remove the instance from the `uniquemember` field by editing the field. Do **not** select **Edit > Delete** from the menu.
9. Click **Apply**.

G.4.3 Unable to Reuse Database Name

Problem

You get an error when you try to use the same global database name or SID as the one that you deleted.

Solution

You might see this problem if you deinstall OracleAS Metadata Repository but not Oracle Internet Directory, and you want to reuse the Oracle Internet Directory and the same database name or SID when you install another OracleAS Metadata Repository. The Oracle Internet Directory still contains the name of the deleted OracleAS Metadata Repository. You need to remove this name before you can reuse it.

Note: Do **not** perform this procedure if you are deinstalling a middle tier.

---

1. Start up Oracle Directory Manager. Oracle home refers to the home where you installed Oracle Internet Directory.

```
prompt> $ORACLE_HOME/bin/oidadmin
```

2. In the Connect screen, enter the Oracle Internet Directory connect information. Log in as the Oracle Internet Directory superuser (`cn=orcladmin`).
3. Expand **Entry Management** > **cn=OracleContext** > **cn=Products** > **cn=Portal** > **cn=UltraSearch** > **cn=Database Instances** > **orclApplicationCommonName=***infrastructure_database_name*.
4. Delete all the child entries under **orclApplicationCommonName=***infrastructure_database_name*, starting with the inner-most child entry. To delete an entry, right-click each child entry and select **Delete** from the pop-up menu. Click **Yes** in the Confirmation dialog box. When deleting child entries, you may get some error messages. You can ignore these error messages.

5. After you have deleted all the entries under **orclApplicationCommonName=***infrastructure_database_name*, right-click this entry and delete it.
6. Expand **Entry Management**.

   Expand the Default Subscriber entry. You need to expand each term separately. For example: if your default subscriber is `dc=us,dc=oracle,dc=com`, you need to expand `dc=com`, then expand `dc=oracle`, then expand `dc=us`.

   Then expand **cn=OracleContext** > **cn=Products** > **cn=Portal** > **cn=UltraSearch** > **cn=Database Instances** > **cn=***infrastructure_database_name*.
7. Delete all the child entries under **cn=***infrastructure_database_name*, starting with the inner-most child entry. To delete an entry, right-click each child entry and select **Delete** from the pop-up menu. Click **Yes** in the Confirmation dialog box. When deleting child entries, you may get some error messages. You can ignore these error messages.
8. After you have deleted all the entries under **cn=***infrastructure_database_name*, right-click this entry and delete it.
9. Click **Apply**.

G.4.4 Harmless Warning Dialog Window During Deinstallation

During an OracleAS Portal deinstallation, you may see a warning dialog window with the following message:

Could not find the main class. Program will exit.

This message is harmless and can be ignored. Click **OK** to dismiss the window and continue with the deinstallation.

G.5 Backup and Recovery Problems and Solutions

This section describes common problems related to backup and recovery:

G.5.1 Restoring After a Failed Restore Attempt

Problem

If a restore attempt fails during the second phase (when configuration files are being restored), all subsequent recovery attempts will also fail.

Solution

Run the following command with the OracleAS Backup and Recovery Tool:

```
$ORACLE_HOME/backup_restore/bkp_restore.sh -m restore_config -t timestamp_of_
failed_recovery
```

For more information about the OracleAS Backup and Recovery Tool, refer to Chapter 14.

G.6 Configuration Assistant Problems and Solutions

This section describes how to deal with problems related to configuration assistants.

The following topics are covered:

- Section G.6.1, "General Tips"
- Section G.6.2, "Configuration Assistant Result Codes"

G.6.1 General Tips

If a configuration assistant fails, try the following steps to correct the problem:

1. Review the installation log files listed in Section G.1, "Log Files".
2. Review the log files for the failed configuration assistant. Configuration assistant log files are listed in Section F.1, "Oracle Application Server Standard Edition One Configuration Assistants". Try to fix the issue that caused the error.
3. If the failed configuration assistant has any dependencies, then run the dependencies again. You must do this even if the dependency completed successfully.
4. Run the failed configuration assistant again by selecting the configuration assistant in the installer and clicking **Retry**.

   If the configuration assistant fails again after you click **Retry**, remove the `/tmp/EM_CONFIG_INSTALL.lk` file and re-run the configuration assistant again.

   If the configuration assistant fails again after you click **Retry**, remove the component entry from the `$ORACLE_HOME/sysman/emd/targets.xml` file. For example, the following lines show the OracleAS Web Cache entry in the `targets.xml` file:

```
<Target TYPE="oracle_webcache" NAME="instance2.domain.com_Web Cache" DISPLAY_
NAME="Web Cache">
   <Property NAME="HTTPPort" VALUE="7777" />
   <Property NAME="logFileName" VALUE="webcache.log" />
   <Property NAME="authrealm" VALUE="Oracle Web Cache Administrator" />
   <Property NAME="AdminPort" VALUE="4000" />
   <Property NAME="HTTPProtocol" VALUE="http" />
   <Property NAME="logFileDir" VALUE="/sysman/log" />
   <Property NAME="HTTPMachine" VALUE="domain.com" />
   <Property NAME="HTTPQuery" VALUE="" />
   <Property NAME="controlFile" VALUE="/ORACLE_HOME/webcache/bin/webcachectl"
/>
   <Property NAME="MonitorPort" VALUE="4002" />
   <Property NAME="HTTPPath" VALUE="/" />
   <Property NAME="authpwd" VALUE="administrator" />
   <Property NAME="authuser" VALUE="administrator" />
   <CompositeMembership>
      <MemberOf TYPE="oracle_ias" NAME="domain.com" ASSOCIATION="null" />
   </CompositeMembership>
</Target>
```

5. If an optional configuration assistant fails, and it does not have any dependencies, run the remaining configuration assistants. Uncheck the cancelled optional configuration assistant, highlight and check the next listed configuration assistant, and click **Retry**.
6. If configuration assistant failure occurs when running configuration assistant execution commands on the command line, then re-run the configuration assistant execution command again.

   You can use the generated script file named `configtoolcmds.pl` located in the `$ORACLE_HOME/bin` directory to execute the failed configuration assistant again. The `configtoolcmds.pl` script is generated after you exit the installer. During

silent or non-interactive installation, the `configtoolcmds.pl` script is generated immediately after configuration assistant failure.

7. If you see a Fatal Error. Reinstall message, find the cause of the problem by analyzing the log files. You cannot recover from a fatal error by correcting the problem and continuing. You must remove the current installation and reinstall Oracle Application Server. The following tasks describe the recovery procedure:
   a. Deinstall the failed installation using the procedure described in Appendix A, "Deinstallation and Reinstallation".
   b. Correct the cause of the fatal error.
   c. Reinstall Oracle Application Server.
   d. If the fatal error reoccurs, then you must remove all Oracle installations from your computer.

G.6.2 Configuration Assistant Result Codes

If a configuration assistant fails, the bottom half of the installation screen displays the error message, and the configuration assistant writes its result code (Table G–1) to the following log file:

oraInventory`/logs/installActions`*timestamp*`.log`

Table G–1 Result Codes for Configuration Assistants

Result Code	Description
`0`	Configuration assistant succeeded
`1`	Configuration assistant failed
`-1`	Configuration assistant cancelled

G.7 OracleAS Portal Problems and Solutions

This section describes common problems related to OracleAS Portal:

- Section G.7.1, "Retrieving an OracleAS Portal Password"
- Section G.7.2, "Unable to Login to OracleAS Portal Using Internet Explorer with SSL Enabled"

G.7.1 Retrieving an OracleAS Portal Password

Problem

You misplaced or forgot your OracleAS Portal login password.

Solution

Your lost password can be retrieved from Oracle Directory Manager:

1. Start Oracle Directory Manager using the following command:

   ```
   $ORACLE_HOME/bin/oidadmin
   ```

2. On the Connect screen, enter the connect information. Log in as the Oracle Internet Directory superuser (`cn=orcladmin`).
3. Navigate to the following node:

Entry Management, cn=OracleContext, cn=Products, cn-IAS, cn=IAS Infrastructure Databases, orclReferenceName=*your_database_name* orclResourceName=PORTAL.

G.7.2 Unable to Login to OracleAS Portal Using Internet Explorer with SSL Enabled

Problem

An error message is generated when you attempt to login to OracleAS Portal with SSL enabled using Internet Explorer version 6. This problem occurs when the infrastructure and middle tier exist on the same computer.

Solution

Create an alias for your computer and configure OracleAS Single Sign-On to use the alias rather than the actual computer name:

1. Add a new host name for your computer. For example:

   ```
   123.45.67.89 devhost2-sso.us.oracle.com mgueury-sso
   ```

2. Start Application Server Control Console with the `emctl` command:

   ```
   /> emctl start iasconsole
   ```

3. In Application Server Control Console, navigate to the Virtual Hosts page (**Infrastructure**, **HTTP_Server**, **Virtual Hosts**) and change the virtual host name to the desired name (for example, from `devhost1-sso.us.oracle.com` to `devhost2-sso.us.oracle.com`).

4. Configure the SSO server to reflect this change:

   ```
   /> cd INFRA_ORACLE_HOME/sso/bin
   /INFRA_ORACLE_HOME/sso/bin> ssocfg https devhost2-sso.us.oracle.com 4459
   ```

5. Configure OracleAS Portal to recognize this change in SSO:

   ```
   /> cd MIDTIER_ORACLE_HOME/portal/conf
   /> MIDTIER_ORACLE_HOME/portal/conf> ptlconfig -dad portal
   ```

6. Clear the Portal cache:

   ```
   /> cd MIDTIER_ORACLE_HOME/Apache/modplsql/cache
   /MIDTIER_ORACLE_HOME/Apache/modplsql/cache> rm -rf *
   ```

G.8 Oracle Application Server Metadata Repository Creation Assistant Problems and Solutions

This sections describes common problems related to OracleAS Metadata Repository Creation Assistant:

- Section G.8.1, "Unable to Connect to the Database"
- Section G.8.2, "Unable to Connect as sys User"
- Section G.8.3, "Manual Steps: Cleaning Up a Failed Registration or Deregistering OracleAS Metadata Repository"
- Section G.8.4, "ORA-01403: No Data Found"

G.8.1 Unable to Connect to the Database

Problem

OracleAS Metadata Repository Creation Assistant is unable to connect to the database

Solution

Check the following:

- Ensure that you are using correct service name (*SID* or *SID.domainname*).
- Ensure that the database is up.
- Ensure that the listener is up.
- Ensure that you have network connectivity to the database.
- Check that the `glogin.sql` or the `login.sql` files, located in the `$ORACLE_HOME/sqlplus/admin` directory, do not contain user prompt lines, which look like the following:

  ```
  column db_name new_value db_name noprint
  select user ||' on ' || name "db_name" from v$database ;
  set sqlprompt "&db_name> "
  ```

  If either file contains the user prompt lines, then:

  a. Rename the file to something else.

  b. Exit OracleAS Metadata Repository Creation Assistant.

  c. Restart OracleAS Metadata Repository Creation Assistant.

  d. Try connecting again.

  e. When OracleAS Metadata Repository Creation Assistant is done, rename the file back.

G.8.2 Unable to Connect as sys User

Problem

You get the following message when running OracleAS Metadata Repository Creation Assistant:

```
RepCA unable to connect as sys. Error message:
*** Specify Database Connect ***
ERROR -SQLException on getting SID and SYSTEMNAME
informationjava.sql.SQLException:
@ ORA-01017 : invalid username/password; logon denied
```

Solution

Try the following:

- Check that you entered the correct password for the `sys` user.
- Reset the password for the `sys` user and try again. You can reset the password using the `$ORACLE_HOME/bin/orapwd` command. For more information, refer to Section 15.5.12, "Password File Authentication".

- Check that the `glogin.sql` or the `login.sql` files, located in the `$ORACLE_HOME/sqlplus/admin` directory, do not contain user prompt lines, which look like the following:

  ```
  column db_name new_value db_name noprint
  select user ||' on ' || name "db_name" from v$database ;
  set sqlprompt "&db_name> "
  ```

  If either file contains these lines, then:

  a. Rename the file to something else.

  b. Exit OracleAS Metadata Repository Creation Assistant.

  c. Restart OracleAS Metadata Repository Creation Assistant.

  d. Try connecting again.

  e. When OracleAS Metadata Repository Creation Assistant is done, rename the file back.

G.8.3 Manual Steps: Cleaning Up a Failed Registration or Deregistering OracleAS Metadata Repository

This section describes how to clean up registration entries in Oracle Internet Directory without using OracleAS Metadata Repository Creation Assistant.

1. Connect to Oracle Internet Directory using Oracle Directory Manager.

   a. Start up Oracle Directory Manager.

   ```
   prompt> $ORACLE_HOME/bin/oidadmin
   ```

   b. In the Connect screen, enter the connect information. Log in as the Oracle Internet Directory superuser (`cn=orcladmin`).

2. Clean up the database registration entries in Oracle Internet Directory:

   a. Expand the following entries (shown in Figure G–1):

   Entry Management > **cn=OracleContext** > **cn=***your_database_name*

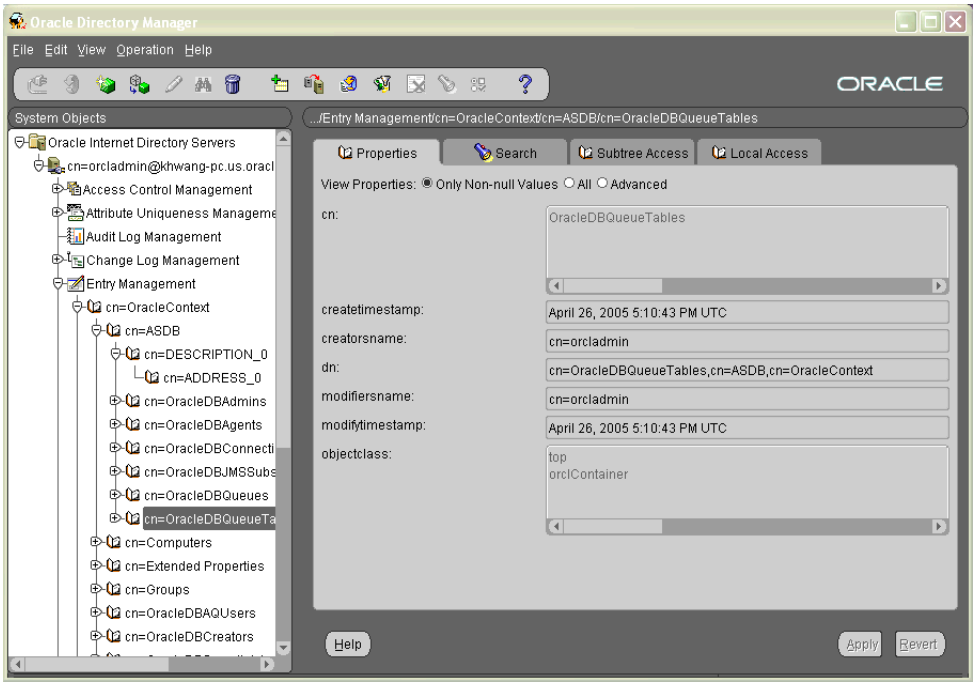
   b. Delete all the child entries under `cn=`*`your_database_name`*, starting with the bottom-most child entry.

   Before deleting the `cn=DESCRIPTION_0` entry, expand it until you reach the last child. Then delete each child starting with the innermost child.

   To delete an entry, right-click each child entry and select **Delete** from the pop-up menu. Click **Yes** in the Confirmation dialog box. When deleting some child entries, you may get some error messages. You can ignore these error messages.

   c. Right-click `cn=`*`your_database_name`* and delete it.

Figure G–1 Clean Up Database Registration Entries



3. Clean up the metadata repository registration entries in Oracle Internet Directory:

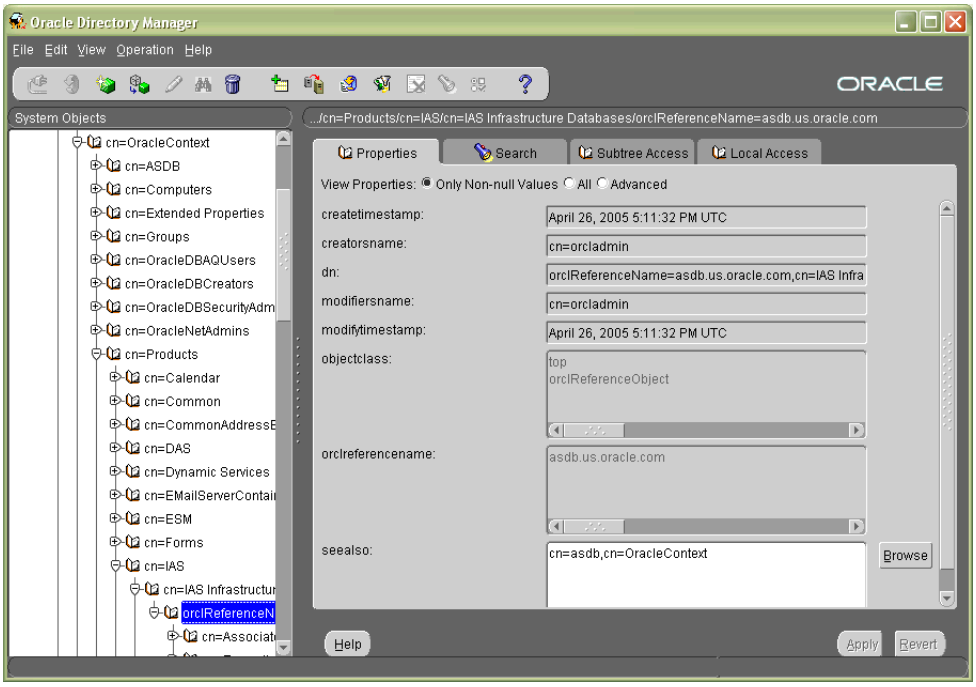
   a. Expand the following entries (shown in Figure G–2):

      Entry Management, cn=OracleContext, cn=Products, cn=IAS, cn=IAS Infrastructure Databases, and then **orclReferenceName=***your_database_name*

   b. Delete each child entry under `orclReferenceName=`*your_database_name*.

   c. Delete the `orclReferenceName=`*your_database_name* entry.

Figure G–2 Clean Up Metadata Repository Registration Entries



G.8.4 ORA-01403: No Data Found

Problem

When OracleAS Metadata Repository Creation Assistant loads the Workflow schema, it returns a PL/SQL error ORA-01403: no data found.

Solution

Your `NLS_LANG` environment variable is set to a non-English locale. Before you run OracleAS Metadata Repository Creation Assistant, you need to ensure that the `NLS_LANG` environment variable is unset or is set to `american_america.us7ascii`.

```
prompt> unsetenv NLS_LANG
 - or -
prompt> setenv NLS_LANG american_america.us7ascii
```

You can set `NLS_LANG` back to its original value after running OracleAS Metadata Repository Creation Assistant.

G.9 Database Problems and Solution

If you perform an OracleAS Portal installation, the Database Control Service is stopped, and the service start type is changed to Manual so that the service is not started automatically when the machine is restarted. This is to prevent an extra instance of `emagent` from starting, thus consuming fewer system resources.

You can start the Database Control Service manually from the Services control panel.

G.10 Need More Help?

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

- Oracle Application Server Release Notes, available on the Oracle Technology Network (http://www.oracle.com/technology/documentation)
- Oracle*MetaLink* (http://metalink.oracle.com)

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

Index

E

F

G

H

I

J

K

L

M

N

O

P

R

S

T

U

V

W