

Oracle® Application Server
Forms and Reports Services Installation Guide
10g Release 2 (10.1.2) for Linux x86
B19314-02

August 2005

Oracle Application Server Forms and Reports Services Installation Guide, 10g Release 2 (10.1.2) for Linux x86
B19314-02

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Preface

Oracle Application Server Forms and Reports Services Installation Guide covers requirements, new features in the installer, concepts that affect installation, compatibility with other products, post-installation tasks, and troubleshooting tips.

Audience

This guide is intended for users who are comfortable performing system administration operations such as creating users and groups, adding users to groups, and installing operating system patches on the computer on which Forms and Reports Services will be installed. Users installing Forms and Reports Services need root access to run some scripts.

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Related Documents

For more information, see the following documents:

- *Oracle Application Server Forms and Reports Services Release Notes*
- *Oracle Application Server Reports Services Publishing Reports to the Web*
- *Oracle Reports Building Reports*
- *Getting Started with Oracle Reports*, available on the Oracle Technology Network (<http://www.oracle.com/technology/products/reports/>)

The Index of *Getting Started with Oracle Reports* provides access to Reports documentation not available on the main OTN Reports Documentation page. You can select from the Topic and Collateral Type lists to view any Reports document, including online help and tech notes.

- *Oracle Application Server Forms Services Deployment Guide*

Conventions

The following text conventions are used in this document:

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

What's New in the Installation

This chapter describes new features in Oracle Application Server 10g Forms and Reports Services. This chapter is mostly of interest to users who have installed previous versions of Forms and Reports Services.

To see a list of new features in the product itself, visit the Oracle Technology Network site (<http://www.oracle.com/technology>). For frequently asked questions (FAQ) about the installation of Forms and Reports Services, visit the Forms and Reports Services Installation FAQ page on the Oracle Technology Network site (http://www.oracle.com/technology/products/reports/htdocs/faq/faq_fr_services.htm).

This chapter includes the following topics:

- [New Screen for Specifying the staticports.ini File](#)
- [New Element for Specifying Port Numbers for CORBA Communication](#)
- [Configuring Forms and Reports Services to Use the Services of an Oracle Application Server Infrastructure](#)
- [Cloning Forms and Reports Services Instances](#)
- [Additional Tool for Deinstallation](#)
- [Recording Feature for Silent Installations](#)
- [Generating Installation Statistics](#)
- [Change in the Default Port Range](#)
- [What's New in Oracle Application Server Forms Services](#)
- [What's New in Oracle Application Server Reports Services](#)

1.1 New Screen for Specifying the staticports.ini File

In earlier releases, for components to use custom ports, you created a `staticports.ini` file to map components and port numbers. When you started the installer, you used a command-line option to specify the file.

In this release, you specify the `staticports.ini` file in the new "Select Port Configuration Options" screen in the installer. You do not use the command-line options to specify the file.

1.2 New Element for Specifying Port Numbers for CORBA Communication

This release introduces the `ORBPORts` element in the server configuration file to enable you to explicitly specify the port numbers used by Reports Server and engines for communication through CORBA. You can specify either a range of ports or individual ports separated by commas. For example:

```
<ORBPORts value="15000-15010" /> (Range of values)
```

```
<ORBPORts value="15000,16000,17000,18000" /> (Comma-separated values)
```

By default, the `ORBPORts` element is not present in the Reports Server configuration file. If this element is missing, Reports Server chooses a random port for CORBA communication. For more information about the `ORBPORts` element, see the chapter "Configuring OracleAS Reports Services" in the *Oracle Application Server Reports Services Publishing Reports to the Web* manual.

Note: The `ORBPORts` element should be defined only if the TCP port filtering has been enabled on the server where Reports Server is running. If port filtering is enabled, and a few ports can be opened for Reports Server, then use `ORBPORts` to specify them in the server configuration file for Reports Server and engine communication. If any of the ports are not available, Reports Server or engines may fail to start and an error displays.

1.3 Configuring Forms and Reports Services to Use the Services of an Oracle Application Server Infrastructure

In this release, you can configure Forms and Reports Services to use the services of an Oracle Application Server Infrastructure. Forms and Reports Services can then use the services of an OracleAS Infrastructure in the same way as used by the Business Intelligence and Forms components. For more information on the configuration, see [Chapter 6, "Configuring Forms and Reports Services to Use an Oracle Application Server Infrastructure"](#).

1.4 Cloning Forms and Reports Services Instances

Cloning is the process of copying an existing installation to a different location while preserving its configuration. In this release, cloning an installation of Forms and Reports Services instance is possible. For more information on cloning, see the *Oracle Application Server Administrator's Guide*.

1.5 Additional Tool for Deinstallation

In this release, there is a new tool called the Deconfig tool that removes entries from Oracle Internet Directory and the Oracle Application Server Metadata Repository. You run this tool before you deinstall an Oracle Application Server instance using the installer. For more information about the Deconfig tool, see the *Oracle Application Server Installation Guide*.

1.6 Recording Feature for Silent Installations

The installer has a record mode, in which it saves your inputs to a response file. You can then use the generated response file to install Forms and Reports Services on different computers using the same values.

For details, see the *Oracle Application Server Installation Guide*.

1.7 Generating Installation Statistics

The installer provides command-line options for monitoring resources used for installation. [Table 1–1](#) lists the options that are supported.

Table 1–1 *Installer Options for Generating Installation Statistics*

Option	Description
-prnttime	Retrieves information on the time taken for the installation. The installer writes the information in the following file: <i>oraInventory/logs/timetimestamp.log</i> <i>oraInventory</i> specifies the location of your <i>oraInventory</i> directory. You can look in the <i>/etc/oraInst.loc</i> file to find out the location of this directory on your computer.
-prntmemory	Retrieves information on the memory used for the installation. The installer writes the information in the following file: <i>oraInventory/logs/memorytimestamp.log</i> <i>oraInventory</i> specifies the location of your <i>oraInventory</i> directory. You can look in the <i>/etc/oraInst.loc</i> file to find out the location of this directory on your computer.
-prntdiskusage	Retrieves information on the disk space used for the installation. The installer writes the information in the following file: <i>oraInventory/logs/diskusagetimestamp.log</i> <i>oraInventory</i> specifies the location of your <i>oraInventory</i> directory. You can look in the <i>/etc/oraInst.loc</i> file to find out the location of this directory on your computer.

For example, the following command provides information for the time taken, memory used, and disk space used for the installation:

```
runInstaller -prnttime -prntmemory -prntdiskusage
```

1.8 Change in the Default Port Range

The default port ranges for the following components have changed:

- Oracle Application Server Reports Services
- Oracle Internet Directory
- Oracle Application Server Certificate Authority
- Oracle Application Server Containers for J2EE
- Oracle Enterprise Manager 10g
- Oracle Application Server Web Cache

For details, see [Appendix C, "Default Port Numbers"](#).

1.9 What's New in Oracle Application Server Forms Services

Much of the functionality that was handled by the Web server in Oracle 6i Forms has been assumed by components that are delivered with Oracle Application Server. For example, load balancing, security, scalability, HTTP/S communication handling, and deployment of Java servlets are all performed by various components delivered with Oracle Application Server, such as the Oracle HTTP Server and Oracle Application Server Containers for J2EE (OC4J).

The Forms Services component of Oracle Application Server handles all processing specific to Forms Developer applications, such as running the business logic defined in the Forms Developer application and providing the connection to the Oracle Database. A Java applet provides the client user interface.

New features for OracleAS Forms Services include:

- Improved Integration with Enterprise Manager for easier administration and manageability such as End User Monitoring.
- Java Virtual Machine (JVM) Pooling.
- Upgrade Assistant. For more information on the Upgrade Assistant, see [Chapter 8, "Upgrading 9.0.4 Forms and Reports Services to 10.1.2 Forms and Reports Services"](#).

For more information about these features, see the *Oracle Application Server Forms Services Deployment Guide*.

1.10 What's New in Oracle Application Server Reports Services

The new features of OracleAS Reports Services include:

- A new output format SPREADSHEET, using which you can generate spreadsheet output directly from existing paper layout reports, while preserving the paper layout information such as colors, fonts, and conditional formatting in the output.
- Formatting enhancements that allow you to use a defined set of inline HTML formatting tags to format text style attributes, and generate formatted text objects in all bitmap output formats.
- Support for specifying table attributes for paper-based reports generated to HTML output.
- Improvements to right-alignment of text in PDF output, as required by languages that read from right to left.
- Standards compliance for HTML/HTMMLCSS output and XML output.
- The capability to apply external style sheets and user-defined styles to your report or report objects when you generate HTMMLCSS output.
- Enhanced implementation of font subsetting and improved font support to generate PDF output that is clearer, smoother, searchable, and accessible.
- Several graphing enhancements like support for dashed and dotted line graph.
- WebDAV destination enhancement to enable you to send report output to a specific Virtual Private Portal (VPP).
- Migration from Borland's VisiBroker to Sun Microsystems' industry-standard Java Developer's Kit Object Request Broker (JDK ORB).
- Improved integration with Oracle Application Server Control.

- New documentation that provides information and step-by-step instructions for cross-platform report deployment. Refer to the *Oracle Application Server Reports Services Publishing Reports to the Web* manual.

For more information about these features, refer to the *Oracle Reports online Help*.

Introduction to Forms and Reports Services

Oracle Application Server Forms and Reports Services enables you to install and configure Forms and Reports Services without the need to install and configure the entire Oracle Application Server. This is called a standalone installation of Forms and Reports Services. You can also configure the standalone Forms and Reports Services instance to use the Oracle Identity Management and Oracle Application Server Metadata Repository services of an Oracle Application Server Infrastructure.

Forms and Reports Services standalone installation is best suited for users who want to upgrade Forms and Reports applications to the Grid environment in two phases. In phase one, they move to the Grid environment by upgrading their client/server-based Forms and Reports applications to Web-based applications. In phase two, users can then choose to use the services offered by an existing OracleAS Infrastructure installation.

This chapter includes the following topics:

- [Restrictions with This Installation Type](#)
- [Available Features with This Installation Type](#)

2.1 Restrictions with This Installation Type

Once you configure Forms and Reports Services to use the services of an OracleAS Infrastructure, you *cannot* reverse this configuration.

2.2 Available Features with This Installation Type

When you install Forms and Reports Services, you will have access to these features:

- [Oracle Application Server Forms Services](#)
- [Oracle Application Server Reports Services](#)
- [Oracle HTTP Server](#)
- [Oracle Application Server Web Cache](#)
- [Oracle Application Server Containers for J2EE](#)
- [Oracle Enterprise Manager](#)
- [Oracle Process and Management Notification](#)
- [Distributed Configuration Management](#)

2.2.1 Oracle Application Server Forms Services

Oracle Application Server Forms Services deploys Oracle Forms with database access to Java clients in a Web environment. OracleAS Forms Services automatically optimizes class downloads, network traffic, and interactions with the Oracle database. Forms applications are automatically load-balanced across multiple servers; thus, they can easily scale to service any number of requests.

2.2.2 Oracle Application Server Reports Services

Oracle Application Server Reports Services provides an easy-to-use, scalable, and manageable solution for high-quality enterprise reporting and publishing. Using Oracle Reports, you can publish data generated by multiple sources in various formats (paper layout, Web, or data interchange format). This provides flexibility in the presentation of data. OracleAS Reports Services is part of Oracle Application Server.

2.2.3 Oracle HTTP Server

Oracle HTTP Server, built on Apache Web server technology, is the Web server that Oracle Application Server uses. It offers scalability, stability, speed, and extensibility. It also supports Java servlets, Java Server Pages (JSPs), Perl, PL/SQL, and CGI applications.

2.2.4 Oracle Application Server Web Cache

Oracle Application Server Web Cache is a server-accelerator caching service that improves the performance, scalability, and availability of frequently used Oracle E-business Web sites that run on the Oracle platform. By storing frequently accessed URLs in virtual memory, Oracle Application Server Web Cache eliminates the need to repeatedly process requests for those URLs on the Web server. It also caches both static and dynamically generated HTTP content from one or more applications Web servers.

2.2.5 Oracle Application Server Containers for J2EE

Oracle Application Server Containers for J2EE (OC4J) is a complete set of J2EE containers written entirely in Java that execute on the Java Virtual Machine (JVM) of the standard Java Development Kit (JDK).

2.2.6 Oracle Enterprise Manager

Oracle Enterprise Manager Application Server Control (henceforth referred to as Application Server Control) provides you with Web-based management tools that you need to monitor, administer, and configure multiple Oracle Application Server instances and its components. By default, Application Server Control is installed with every instance of Oracle Application Server. You can deploy applications, manage security, and create and manage Oracle Application Server clusters.

Application Server Control consists of the following:

- The Enterprise Manager home pages you use to manage Oracle Application Server and its components. These Web pages provide you with a high-level view of your Oracle Application Server environment. From these pages you can drill down for more detailed information on administration, configuration, and performance monitoring. These pages also let you administer Oracle Application Server, its components, and deployed applications.

- The underlying software technologies that keep track of your Oracle Application Server instances and components. These technologies automatically perform the necessary management tasks. For example, these technologies discover the components of each Oracle Application Server instance, gather and process performance data, and provide access to application configuration information.

2.2.7 Oracle Process and Management Notification

Oracle Process and Management Notification (OPMN) provides process control and monitoring services for Oracle Application Server instances and their components such as Forms and Reports Services. It gathers component status information and distributes the information to the relevant components. Application Server Control uses OPMN for such tasks as starting and stopping the components of your Oracle Application Server instance.

2.2.8 Distributed Configuration Management

Distributed Configuration Management (DCM) manages configurations among Oracle Application Server instances with a common Oracle Application Server Metadata Repository. It enables cluster-wide deployment of Oracle Application Server; thus, enabling you to deploy an application to one instance and have it automatically propagated to the entire cluster. You can also make a single host or instance configuration change to one instance and have it propagated across all instances in the cluster. Application Server Control uses DCM to make configuration changes and to propagate configuration changes and deployed applications across the cluster.

Requirements

Before installing Forms and Reports Services, ensure that your computer meets the requirements described in this chapter.

This chapter contains the following sections:

- [System Requirements](#)
- [Software Requirements](#)
- [Kernel Parameters](#)
- [Shell Limits for the oracle User](#)
- [Ports](#)
- [Operating System Groups](#)
- [Operating System User](#)
- [Environment Variables](#)
- [The Hosts File](#)
- [Network Topics](#)
- [Prerequisite Checks Performed by the Installer](#)

3.1 System Requirements

[Table 3–1](#) lists the system requirements for installing Forms and Reports Services. The installer checks many of these requirements at the start of the installation and displays a warning if any of the requirements is not met.

You can also run the system checks performed by the installer by running the `runInstaller` command. The `runInstaller` command is on the Forms and Reports Services CD-ROM (Disk 1) or DVD-ROM (in the `forms_reports` directory).

CD-ROM:

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

DVD-ROM:

```
prompt> dvd_mount_point/forms_reports/runInstaller -executeSysPrereqs
```

The results are displayed on the screen as well as written to a log file. For more information on the types of checks performed, see [Section 3.11, "Prerequisite Checks Performed by the Installer"](#).

Table 3–1 System Requirements

Item	Requirement	Checked by the Installer
Operating system	<ul style="list-style-type: none"> ■ Red Hat Enterprise Linux AS/ES 2.1 ■ Red Hat Enterprise Linux AS/ES 3.0 ■ Red Hat Enterprise Linux AS/ES 4.0 ■ SUSE Linux Enterprise Server 8 ■ SUSE Linux Enterprise Server 9 <p>For the most current list of supported Linux Operating Systems, check <i>OracleMetaLink</i>. Oracle does not support customized kernels or modules not supported by the Linux vendor.</p>	Yes
IP	The computer's IP address can be static or allocated using DHCP. If you later change the IP configuration, then refer to <i>Oracle Application Server Administrator's Guide</i> for information about reconfiguring Oracle Application Server.	No
Processor Type	Pentium (32-bit)	No
Processor Speed	450 MHz or faster	Yes
Memory	<p>512 MB</p> <p>To determine the amount of memory, enter the following command:</p> <pre>prompt> grep MemTotal /proc/meminfo</pre> <p>Note: These values assume you are running only one Forms and Reports Services instance on each computer.</p> <p>If you do not meet the memory requirements, the installer displays a warning. The installer lets you to dismiss the warning and continue because you might configure some but not all components and thus require less memory. However, you should test your site to ensure that you have sufficient memory.</p>	Yes
Disk space	<p>1 GB</p> <p>To determine the amount of free disk space, use the <code>df</code> command:</p> <pre>prompt> df -k dir</pre> <p>Replace <i>dir</i> with the directory in which you plan to install Forms and Reports Services or with the parent directory if the directory does not exist yet. For example, if you plan to install Forms and Reports Services in <code>/opt/oracle/</code>, replace <i>dir</i> with <code>/opt/oracle</code> or <code>/opt/oracle/oralinfers</code>.</p>	No
Space in /tmp directory	<p>400 MB</p> <p>To determine the amount of free space in the <code>/tmp</code> directory, use the <code>df</code> command:</p> <pre>prompt> df -k /tmp</pre> <p>If the <code>/tmp</code> directory does not have enough free space, you can specify a different directory by setting the <code>TMP</code> environment variable. See Section 3.8.5, "TMP" for details.</p>	Yes

Table 3–1 (Cont.) System Requirements

Item	Requirement	Checked by the Installer
Swap space	<p>1.5 GB or greater of available swap space</p> <p>To determine the amount of available swap space, enter the following command:</p> <pre>prompt> grep SwapTotal /proc/meminfo</pre> <p>If necessary, see your operating system documentation for information on how to configure additional swap space.</p>	Yes
Monitor	<p>256 color display</p> <p>To determine your monitor's display capabilities, run the following command:</p> <pre>prompt> /usr/X11R6/bin/xdpyinfo</pre> <p>Look for the "depths" line. You need a depth of at least 8 (bits per pixel).</p> <p>Note: The DISPLAY environment variable is needed only by Oracle Universal Installer during the installation of Forms and Reports Services. It is not used by Oracle Forms and Oracle Reports.</p>	Yes
Supported browsers	<p>For the most current list of supported browsers, check the <i>OracleMetaLink</i> site (http://metalink.oracle.com).</p> <p>The following browsers are supported:</p> <ul style="list-style-type: none"> ■ Netscape 7.1, 7.2 ■ Mozilla 1.7. You can download Mozilla from http://www.mozilla.org. Note that Firefox, the standalone Mozilla browser, is currently not certified. But check the OracleMetaLink site (http://metalink.oracle.com) for the most current list of certified browsers. ■ Safari 1.2 (on Apple Macintosh computers) <p>Forms applications require a JVM running within a browser. The following browsers and JVM combinations are currently supported:</p> <ul style="list-style-type: none"> ■ Microsoft Internet Explorer 6.0 and higher with native JVM or JInitiator 1.3.1.22 and higher ■ Netscape 4.7x, 7.0x and higher with JInitiator 1.3.1.22 and higher or Sun Java Plugin 1.4.1 and higher <p>More browsers and JVMs will be certified over time. For the latest information on which browsers and JVMs are certified for Forms, check Oracle Technology Network (OTN): (http://otn.oracle.com/products/forms/htdocs/10g/clientsod_fo rms10g.html)</p>	No

Tips for Reducing/Fine Tuning Memory Usage

If you need to reduce memory consumption:

- After installation, use Oracle Enterprise Manager to stop services not used. This reduces the memory usage. For details, see the *Oracle Application Server Administrator's Guide*.
- For OracleAS Reports Services, you can control the JVM heap size by specifying small values using the REPORTS_JVM_OPTIONS environment variable.

For Reports Engine, the JVM options are specified in the *server_name.conf* file in the *jvmoptions* attribute of the *engine* element. If specified, the JVM options set in *server_name.conf* override the value of the REPORTS_JVM_OPTIONS environment variable. If not specified in *server_name.conf*, Oracle Reports

uses the JVM options specified by the `REPORTS_JVM_OPTIONS` environment variable. For Reports Server, you can use the `command` line to specify the JVM options. For details about JVM option support, see the *Oracle Application Server Reports Services Publishing Reports to the Web* manual.

3.2 Software Requirements

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

- [Software Requirements for Red Hat Enterprise Linux AS/ES 2.1 Systems](#)
- [Software Requirements for Red Hat Enterprise Linux AS/ES 3.0 Systems](#)
- [Software Requirements for Red Hat Enterprise Linux AS/ES 4.0 Systems](#)
- [Software Requirements for SUSE Linux Enterprise Server 8 Systems](#)
- [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 10g Forms and Reports Services 10g Release 2 (10.1.2) on a Linux system that is not on a network and you can install Oracle Application Server 10g Forms and Reports Services 10g Release 2 (10.1.2) on a Linux system that is configured to use DHCP. If you want to install Oracle Application Server on a computer that is not on a network you must configure the computer to use either a static IP address or a loopback IP address. Configure the computer to resolve the hostname of the computer to either a static IP address or a loopback IP address.

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

Table 3–2 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 your system meets these requirements and any additional requirements for installing Oracle Application Server 10g Forms and Reports Services.

Note: Oracle Application Server 10g 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 *OracleMetaLink* (<http://metalink.oracle.com>).

Table 3–2 Software Requirements for Red Hat Enterprise Linux AS/ES 2.1 Systems

Item	Requirement
Operating System	Red Hat Enterprise Linux AS/ES 2.1 For more information on Red Hat, see: http://www.redhat.com
Red Hat Update	Update 5

Table 3–2 (Cont.) Software Requirements for Red Hat Enterprise Linux AS/ES 2.1

Item	Requirement
Red Hat Patches	<p>Errata 49 kernel or a higher errata patch approved by Red Hat</p> <p>For example, one of the following, depending on the type of Red Hat installation:</p> <ul style="list-style-type: none"> ■ 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)	<p>glibc-2.2.4-32.17</p> <p>glibc-common-2.2.4-32.17</p> <p>gcc-2.96-128.7.2</p> <p>gcc-c++-2.96-128.7.2</p> <p>pdksh-5.2.14-22</p> <p>openmotif-2.1.30-12</p> <p>sysstat-4.0.1-15.2.1as</p> <p>compat-glibc-6.2-2.1.3.2</p> <p>compat-libstdc++-6.2-2.9.0.16</p> <p>libstdc++-2.96-128.7.2</p> <p>gnome-libs-1.2.13-16</p> <p>binutils-2.11.90.0.8-12.4</p> <p>make-3.79.1-8</p> <p>db1-1.85-7</p> <p>db3-3.3.11-5</p>

To ensure that the system meets all the requirements, follow these steps:

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 *OracleMetaLink* (<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, 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. If necessary, see your operating system documentation for information on upgrading the kernel.

For more information on Red Hat patches, see:

<http://www.redhat.com>

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, download it and install it using the following command:

```
# rpm -i package_name
```

When installing a package, make sure 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
```

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

Table 3–3 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 your system meets these requirements and any additional requirements for installing Oracle Application Server 10g Forms and Reports Services.

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 *OracleMetaLink* (<http://metalink.oracle.com>).

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

Item	Requirement
Operating System	<p>Red Hat Enterprise Linux AS/ES 3.0</p> <p>For more information on Red Hat, see: http://www.redhat.com</p> <p>The minimum supported kernel versions are:</p> <ul style="list-style-type: none"> ■ kernel-2.4.21-20.EL ■ kernel-smp-2.4.21-20.EL ■ kernel-hugemem-2.4.21-20.EL
Red Hat Update	Update 3

Table 3–3 (Cont.) Software Requirements for Red Hat Enterprise Linux AS/ES 3.0

Item	Requirement
Software packages (check that these versions or higher versions are installed)	<pre>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</pre>
	<p>Note: For Red Hat Enterprise Linux AS/ES 3.0, the equivalent version of <code>openmotif 2.1.30-8</code> is <code>openmotif21-2.1.30-8</code>. The <code>openmotif21-2.1.30-8</code> package can be installed from disk number 3 of the Red Hat Enterprise Linux AS/ES 3.0 distribution by entering:</p> <pre>\$ rpm -ivh openmotif21-2.1.30-8</pre>
64-bit Certification	<p>Red Hat Enterprise Linux AS/ES 3.0, Update 3 or higher, is certified on AMD64 and Intel EM64T. The following packages (or higher versions) are required:</p> <pre>glibc-2.3.2-95.27.x86_64.rpm glibc-3.2.3-95.27.i686.rpm (32-bit) glibc-devel-3.2.3-95.27.x86_64.rpm glibc-devel-3.2.3-95.27.i386.rpm (32-bit) gcc-3.2.3-20.x86_64.rpm libgcc-3.2.3-20.x86_64.rpm libgcc-3.2.3-20.i386.rpm (32-bit) setarch-1.3-1.x86_64.rpm pdksh-5.2.14-21.x86_64.rpm openmotif21-2.1.30-8.i386.rpm compat-glibc-7.x-2.2.4.32.5.i386.rpm (32-bit) compat-gcc-7.3-2.96.122.i386.rpm sysstat-4.0.7-4.x86_64.rpm gnome-libs-1.4.1.2.90-34.1.i386.rpm (32-bit) compat-db-4.0.14-5.1.i386.rpm (32-bit)</pre> <p>Note the following:</p> <ul style="list-style-type: none"> ■ To install 32-bit packages on a 64-bit system, you may need to use the <code>--force</code> option and the <code>--nodeps</code> option of the <code>rpm</code> utility. ■ Always use 32-bit shell emulation, use the following command before running the installer and any other Oracle Application Server commands or scripts: <pre># linux32 bash</pre>

To ensure that the system meets all the requirements, follow these steps:

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 Enterprise Linux AS 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, download it and install it using the following command:

```
# rpm -i package_name
```

When installing a package, make sure 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. If the hugemem kernel is used, set the architecture using following command:

```
prompt> setarch i386
```

3.2.3 Software Requirements for Red Hat Enterprise Linux AS/ES 4.0 Systems

Complete the following steps before installing Oracle Application Server 10g Forms and Reports Services on Red Hat Enterprise Linux AS/ES 4.0 systems:

1. Log in as the root user.
2. Check that Red Hat Enterprise Linux AS/ES 4.0 is installed

```
# cat /etc/issue
Red Hat Enterprise Linux AS release 4 (Nahant Update 1)
```

The minimum supported kernel versions are:

- kernel-2.6.9-11.EL
- kernel-smp-2.6.9-11.EL
- kernel-hugemem-2.6.9-11.EL

3. Check that Update 1 is installed:

```
# cat /etc/redhat-release
Red Hat Enterprise Linux AS release 4 (Nahant Update 1)
```

4. Check that the following software packages, or higher versions, are installed:

```
glibc-2.3.4-2.9
glibc-common-2.3.4-2.9
binutils-2.15.92.0.2-13
compat-libstdc++-296-2.96-132.7.2
gcc-3.4.3-22.1
gcc-c++-3.4.3-22.1
libstdc++-3.4.3-22.1
libstdc++-devel-3.4.3-22.1
openmotif21-2.1.30-11.RHEL4.4
pdksh-5.2.14-30
setarch-1.6-1
make-3.80-5
gnome-libs-1.4.1.2.90-44.1
sysstat-5.0.5-1
compat-db-4.1.25-9
control-center-2.8.0-12
xscreensaver-4.18-5.rhel4.2
```

For latest status on Red Hat Enterprise Linux AS/ES 4.0 (64-bit) certification on AMD64 and Intel EM64T, check the Certification status on Oracle Metalink (<http://metalink.oracle.com>)

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

```
# rpm -q package_name
```

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

```
# rpm -i package_name
```

When installing a package, make sure 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. If the `hugemem` kernel is used, set the architecture using following command:

```
prompt> setarch i386
```

3.2.4 Software Requirements for SUSE Linux Enterprise Server 8 Systems

Table 3–4 lists the software requirements for SUSE Linux Enterprise Server 8 systems and the procedure that follows the table describes how to ensure your system meets these requirements and any additional requirements for installing Oracle Application Server 10g Forms and Reports Services.

Note: Oracle Application Server 10g 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 *OracleMetaLink* (<http://metalink.oracle.com>).

Table 3–4 Software Requirements for SUSE Linux Enterprise Server 8 Systems

Item	Requirement
Operating System	<p>SUSE Linux Enterprise Server 8</p> <p>For more information on SUSE Linux Enterprise Server, see: http://www.suse.com</p> <p>SP3 is certified for Oracle Application Server 10g Forms and Reports Services 10g Release 2 (10.1.2).</p> <p>For SUSE Linux Enterprise Server 8 SP3, the minimum supported kernel versions are:</p> <ul style="list-style-type: none"> ■ k_smp-2.4.21-138 ■ k_deflt-2.4.21-138 ■ k_psm-2.4.21-138
Software packages (check that these versions or higher versions are installed)	<p>glibc-2.2.2-124</p> <p>gcc-3.2.2-38</p> <p>gcc-c++-3.2.2-38</p> <p>pdksh-5.2.14</p> <p>openmotif-2.1.30MLI4</p> <p>sysstat-4.0.3</p> <p>libstdc++-3.2.2</p> <p>make-3.79.1-407</p> <p>binutils-2.12.90.0.15-50</p> <p>compat-2003.1.10-0</p>

To ensure that the system meets all the requirements, follow these steps:

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

```
prompt> 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 *OracleMetaLink* (<http://metalink.oracle.com>).

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

```
prompt> uname -r
k_smp-2.4.21-138
```

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

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

```
prompt> rpm -q package_name
```

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

```
prompt> rpm -i package_name
```

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

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

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

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

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

```
prompt> 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:

```
prompt> ln -sf /bin/fuser /sbin/fuser
```

7. If the `orarun` package was installed on a SUSE Linux Enterprise Server system, 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 into the `oracle` user account for the changes to take effect.

8. If any Java packages are installed on the system, 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 make sure 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)

If necessary, remove entries from the `/etc/services` file and restart the system. To remove the entries, you can use the perl script included in the `utils/3167528/` directory of Oracle Application Server 10g release 2 (10.1.2) CD-ROM Disk 1 and in the `application_server/utils/3167528/` directory on the DVD-ROM. Run the script as the root user. This script is also available as patch 3167528. This patch is available from:

<http://metalink.oracle.com>

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

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

- a.** Make sure that the following line exists in the `/etc/yp.conf` file:

```
hostname.domainname broadcast
```

- b.** Make sure that the following line exists in the `/etc/nsswitch.conf` file:

```
hosts: files nis dns
```

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

```
prompt> 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:

```
prompt> special IPv6 addresses
prompt> ::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 Oracle Application Server 10g release 2 (10.1.2) CD-ROM Disk 1 and in the `application_server/utils/4015045/` directory on the DVD-ROM. Run the script as the root user. This script is also available as patch 4015045. This patch is available from:

<http://metalink.oracle.com>

3.2.5 Software Requirements for SUSE Linux Enterprise Server 9 Systems

Table 3–5 lists the software requirements for SUSE Linux Enterprise Server 9 systems and the procedure that follows the table describes how to ensure your system meets these requirements and any additional requirements for installing Oracle Application Server 10g Forms and Reports Services.

Note: Oracle Application Server 10g 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 OracleMetaLink (<http://metalink.oracle.com>).

Table 3–5 Software Requirements for SUSE Linux Enterprise Server 9 Systems

Item	Requirement
Operating System	<p>SUSE Linux Enterprise Server 9</p> <p>For more information on SUSE Linux Enterprise Server, see: http://www.suse.com</p> <p>For SUSE Linux Enterprise Server 9, the minimum supported kernel versions are:</p> <ul style="list-style-type: none"> ■ kernel-bigsmpt-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)	<p>glibc-2.3.3-98.28</p> <p>gcc-3.3.3-43.24</p> <p>gcc-c++-3.3.3-43.24</p> <p>libstdc++-3.3.3-43.24</p> <p>libstdc++-devel-3.3.3-43.24</p> <p>openmotif21-libs-2.1.30MLI4-119.1</p> <p>pdksh-5.2.14-780.1</p> <p>make-3.80-184.1</p> <p>gnome-libs-1.4.1.7-671.1</p> <p>gnome-libs-devel-1.4.1.7-671.1</p> <p>sysstat-5.0.1-35.1</p> <p>binutils-2.15.90.0.1.1-32.5</p> <p>db1-1.85-85.1</p> <p>compat-2004.7.1-1.2</p>

Table 3–5 (Cont.) Software Requirements for SUSE Linux Enterprise Server 9 Systems

Item	Requirement
64-bit Certification	<p>SUSE Linux Enterprise Server is certified on AMD64 and Intel EM64T. The following packages (or higher versions) are required:</p> <pre> glibc-2.3.3-98.28.x86_64.rpm glibc-32bit-9-200407011233.x86_64.rpm glibc-devel-32bit-9-200407011229.x86_64.rpm gcc-3.3.3-43.24.x86_64.rpm gcc-c++-3.3.3-43.24.x86_64.rpm libstdc++-3.3.3-43.24.x86_64.rpm libstdc++-devel-3.3.3-43.24.x86_64.rpm libstdc++-devel-32bit-9-200407011229.x86_64.rpm gnome-libs-1.4.1.7-671.1.x86_64.rpm gnome-libs-devel-1.4.1.7-671.1.x86_64.rpm gnome-libs-32bit-9-200407011229.x86_64.rpm binutils-2.15.90.0.1.1-32.5.x86_64.rpm binutils-32bit-9-200407011229.x86_64.rpm compat-32bit-9-200407011229.x86_64.rpm compat-sles8-1.3-93.3.x86_64.rpm compat-2004.7.1-1.2.x86_64.rpm pdksh-5.2.14-780.1.x86_64.rpm make-3.80-184.1.x86_64.rpm sysstat-5.0.1-35.1.x86_64.rpm perl-32bit-9-200407011229.x86_64.rpm libaio-devel-32bit-9-200407011229.x86_64.rpm XFree86-devel-32bit-9-200407011229.x86_64.rpm linux32-1.0-341.1.x86_64.rpm db-32bit-9-200407011229.x86_64.rpm db1-32bit-9-200407011229.x86_64.rpm compat-32bit-9-200407011229.x86_64.rpm </pre> <p>Always use 32-bit shell emulation, use the following command before running the installer and any other Oracle Application Server commands or scripts:</p> <pre># linux32 bash</pre>

To ensure that the system meets all the requirements, follow these steps:

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

```
prompt> cat /etc/issue
Welcome to SuSE Linux 9.0 (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 *OracleMetaLink* (<http://metalink.oracle.com>).

3. To determine the kernel version, enter the following command:

```
prompt> uname -r
kernel-bigsm-2.6.5-7.97
```

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

```
prompt> rpm -q package_name
```

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

```
prompt> rpm -i package_name
```

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

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

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

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

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


```
prompt> 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:


```
prompt> ln -sf /bin/fuser /sbin/fuser
```
7. If the orarun package was installed on a SUSE Linux Enterprise Server system, 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 into the oracle user account for the changes to take effect.
8. If any Java packages are installed on the system, 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 make sure 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)

If necessary, remove entries from the `/etc/services` file and restart the system. To remove the entries, you can use the perl script included in the `utils/3167528/` directory of Oracle Application Server 10g release 2 (10.1.2) CD-ROM Disk 1 and in the `application_server/utils/3167528/` directory on the DVD-ROM. Run the script as the root user. This script is also available as patch 3167528. This patch is available from:

<http://metalink.oracle.com>

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

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

- a.** Make sure that the following line exists in the `/etc/yp.conf` file:

```
hostname.domainname broadcast
```

- b.** Make sure that the following line exists in the `/etc/nsswitch.conf` file:

```
hosts: files nis dns
```

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

```
prompt> 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:

```
prompt> special IPv6 addresses
prompt> ::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 Oracle Application Server 10g release 2 (10.1.2) CD-ROM Disk 1 and in the `application_server/utils/4015045/` directory on the DVD-ROM. Run the script as the root user. This script is also available as patch 4015045. This patch is available from:

<http://metalink.oracle.com>

3.3 Kernel Parameters

The computers on which you plan to install OracleAS Web Cache require their kernel parameters to be set to the minimum values listed in the following section.

3.3.1 Kernel Parameter Settings for OracleAS Web Cache

Complete the following tasks to set 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. If the command returns a value less than 65536, add this line to the `/etc/security/limits.conf` file (use a text editor to edit the file):

```
*          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.

3.4 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 user's default shell:

Bourne or Bash Shell Limit	Korn Shell Limit	C or tcsh Shell Limit	Hard Limit
<code>nofile</code>	<code>nofile</code>	<code>descriptors</code>	65536
<code>noproc</code>	<code>processes</code>	<code>maxproc</code>	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 the `oracle` user's default shell, make the following changes to the default shell start-up 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
```

3.5 Ports

Many Oracle Application Server components, such as Oracle HTTP Server, OracleAS Web Cache, and Oracle Enterprise Manager 10g, use ports. You can have the installer assign default port numbers, or use port numbers that you specify.

- [Section 3.5.1, "Checking If a Port Is in Use"](#)
- [Section 3.5.2, "Using Default Port Numbers"](#)
- [Section 3.5.3, "Using Custom Port Numbers \(the Static Ports Feature\)"](#)

Why the Default Port for Oracle HTTP Server Is Port 7777 and Not Port 80

By default, the installer configures Oracle HTTP Server to use port 7777, not port 80. Port 7777 is the default port because on UNIX, components that use port numbers lower than 1024 require additional steps to be done as the root user before the components can run. Because the installer does not have root access, it has to use a port greater than 1024.

If you want Oracle HTTP Server to use a different port, such as port 80, use the static ports feature, which enables you to specify port numbers for components. Although you can change the port number after installation, it is easier to set the port number during installation.

3.5.1 Checking If a Port Is in Use

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

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

3.5.2 Using Default Port Numbers

If you want to use the default port numbers for components, you do not have to do anything. 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 the range, the installation fails.

3.5.3 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. [Section 3.5.3.1, "Format of the staticports.ini File"](#) describes the file format. This file is typically called `staticports.ini`, but you can name it anything you want.
2. In the installer, on the Specify Port Configuration Options screen, select **Manual** and enter the *complete path* to the `staticports.ini` file.

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

Difference from Previous Release: In Release 10g (9.0.4), you used command-line options to specify the `staticports.ini` file. In this release, you specify the file in the new Specify Port Configuration Options screen.

3.5.3.1 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.

```
# J2EE and Web Cache
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
ASG port = port_num

# Business Intelligence and Forms
Reports Services SQL*Net port = port_num
Reports Services discoveryService port = port_num
Reports Services bridge port = port_num

# 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
```

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

1. Copy the `staticports.ini` file from the CD-ROM or DVD-ROM to your hard disk.

Table 3–6 Location of the staticports.ini File on CD-ROM and DVD-ROM

Media	Location of staticports.ini File
CD-ROM	Disk 1: <code>mount_point/1012disk1/stage/Response/staticports.ini</code>
DVD-ROM	<code>dvd_mount_point/forms_reports/stage/Response/staticports.ini</code>

2. Edit the local copy (the file on the hard disk) to include the required 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, the installer uses the default port number for that component.

The following example sets the Application Server Control port and some OracleAS Web Cache ports. For components not specified, the installer assigns 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 installation is complete, you can check the `ORACLE_HOME/install/portlist.ini` file to see the assigned ports.

Note on Choosing Port Numbers:

- Port numbers cannot be greater than 65535.
 - If you use a port number less than 1024 for a component, you must run the component as the root user.
 - If you use a port number less than 1024 for a component, the installer will not be able to start up the component at the end of installation. You may need to configure the component first before starting it. See the appropriate component documentation for details.
 - You still have to comment out ports 389 and 636 in the `/etc/services` file if you want to use these port numbers for Oracle Internet Directory.
 - If you plan to set port numbers for Oracle HTTP Server and OracleAS Web Cache, be sure you read [Section 3.5.3.3, "Ports for Oracle HTTP Server and OracleAS Web Cache"](#).
-
-

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, it displays an alert. The installer does 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 using the port.
2. Click **Retry**. The installer rereads 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* a Forms and Reports Services installation. If you have installed Forms and Reports Services and want to use the same port numbers in another installation, use the `portlist.ini` file from the first installation as the `staticports.ini` file for subsequent installations.

Note: In `staticports.ini`, the Oracle Management Agent port line corresponds to the Enterprise Manager Agent port line in `portlist.ini`.

3.5.3.2 Error Conditions That Cause the Installer to Use Default Ports Instead of Specified Ports

Check the `staticports.ini` file carefully because a mistake can cause the installer to use default ports without displaying any warning. Here are some things that you should check:

- If you specify the same port for more than one component, the installer uses the specified port for the first component, but for the other components, it uses the components' default ports. The installer does not warn you if you have specified the same port for multiple components.
- If you have syntax errors in the `staticports.ini` file (for example, if you omitted the = character for a line), 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, 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, 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, the installer will not find the file. The installer continues without displaying a warning and assigns default ports to all components. You must specify a complete path to the `staticports.ini` file.

3.5.3.3 Ports for Oracle HTTP Server and OracleAS Web Cache

In the `httpd.conf` file for Oracle HTTP Server, the `Port` and the `Listen` directives specify the ports used by OracleAS Web Cache and Oracle HTTP Server. The correct lines in the `staticports.ini` file for setting these ports depend on the components that you are configuring.

Ensure that you understand the following when setting ports for these components.

If You Are Configuring OracleAS Web Cache and Oracle HTTP Server

1. Set the port for OracleAS Web Cache.

OracleAS Web Cache uses the port specified by the `Port` directive (Figure 3-1). To set this port, use this line in the `staticports.ini` file:

```
Web Cache HTTP Listen port = port_number
```

To configure the SSL port for OracleAS Web Cache, use the following line:

```
Web Cache HTTP Listen (SSL) port = port_number
```

You cannot set the port number using the `Oracle HTTP Server port` line in this case. If the `staticports.ini` file contains both the `Oracle HTTP Server port` and the `Web Cache HTTP Listen port` lines, the `Oracle HTTP Server port` line is ignored. For example, if you have these lines in `staticports.ini`:

```
Web Cache HTTP Listen port = 7979
Oracle HTTP Server port = 8080
```

the `Port` directive is set to 7979.

2. Set the port for Oracle HTTP Server.

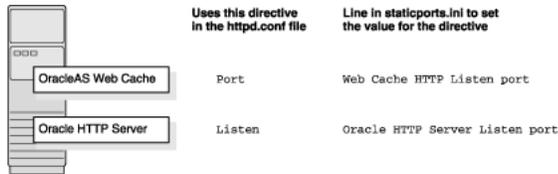
Oracle HTTP Server uses the port specified by the `Listen` directive. To set this port, use this line in the `staticports.ini` file:

```
Oracle HTTP Server Listen port = port_number
```

To configure the SSL Listen port, use the following line:

```
Oracle HTTP Server Listen (SSL) port = port_number
```

Figure 3–1 Configuring Both OracleAS Web Cache and Oracle HTTP Server



If You Are Configuring Oracle HTTP Server Only (no OracleAS Web Cache)

If you are configuring Oracle HTTP Server only, then Oracle HTTP Server uses both `Port` and `Listen` directives (Figure 3–2). In this case, you must set both directives to use the same port number.

To set these ports, use the Oracle HTTP Server port and Oracle HTTP Server Listen port lines in the `staticports.ini` file. For example:

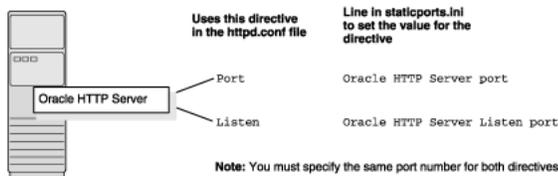
```
Oracle HTTP Server port = 8080
Oracle HTTP Server Listen port = 8080
```

To set the SSL version of these ports, use the following lines. As in the non-SSL version, the port numbers must be the same.

```
Oracle HTTP Server SSL port = 443
Oracle HTTP Server Listen (SSL) port = 443
```

If you also specify the Web Cache lines in `staticports.ini`, they are ignored because you are not configuring OracleAS Web Cache.

Figure 3–2 Configuring Only Oracle HTTP Server



3.5.3.4 Examples

This section describes some common scenarios for using `staticports.ini`.

- [Configuring Oracle HTTP Server to Use Ports 80 and 443 With OracleAS Web Cache as the Front-End](#)
- [Configuring Oracle HTTP Server to Use Ports 80 and 443 Without OracleAS Web Cache](#)

3.5.3.4.1 Configuring Oracle HTTP Server to Use Ports 80 and 443 With OracleAS Web Cache as the Front-End In this scenario, create a `staticports.ini` file that includes the following lines:

```
Web Cache HTTP Listen port = 80
Oracle HTTP Server Listen port = 81
Web Cache HTTP Listen (SSL) port = 443
Oracle HTTP Server Listen (SSL) port = 444
```

The ports for Oracle HTTP Server Listen and SSL Listen can be any available port. The example uses ports 81 and 444. These port numbers do not have to be less than 1024. If you select port numbers less than 1024, start Oracle HTTP Server and OracleAS Web Cache as the root user.

Note: Because you are using ports less than 1024, you have to configure Oracle HTTP Server and OracleAS Web Cache to run as the root user. You can perform the configuration during installation or after installation.

If you perform the configuration after installation, then the installer does not start the components (because they are not yet configured).

For details, see these guides: *Oracle HTTP Server Administrator's Guide* and *Oracle Application Server Web Cache Administrator's Guide*.

3.5.3.4.2 Configuring Oracle HTTP Server to Use Ports 80 and 443 Without OracleAS Web Cache In this scenario, create a `staticports.ini` file that includes the following lines:

```
Oracle HTTP Server port = 80
Oracle HTTP Server Listen port = 80
Oracle HTTP Server SSL port = 443
Oracle HTTP Server Listen (SSL) port = 443
```

Note: Because you are using ports less than 1024, you have to configure Oracle HTTP Server to run as the root user. See the Note on page 3-22 for details.

3.6 Operating System Groups

You must create operating system groups if you plan to install Forms and Reports Services on a computer that does not have Oracle products installed. In this case, create a group to own the inventory directory. See "[Creating a Group for the Inventory Directory](#)" in [Section 3.6, "Operating System Groups"](#).

To create a local operating system group:

Enter the following command to create the `oinstall` group:

```
# /usr/sbin/groupadd oinstall
```

You have created a local operating system group. For more information about operating system users and groups, see your operating system documentation or contact your system administrator.

Creating a Group for the Inventory Directory

If you plan to install Forms and Reports Services on a computer that does not have Oracle products installed, 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 `oinstall` name for this operating system group.

By having a separate group for the inventory directory, different users can install Oracle products on the computer. Users must have write permission for the inventory directory. To have write permission, users must belong to the `oinstall` group.

When an Oracle product is installed for the first time on a computer, the installer displays a screen where you enter a group name for the inventory directory. After this the installer displays 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 an inventory directory already exists on the computer, check the `/etc/oraInst.loc` file. This file lists the location of the inventory directory and the group that owns it. If this file does not exist, it means that no Oracle products are installed on the computer.

3.7 Operating System User

Create an operating system user to install and upgrade Oracle products. The operating system user running the installer must have write permission for the following directories:

- `ORACLE_HOME`, 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 it means that you may already have an operating system user. Check the `/etc/oraInst.loc` file. This file lists the location of the inventory directory and the group that owns it. If this file does not exist, it means that no Oracle products are installed on your computer.

If you do not already have a user for installing Oracle products, create a user with the properties listed in [Table 3-7](#).

Table 3-7 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 <code>oracle</code> user.
Group identifier	The primary group of the <code>oracle</code> user must have write permission for the <code>oraInventory</code> directory. You can use any name for the group. This guide uses the name <code>oinstall</code> .
Home directory	The home directory for the <code>oracle</code> 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 maintaining Oracle products. Never use the `oracle` user for purposes unrelated to the installer. Do not use `root` as the `oracle` user.

Creating a Local Operating System 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
```

The local operating system user has been created.

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

```
prompt> groups oracle
```

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

3.8 Environment Variables

The operating system user who will be installing Forms and Reports Services needs to set (or unset) the environment variables listed in [Table 3–8](#).

Table 3–8 Summary of Environment Variables

Environment Variable	Set or Unset
ORACLE_HOME and ORACLE_SID	Does not matter (the installer unsets these two environment variables).
PATH , CLASSPATH , and LD_LIBRARY_PATH	Must not contain references to directories in any Oracle home directories.
DISPLAY	Set it to the monitor on which you want the installer window to appear.
TMP	Optional. If unset, defaults to <code>/tmp</code> .
TNS_ADMIN	Must not be set.
REPORTS_DEFAULT_DISPLAY	Default set to YES. If set to NO, ensure that you specify the appropriate display.
LD_ASSUME_KERNEL	Set it to 2.4.19 on Linux Red Hat 3.0 systems.

3.8.1 Tips on Environment Variables

Here are some tips when working with environment variables:

- If you set environment variables in the `.profile` file, they may not be read. To ensure environment variables are set to the correct values, check their values in the shell where you run the installer.

- To check the value of environment variables, use the `env` command. This command 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), check the environment variables when you are the new user because the environment variables may 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
```

3.8.2 ORACLE_HOME and ORACLE_SID

It does not matter if these environment variables are set or unset when you start the installer because the installer unsets these environment variables.

3.8.3 PATH, CLASSPATH, and LD_LIBRARY_PATH

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

3.8.4 DISPLAY

Set the `DISPLAY` environment variable to point to the X server that displays 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/X11R6/bin/xclock &
```

Forms and Reports Services 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 want to do this, then use a virtual frame buffer, such as X Virtual Frame Buffer (XVFB) or Virtual Network Computing (VNC).

Visit OTN at <http://www.oracle.com/technology/products/> for information about obtaining and installing XVFB or other virtual frame buffer solutions. Search OTN for "frame buffer".

3.8.5 TMP

During installation, the installer needs to write temporary files to a temporary directory. By default, the temporary directory is `/tmp`.

If you want the installer to use a directory other than `/tmp`, set the `TMP` environment variable to the full path of the alternate directory. This directory must meet the requirements listed in [Table 3-1](#).

Example (C shell):

```
% setenv TMP /tmp2
```

Example (Bourne or Korn shell):

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

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.

3.8.6 TNS_ADMIN

This section describes two requirements:

- The `TNS_ADMIN` environment variable must not be set.
- The `/etc` directory 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 have the `tnsnames.ora` file in `/etc` directory, perform the following steps before installing Forms and Reports Services.

1. If you have the `tnsnames.ora` file in `/etc` directory, move the file from this directory to a different directory. Alternatively, you can rename the file.
2. Ensure 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 the existing `tnsnames.ora` file.

3.8.7 REPORTS_DEFAULT_DISPLAY

The `REPORTS_DEFAULT_DISPLAY` environment variable specifies whether to implement the following for Oracle Reports:

- Elimination of dependency on `DISPLAY`
- Elimination of dependency on having a valid printer defined for font information
- ScreenPrinter (`screenprinter.ppd`) for surface resolution for images and font information
- Advanced Imaging Support

For Oracle Reports, if `REPORTS_DEFAULT_DISPLAY=YES`, it overrides any value set for the `DISPLAY` environment variable. For more information about

REPORTS_DEFAULT_DISPLAY, see the *Oracle Application Server Reports Services Publishing Reports to the Web* manual.

Note: REPORTS_DEFAULT_DISPLAY is used for Oracle Reports only and is not applicable to the Oracle Application Server installer. The installer continues to use the DISPLAY environment variable even if REPORTS_DEFAULT_DISPLAY is set to YES.

3.8.8 LD_ASSUME_KERNEL

On Red Hat 3.0 systems, add following line to the \$ORACLE_HOME/forms/server/default.env file:

```
LD_ASSUME_KERNEL=2.4.19
```

3.9 The Hosts File

The contents of the `/etc/hosts` file affect the location of the default Oracle Identity Management realm and the host name for Oracle Application Server Single Sign-On.

The installer provides alternative methods for you to enter the values that you want without editing the `hosts` file. For more information, see the *Oracle Application Server Installation Guide*.

3.10 Network Topics

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

This section describes the procedure to install Forms and Reports Services on computers that do not meet the typical scenario. It covers the following cases:

- [Installing on DHCP Computers](#)
- [Installing on Multihomed \(Multi-IP\) Computers](#)
- [Copying CD-ROMs or DVD-ROM to Hard Drive, and Installing from the Hard Drive](#)
- [Installing from a Remote CD-ROM or DVD-ROM Drive](#)
- [Installing on Remote Computers](#)
- [Installing on NFS-Mounted Storage](#)
- [Running Multiple Instances from One Installation](#)
- [Support for NIS and NIS+](#)
- [Installing on Computers with Multiple Network Cards](#)

3.10.1 Installing on DHCP Computers

Note this limitation when running Forms and Reports Services **on DHCP computers:** Forms and Reports Services instances on DHCP computers cannot communicate with instances running on other computers. All the instances that need to communicate with each other must run on the same computer. There are no limitations on clients;

clients from other computers can access instances running on the DHCP computer, as long as the client computer can resolve the DHCP computer on the network.

3.10.2 Installing on Multihomed (Multi-IP) Computers

A multihomed computer is associated with multiple IP addresses. This is achieved by having multiple network cards on the computer. Each IP address is associated with a hostname; additionally, you can set up aliases for the hostname. By default, Oracle Universal Installer uses the `ORACLE_HOSTNAME` environment variable setting to find the hostname. If `ORACLE_HOSTNAME` is not set and you are installing Forms and Reports Services on a computer that has multiple network cards, Oracle Universal Installer determines the hostname by using the first name in the `/etc/hosts` file.

Clients must be able to access the computer using this hostname (or using aliases for this hostname). To check, ping the hostname from the client computers using the short name (hostname only) and the full name (hostname and domain name). Both must work.

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

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

You can also install from remote CD-ROM or DVD-ROM drives. See [Installing from a Remote CD-ROM or DVD-ROM 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.

To copy the CD-ROMs:

1. Create a parent directory (for example, `oralinfrs`) and, under the parent directory, create subdirectories called `Disk1`, `Disk2`, and so on. The names of the subdirectories must be `DiskN`, where *N* is the CD-ROM number.
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 `runInstaller` executable from the `Disk1` directory. Run it from the computer that will be running Forms and Reports Services.

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

To copy the `oralinfrs` Directory from the DVD-ROM

Copy the `oralinfrs` directory from the DVD-ROM to your hard disk:

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

To run the installer from the copied files, invoke the `runInstaller` executable from the computer that will be running Forms and Reports Services:

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

3.10.4 Installing from a Remote CD-ROM or DVD-ROM Drive

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 Forms and Reports Services on the remote computer.

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

```
local_computer> xhost +remote_computer
```

If you do not run `xhost`, 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 3.7, "Operating System User"](#). Ensure that the user has set the environment variables correctly, as described in [Section 3.8, "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. See [Section 4.9, "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.

3.10.5 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 installs Forms and Reports Services on the remote computer.

1. Allow *remote_computer* to display on *local_computer*. Run this command on the local computer's console.

```
local_computer> xhost +remote_computer
```

If you do not run `xhost`, you may 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 on as the `oracle` user, as described in [Section 3.7, "Operating System User"](#). Ensure that the user has set the environment variables correctly, as described in [Section 3.8, "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. For information on running the installer, see [Section 4.9, "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 changing the color model or visual settings.

3.10.6 Installing on NFS-Mounted Storage

You cannot install and run Forms and Reports Services on computers with standard NFS. You must use a certified NFS-mounted storage system, such as Network Appliance (NetApp) Filers. Forms and Reports Services is certified to run on NFS-mounted storage systems.

The NetApp system must 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>).

3.10.7 Running Multiple Instances from One Installation

Forms and Reports Services components are intended to be run only on the computer on which they are installed. You cannot run the components on remote computers even though the computers can access the files through NFS.

3.10.8 Support for NIS and NIS+

You can install and run Forms and Reports Services in NIS and NIS+ environments. See the *Oracle Application Server Installation Guide* for more information on these environments.

3.10.9 Installing on Computers with Multiple Network Cards

If you are installing Forms and Reports Services on a computer with multiple network cards, the installer uses the first name in the `/etc/hosts` file. You may need to reorder the lines in this file so the required hostname appears first. You can change the file back to its original state after installation.

3.11 Prerequisite Checks Performed by the Installer

Table 3–9 lists the checks performed by the installer:

Table 3–9 Prerequisite Checks Performed by the Installer

Item	Description
CPU	Checks that the CPU meets the minimum speed requirement.
Operating system version	See Table 3–1 for supported versions.
Operating system	See Section 3.2, "Software Requirements" for a list of supported operating systems, operating system patches, software packages, and Linux x86-64 certification information.
Memory	See Table 3–1 for recommended values.
Swap space	See Table 3–1 for recommended values.
TMP space	See Table 3–1 for recommended values.
Instance name	The installer checks that the computer on which you are installing Forms and Reports Services 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 may interfere with the installation.

Table 3–9 (Cont.) Prerequisite Checks Performed by the Installer

Item	Description
Oracle home directory	<p>You should install Forms and Reports Services in a new directory, unless you are expanding middle tier or installing middle tier in an Oracle home that contains Oracle Developer Suite. Here are some examples of installations that are <i>not allowed</i>:</p> <ul style="list-style-type: none"> ■ Any type of Oracle Application Server 10g into an 8.0, 8i, 9.0.1, or 9.2 database Oracle home ■ Any type of Oracle Application Server 10g into an Oracle Management Service Oracle home ■ Any type of Oracle Application Server 10g into an Oracle Collaboration Suite Oracle home ■ Any type of Oracle Application Server 10g into an Oracle HTTP Server standalone Oracle home ■ Any type of Oracle Application Server 10g into an OracleAS Web Cache standalone Oracle home ■ Any type of Oracle Application Server 10g into an Oracle9i Developer Suite 9.0.2 Oracle home ■ Any type of Oracle Application Server 10g into an Oracle Application Server Containers for J2EE standalone Oracle home ■ Any type of Oracle Application Server 10g into an Oracle9iAS 1.0.2.2 Oracle home ■ Oracle Application Server 10g Forms and Reports Services middle tier into an Oracle9iAS9.0.2 or 9.0.3 middle tier Oracle home ■ OracleAS Developer Kits 10g into an OracleAS Infrastructure 9.0.2 or Release 10g Oracle home ■ OracleAS Developer Kits 10g into an Oracle9iAS middle tier 9.0.2 or 9.0.3 Oracle home ■ OracleAS Developer Kits 10g into an Oracle Developer Suite 9.0.2 or Release 10g Oracle home ■ OracleAS Infrastructure 10g into any Oracle9iAS 9.0.2 Oracle home ■ OracleAS Infrastructure 10g into an Oracle Application Server 10g Forms and Reports Services middle tier or OracleAS Developer Kits 10g Oracle home ■ OracleAS Infrastructure 10g into an Oracle Developer Suite 9.0.2 or Release 10g Oracle home
Port 1521	<p>The installer displays a warning if port 1521 is in use by any application, including database listeners of any version. You must stop the application using port 1521, then click Retry in the warning dialog box.</p> <p>If a database listener is using port 1521, you may be able to use it for the metadata repository database.</p> <p>If another application is using port 1521, 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. See the <i>Oracle Application Server Administrator's Guide</i> for details.</p>
Static port conflicts	<p>The installer checks the ports listed in the <code>staticports.ini</code> file, if specified. For more information about the <code>staticports.ini</code> file, see Section 3.5, "Ports".</p>
Monitor	<p>The installer checks that the monitor is configured to display at least 256 colors.</p>
Display permission	<p>The installer checks that the user has permissions to display on the monitor specified by the <code>DISPLAY</code> environment variable.</p>

Table 3–9 (Cont.) Prerequisite Checks Performed by the Installer

Item	Description
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.
Oracle Enterprise Manager directories are writable	The installer runs this check only if you are expanding a middle tier or reinstalling Forms and Reports Services in the same Oracle home. The installer checks that these directories are writable by the operating system user running the installer: <ul style="list-style-type: none">■ 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 Forms and Reports Services in the same Oracle home. The installer checks that these files exist: <ul style="list-style-type: none">■ ORACLE_HOME/sysman/config/iasadmin.properties■ ORACLE_HOME/sysman/webapps/emd/WEB-INF/config/consoleConfig.xml

Considerations Before Starting the Installation

This chapter contains the following topics:

- Oracle Home Directory
- First-Time Installation of Any Oracle Product
- Installing Additional Languages
- Forms and Reports Services Instances and Instance Names
- The `ias_admin` User
- Installer File Locations
- Why Should I Log In as Root at Certain Times During Installation?
- Setting the Mount Point for the CD-ROM or DVD-ROM
- Starting Oracle Universal Installer

4.1 Oracle Home Directory

The directory in which you install Forms and Reports Services is called the Oracle home. During installation, you must specify the full path to this directory and a name for this Oracle home.

For example, you can install Forms and Reports Services in `/opt/oracle/` and you can name it `oralinfrs`.

4.2 First-Time Installation of Any Oracle Product

If Forms and Reports Services is the first Oracle product to be installed on a computer, the installer displays a screen where you specify an "inventory" directory (also called the "oraInventory" directory). This inventory directory is used by the installer to keep track of all Oracle products installed on the computer.

The inventory directory is separate from the Oracle home directory for Forms and Reports Services.

To ensure that other users in the `oinstall` group have access to the inventory directory (so that they can install Oracle products), do not use the `oracle` user's home directory as the inventory directory because home directories might not have the proper permissions set up for the `oinstall` group. Instead, you can put the inventory directory in the `/opt/oracle` directory (for example, `/opt/oracle/oraInventory`).

If you have installed an Oracle product on the computer previously, the installer uses the existing inventory directory. Ensure that you have write permissions on that directory. The best way of ensuring this is to run the installer as the same operating system user who installed the existing Oracle products.

It is recommended that you create an operating system user to perform all tasks related to installation of Oracle products. See [Section 3.7, "Operating System User"](#).

4.3 Installing Additional Languages

By default, the installer installs Forms and Reports Services with text in English and in the operating system language. If you need to install additional languages, click **Product Languages** on the Available Product Components screen.

Note that you cannot install additional languages after installation. You must install additional languages only during installation. If you run Forms and Reports Services in an environment that uses a language you did not install, the user interface may display text in that language and in English, or it may display square boxes (caused by missing fonts) instead of text.

4.4 Forms and Reports Services Instances and Instance Names

When you install Forms and Reports Services, an instance of Forms and Reports Services is created. The installer prompts you to provide a name for this new instance that you are installing. For example, you can name an instance `oralinfrs` or `J2EE_1012`. This name can be different from the Oracle home name. You cannot change this name after installation.

The Enterprise Manager appends the hostname 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 `frs1`, then the full name of the instance is `frs1.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 \$ or _ (underscore) characters.

There is no maximum length restriction for instance names.

How Forms and Reports Services Uses Instance Names

Instance names are important because Forms and Reports Services uses them to uniquely identify instances. This means that if you install multiple Forms and Reports Services instances on the same computer (for example, an OracleAS Infrastructure 10g and a J2EE and Web Cache instance), you must give them different names.

When you administer Forms and Reports Services using Oracle Enterprise Manager Application Server Control, the instance name appears on the screens. You can click the instance name to see details about the instance, such as the components that are installed in that instance, whether the components are running or stopped, and the log files for the components. The Application Server Control is a browser-based administration tool for Forms and Reports Services. See the *Oracle Application Server Administrator's Guide* for details about this administration tool.

4.5 The `ias_admin` User

The installer prompts you to specify a password for the `ias_admin` user. The `ias_admin` user is the administrative user for Forms and Reports Services instances. To manage Forms and Reports Services instances using Application Server Control, log on as `ias_admin`.

On a computer, you can install multiple Forms and Reports Services instances, each with its own unique instance name, but the name of the administrative user is `ias_admin` for all instances. The password for the `ias_admin` user can be different for each instance.

Each Forms and Reports Services instance has its own password. Even if you install multiple Forms and Reports Services instances on the same computer using the same operating system user, you have to enter a new password for each instance on the same computer.

Password for the `ias_admin` User

The password for the `ias_admin` user must conform to the following password policy:

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

The password for the `ias_admin` user has these 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. Appendix C in the *Oracle9i SQL Reference* guide lists the reserved words. You can find this guide on Oracle Technology Network (<http://www.oracle.com/technology>). Alternatively, avoid using words that sound as though they may be reserved words.

You must remember the password because you need to enter it to perform the following task:

- When you log on to Application Server Control to manage Forms and Reports Services, you log on as the `ias_admin` user.

If you forget the password, you can reset it. See the *Oracle Application Server Administrator's Guide* for details.

4.6 Installer File Locations

The installer writes files to the following directories:

Table 4–1 Directories to Which the Installer Writes Files

Directory	Description
Oracle home directory	Directory in which you install Oracle Application Server 10g Forms and Reports Services.
Inventory directory	Directory that the installer uses to keep track of the Oracle products installed on the computer. In subsequent installations, the installer uses the same inventory directory.

Table 4–1 (Cont.) Directories to Which the Installer Writes Files

Directory	Description
/etc directory	Contains information on locations of Oracle homes on the computer. If you installed Oracle Application Server on your computer, this directory also contains files that provide information for Oracle Enterprise Manager.
/tmp directory	Writes files needed only during installation to a temporary directory. By default, the temporary directory is /tmp. To specify a different directory, set the TMP environment variable. See Section 3.8.5, "TMP" for details.

4.7 Why Should I Log In as Root at Certain Times During Installation?

At least once during installation, the installer prompts you to log in as the root user and run a script. You need to be the root user because the script edits files in the /etc directory.

The installer prompts you to run the `root.sh` script in a separate window. This script creates files in the local bin directory (`/usr/local/bin`, by default).

If the script finds files of the same name, it prompts you if you want to override the existing files. You should back up these files (you can do this from another window), and then overwrite them.

The following lines show the prompts from the `root.sh` script. The default values are enclosed in square brackets.

```
Enter the full pathname of the local bin directory: [/usr/local/bin]:
The file "dbhome" already exists in /usr/local/bin. Overwrite it? (y/n)[n]: y
Copying dbhome to /usr/local/bin ...
The file "oraenv" already exists in /usr/local/bin. Overwrite it? (y/n)[n]: y
Copying oraenv to /usr/local/bin ...
The file "coraenv" already exists in /usr/local/bin. Overwrite it? (y/n)[n]: y
Copying coraenv to /usr/local/bin ...
```

After running `root.sh`, you may see warnings that begin with "chmod: WARNING: Corresponding set-ID also disabled...". You may ignore these warnings.

4.8 Setting the Mount Point for the CD-ROM or DVD-ROM

The Forms and Reports Services CD-ROMs are in RockRidge format. The DVD is in DVD-ROM format.

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 10g Forms and Reports Services 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, enter the following command:

- Red Hat:


```
# mount -t iso9660 /dev/cdrom /mnt/cdrom
```
- SUSE Linux Enterprise Server:


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

4.9 Starting Oracle Universal Installer

To start Oracle Universal Installer:

1. If your computer does not mount CD-ROMs or DVD-ROMs automatically, you need to set the mount point manually. See [Section 4.8, "Setting the Mount Point for the CD-ROM or DVD-ROM"](#).
2. Log in as the `oracle` user.
3. If you are installing Forms and Reports Services on a multihomed computer, create the `ORACLE_HOSTNAME` environment variable. Set this variable to point to the hostname of the computer on which you are installing Forms and Reports Services. For more information on installing on multihomed computers, see [Section 3.10.2, "Installing on Multihomed \(Multi-IP\) Computers"](#).
4. CD-ROM users: Insert Forms and Reports Services disk into the CD-ROM drive.
DVD-ROM users: Insert the Forms and Reports Services DVD-ROM into the DVD-ROM drive.
5. Run the Oracle Universal Installer using the `cd` command.

Notes:

- Ensure that you are not logged in as the root user when you start the Oracle Universal Installer. The installer gives an error message if you try to run it as the root user.
 - 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.
-
-

CD-ROM:

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

DVD-ROM:

```
prompt> cd
prompt> dvd_mount_point/forms_reports/runInstaller
```

This starts Oracle Universal Installer, through which you can install Forms and Reports Services.

Installation Overview

It is highly recommended that you read this guide in its entirety to ensure a successful installation and to optimize the capabilities of this release.

There are a few restrictions with this installation. For more information about these restrictions, see [Section 2.1, "Restrictions with This Installation Type"](#).

To install Forms and Reports Services, follow these steps:

1. Read the latest versions of the following Release Notes:
 - *Oracle Application Server Forms and Reports Services Release Notes* contains release notes for OracleAS Forms Services, Oracle Forms Developer, OracleAS Reports Services, and Oracle Reports Developer. In addition, *Oracle Application Server Forms and Reports Services Release Notes* contains information about the features available in this installation type.
 - *Oracle Application Server Release Notes* contains general information about Oracle Application Server 10g Release 2 (10.1.2), as well as references to other sources of information. You can find the latest version of the release notes document on the Oracle Technology Network (<http://www.oracle.com/technology/documentation/ias.html>).
2. Start Oracle Universal Installer (OUI).

For information about starting OUI, see [Section 4.9, "Starting Oracle Universal Installer"](#).
3. The Welcome screen appears. Click **Next**.
4. The Specify File Locations screen appears. On the Specify File Locations screen, enter the following information:
 - **Name:** A name to identify this Oracle home. This name cannot contain spaces and can have a maximum length of 16 characters.
Example: `oralinfrs`
 - **Path:** The full path to the destination directory (Oracle home). If the directory specified does not exist, the installer creates it with administrative privileges.
Example: `/opt/oracle/oralinfrs`
5. Click **Next**.
6. The Product-Specific Prerequisite Checks screen appears. Verify that all product prerequisite checks complete successfully.
7. Click **Next**.

-
8. The Language Selection screen appears. This screen lists the additional languages that you can install to run Forms and Reports Services. Select the required language from the **Available Languages** list.

Note: By default, the installer installs Forms and Reports Services with text in English and in the operating system language.

9. Click **Next**.
10. The Specify Port Configuration Options screen appears.
 - Select **Automatic** to assign default ports to Forms and Reports Services. For more information about default ports, see the *Oracle Application Server Installation Guide*.
 - Select **Manual** if you want to manually configure the ports. If you select **Manual**, then create a port configuration file that specifies the port numbers that you want to use. Enter the entire path of the port configuration file in the field provided. For more information about the port configuration file, see the *Oracle Application Server Installation Guide*.
11. Click **Next**.
12. The Provide Outgoing Mail Server Information screen appears. Enter the outgoing mail (SMTP) server to be used by Forms and Reports Services.

Example: `smtp.oracle.com`

Note: This field is optional. However, you cannot distribute reports through e-mail until you have configured the mail server information. Refer to the *Oracle Application Server Reports Services Publishing Reports to the Web* manual for more information on specifying the outgoing mail server information.

13. The Specify Instance Name and `ias_admin` Password screen appears.
 - **Instance Name:** Enter a name for this instance. Instance names can contain only alphanumeric and underscore characters. If you have more than one Forms and Reports Services instance on a computer, then the instance names must be unique.
 - **ias_admin Password and Confirm Password:** Enter a password for the `ias_admin` user. This is the administrative user for the instance. By default, the password must have a minimum of five alphanumeric characters and at least one of the characters must be a number.

Note: Each Forms and Reports Services instance has its own password, regardless of the user performing the installation. Passwords are not shared across instances even if the instances are installed by the same user.

14. Click **Next**.
15. The Summary screen appears and lists all the components that will be installed. Click **Install** to complete the installation. The Summary screen shows the progress of the installation.

Note: At any time during the installation, click **Stop Installation** to exit.

When you install OracleAS Reports Services, the broadcast mechanism is configured for server communication. For information on changing this to the Common Object Service (COS) naming mechanism, see the *Oracle Application Server Reports Services Publishing Reports to the Web* manual.

If you want to retain the broadcast mechanism for communication, but if your Reports Server is located across subnets, configure the Oracle Reports bridge. For information on configuring the Oracle Reports bridge, see the *Oracle Application Server Reports Services Publishing Reports to the Web* manual. In case of the COS naming service, the Oracle Reports bridge is not needed even if your servers are located across subnets.

To configure Oracle Reports security, you must have OracleAS Portal installed, as the security information is stored in the OracleAS Portal repository. For information about configuring OracleAS Portal to store OracleAS Reports Services security information, refer to the Securing Oracle Reports white paper on OTN (<http://www.oracle.com/technology/products/reports/htdocs/getstart/whitepapers/securing9i.pdf>).

Configuring Forms and Reports Services to Use an Oracle Application Server Infrastructure

In this release, you can configure Forms and Reports Services to use the services of an Oracle Application Server Infrastructure. This configuration enables Forms and Reports Services to be a part of an Oracle Application Server Farm. Forms and Reports Services can then use the services of an OracleAS Infrastructure in the same way as used by the Business Intelligence and Forms components.

Forms and Reports Services can be configured to use the following services:

- Oracle Identity Management

This enables Forms and Reports Services to use Oracle Identity Management components such as Oracle Application Server Single Sign-On, Oracle Internet Directory, and so on.

To configure Forms and Reports Services to use Oracle Identity Management, refer to [Section 6.1, "Configuring Forms and Reports Services to Use Oracle Identity Management"](#).

- Oracle Application Server Metadata Repository

This adds Forms and Reports Services to an OracleAS Farm, thus enabling it to join an OracleAS Cluster.

To configure Forms and Reports Services to use OracleAS Metadata Repository, refer to [Section 6.2, "Configuring Forms and Reports Services to Use OracleAS Metadata Repository"](#).

Note: Once you configure Forms and Reports Services, you *cannot* reverse this configuration, though you can reassociate to a different Oracle Identity Management and OracleAS Metadata Repository.

This chapter includes the following topics:

- [Configuring Forms and Reports Services to Use Oracle Identity Management](#)
- [Configuring Forms and Reports Services to Use OracleAS Metadata Repository](#)
- [Making the Reports Server Secure](#)
- [Starting OPMN Services](#)
- [Testing the Configuration on Oracle Application Server Forms Services](#)

- [Testing the Configuration on Oracle Application Server Reports Services](#)

6.1 Configuring Forms and Reports Services to Use Oracle Identity Management

This section describes the procedure to configure Oracle Identity Management. Oracle Identity Management components provide directory, security, and user-management functionality. Some of these components (such as OracleAS Single Sign-On) have schemas in the Oracle Application Server Metadata Repository.

Before starting the configuration, ensure that:

- The Oracle Identity Management instance is started (status is Up)
- You know the Oracle Internet Directory host and port numbers
- You know the password for `cn=orcladmin`, or another user who is a member of the `iASAdmins` group

To configure Oracle Identity Management:

1. Navigate to the Application Server Control home page.
2. Click **Infrastructure**.

Internet Directory Host in the Identity Management section and Default Metadata Repository in the Metadata Repository section display **Not Configured** as shown in [Figure 6-1](#).

Figure 6-1 Identity Management and Metadata Repository Sections



3. In the Identity Management section, click **Configure** to display the Configure Identity Management: Internet Directory page.
4. On the Configure Identity Management: Internet Directory page:
 - a. In the **Host** field, enter the name of the computer on which Oracle Internet Directory and Identity Management are running.
For example, `host.oracle.com`
 - b. In the **Port** field, enter the port at which Oracle Internet Directory is listening. The default port number is 389.
 - c. Select **Use Only SSL Connections with Internet Directory** if you want to use only SSL to connect to Oracle Internet Directory.

Note: If you select **Use Only SSL Connections with Internet Directory**, then the default port number is 636.

- d. Click **Next** to display the Configure Identity Management: Login page.
5. On the Configure Identity Management: Login page:
 - a. In the **User Name** field, the user name to log on to Oracle Internet Directory is displayed as `cn=orcladmin`. You may change this provided the user belongs to the `IASAdmin` group and the user name is in the `cn=user_name` format. For example, `cn=admin` where `admin` is the username.

You must log on as a user who belongs to the necessary groups in Oracle Internet Directory. For more information about the necessary groups, see the *Oracle Application Server Installation Guide*.
 - b. In the **Password** field, enter the password for the user name.
 - c. Click **Next** to display the Configure Identity Management: Validation page.
6. The Configure Identity Management: Validation page displays a summary of the Oracle Application Server and Oracle Internet Directory details. Click **Finish** to complete the configuration.

The configuration of Oracle Identity Management is complete. For more information about Oracle Identity Management, see the *Oracle Identity Management Concepts and Deployment Planning Guide*.

6.2 Configuring Forms and Reports Services to Use OracleAS Metadata Repository

This section describes the procedure to configure OracleAS Metadata Repository. OracleAS Metadata Repository is a collection of schemas that are used by other Oracle Application Server components.

Before starting the configuration, ensure that:

- OracleAS Metadata Repository is started (status is **Up**)
- The Oracle Identity Management instance is started (status is **Up**)
- You know the password for `cn=orcladmin`, or another user who is a member of the `iASAdmins` group

To configure OracleAS Metadata Repository:

1. Navigate to the Application Server Control home page.
2. Click **Infrastructure**.

Internet Directory Host in the Identity Management section and Default Metadata Repository in the Metadata Repository section display **Not Configured** as shown in [Figure 6-1](#).

3. In the Metadata Repository section, click **Configure** to display the Configure Repository: Internet Directory page.
4. On the Configure Repository: Internet Directory page:
 - a. In the **User Name** field, the user name to log on to Oracle Internet Directory is displayed as `cn=orcladmin`. You may change it provided the user is in the

IASAdmin group and the user name is in the `cn=user_name` format. For example, `cn=admin` where `admin` is the user name.

You must log on as a user who belongs to the necessary groups in Oracle Internet Directory. For more information about the necessary groups, see the *Oracle Application Server Installation Guide*.

- b. In the **Password** field, enter the password for the user name.
 - c. Click **Next** to display the Configure Repository: Location page.
5. On the Configure Repository: Location page:
 - a. From the **Repository** list, select an existing OracleAS Metadata Repository.
 - b. Click **Next** to display the Configure Repository: Validation page.
 6. The Configure Repository: Validation page displays a summary of the Oracle Application Server instance and the new database. Click **Finish** to complete the configuration.

The configuration of OracleAS Metadata Repository is complete. Forms and Reports Services is now a part of the OracleAS Metadata Repository's farm. For more information about OracleAS Metadata Repository's farms, see the *Oracle Application Server High Availability Guide*.

6.3 Making the Reports Server Secure

After configuring Forms and Reports Services to use the services of an OracleAS Infrastructure, you must make the Reports Server secure. The in-process server reduces the maintenance and administration of the Reports Server by providing a means for starting the server automatically. For more information about the in-process server, see the *Oracle Application Server Reports Services Publishing Reports to the Web* manual.

To make the existing Reports Server secure:

1. Update the `server_name.conf` file located in the `ORACLE_HOME/reports/conf` directory. To do this:
 - a. Navigate to the Application Server Control home page.
 - b. Under the System Components section, click the **Reports Server:server_name** link to display the Reports Server page.
 - c. On the Reports Server page, under the Administration section, click **Configuration** to display the Configuration page.
 - d. On the Configuration page, click **Edit Configuration File** to display the Edit Configuration File page.

On the Edit Configuration page, the `server_name.conf` file is displayed.

2. In the `server_name.conf` file, search for the `security` element. Uncomment the `security` element. After uncommenting, the `security` element must look like this:

```
<security id="rwSec" class="oracle.reports.server.RWSecurity">
<!--property name="securityUserId" value="portal_db_username/portal_db_
password@%portal_db_tnsname" confidential="yes" encrypted="no"/-->
<property name="oidEntity" value="reports_oid_entity"/>
</security>
```

3. Ensure that the value of `oidEntity` is the same as the value of `oidEntity` in the `rwserver.template` file. The `rwserver.template` file is located in the `ORACLE_HOME/reports/conf` directory.

Save your changes and restart the Reports Server. To make the earlier servers secure, perform steps on the other servers.

All newly started servers will be secure by default.

Note: OracleAS Reports Services enables Reports-related groups (prefixed `RW_`) such as `RW_ADMINISTRATORS`, `RW_DEVELOPER` and `IASADMINS` to run the certain Web commands such as `getjobid`, `getserverinfo`, `showjobs`, and `showenv`. If OracleAS Portal is not configured to use the services of the OracleAS Infrastructure that is configured with the Forms and Reports Services installation, `RW_` groups are not created. In this case, to enable these users to run the Web commands, you have to create the `RW_` groups manually and add users to these `RW_` groups. For more information on the Reports-related (`RW_`) groups, refer to the chapter "Deploying Reports in OracleAS Portal" in the *Oracle Application Server Reports Services Publishing Reports to the Web* manual.

6.4 Starting OPMN Services

Once the configuration of Oracle Identity Management and OracleAS Metadata Repository is complete, the status of the Oracle Process and Management Notification (OPMN) services is displayed as **Down**. You must restart the OPMN services.

To restart the OPMN services:

1. Navigate to the Application Server Control home page.
2. Click **Start All** to display the Processing: Start All page. The Processing: Start All page displays the progress of the Start All operation.

After the Start All operation is complete, the Application Server Control home page displays the earlier standalone Forms and Reports Services instance as part of an OracleAS Farm as shown in [Figure 6–2](#).

Figure 6–2 Forms and Reports Services Part of an OracleAS Farm



6.5 Testing the Configuration on Oracle Application Server Forms Services

To test whether the configuration of Oracle Application Server Forms Services to use the services of an OracleAS Infrastructure is successful:

1. Navigate to the Application Server Control home page.

2. In the System Components section, click **Forms** to display the Forms Overview page.
3. Click the **Configuration** tab on the Forms Overview page.
4. From the **View** list, select **Forms Web Configuration (formsweb.cfg)**.
5. Click **Create New Section**. The section that you create will be added to the `formsweb.cfg` file.
6. In the **Section Name You Want to Add** field, enter a name for the section. For example, `modosso`.
7. Click **OK**.
8. The section that you added is displayed in the Configuration page. You can add comments in the field next to the section name. Select the section that you added and click **Edit** to display the Edit Section page.
9. On the Edit Section page, you must add parameters to the section you created. To add parameters:
 - a. In the **Name** field, enter a name for the parameter. For example, `ssomode`.
 - b. In the **Value** field, enter `true`.
 - c. Click **Add New Parameter**.
 - d. The parameter name and value are displayed in the Edit Section page. Click **Apply**.
10. Run a form by typing the following URL to display the Oracle Single Sign-On page:

```
http://host-name:port-number/forms/frmservlet?config=modosso
```

For example,

```
http://host.oracle.com:7778/forms/frmservlet?config=modosso
```
11. On the Oracle Single Sign-On page, log on with the Oracle Internet Directory user name and password.

If the configuration is successful, an OracleAS Forms Services page is displayed.

6.6 Testing the Configuration on Oracle Application Server Reports Services

To test whether the configuration of Oracle Application Server Reports Services to use the services of an OracleAS Infrastructure is successful:

1. Navigate to the following URL to open the Reports demo page:

```
http://host-name:port-number/repdemo
```

For example,

```
http://host.oracle.com:80/repdemo
```
2. Click either the **Test a JSP Web Report** link or the **Test a Paper Report on the Web** link.
3. On the Getting Started with Oracle Reports page, click **Run Report**.

If the configuration is successful, a "Reports Ran Successfully" message is displayed.

Post-Installation Tasks

This chapter describes the post-installation tasks you need to perform to ensure complete installation of Forms and Reports Services.

This chapter contains the following topics:

- [State of Forms and Reports Services Instances After Installation](#)
- [NFS Installations](#)
- [Testing the Forms and Reports Services Installation](#)
- [Backup and Recovery](#)
- [SSL](#)
- [NLS_LANG Environment Variable](#)
- [Deployment of Forms and Reports](#)

7.1 State of Forms and Reports Services Instances After Installation

After installation, the components that you have configured are started (unless you have configured them to use ports lower than 1024, in which case you have to start them up manually).

You can use scripts or the Oracle Enterprise Manager Application Server Control to start and stop Forms and Reports Services instances. See the *Oracle Application Server Administrator's Guide* for details.

7.2 NFS Installations

If you installed Forms and Reports Services on an NFS disk, edit 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 the *Oracle HTTP Server Administrator's Guide* for details.

7.3 Testing the Forms and Reports Services Installation

Testing the Forms and Reports Services installation requires you to use a Web browser to invoke the Enterprise Manager page of your installation.

To test your installation, perform the following steps:

1. Open the Oracle Application Server Welcome page (`http://hostname:80`).
2. Click the **Demonstrations** tab.

3. Click the **Forms Services** or **Reports Services** link to run a test Form or a test Report.

Note: If your computer is not on the network, then configure the Common Object Service (COS) naming service to access the Reports Server. For information about configuring the naming service, see the *Oracle Application Server Reports Services Publishing Reports to the Web* manual.

7.4 Backup and Recovery

Post-installation is an ideal time to set up your backup and recovery strategies and implement them. See the *Oracle Application Server Administrator's Guide* for details.

7.5 SSL

By default, most components are not configured for SSL. To enable SSL for the components, view the guide for the specific components. For example, to enable SSL for Oracle HTTP Server, see the *Oracle HTTP Server Administrator's Guide*.

7.6 NLS_LANG Environment Variable

Check the value of the NLS_LANG environment variable to ensure that it is correct for your environment. See the *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.

7.7 Deployment of Forms and Reports

[Table 7-1](#) lists the guides that outline post-installation information on how to configure and deploy Forms and Reports applications. These guides are available on Oracle Technology Network (<http://www.oracle.com/technology>)

Table 7-1 Deploying Forms and Reports Applications

Component	Guides
Oracle Reports	<i>Oracle Application Server Reports Services Publishing Reports to the Web</i>
Oracle Application Server Forms Services	<i>Oracle Application Server Forms Services Deployment Guide</i>

Upgrading 9.0.4 Forms and Reports Services to 10.1.2 Forms and Reports Services

You can upgrade a 10g Release 1 (9.0.4) standalone instance of Forms and Reports Services to a 10g Release 2 (10.1.2) Business Intelligence and Forms instance. For other supported upgrade scenarios, see the *Oracle Application Server Upgrade and Compatibility Guide*.

This chapter briefly describes the steps to accomplish 10g Release 1 (9.0.4) standalone instance of Forms and Reports Services to a 10g Release 2 (10.1.2) Business Intelligence and Forms instance upgrade in the following sections:

- [Compatibility Matrix](#)
- [Upgrading a 9.0.4 Standalone Forms and Reports Services Instance](#)
- [Completing the Oracle Application Server Forms Services Upgrade](#)
- [Completing the Oracle Application Server Reports Services Upgrade](#)
- [Configuring the 10.1.2 Standalone Instance of Forms and Reports Services to Use Oracle Application Server Infrastructure Services](#)

For detailed information about the upgrade, see the *Oracle Application Server Upgrade and Compatibility Guide*.

8.1 Compatibility Matrix

[Table 8–1](#) shows the Release 2 (9.0.2) middle-tier installation types and the corresponding compatible 10g Release 2 (10.1.2) installation types.

Table 8–1 Compatible 10g Release 2 (10.1.2) Middle-Tier Installation Types for Release 2 (9.0.2) Upgrades

Release 2 (9.0.2) Installation Type	Compatible 10g Release 2 (10.1.2) Installation Types
Business Intelligence and Forms	Forms and Reports Services

[Table 8–2](#) shows the 10g (9.0.4) middle-tier installation types and the corresponding compatible 10g Release 2 (10.1.2) installation types.

Table 8–2 Compatible 10g Release 2 (10.1.2) Middle-Tier Installation Types for 10g (9.0.4) Upgrades

10g (9.0.4) Installation Type	Compatible 10g Release 2 (10.1.2) Installation Types
Business Intelligence and Forms	Forms and Reports Services
Forms and Reports Services	Forms and Reports Services

8.2 Upgrading a 9.0.4 Standalone Forms and Reports Services Instance

It is assumed that you have a standalone 10g Release 1 (9.0.4) instance of Forms and Reports Services on your computer. To upgrade the 10g Release 1 (9.0.4) instance to 10g Release 2 (10.1.2):

1. Install Forms and Reports Services 10g Release 2 (10.1.2).

For information about installing Forms and Reports Services, see [Chapter 5, "Installation Overview"](#).

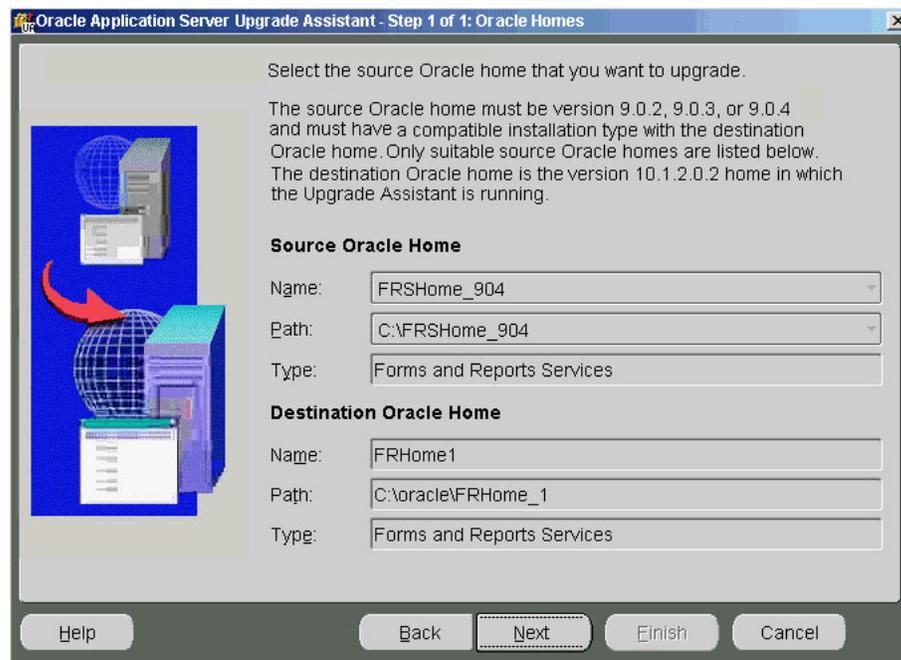
Note: Ensure that the Oracle home directory for your Forms and Reports Services 10g Release 2 (10.1.2) is different from the Oracle home directory for the Forms and Reports Services 9.0.4 installation.

2. Navigate to the `ORACLE_HOME/upgrade` directory where `ORACLE_HOME` is your Oracle home directory in which you installed Forms and Reports Services 10g Release 2 (10.1.2).
3. Run the `iasua.sh` file. Running this file starts the Oracle Application Server Upgrade Assistant.

Note: Do not run the `iasua.sh` script as the root user. Instead, run the script from the same user account that you used to install the destination Oracle home.

4. In the Oracle Application Server Upgrade Assistant - Welcome screen, click **Next**.
5. The Oracle Application Server Upgrade Assistant - Step 1 of 1: Oracle Homes screen appears as shown in [Figure 8–1](#).

Figure 8–1 Oracle Application Server Upgrade Assistant - Step 1 of 1: Oracle Homes Screen



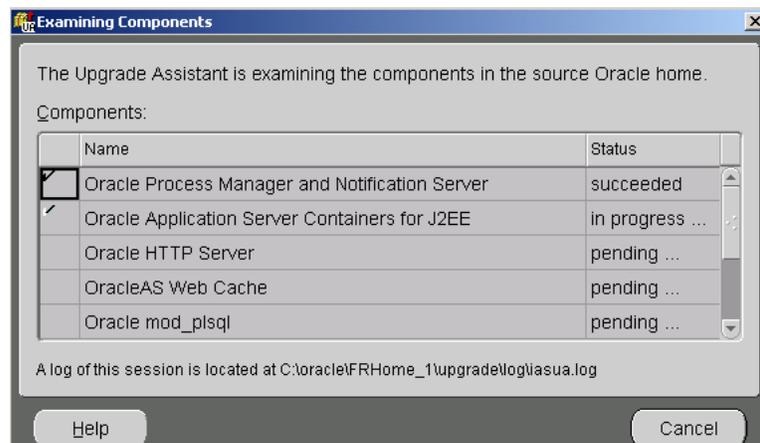
The Source Oracle Home section contains the name and path of the 9.0.4 instance of Forms and Reports Services.

The Destination Oracle Home section contains the name and path of the 10g Release 2 (10.1.2) Oracle home of Forms and Reports Services in which the OracleAS Upgrade Assistant is running.

Click **Next** to display the Examining Components dialog box.

6. In the Examining Components dialog box, the OracleAS Upgrade Assistant examines each component in the source Oracle home to determine whether it needs to be upgraded as shown in [Figure 8–2](#).

Figure 8–2 Examining Components Dialog Box



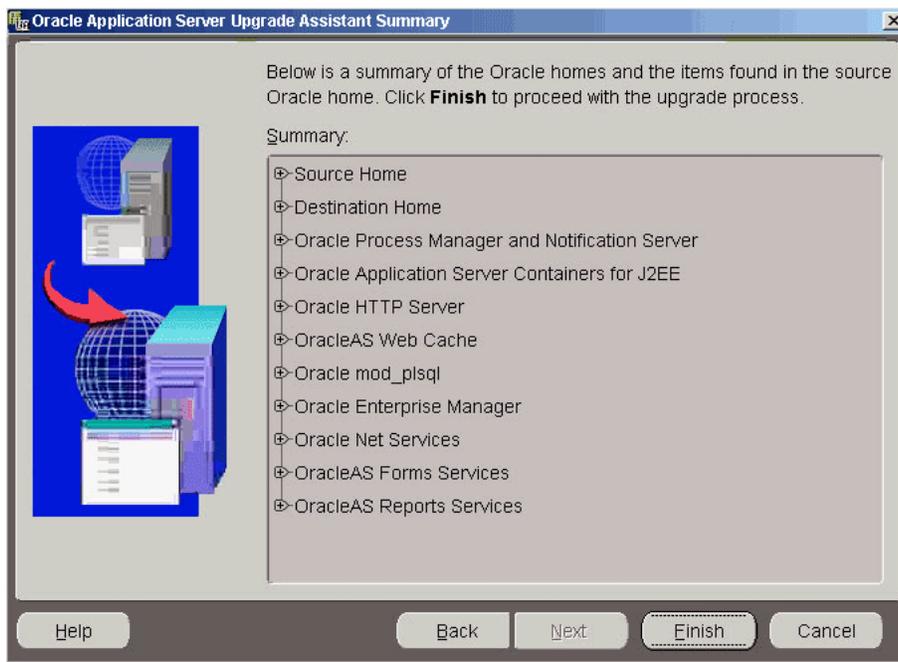
The Status column for each component contains one of the following:

Table 8–3 Values of the Status column in the Examining Components Dialog Box

Status	Meaning
Succeeded	The component is valid for upgrade.
In Progress	The OracleAS Upgrade Assistant is examining the validity of the component.
Pending	The component will be examined when the OracleAS Upgrade Assistant finishes examining the current component.
Failed	The component has upgrade items that are missing or did not meet upgrade criteria. The OracleAS Upgrade Assistant cannot upgrade the component.

After the examination of the components, the Oracle Application Server Upgrade Assistant - Summary screen appears as shown in [Figure 8–3](#). You can click the plus symbol (+) to view the upgrade items for a particular component.

Figure 8–3 Oracle Application Server Upgrade Assistant - Summary Screen



7. Click **Finish** to start the upgrade process. The Upgrading Components screen appears and shows the status of the upgrade.
8. Click **OK** when the upgrade is complete.
9. Once the upgrade is complete, the Upgrade Succeeded or Upgrade Failed screen appears.
 - If the Upgrade Failed screen appears, click **OK** to close the screen and remedy the conditions that prevented the components from being upgraded. Start the OracleAS Upgrade Assistant again.
 - The Upgrade Succeeded screen specifies the location of the upgrade log file and lists the post-upgrade tasks to be performed for various components. Click **OK** to close the Upgrade Succeeded screen.

For more information about the OracleAS Upgrade Assistant or reasons for the failure of an upgrade, see the *Oracle Application Server Upgrade and Compatibility Guide*.

8.3 Completing the Oracle Application Server Forms Services Upgrade

The OracleAS Upgrade Assistant moves most of the OracleAS Forms Services configuration data from the source to the destination Oracle home. However, there may be manual tasks remaining after the upgrade. This section explains how to perform these tasks. For more information about the OracleAS Upgrade Assistant, see the *Oracle Application Server Upgrade and Compatibility Guide*.

Note: After the upgrade, the `default.env` file contains the default OracleAS Forms Services environment variables and user-defined environment variables if any. The Upgrade Assistant upgrades any user-defined environment variables to the destination Oracle home `default.env` file. Any user modifications to the default variables in the source Oracle home `default.env` file will be extracted and appended to the default environment variable values that the installer puts in the destination Oracle home `default.env` file.

8.3.1 Upgrading Forms *.fmx Files

If you have deployed these files within the source Oracle home, you must manually copy them to the same location in the destination Oracle home. If the `*.fmx` files are not under the Oracle home on the file system, then no action is needed, as `FORMS90_PATH` will be upgraded by the OracleAS Upgrade Assistant, and will be valid after the upgrade.

8.3.2 Upgrading forms90app.ear Deployed in User-defined OC4J Instances

The `forms90app.ear` file is deployed by default into the OC4J_BI_Forms OC4J instance. Note that the OracleAS Upgrade Assistant upgrades all user-defined OC4J instances and the applications deployed under these instances to the destination Oracle home.

Thus, if you have deployed the `forms90app.ear` file into one of the user-defined OC4J instances in the source Oracle home, the OracleAS Upgrade Assistant will upgrade this deployment into the corresponding OC4J instance in the destination Oracle home.

As a result, the source Oracle home Release 1 (9.0.4) `forms90app.ear` file is deployed into the destination Oracle home. This causes the configuration of OracleAS Forms Services 10g Release 2 (10.1.2) to be incorrect, because it requires the 10g Release 2 (10.1.2) EAR file in order to function properly.

Therefore, you must undeploy the `forms90app.ear` file from these upgraded OC4J instances in the destination Oracle home, and then deploy `forms90app.ear` in the destination Oracle home again.

The Oracle Application Server Forms Services 10g Release 2 (10.1.2) `forms90app.ear` file is located in the following directory:

```
ORACLE_HOME/forms/j2ee
```

8.4 Completing the Oracle Application Server Reports Services Upgrade

The OracleAS Upgrade Assistant performs most of the Oracle Reports upgrade. However, it does not process the following:

- The `.sh` script files in the following source Oracle home location:

```
ORACLE_HOME/bin/rw*.sh
ORACLE_HOME/bin/reports.sh
```

- The template file in the following source Oracle home location:

```
ORACLE_HOME/reports/conf/rwserver.template
```

- The `jdbcpds.conf` configuration file in the following source Oracle home location:

```
ORACLE_HOME/reports/conf/jdbcps.conf
```

If you have customized any of these files, you must apply the customizations to the corresponding files in the destination Oracle home.

Caution: To apply customizations, you must copy the individual customized entries from the file in the source Oracle home to the file in the destination Oracle home. Do not replace any 10g Release 2 (10.1.2) files with the files from the source Oracle home, because the organization and content of the files are different in 10g Release 2 (10.1.2).

In addition, to preserve the cache files and the cache directory from source Oracle home, copy the reports server cache directory from the source Oracle home to the destination Oracle home.

8.4.1 Enabling Management of Oracle Application Server Reports Services from Application Server Control Console

After you upgrade OracleAS Reports Services in the middle tier, make the following changes to the `targets.xml` configuration file to manage the upgraded in-process server from the Application Server Control Console. These changes are necessary for the Oracle Enterprise Manager integration to work with the upgraded Reports in-process server.

1. Open the `targets.xml` file in a text editor. This file is located in the `ORACLE_HOME/sysman/emd` directory.
2. Locate the following entry in the `targets.xml` file for the Reports in-process server:

```
TYPE="oracle_repserv" and DISPLAY_NAME="Reports Server: new_server_name
```

Note that `new_server_name` will be in the `rep_hostname_newOracleHome` format.

In this example, `hostname` is the name of host computer without the domain name and `newOracleHome` is the Oracle home directory.

3. For the `oracle_repserv` entry, replace all occurrences of `new_server_name` with the original server name that was used in the source Oracle home before you performed the middle-tier upgrade.

This example uses boldface type to identify the typical occurrences of new server name in the `oracle_repserv` entry in the `targets.xml` file. The original server name can be found in the `rwervlet.properties` file located at `ORACLE_HOME/reports/conf`.

```
<Target TYPE="oracle_repserv"
NAME="appserv1.acme.com_Reports_Server: new_server_name"
DISPLAY_NAME="Reports Server: new_server_name"
VERSION="1.0"
ON_HOST="appserv1.acme.com">
<Property NAME="IASInternalName" VALUE="new_server_name" />
<Property NAME="Password" VALUE="77c1ed41793a5ce6" ENCRYPTED="TRUE" />
<Property NAME="Server" VALUE="new_server_name" />
<Property NAME="Servlet"
VALUE="http://appserv1.acme.com:port/reports/rwervlet" />
...
...
</Target>
```

4. Stop and restart Enterprise Manager for the changes to take effect.

8.4.2 Upgrading User-Defined OC4J Instances With Oracle Reports Deployments

The OracleAS Upgrade Assistant upgrades your Release 1 (9.0.4) Forms and Reports Services configuration to a 10g Release 2 (10.1.2) Forms and Reports Services configuration. The OracleAS Upgrade Assistant is not aware of OC4J instances outside of these configurations that may contain deployed reports, or of customizations made to those instances in order to enable the deployed reports to run.

Therefore, if you are using OC4J instances other than the standard Forms and Reports Services OC4J instance, you must apply any manual deployment steps that you performed on those instances to the equivalent instances in Forms and Reports Services 10g Release 2 (10.1.2).

8.5 Configuring the 10.1.2 Standalone Instance of Forms and Reports Services to Use Oracle Application Server Infrastructure Services

After upgrading your standalone 10g Release 1 (9.0.4) Forms and Reports Services instance to a 10g Release 2 (10.1.2) Forms and Reports Services instance, you can configure this 10g Release 2 (10.1.2) instance to use the services of an Oracle Application Server Infrastructure. For information about configuring a standalone 10g Release 2 (10.1.2) Forms and Reports Services instance to use the services of an OracleAS Infrastructure, see [Chapter 6, "Configuring Forms and Reports Services to Use an Oracle Application Server Infrastructure"](#).

Compatibility with Earlier Versions

This chapter outlines the compatibility matrix, known issues and workarounds that you should be aware of when you have a configuration that includes different versions of Oracle Forms and Oracle Reports with Oracle Application Server 10g Release 2 (10.1.2) Forms and Reports Services in the following topics:

- [Compatibility with Earlier Versions and Release 10g \(10.1.2\)](#)
- [Interoperability Issues and Workarounds](#)

9.1 Compatibility with Earlier Versions and Release 10g (10.1.2)

[Table 9–1](#) shows a compatibility matrix of earlier versions of Oracle Forms and Oracle Reports.

Notes about the table:

- The **Clients** column refers to all the clients of Oracle Reports and Oracle Forms.
- The **Reports/Forms Server** column refers to the different releases of Oracle Forms and Oracle Reports server.
- The **Supported** column refers to backward compatibility between client and server.

Table 9–1 Forms and Reports Services Compatibility Matrix

Clients	Reports/Forms Server	Supported?	Comments
Oracle6i Reports <ul style="list-style-type: none"> ■ rwcgi60 ■ rwcli60 ■ rwrqv60 ■ rwservlet 	AS 10g Release 2 (10.1.2) Reports Services	No	None
Oracle9i Reports (9.0.2) Clients <ul style="list-style-type: none"> ■ rwcgi ■ rwclient ■ rwrqv ■ rwservlet 	AS 10g Release 2 (10.1.2) Reports Services	No	None
Oracle Reports 10g Release 1 (9.0.4) Clients <ul style="list-style-type: none"> ■ rwcgi ■ rwclient ■ rwrqv ■ rwservlet 	AS 10g Release 2 (10.1.2) Reports Services	Yes	None

9.2 Interoperability Issues and Workarounds

This section describes the known issues and workarounds that you should be aware of when you have a configuration that includes different versions of Oracle Application Server instances:

- [Oracle Enterprise Manager for 9.0.2, 9.0.3, or 9.0.4 and 10g Release 2 \(10.1.2\) Uses the Same Port \(Port 1810\)](#)
- [dcmctl getState Command from an Oracle Application Server Forms Services Instance Cannot Be Used With 9.0.2, 9.0.3, and 9.0.4 Instances](#)
- [Oracle Enterprise Manager: No Rollup Metrics for 9.0.2 Middle Tiers](#)

9.2.1 Oracle Enterprise Manager for 9.0.2, 9.0.3, or 9.0.4 and 10g Release 2 (10.1.2) Uses the Same Port (Port 1810)

In 9.0.2, 9.0.3, and 9.0.4, the installer assigns port 1810 to the Oracle Enterprise Manager Web Site, regardless of whether or not the port is already in use. If the computer on which you plan to install the 10g Release 2 (10.1.2) instance already has a 9.0.2, 9.0.3, or 9.0.4 instance, the Application Server Control component for the 10g Release 2 (10.1.2) instance might already be using port 1810.

Tip: In 10g Release 2 (10.1.2), you can specify custom port numbers to use for each component. See [Section 3.5.3, "Using Custom Port Numbers \(the Static Ports Feature\)"](#).

For the case where Oracle Enterprise Manager 9.0.2, 9.0.3, or 9.0.4, and 10g Release 2 (10.1.2) are configured on the same port (1810), you can change the port used by the 10g Release 2 (10.1.2) Oracle Enterprise Manager to a different port. You can then run both Oracle Enterprise Managers at the same time. To change the port on the Oracle Enterprise Manager Release 10g, perform these steps:

1. In the 10g Release 2 (10.1.2) home, edit the `ORACLE_HOME/sysman/j2ee/config/emd-web-site.xml` file and change the port value from 1810 to an unused port. The following example sets the port to 1814:

```
<web-site host="[ALL]" port="1814" display-name="Oracle Enterprise Manager
  iAS Console Website" secure="false">
```

If the 9.0.2/9.0.3/9.0.4 instance is using 1810, it is also likely that the instance is using port 1811 for RMI operations. With the 9.0.2, 9.0.3, or 9.0.4 Oracle Enterprise Manager running, check which port in the 1810-1829 range is unused, and use this value.

You can run the `netstat` command to determine which ports are in use. The following example checks if port 1814 is in use.

```
prompt> netstat -n | grep 1814
```

2. Also in the 10g Release 2 (10.1.2) home, enter the same port number in the `ORACLE_HOME/sysman/emd/targets.xml` file. The port number is specified in the `StandaloneConsoleURL` property of the `oracle_ias` target.

```
<Target TYPE="oracle_ias" NAME="infra.myhost.oracle.com" VERSION="1.0">
  ... lines not shown ...
  <Property NAME="StandaloneConsoleURL"
    VALUE="http://myhost.oracle.com:1814/emd/console"/>
```

Once you have updated these two files, you can run BOTH the 9.0.2, 9.0.3, or 9.0.4 and Oracle Enterprise Manager 10g Release 2 (10.1.2) at the same time.

9.2.2 dcmctl getState Command from an Oracle Application Server Forms Services Instance Cannot Be Used With 9.0.2, 9.0.3, and 9.0.4 Instances

If you run the `dcmctl getState` command from an OracleAS Forms Services instance to get information on a 9.0.2, 9.0.3, or 9.0.4 instance, you will get an ADMN-604104 error:

```
prompt> dcmctl getState -i name_of_902_or_903_instance
ADMN-604104 Unable to connect to the OPMN process to obtain process status table
```

To get information on 9.0.2, 9.0.3, or 9.0.4 instances using the `dcmctl` command, use the 9.0.2, 9.0.3, or 9.0.4 `dcmctl` command.

9.2.3 Oracle Enterprise Manager: No Rollup Metrics for 9.0.2 Middle Tiers

Oracle Enterprise Manager Application Server Control does not monitor 9.0.2.x or 9.0.3.x instances. You have to use Oracle Enterprise Manager 9.0.2 or 9.0.3 to manage these instances.

Troubleshooting

This appendix lists some methods for troubleshooting your Forms and Reports Services installation. It includes the following topics:

- [Verifying Requirements](#)
- [Resolving Installation Errors](#)
- [Troubleshooting Configuration Assistants](#)
- [Descriptions of Forms and Reports Services Configuration Assistants](#)

A.1 Verifying Requirements

Review the following information before performing any of the troubleshooting steps in this appendix:

- Ensure that the computer meets the requirements specified in [Chapter 3, "Requirements"](#).

Read the Release Notes

- Read *Oracle Application Server Forms and Reports Services Release Notes*, which contains release notes for Oracle Forms Services, Oracle Forms Developer, Oracle Reports Services, and Oracle Reports Developer. In addition, *Oracle Application Server Forms and Reports Services Release Notes* contains information about the features that are available in this installation type.
- Read *Oracle Application Server Release Notes* prior to installing Forms and Reports Services. The release notes are available with the platform-specific documentation. The latest version of the release notes is available on OTN at:

<http://otn.oracle.com/documentation/ias.html>

A.2 Resolving Installation Errors

If you encounter an error during installation of Forms and Reports Services:

- Ensure that you entered correct information on all the installation screens. In case you entered wrong information on one of the screens, return to that screen by clicking **Back** and enter the correct information.
- Exit the installer only if you want to access the component log files. The log files located in the `ORACLE_HOME/cfgtoollogs` directory are inaccessible if the installer is running.
- If you encounter an error while the installer is copying or linking files, do the following:

1. Note the error and review the installation logs for causes:
 - * `oraInventory_location/logs/installActionstimestamp.log`
 - * `oraInventory_location/logs/oraInstalltimestamp.err`
 - * `oraInventory_location/logs/oraInstalltimestamp.out`
2. Remove the failed installation by following the steps in [Appendix B, "Deinstallation and Reinstallation"](#).
3. Correct the issue that caused the error.
4. Restart the installation.

A.3 Troubleshooting Configuration Assistants

To troubleshoot an installation error that occurs when the configuration assistants are running:

- Review the installation log files listed in [Section A.2, "Resolving Installation Errors"](#).
- Review the configuration assistant log files located in the `ORACLE_HOME/cfgtoollogs` directory for a specific Forms and Reports Services configuration assistant. [Section A.4, "Descriptions of Forms and Reports Services Configuration Assistants"](#) also lists any other log file locations for a specific configuration assistant. Try to fix the issue that caused the error.
- If you see a `Fatal Error. Reinstall message`, try to find the cause of the problem by analyzing the log files. Refer to [Section A.3.3, "Fatal Errors"](#) for further instructions.

A.3.1 Configuration Assistant Failure

Forms and Reports Services configuration assistant failures are noted at the bottom of the installation screen. The configuration assistant interface displays additional information when applicable. The configuration assistant's execution status is identified by the result. The result codes are:

Status	Result Code
Configuration Assistant Succeeded	0
Configuration Assistant Failed	1
Configuration Assistant Cancelled	-1

This result code is written to the following log file:

`oraInventory/logs/installActionstimestamp.log`

A.3.2 Failure During Component Configuration and Startup

During installation, configuration assistants run when the Configuration Assistants screen appears. If a configuration assistant fails, try the following procedure to correct the problem:

1. Review the installation log files for this Forms and Reports Services instance.

2. Review the log files for each configuration assistant located in the `ORACLE_HOME/cfgtoollogs` directory. Default log file locations are described in [Section A.4, "Descriptions of Forms and Reports Services Configuration Assistants"](#).
3. Refer to the section describing the configuration assistants in [Section A.4, "Descriptions of Forms and Reports Services Configuration Assistants"](#).
 - a. If the failing configuration assistant has any dependencies, then run the dependencies again. You must do this even if the dependency completed successfully.
 - b. Run the failing configuration assistant again. If you are using the installer, select the configuration assistant and click **Retry**.

If the configuration assistant fails again after you click **Retry**, then remove the `/var/tmp/EM_CONFIG_INSTALL.lk` lock entry and try running the configuration assistant again.

- c. If an optional configuration assistant fails, and it does not have any dependencies, run the remaining configuration assistants. Deselect the cancelled optional configuration assistant, highlight and check the next listed configuration assistant, and click **Retry**.
- d. If configuration assistant failure occurs when running configuration assistant execution commands on the command line, then run the configuration assistant execution command again.

You can use the generated script file named `configToolCommands` located in the `ORACLE_HOME/cfgtoollogs` directory to execute the failed configuration assistant again. The `configToolCommands` script is generated after you exit the installer. During silent or non-interactive installation of Forms and Reports Services, the `configToolCommands` script is generated immediately after configuration assistant failure.

You must set the following environment variables before using the generated script:

- Set the `ORACLE_HOME` environment variable to the `ORACLE_HOME` path.
- Append the `LD_LIBRARY_PATH` environment variable with `ORACLE_HOME/lib` and `ORACLE_HOME/network/lib`.
- For the Register DCM Plug-Ins With EM Configuration Assistant only, set the `PERL5LIB` environment variable to the `ORACLE_HOME/perl/lib/5.6.1` directory.

Note: If the description of a configuration assistant includes an "Initial Tasks" section, perform these tasks before running the configuration assistant.

A.3.3 Fatal Errors

Some configuration assistant failures are "fatal errors". You cannot recover from a fatal error by correcting the problem and continuing. You must remove the current installation and reinstall Forms and Reports Services. The following tasks describe the recovery procedure:

1. Deinstall the failed installation using the procedure described in [Section B.1, "Deinstallation of Forms and Reports Services Instances"](#).

2. Correct the cause of the fatal error.
3. Reinstall Forms and Reports Services.
4. If the fatal error reoccurs, then you must remove all Oracle installations from your computer.

A.3.4 OC4J Instance Configuration Assistant Errors

If you are installing a middle tier against an Oracle Internet Directory that was upgraded from 9.2.0.x to 10g Release 2 (10.1.2) and not all the upgrade steps were completed, then the OC4J Instance Configuration Assistant may fail with the following error:

```
Adding dependent libraries for application 'portal'...done.
Deploying application 'oraudrepl' to OC4J instance 'OC4J_Portal'...
ERROR: Caught exception during deploy.
java.rmi.RemoteException: deploy failed!: ; nested exception is:
oracle.oc4j.admin.internal.DeployerException: User specified for
application-client uddirepl, 'uddi_replicator' not found
at com.evermind.server.rmi.RMIConnection.
EXCEPTION_ORIGINATES_FROM_THE_REMOTE_SERVER(RMIConnection.java:1520)
... lines omitted ...
```

Ensure that you followed the steps on upgrading Oracle Internet Directory 9.2.0.x to 10g Release 2 (10.1.2) as documented in *Oracle Application Server Upgrade and Compatibility Guide*. The instructions are in the "Upgrading the Identity Management Services" chapter.

Reports Server Start/Stop Errors

Oracle Process and Management Notification (OPMN) checks the status of the Report in-process Server using a ping mechanism. The ping URL is specified in the OC4J_BI_Forms process-type in the `ORACLE_HOME/opmn/conf/opmn.xml` file. The `urlping` element is present in the `ORACLE_HOME/opmn/conf/opmn.xml` file:

```
<process-type id="OC4J_BI_Forms" module-id="OC4J">
...
<category id="urlping-parameters">
<data id="/reports/rwservlet/pingserver?start=auto" value="200" />
</category>
...
<start timeout="900" retry="2"/>
<stop timeout="120"/>
<restart timeout="720" retry="2"/>
...
</process-type>
```

OPMN sends the ping URL to the Reports Servlet and if the Reports Servlet is up, it responds to the ping. `start=auto` in the URL means that if the in-process Reports Server is not up while receiving the ping, the Reports Servlet starts the in-process server automatically.

Sometimes, the ping timeout is reached before the in-process Reports Server is fully started (for example, the Reports Server may not be able to start completely within time because of heavy load), as a result of which the `URLPing` request from OPMN may time out. The ping timeout is the measure that OPMN uses to determine the time that it must wait for a callback from an in-process Reports Server (in OC4J_BI_FORMS) before considering it a timeout. You can configure the ping timeout by

adding a ping entry with sufficient timeout configured to the computer's load in the following element in `opmn.xml`:

```
<ias-component id="OC4J">
<process-type id="OC4J_BI_Forms" module-id="OC4J">
...
<category id="urlping-parameters">
<process-type id="OC4J_BI_Forms" module-id="OC4J">
  <data id="/reports/rwservlet/pingservlet?start=auto" value="200" />
</category>
...
<start timeout="900" retry="2"/>
<stop timeout="120"/>
<restart timeout="720" retry="2" />
<ping timeout="110" interval="30" retry="2" /> -- ping timeout
...
</process-type>
</ias-component>
```

Then, restart `OC4J_BI_Forms`. For more information on using OPMN with Reports Server, see the *Oracle Application Server Reports Services Publishing Reports to the Web* manual.

A.4 Descriptions of Forms and Reports Services Configuration Assistants

Table A-1 lists the Forms and Reports Services configuration assistants in alphabetical order. Different installations use different configuration assistants depending on installation type and configuration options you selected.

For information about configuring Oracle Reports, see the *Oracle Application Server Reports Services Publishing Reports to the Web* manual. For information about configuring Oracle Forms, see the *Oracle Application Server Forms Services Deployment Guide*.

Table A-1 Forms and Reports Services Configuration Assistants

Configuration Assistant	Description	Log File Location
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.	not applicable
DCM Repository Backup Assistant	Enables you to back up your DCM repository.	not applicable
Forms Configuration Assistant	Configures the Oracle Application Server Forms Services server and integrates Oracle Application Server Forms Services with Oracle Enterprise Manager Application Server Control.	ORACLE_HOME/cfgtoollogs/formsConfig.log
HTTP Server Configuration Assistant	Configures Oracle HTTP Server and registers it with the Oracle Enterprise Manager Application Server Control.	ORACLE_HOME/Apache/Apache/logs ORACLE_HOME/Apache/Apache/httpd.log ORACLE_HOME/cfgtoollogs/configtoolstamp.log

Table A-1 (Cont.) Forms and Reports Services Configuration Assistants

Configuration Assistant	Description	Log File Location
Java Security Configuration Assistant	Changes default password and sets and reassigns new passwords for JAAS security.	ORACLE_HOME/cfgtoollogs/jaznca.log
OC4J Configuration Assistant	Integrates OC4J with the Oracle Enterprise Manager Application Server Control. It uses the Oracle Enterprise Manager Application Server Control-provided APIs to perform the following steps: <ul style="list-style-type: none"> ■ Add entries to the <code>targets.xml</code> file ■ Add entries to the <code>iasadmin.properties</code> file ■ This configuration assistant is dependent on the presence of the <code>deploy.ini</code> file. 	not applicable
OC4J Instance Configuration Assistant	Configures OC4J instances for deployed Forms and Reports Services applications.	not applicable
OPMN Configuration Assistant- start DAS instance	Starts DAS instance through OPMN.	ORACLE_HOME/opmn/logs/opmn.log
Oracle Net Configuration Assistant	Configures the database listener and Forms and Reports Services instances to use the LDAP naming by default.	ORACLE_HOME/orainventory/logs/installActions<time.stamp>.log
OracleAS Instance Configuration Assistant	Adds Forms and Reports Services instance name into the ORACLE_HOME/config/ <code>targets2add.xml</code> file	not applicable
Register DCM Plug-Ins With Oracle Enterprise Manager Configuration Assistant	Registers DCM plug-ins with Enterprise Manager.	not applicable
Reports Configuration Assistant	Configures the Oracle Reports server and integrates Oracle Reports with Oracle Enterprise Manager Application Server Control.	ORACLE_HOME/cfgtoollogs/reportsConfig.log
Web Cache Configuration Assistant	Configures OracleAS Web Cache and registers it with Oracle Enterprise Manager Application Server Control.	ORACLE_HOME/cfgtoollogs/configtoolstimestamp.log

See Also: Appendix F, "Configuration Assistants" in the *Oracle Application Server Installation Guide* for more information on log file locations

Deinstallation and Reinstallation

This appendix guides you through the deinstallation and reinstallation process for Forms and Reports Services.

Note: Forms and Reports Services is a flexible product that you can start and stop in different ways, depending on your requirements. Before you either deinstall or reinstall the product, see the *Oracle Application Server Administrator's Guide* for more information on stopping all related services or processes.

This appendix contains the following topics:

- [Deinstallation of Forms and Reports Services Instances](#)
- [Reinstallation](#)

B.1 Deinstallation of Forms and Reports Services Instances

To deinstall Forms and Reports Services instances, you have to completely remove the items listed in [Table B-1](#).

Table B-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, you can remove the remaining files using the <code>rm</code> command.
Entries for the deleted instance in the Inventory directory	Installer
Instance name from Farm page	Installer
Entries for the deleted instance in the <code>/etc</code> directory	Installer

See the *Oracle Application Server Installation Guide* for more information on deinstallation of components.

B.2 Reinstallation

The installer does not allow reinstallation of an Forms and Reports Services instance in a directory that already contains a Forms and Reports Services instance. To reinstall

Forms and Reports Services in the same directory, deinstall Forms and Reports Services and then install it again.

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.

If you want to use a different set of port numbers, you have to create a file called `staticports.ini`, in which you list the port numbers that you want to use. See [Section 3.5.3, "Using Custom Port Numbers \(the Static Ports Feature\)"](#) for details.

This appendix contains the following topics:

- [Method of Assigning Default Port Numbers](#)
- [Default Port Numbers](#)

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, 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, 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. See [Section 3.5.3, "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 <code>staticports.ini</code>
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

Table C-1 (Cont.) Default Port Numbers and Ranges (Grouped by Component)

Component	Default Port	Port Number Range	Name in staticports.ini
Oracle Notification Server Remote Port	6200	6200 - 6299	Oracle Notification Server Remote port
Oracle Application Server Containers for J2EE (OC4J)			
OC4J AJP	12501	12501 - 12600	Not settable through staticports.ini
OC4J RMI	12401	12401 - 12500	Not settable through staticports.ini
JMS	12601	12601 - 12700	Not settable through staticports.ini
IIOP	13301	13301 - 13400	Not settable through staticports.ini
IIOPS1	13401	13401 - 13500	Not settable through staticports.ini
IIOPS2	13501	13501 - 13600	Not settable through staticports.ini
OracleAS Forms Services			
OracleAS Forms Services	Uses the same port as Oracle HTTP Server		
Oracle HTTP Server			
Oracle HTTP Server Listener (OracleAS Web Cache not configured)	7777	7777 - 7877	Oracle HTTP Server Listen port
Oracle HTTP Server Listener (SSL)	4443	4443 - 4543	Oracle HTTP Server Listen (SSL) port
Oracle HTTP Server Listener (non-SSL, OracleAS Web Cache configured)	7778	7777 - 7877	Oracle HTTP Server port
Oracle HTTP Server Listener (SSL, OracleAS Web Cache configured)	4444	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 Reports Services			
SQL*Net	14040	14040-14049	Reports Services SQL*Net port
discoveryService	14021-14030	14021-14030	Reports Services discoveryService port
Oracle Reports Bridge	14011-14020	14011-14020	Reports Services bridge port

Table C-1 (Cont.) Default Port Numbers and Ranges (Grouped by Component)

Component	Default Port	Port Number Range	Name in staticports.ini
OracleAS Web Cache			
OracleAS Web Cache - HTTP Listener	7777	7777 - 7877	Web Cache HTTP Listen port
OracleAS Web Cache - HTTP Listener (SSL)	8250	8250 - 8350	Web Cache HTTP Listen (SSL) port
OracleAS Web Cache Administration	9400	9400 - 9499	Web Cache Administration port
OracleAS Web Cache Invalidation	9401	9400 - 9499	Web Cache Invalidation port
OracleAS Web Cache Statistics	9402	9400 - 9499	Web Cache Statistics port
Oracle Enterprise Manager 10g Application Server Control			
Application Server Control	1156	1156; 1810 - 1829	Application Server Control port
Oracle Management Agent	1157	1157; 1830 - 1849	Not settable through staticports.ini
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 <i>Oracle Application Server Administrator's Guide</i> for details.
Enterprise Manager Console HTTP port (orcl)	5500		Not settable through staticports.ini
Enterprise Manager Agent port (orcl)	1831		Not settable through staticports.ini
Log Loader	44000	44000 - 44099	Log Loader port

URLs for Components

Table D-1 shows the URLs and login IDs to use to access components after installation.

The URLs in the table use the default ports. The components in your environment might use different ports. To determine the port numbers for components, look in the `ORACLE_HOME/install/portlist.ini` file.

Table D-1 URLs for Components

Component	URL	Entry in portlist.ini	Login and Password
OracleAS Welcome Pages	<code>http://host:7777</code>	Oracle HTTP Server port or Web Cache Listen port	not applicable
Oracle HTTP Server	<code>http://host:7777</code> (without Web Cache) <code>http://host:7778</code> (with Web Cache)	Oracle HTTP Server Listen port	not applicable
Oracle Application Server Forms Services	<code>http://host:port/forms/frmservlet</code>	Web Cache Listen port	not applicable
Oracle Reports	<code>http://host:7777/reports/rwservlet/help?</code>	Web Cache Listen port	orcladmin Password: The default password for orcladmin is the same as the ias_admin password you supplied during installation.
Oracle Enterprise Manager Application Server Control	<code>http://host:1810</code>	Application Server Control port	ias_admin Password: Use the ias_admin password you supplied during installation.

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