

Oracle® Database

Client Installation Guide

10g Release 2 (10.2) for Linux x86

B15662-01

June 2005

Oracle Database Client Installation Guide, 10g Release 2 (10.2) for Linux x86

B15662-01

Copyright © 2005, Oracle. All rights reserved.

Primary Authors: Apolina Das, Sanjay Sharma, Lyju Vadassery

Contributing Authors: Kevin Flood, Pat Huey, Clara Jaeckel, Emily Murphy, Terri Winters

Contributors: David Austin, Subhranshu Banerjee, Mark Bauer, Robert Chang, Jonathan Creighton, Sudip Datta, Padmanabhan Ganapathy, Thirumaleshwara Hasandka, Joel Kallman, George Kotsovolos, Richard Long, Rolly Lv, Padmanabhan Manavazhi, Sreejith Minnanghat, Krishna Mohan, Rajendra Pingte, Hanlin Qian, Janelle Simmons, Preeti Shukla, Roy Swonger, Douglas Williams

The Programs (which include both the software and documentation) contain proprietary information; they are provided under a license agreement containing restrictions on use and disclosure and are also protected by copyright, patent, and other intellectual and industrial property laws. Reverse engineering, disassembly, or decompilation of the Programs, except to the extent required to obtain interoperability with other independently created software or as specified by law, is prohibited.

The information contained in this document is subject to change without notice. If you find any problems in the documentation, please report them to us in writing. This document is not warranted to be error-free. Except as may be expressly permitted in your license agreement for these Programs, no part of these Programs may be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose.

If the Programs are delivered to the United States Government or anyone licensing or using the Programs on behalf of the United States Government, the following notice is applicable:

U.S. GOVERNMENT RIGHTS Programs, software, databases, and related documentation and technical data delivered to U.S. Government customers are "commercial computer software" or "commercial technical data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the Programs, including documentation and technical data, shall be subject to the licensing restrictions set forth in the applicable Oracle license agreement, and, to the extent applicable, the additional rights set forth in FAR 52.227-19, Commercial Computer Software—Restricted Rights (June 1987). Oracle Corporation, 500 Oracle Parkway, Redwood City, CA 94065

The Programs are not intended for use in any nuclear, aviation, mass transit, medical, or other inherently dangerous applications. It shall be the licensee's responsibility to take all appropriate fail-safe, backup, redundancy and other measures to ensure the safe use of such applications if the Programs are used for such purposes, and we disclaim liability for any damages caused by such use of the Programs.

Oracle, JD Edwards, PeopleSoft, and Retek are registered trademarks of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.

The Programs may provide links to Web sites and access to content, products, and services from third parties. Oracle is not responsible for the availability of, or any content provided on, third-party Web sites. You bear all risks associated with the use of such content. If you choose to purchase any products or services from a third party, the relationship is directly between you and the third party. Oracle is not responsible for: (a) the quality of third-party products or services; or (b) fulfilling any of the terms of the agreement with the third party, including delivery of products or services and warranty obligations related to purchased products or services. Oracle is not responsible for any loss or damage of any sort that you may incur from dealing with any third party.

Contents

Send Us Your Comments	vii
Preface	ix
Audience	ix
Documentation Accessibility	ix
Related Documentation	x
Conventions	x
Command Syntax	x
Accessing Documentation	xi
Third Party Software Notices	xi
1 Installation Overview	
Overview of Client Installation	1-1
Oracle Client Installation Methods	1-2
Interactive Installation Methods	1-2
Automated Installation Methods Using Response Files	1-2
Oracle Client Installation Types	1-2
Installation Considerations	1-3
Hardware and Software Certification	1-4
Multiple Oracle Homes	1-4
Installing the Software on a System with an Existing Oracle Installation	1-4
2 Preinstallation Tasks	
Logging In to the System as root	2-1
Checking the Hardware Requirements	2-2
Checking the Software Requirements	2-4
Instant Client Light Requirements	2-6
Creating Required Operating System Group and User	2-7
Creating the Oracle Inventory Group	2-7
Creating the Oracle Software Owner User	2-8
Determining Whether an Oracle Software Owner User Exists	2-8
Creating an Oracle Software Owner User	2-9
Modifying an Oracle Software Owner User	2-9
Identifying Required Software Directories	2-9
Oracle Base Directory	2-9

Oracle Inventory Directory	2-10
Oracle Home Directory	2-10
Identifying or Creating an Oracle Base Directory	2-11
Identifying an Existing Oracle Base Directory	2-11
Creating an Oracle Base Directory	2-12
Configuring the oracle User's Environment	2-12

3 Installation Tasks

Reviewing Component-Specific Installation Guidelines	3-1
Accessing the Installation Software	3-1
Downloading Oracle Software from the OTN Web Site	3-2
Downloading the Installation Archive Files	3-2
Extracting the Installation Files	3-2
Copying the Software to the Hard Disk	3-3
Mounting Discs	3-3
Copying the Oracle Client Software to a Hard Disk	3-4
Installing the Oracle Client Software	3-4
Reviewing Product-Specific Installation Guidelines	3-5
Running Oracle Universal Installer	3-5

4 Postinstallation Tasks

Required Postinstallation Tasks	4-1
Downloading and Installing Patches	4-1
Running Oracle Enterprise Manager Java Console	4-2
Updating Instant Client	4-2
Connecting with Instant Client	4-3
Recommended Postinstallation Tasks	4-3
Configuring Instant Client Light	4-4
Creating a Backup of the root.sh Script	4-4
Connecting Instant Client or Instant Client Light to an Oracle Database	4-4
Specifying a Connection by Using the Easy Connect Naming Method	4-4
Specifying a Connection by Configuring a tnsnames.ora File	4-5
Specifying a Connection by Using an Empty Connect String and the LOCAL Environment Variable	4-6
Setting Up User Accounts	4-6
Setting the NLS_LANG Environment Variable	4-6
Generating the Client Static Library	4-6
Required Product-Specific Postinstallation Tasks	4-7
Configuring Oracle Net Services	4-7
Configuring Oracle Precompilers	4-7
Configuring Pro*C/C++	4-7
Configuring Pro*FORTRAN	4-7
Configuring OCCI	4-8
Configuring ODBC	4-8

5	Removing Oracle Software	
	Removing Oracle Software.....	5-1
A	Installing and Configuring Oracle Database Using Response Files	
	Introduction.....	A-1
	Installation Overview	A-2
	Preparing a Response File	A-2
	Editing a Response File Template.....	A-2
	Recording a Response File	A-3
	Running Oracle Universal Installer in Silent or Suppressed Mode	A-4
B	Globalization Support	
	About NLS_LANG Environment Variable.....	B-1
	Running Oracle Universal Installer in Different Languages	B-2
C	Troubleshooting	
	Verify Requirements.....	C-1
	X Window Display Errors	C-1
	What to Do If an Installation Error Occurs?.....	C-2
	Reviewing the Log of an Installation Session	C-2
	Troubleshooting Configuration Assistants	C-3
	Configuration Assistant Failure.....	C-3
	Fatal Errors.....	C-4
	Silent-Mode Response File Error Handling.....	C-4
	Cleaning Up After a Failed Installation.....	C-4
D	Frequently Asked Questions About Installation	
	Installing Oracle Database or Oracle Database Client	D-1
	Installing Oracle Database Tools	D-3
	Installing Oracle Database with Oracle Applications	D-6
	Installing Oracle Database Heterogeneous Connectivity Tools (Gateways).....	D-8

Index

Send Us Your Comments

Oracle Database Client Installation Guide, 10g Release 2 (10.2) for Linux x86 B15662-01

Oracle welcomes your comments and suggestions on the quality and usefulness of this publication. Your input is an important part of the information used for revision.

- Did you find any errors?
- Is the information clearly presented?
- Do you need more information? If so, where?
- Are the examples correct? Do you need more examples?
- What features did you like most about this manual?

If you find any errors or have any other suggestions for improvement, please indicate the title and part number of the documentation and the chapter, section, and page number (if available). You can send comments to us in the following ways:

- Electronic mail: infodev_us@oracle.com
- FAX: (650) 506-7227. Attn: Server Technologies Documentation Manager
- Postal service:

Oracle Corporation
Server Technologies Documentation Manager
500 Oracle Parkway, Mailstop 4op11
Redwood Shores, CA 94065
USA

If you would like a reply, please give your name, address, telephone number, and electronic mail address (optional).

If you have problems with the software, please contact your local Oracle Support Services.

Preface

This guide describes how to install and configure Oracle Database Client 10g release 2 (10.2) on Linux x86.

Audience

This guide is intended for anyone responsible for installing Oracle Database Client 10g release 2 (10.2) on a single Linux x86 system.

Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible, with good usability, to the disabled community. To that end, our documentation includes features that make information available to users of assistive technology. This documentation is available in HTML format, and contains markup to facilitate access by the disabled community. Accessibility standards will continue to evolve over time, and Oracle is actively engaged with other market-leading technology vendors to address technical obstacles so that our documentation can be accessible to all of our customers. For more information, visit the Oracle Accessibility Program Web site at

<http://www.oracle.com/accessibility/>

Accessibility of Code Examples in Documentation

Screen readers may not always correctly read the code examples in this document. The conventions for writing code require that closing braces should appear on an otherwise empty line; however, some screen readers may not always read a line of text that consists solely of a bracket or brace.

Accessibility of Links to External Web Sites in Documentation

This documentation may contain links to Web sites of other companies or organizations that Oracle does not own or control. Oracle neither evaluates nor makes any representations regarding the accessibility of these Web sites.

TTY Access to Oracle Support Services

Oracle provides dedicated Text Telephone (TTY) access to Oracle Support Services within the United States of America 24 hours a day, seven days a week. For TTY support, call 800.446.2398.

Related Documentation

The platform-specific documentation for Oracle Database 10g products includes the following manuals:

- Oracle Database:
 - *Oracle Database Release Notes for Linux x86*
 - *Oracle Database Quick Installation Guide for Linux x86*
 - *Oracle Database Installation Guide for Linux x86*
 - *Oracle Database Oracle Clusterware and Oracle Real Application Clusters Installation Guide for Linux*
 - *Oracle Database Administrator's Reference for Linux and Solaris Operating Systems*
- Oracle Database Client:
 - *Oracle Database Client Quick Installation Guide for Linux x86*
 - *Oracle Database Client Installation Guide for Linux x86*
- Oracle Database Companion CD:
 - *Oracle Database Companion CD Installation Guide for Linux x86*
 - *Oracle Database Companion CD Quick Installation Guide for Linux x86*

Refer to *Oracle Database Release Notes for Linux x86* for important information that was not available when this book was released. The release notes for Oracle Database 10g are updated regularly. You can get the most-recent version from Oracle Technology Network at

<http://www.oracle.com/technology/documentation/index.html>

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.
UPPERCASE	Uppercase letters indicate Structured Query Language (SQL) reserved words, initialization parameters, and environment variables.

Command Syntax

UNIX command syntax appears in monospace font. The dollar character (\$), number sign (#), or percent character (%) are UNIX command prompts. Do not enter them as part of the command. The following command syntax conventions are used in this guide:

Convention	Description
backslash \	A backslash is the UNIX command continuation character. It is used in command examples that are too long to fit on a single line. Enter the command as displayed (with a backslash) or enter it on a single line without a backslash: <pre>dd if=/dev/rdsd/c0t1d0s6 of=/dev/rst0 bs=10b \ count=10000</pre>
braces { }	Braces indicate required items: <pre>.DEFINE {macro}</pre>
brackets []	Brackets indicate optional items: <pre>cvtcrt termname [outfile]</pre>
ellipses ...	Ellipses indicate an arbitrary number of similar items: <pre>CHKVAL fieldname value1 value2 ... valueN</pre>
<i>italics</i>	Italic type indicates a variable. Substitute a value for the variable: <pre>library_name</pre>
vertical line	A vertical line indicates a choice within braces or brackets: <pre>FILE filesize [K M]</pre>

Accessing Documentation

The documentation for Oracle Database 10g release 2 (10.2) includes platform-specific documentation and generic product documentation.

Platform-Specific Documentation

Platform-specific documentation includes information about installing and using Oracle products on particular platforms. The platform-specific documentation for this product is available in both Adobe portable document format (PDF) and HTML format on the product disc. To access the platform-specific documentation on disc:

1. Use a Web browser to open the `welcome.htm` file in the top-level directory of the disc.
2. For DVDs only, select the appropriate product link.
3. Select the **Documentation** tab.

If you prefer paper documentation, then open and print the PDF files.

Product Documentation

Product documentation includes information about configuring, using, or administering Oracle products on any platform. The product documentation for Oracle Database 10g products is available in both HTML and PDF formats in the Oracle Database 10g Release 2 (10.2) Online Documentation Library. This library is on the Oracle Technology Network Web site at

<http://www.oracle.com/technology/documentation/index.html>

Third Party Software Notices

This program contains third party software from HP. The Oracle program license that accompanied this product determines your right to use the Oracle program, including the HP software. Notwithstanding anything to the contrary in the Oracle program

license, the HP software is provided "AS IS" and without intellectual property indemnities, warranties, or support of any kind from Oracle or HP.

This program also contains third party software from International Business Machines Corporation (IBM). The Oracle program license that accompanied this product determines your right to use the Oracle program, including the IBM software.

Notwithstanding anything to the contrary in the Oracle program license, the IBM software is provided "AS IS" and without intellectual property indemnities, warranties, or support of any kind from Oracle or IBM.

Installation Overview

This chapter describes the different types of Oracle Client installations that you can perform, and issues that you should consider before installing the software. It includes information about the following topics:

- [Overview of Client Installation](#)
- [Oracle Client Installation Methods](#)
- [Oracle Client Installation Types](#)
- [Installation Considerations](#)

Overview of Client Installation

The Oracle Client installation process consists of the following phases:

1. **Read the release notes:** Read the Oracle Database 10g release 2 (10.2) release notes before you begin the installation. The release notes are available with the platform-specific documentation. The latest version of the release notes is available on Oracle Technology Network at:

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

2. **Planning the installation:** This chapter describes the Oracle products that you can install and issues that you must consider before starting the installation.

You can also refer to [Appendix D](#) which covers frequently asked questions about installing Oracle Database components, such as how to install Oracle Database if the site uses Oracle applications or if you need multiple Oracle Database client connections.

3. **Completing preinstallation tasks:** [Chapter 2](#) describes preinstallation tasks that you must complete before installing the product.
4. **Installing software:** Use the following section to install Oracle Client:
 - [Chapter 3](#) describes how to use Oracle Universal Installer to install Oracle Client.
 - [Appendix A](#) describes advanced installation topics: performing noninteractive (silent) installations, which you may want to use if you need to perform multiple installations of Oracle Database.
 - [Appendix C](#) provides troubleshooting advice in case you encounter problems with the installation.
 - [Chapter 5](#) describes how to remove Oracle Database.

5. **Completing postinstallation tasks:** [Chapter 4](#) describes recommended and required postinstallation tasks.

Oracle Client Installation Methods

You can choose different installation methods to install Oracle Client, as follows:

- [Interactive Installation Methods](#)
- [Automated Installation Methods Using Response Files](#)

Interactive Installation Methods

When you use the interactive method to install Oracle Client, Oracle Universal Installer displays a series of screens that enable you to specify all of the required information to install the Oracle Client software.

Automated Installation Methods Using Response Files

By creating a response file and specifying this file when you start Oracle Universal Installer, you can automate some or all of the Oracle Client installation. These automated installation methods are useful if you need to perform multiple installations on similarly configured systems or if the system where you want to install the software does not have X Window system software installed.

When you use a response file, you can run Oracle Universal Installer in the following modes, depending on whether you specify all of the required information or not:

- **Silent Mode:** Oracle Universal Installer runs in silent mode if you use a response file that specifies all required information. None of the Oracle Universal Installer screens are displayed.
- **Suppressed Mode:** Oracle Universal Installer runs in suppressed mode if you do not specify all required information in the response file. Oracle Universal Installer displays only the screens that prompt for the information that you did not specify.

For more information about these modes and about how to complete an installation using response files, refer to [Appendix A](#).

Oracle Client Installation Types

You can choose one of the following installation types when installing Oracle Client:

- **Administrator:** Enables applications to connect to an Oracle Database instance on the local system or on a remote system. It also provides tools that enable you to administer Oracle Database.
- **Runtime:** Enables applications to connect to an Oracle Database instance on the local system or on a remote system.
- **Custom:** Allows you to select individual components from the list of Administrator and Runtime components.
- **Instant Client:** Enables you to install only the shared libraries required by Oracle Call Interface (OCI), Oracle C++ Call Interface (OCCI), Pro*C, or Java database connectivity (JDBC) OCI applications. This installation type requires much less disk space than the other Oracle Client installation types.

See Also: *Oracle Call Interface Programmer's Guide* or *Oracle Database JDBC Developer's Guide and Reference* for more information about Instant Client

Included in the Instant Client installation is Instant Client Light. You may want to use this version of Instant Client if the applications generate error messages in American English only. Instant Client Light is beneficial to application that use one of the supported character sets and can accept error messages in American English. The following are the supported character sets:

- US7ASCII
- WE8DEC
- WE8ISO8859P1
- WE8EBCDIC37C for EBCDIC platform only
- WE8EBCDIC1047 for EBCDIC platform only
- WE8MSWIN1252
- UTF8
- AL32UTF8
- AL16UTF16

The advantage of using Instant Client Light is that it has a smaller footprint than the regular Instant Client. The shared libraries, which an application must load, are only 34 MB as opposed to the 110 MB that regular Instant Client uses. Therefore, the applications use less memory.

Caution: AL32UTF8 is the Oracle Database character set that is appropriate for XMLType data. It is equivalent to the IANA registered standard UTF-8 encoding, which supports all valid XML characters.

Do not confuse Oracle Database database character set UTF8 (no hyphen) with database character set AL32UTF8 or with character encoding UTF-8. Database character set UTF8 has been superseded by AL32UTF8. Do not use UTF8 for XML data. UTF8 supports only Unicode version 3.1 and earlier; it does not support all valid XML characters. AL32UTF8 has no such limitation.

Using database character set UTF8 for XML data could potentially cause a fatal error or affect security negatively. If a character that is not supported by the database character set appears in an input-document element name, then a replacement character (usually "?") is substituted for it. This will terminate parsing and raise an exception.

Installation Considerations

This section contains information that you should consider before deciding how to install this product. It contains the following sections:

- [Hardware and Software Certification](#)
- [Multiple Oracle Homes](#)

Hardware and Software Certification

The platform-specific hardware and software requirements included in this installation guide were current at the time this guide was published. However, because new platforms and operating system software versions might be certified after this guide is published, review the certification matrix on the *OracleMetaLink* Web site for the most up-to-date list of certified hardware platforms and operating system versions. The *OracleMetaLink* Web site is available at the following URL:

<http://metalink.oracle.com>

If you do not have a current Oracle Support Services contract, then you can access the same information at the following Web site:

<http://www.oracle.com/technology/support/metalink/content.html>

Multiple Oracle Homes

This product supports multiple Oracle homes. This means that you can install this release or previous releases of the software more than once on the same system, in different Oracle home directories.

Installing the Software on a System with an Existing Oracle Installation

You must install this product into a new Oracle home directory. You cannot install products from one release of Oracle Client into an Oracle home directory of a different release. For example, you cannot install release 10.2 software into an existing Oracle9i Oracle home directory. If you attempt to install this release into an Oracle home directory that contains software from an earlier Oracle release, then the installation fails.

You can install this release more than once on the same system if each installation is installed in a separate Oracle home directory.

Preinstallation Tasks

This chapter describes the tasks that you must complete before you start Oracle Universal Installer. It includes information about the following tasks:

- [Logging In to the System as root](#)
- [Checking the Hardware Requirements](#)
- [Checking the Software Requirements](#)
- [Creating Required Operating System Group and User](#)
- [Identifying Required Software Directories](#)
- [Identifying or Creating an Oracle Base Directory](#)
- [Configuring the oracle User's Environment](#)

Logging In to the System as root

Before you install the Oracle software, you must complete several tasks as the `root` user. To log in as the `root` user, complete one of the following procedures:

Note: Unless you intend to complete a silent-mode installation, you must install the software from an X Window System workstation, an X terminal, or a PC or other system with X server software installed.

For more information about silent-mode installations, refer to [Appendix A](#).

- If you are installing the software from an X Window System workstation or X terminal, then:
 1. Start a local terminal session, for example, an X terminal (`xterm`).
 2. If you are not installing the software on the local system, then enter the following command to enable the remote host to display X applications on the local X server:

```
$ xhost fully_qualified_remote_host_name
```

For example:

```
$ xhost somehost.us.acme.com
```

3. If you are not installing the software on the local system, then use the `ssh`, `rlogin`, or `telnet` command to connect to the system where you want to install the software:

```
$ telnet remote_host
```

4. If you are not logged in as the `root` user, then enter the following command to switch user to `root`:

```
$ su - root
password:
#
```

- If you are installing the software from a PC or other system with X server software installed, then:

Note: If necessary, refer to your X server documentation for more information about completing this procedure. Depending on the X server software that you are using, you may need to complete the tasks in a different order.

1. Start the X server software.
2. Configure the security settings of the X server software to permit remote hosts to display X applications on the local system.
3. Connect to the remote system where you want to install the software and start a terminal session on that system, for example, an X terminal (`xterm`).
4. If you are not logged in as the `root` user on the remote system, then enter the following command to switch user to `root`:

```
$ su - root
password:
#
```

Checking the Hardware Requirements

The system must meet the following minimum hardware requirements:

- 256 MB of physical RAM
- The following table gives the relationship between the available RAM and the required swap space.

Available RAM	Swap Space Required
Up to 256 MB	3 times the size of RAM
Between 257 MB and 512 MB	2 times the size of RAM
Between 513 MB and 726 MB	1.5 times the size of RAM
More than 726 MB	0.75 times the size of RAM

- The minimum client install `TEMP` space required is 115 MB. The minimum disk space requirement in the `/tmp` directory depends on the installation type you have selected. The following table lists the minimum disk space requirements for the `/tmp` directory in each type of installation.

Client Installation Type	Disk Space Required for the /tmp Directory (MB)
Admin	835
Runtime	470
Custom (all components selected)	765
Instant	120

- Between 34 MB and 820 MB of disk space for the Oracle software, depending on the installation type

To ensure that the system meets these requirements:

1. To determine the physical RAM size, enter the following command:

```
# grep MemTotal /proc/meminfo
```

If the size of the physical RAM is less than the required size, then you must install more memory before continuing.

2. To determine the size of the configured swap space, enter the following command:

```
# grep SwapTotal /proc/meminfo
```

If necessary, refer to your operating system documentation for information about how to configure additional swap space.

3. To determine the available RAM and swap space, enter the following command:

```
# free
```

Note: Oracle recommends that you take multiple values for the available RAM and swap space before freezing on a value. This is because the available RAM and swap space keep changing depending on the user interactions with the computer.

4. To determine the amount of disk space available in the /tmp directory, enter the following command:

```
# df -k /tmp
```

If there is less than 400 MB of free disk space available in the /tmp directory, then complete one of the following steps:

- Delete unnecessary files from the /tmp directory to meet the disk space requirement.
 - Set the TEMP and TMPDIR environment variables when setting the oracle user's environment (described later).
 - Extend the file system that contains the /tmp directory. If necessary, contact your system administrator for information about extending file systems.
5. To determine the amount of free disk space on the system, enter the following command:

```
# df -k
```

The following table shows the approximate disk space requirements for software files for each installation type:

Installation Type	Requirement for Software Files (MB)
Instant Client	110
Administrator	820
Runtime	450
Custom (maximum)	750

Note: If you want to configure only the Instant Client Light component of Instant Client, you need 34 MB of disk space to store the related files. To configure Instant Client Light, refer to the ["Configuring Instant Client Light"](#) section on page 4-4.

- To determine whether the system architecture can run the software, enter the following command:

```
# grep "model name" /proc/cpuinfo
```

Note: This command displays the processor type. Verify that the processor architecture matches the Oracle software release that you want to install. If you do not see the expected output, then you cannot install the software on this system.

Checking the Software Requirements

Depending on the products that you intend to install, verify that the following software is installed on the system. The procedure following the table describes how to verify whether these requirements are addressed.

Item	Requirement
Operating system	One of the following operating system versions: <ul style="list-style-type: none"> ■ Red Hat Enterprise Linux 3.0 (Update 3 or later) ■ Red Hat Enterprise Linux 4.0 ■ SUSE Linux Enterprise Server 9.0 ■ Asianux 1.0 ■ Asianux 2.0
Kernel version	The system must be running the following kernel version (or a later version): <p>Red Hat Enterprise Linux 3.0 and Asianux 1.0: 2.4.21-27.EL</p> <p>Note: This is the default kernel version.</p> <p>Red Hat Enterprise Linux 4.0 and Asianux 2.0: 2.6.9-5.0.5.EL</p> <p>SUSE Linux Enterprise Server 9.0: 2.6.5-7.97</p>

Item	Requirement
Packages	<p>The following packages (or later versions) must be installed:</p> <p>Red Hat Enterprise Linux 3.0 and 4.0, and Asianux 1.0 and 2.0:</p> <pre>make-3.79.1 gcc-3.2.3-34 glibc-2.3.2-95.20 glibc-devel-2.3.2-95.20 glibc-devel-2.3.2-95.20 (32 bit) compat-db-4.0.14-5 compat-gcc-7.3-2.96.128 compat-gcc-c++-7.3-2.96.128 compat-libstdc++-7.3-2.96.128 compat-libstdc++-devel-7.3-2.96.128 openmotif21-2.1.30-8 setarch-1.3-1 gnome-libs-1.4.1.2.90-34.1 (32 bit) libaio-0.3.96-3 libaio-devel-0.3.96-3</pre> <p>SUSE Linux Enterprise Server 9:</p> <pre>gcc-3.3.3-43 gcc-c++-3.3.3-43 glibc-2.3.3-98 libaio-0.3.98-18 libaio-devel-0.3.98-18 make-3.80 openmotif-libs-2.2.2-519.1</pre>
PL/SQL native compilation, Pro*C/C++, Oracle Call Interface, Oracle C++ Call Interface, Oracle XML Developer's Kit (XDK)	<p>The version of GNU C and C++ compilers listed previously for your distribution is supported for use with these products.</p> <p>Notes: Intel C++ Compiler v7.1.0.28 or later is also supported, however it is not required for installation. On Red Hat Enterprise Linux 3, OCCI is supported with both version 2.96-128 and version 3.2 of the GNU C++ compiler, however, version 3.2 is the default compiler version. OCCI is also supported with Intel Compiler v8.0 with gcc 3.2.3 standard template libraries. Intel C++ Compiler v7 does not support OCCI.</p>
Oracle JDBC/OCI Drivers	<p>You can use the following optional JDK version with the Oracle JDBC/OCI drivers, however it is not required for the installation:</p> <p>Sun JDK 1.4.2_08 with the JNDI extension</p>
Oracle ODBC Drivers	<p>You should install ODBC Driver Manager for UNIX. You can download and install the Driver Manager from the following URL:</p> <p>http://www.unixodbc.org</p>

See Also: If you plan to use GNU Compiler Collection as the primary compiler, then refer to *Oracle Database Installation Guide for Linux x86* for instructions on configuring the primary compiler

To ensure that the system meets these requirements:

1. To determine which distribution and version of Linux is installed, enter the following command:

```
# cat /etc/issue
```

Note: Only the distributions and versions listed in the previous table are supported. Do not install the software on other versions of Linux.

2. To determine whether the required kernel is installed, enter the following command:

```
# uname -r
```

The following is sample output obtained by running this command on a Red Hat Enterprise Linux 3.0 system:

```
2.4.21-15.EL
```

In this example, the output shows the kernel version (2.4.21) and errata level (15.EL) on the system.

If the kernel version does not meet the requirement specified earlier in this section, then contact your operating system vendor for information about obtaining and installing kernel updates.

3. To determine whether the required packages are installed, enter commands similar to the following:

```
# rpm -q package_name
```

If a package is not installed, then install it from your Linux distribution media or download the required package version from your Linux vendor's Web site.

Instant Client Light Requirements

In addition to the requirements described in the preceding section, if you plan to use Instant Client Light, then your applications must use the following languages and character sets:

- **Language:** US English
- **Territory:** Any territory that is supported by Oracle
- **Character sets:**
 - Single byte
 - * US7ASCII
 - * WE8DEC
 - Unicode
 - * UTF8
 - * AL16UTF16
 - * AL32UTF8

The language, territory, and character sets are determined by the `NLS_LANG` environment variable.

Creating Required Operating System Group and User

Depending on whether this is the first time Oracle software is being installed on this system and on the products that you are installing, you may need to create the following operating system group and user:

- The Oracle Inventory group (`oinstall`)

You must create this group the first time you install Oracle software on the system. The usual name chosen for this group is `oinstall`. This group owns the Oracle inventory, which is a catalog of all Oracle software installed on the system.

Note: If Oracle software is already installed on the system, then the existing Oracle Inventory group must be the primary group of the operating system user that you use to install new Oracle software.

- The Oracle software owner user (typically, `oracle`)

You must create this user the first time you install Oracle software on the system. This user owns all of the software installed during the installation. This user must have the Oracle Inventory group as its primary group.

Note: In Oracle documentation, this user is referred to as the `oracle` user.

A single Oracle Inventory group is required for all installations of Oracle software on the system. After the first installation of Oracle software, you must use the same Oracle Inventory group for all subsequent Oracle software installations on that system. However, you can choose to create different Oracle software owner users for separate installations.

Note: The following sections describe how to create local users and groups. As an alternative to creating local users and groups, you could create the appropriate users and groups in a directory service, for example, Network Information Services (NIS). For information about using directory services, contact your system administrator or refer to your operating system documentation.

The following sections describe how to create the required operating system users and groups:

- [Creating the Oracle Inventory Group](#)
- [Creating the Oracle Software Owner User](#)

Creating the Oracle Inventory Group

You must create the Oracle Inventory group if it does not already exist. The following subsections describe how to determine the Oracle Inventory group name, if it exists, and how to create it if necessary.

Determining Whether the Oracle Inventory Group Exists

When you install Oracle software on the system for the first time, Oracle Universal Installer creates the `oraInst.loc` file. This file identifies the name of the Oracle Inventory group and the path of the Oracle Inventory directory.

To determine whether the Oracle Inventory group exists, enter the following command:

```
# more /etc/oraInst.loc
```

If the output of this command shows the `oinstall` group name, then the group already exists.

If the `oraInst.loc` file exists, then the output from this command is similar to the following:

```
inventory_loc=/u01/app/oracle/oraInventory
inst_group=oinstall
```

The `inst_group` parameter shows the name of the Oracle Inventory group, `oinstall`.

Creating the Oracle Inventory Group

If the `oraInst.loc` file does not exist, then create the Oracle Inventory group by entering the following command:

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

Creating the Oracle Software Owner User

You must create an Oracle software owner user in the following circumstances:

- If an Oracle software owner user does not exist, for example, if this is the first installation of Oracle software on the system
- If an Oracle software owner user exists, but you want to use a different operating system user

Determining Whether an Oracle Software Owner User Exists

To determine whether an Oracle software owner user named `oracle` exists, enter the following command:

```
# id oracle
```

If the `oracle` user exists, then the output from this command is similar to the following:

```
uid=440(oracle) gid=200(oinstall) groups=201(dba),202(oper)
```

If the user exists, then determine whether you want to use the existing user or create another `oracle` user. If you want to use the existing user, then ensure that the user's primary group is the Oracle Inventory group. Refer to one of the following sections for more information:

Note: If necessary, contact your system administrator before using or modifying an existing user.

- If you want to use the existing Oracle software owner user, and the user's primary group is the Oracle Inventory group, then refer to the ["Identifying Required Software Directories"](#) section on page 2-9.
- To modify an existing user, refer to the ["Modifying an Oracle Software Owner User"](#) section on page 2-9.
- To create a user, refer to the following section.

Creating an Oracle Software Owner User

If the Oracle software owner user does not exist or if you require a new Oracle software owner user, then create it as follows. In the following procedure, use the user name `oracle` unless a user with that name already exists.

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

```
# /usr/sbin/useradd -g oinstall[ -G dba] 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 optional secondary groups `dba`
2. Set the password of the `oracle` user:

```
# passwd oracle
```

Refer to the ["Identifying Required Software Directories"](#) section on page 2-9 to continue.

Modifying an Oracle Software Owner User

If the `oracle` user exists, but its primary group is not `oinstall`, then enter a command similar to the following to modify it. Specify the primary group using the `-g` option and any required secondary group using the `-G` option:

```
# /usr/sbin/usermod -g oinstall -G dba oracle
```

Identifying Required Software Directories

You must identify or create the following directories for the Oracle software:

- [Oracle Base Directory](#)
- [Oracle Inventory Directory](#)
- [Oracle Home Directory](#)

Oracle Base Directory

The Oracle base directory is a top-level directory for Oracle software installations. It is analogous to the `C:\Oracle` directory used for Oracle software installations on Microsoft Windows systems. On Linux systems, the Optimal Flexible Architecture (OFA) guidelines recommend that you use a path similar to the following for the Oracle base directory:

```
/mount_point/app/oracle_sw_owner
```

In this example:

- *mount_point* is the mount point directory for the file system that will contain the Oracle software.
The examples in this guide use `/u01` for the mount point directory. However, you could choose another mount point directory, such as `/oracle` or `/opt/oracle`.
- *oracle_sw_owner* is the operating system user name of the Oracle software owner, for example `oracle`.

You can use the same Oracle base directory for more than one installation or you can create separate Oracle base directories for different installations. If different operating system users install Oracle software on the same system, then each user must create a separate Oracle base directory. The following example Oracle base directories could all exist on the same system:

```
/u01/app/oracle  
/u01/app/orauser  
/opt/oracle/app/oracle
```

The following sections describe how to identify existing Oracle base directories that may be suitable for your installation and how to create an Oracle base directory if necessary.

Regardless of whether you create an Oracle base directory or decide to use an existing one, you must set the `ORACLE_BASE` environment variable to specify the full path to this directory.

Oracle Inventory Directory

The Oracle Inventory directory (`oraInventory`) stores an inventory of all software installed on the system. It is required by, and shared by, all Oracle software installations on a single system. The first time you install Oracle software on a system, Oracle Universal Installer prompts you to specify the path to this directory. then Oracle recommends that you choose the following path:

```
oracle_base/oraInventory
```

Oracle Universal Installer creates the directory that you specify and sets the correct owner, group, and permissions for it. You do not need to create it.

Note: All Oracle software installations rely on this directory. Ensure that you back it up regularly.

Do not delete this directory unless you have completely removed all Oracle software from the system.

Oracle Home Directory

The Oracle home directory is the directory where you choose to install the software for a particular Oracle product. You must install different Oracle products, or different releases of the same Oracle product, in separate Oracle home directories. When you run Oracle Universal Installer, it prompts you to specify the path to this directory, as well as a name that identifies it. The directory that you specify must be a subdirectory of the Oracle base directory. Oracle recommends that you specify a path similar to the following for the Oracle home directory:

```
oracle_base/product/10.2.0/client_1
```

Oracle Universal Installer creates the directory path that you specify under the Oracle base directory. It also sets the correct owner, group, and permissions on it. You do not need to create this directory.

Identifying or Creating an Oracle Base Directory

Before starting the installation, you must either identify an existing Oracle base directory or if required, create one. This section contains information about the following:

- [Identifying an Existing Oracle Base Directory](#)
- [Creating an Oracle Base Directory](#)

Note: You can choose to create an Oracle base directory, even if other Oracle base directories exist on the system.

Identifying an Existing Oracle Base Directory

Existing Oracle base directories may not have paths that comply with OFA guidelines. However, if you identify an existing Oracle Inventory directory or existing Oracle home directories, then you can usually identify the Oracle base directories, as follows:

- Identifying an existing Oracle Inventory directory

Enter the following command to view the contents of the `oraInst.loc` file:

```
# more /etc/oraInst.loc
```

If the `oraInst.loc` file exists, then the output from this command is similar to the following:

```
inventory_loc=/u01/app/oracle/oraInventory
inst_group=oinstall
```

The `inventory_loc` parameter identifies the Oracle Inventory directory (`oraInventory`). The parent directory of the `oraInventory` directory is typically an Oracle base directory. In the previous example, `/u01/app/oracle` is an Oracle base directory.

- Identifying existing Oracle home directories

Enter the following command to view the contents of the `oratab` file:

```
# more /etc/oratab
```

If the `oratab` file exists, then it contains lines similar to the following:

```
*:/u03/app/oracle/product/10.2.0/db_1:N
*/opt/orauser/infra_904:N
*/oracle/9.2.0:N
```

The directory paths specified on each line identify Oracle home directories. Directory paths that end with the user name of the Oracle software owner that you want to use are valid choices for an Oracle base directory. If you intend to use the `oracle` user to install the software, then you could choose one of the following directories from the previous example:

```
/u03/app/oracle
/oracle
```

Note: If possible, choose a directory path similar to the first (/u03/app/oracle). This path complies with the OFA guidelines.

To continue:

- If an Oracle base directory exists and you want to use it, then refer to the "[Configuring the oracle User's Environment](#)" section on page 2-12.
When you configure the `oracle` user's environment later in this chapter, set the `ORACLE_BASE` environment variable to specify the directory you chose.
- If an Oracle base directory does not exist on the system or if you want to create an Oracle base directory, then refer to the following section.

Creating an Oracle Base Directory

Before you create an Oracle base directory, you must identify an appropriate file system with disk space.

To identify an appropriate file system:

1. Use the `df -h` command to determine the free disk space on each mounted file system.
2. From the display, identify a file system that has appropriate free space.
3. Note the name of the mount point directory for the file system that you identified.

To create the Oracle base directory and specify the correct owner, group, and permissions for it:

1. Enter commands similar to the following to create the recommended subdirectories in the mount point directory that you identified and set the appropriate owner, group, and permissions on them:

```
# mkdir -p /mount_point/app/oracle_sw_owner
# chown -R oracle:oinstall /mount_point/app/oracle_sw_owner
# chmod -R 775 /mount_point/app/oracle_sw_owner
```

For example, if the mount point you identify is `/u01` and `oracle` is the user name of the Oracle software owner, then the recommended Oracle base directory path is as follows:

```
/u01/app/oracle
```

2. When you configure the `oracle` user's environment later in this chapter, set the `ORACLE_BASE` environment variable to specify the Oracle base directory that you have created.

Configuring the oracle User's Environment

You run Oracle Universal Installer from the `oracle` account. However, before you start Oracle Universal Installer you must configure the environment of the `oracle` user. To configure the environment, you must:

- Set the default file mode creation mask (`umask`) to 022 in the shell startup file.
- Set the `DISPLAY` environment variable.

Note: Ensure that the `PATH` variable contains `$ORACLE_HOME/bin` before `/usr/X11R6/bin`.

To set the oracle user's environment:

1. Start a new terminal session, for example, an X terminal (`xterm`).
2. Enter the following command to ensure that X Window applications can display on this system:

```
$ xhost fully_qualified_remote_host_name
```

For example:

```
$ xhost somehost.us.acme.com
```

3. If you are not already logged in to the system where you want to install the software, then log in to that system as the `oracle` user.
4. If you are not logged in as the `oracle` user, then switch user to `oracle`:


```
$ su - oracle
```
5. To determine the default shell for the `oracle` user, enter the following command:


```
$ echo $SHELL
```
6. Open the `oracle` user's shell startup file in any text editor:

Note: On Red Hat Linux, `.bash_profile` is the user startup file for the Bash shell.

- Bourne shell (`sh`), Bash shell (`bash`), or Korn shell (`ksh`):


```
$ vi .bash_profile
```
 - C shell (`csh` or `tcsh`):


```
% vi .login
```
7. Enter or edit the following line, specifying a value of `022` for the default file mode creation mask:


```
umask 022
```
 8. If the `ORACLE_SID`, `ORACLE_HOME`, or `ORACLE_BASE` environment variable is set in the file, then remove the appropriate lines from the file.
 9. Save the file, and exit from the editor.
 10. To run the shell startup script, enter one of the following commands:
 - Bash shell on Red Hat Enterprise Linux:


```
$ . ~/.bash_profile
```
 - Bourne, Bash, or Korn shell:


```
$ . /.profile
```
 - C shell:

```
% source ~/.login
```

11. If you are not installing the software on the local system, then enter a command similar to the following to direct X applications to display on the local system:

- Bourne, Bash, or Korn shell:

```
$ DISPLAY=local_host:0.0 ; export DISPLAY
```

- C shell:

```
% setenv DISPLAY local_host:0.0
```

In this example, *local_host* is the host name or IP address of the system that you want to use to display Oracle Universal Installer (your workstation or PC).

12. If you determined that the `/tmp` directory has less than 400 MB of free disk space, then identify a file system with at least 400 MB of free space and set the `TEMP` and `TMPDIR` environment variables to specify a temporary directory on this file system:

- Use the `df -h` command to identify a suitable file system with sufficient free space.
- If necessary, enter commands similar to the following to create a temporary directory on the file system that you identified, and set the appropriate permissions on the directory:

```
$ su - root
# mkdir /mount_point/tmp
# chmod a+wr /mount_point/tmp
# exit
```

- Enter commands similar to the following to set the `TEMP` and `TMPDIR` environment variables:

- * Bourne, Bash, or Korn shell:

```
$ TEMP=/mount_point/tmp
$ TMPDIR=/mount_point/tmp
$ export TEMP TMPDIR
```

- * C shell:

```
% setenv TEMP /mount_point/tmp
% setenv TMPDIR /mount_point/tmp
```

13. Enter commands similar to the following to set the `ORACLE_BASE` environment variable:

- Bourne, Bash, or Korn shell:

```
$ ORACLE_BASE=/u01/app/oracle
$ export ORACLE_BASE
```

- C shell:

```
% setenv ORACLE_BASE /u01/app/oracle
```

In these examples, `/u01/app/oracle` is the Oracle base directory that you created or identified earlier.

14. Enter the following commands to ensure that the `ORACLE_HOME` and `TNS_ADMIN` environment variables are not set:

- Bourne, Bash, or Korn shell:

```
$ unset ORACLE_HOME  
$ unset TNS_ADMIN
```

- C shell:

```
% unsetenv ORACLE_HOME  
% unsetenv TNS_ADMIN
```

Note: If the ORACLE_HOME environment variable is set, then Oracle Universal Installer uses the value that it specifies as the default path for the Oracle home directory. However, if you set the ORACLE_BASE environment variable, then Oracle recommends that you unset the ORACLE_HOME environment variable and choose the default path suggested by Oracle Universal Installer.

15. To verify that the environment has been set correctly, enter the following commands:

```
$ umask  
$ env | more
```

Verify that the umask command displays a value of 22, 022, or 0022 and the environment variables that you set in this section have the correct values.

Installation Tasks

The Oracle Client software is available on disc (DVD) or you can download it from the Oracle Technology Network Web site. In most cases, you use the graphical user interface (GUI) provided by Oracle Universal Installer to install the software. However, you can also use Oracle Universal Installer to complete silent-mode installations, without using the GUI. Refer to [Appendix A](#) for information about silent-mode installations.

This chapter includes information about the following topics:

- [Reviewing Component-Specific Installation Guidelines](#)
- [Accessing the Installation Software](#)
- [Installing the Oracle Client Software](#)

Reviewing Component-Specific Installation Guidelines

Review the following guidelines before starting Oracle Universal Installer:

- Oracle Universal Installer
 - Do not use Oracle Universal Installer from an earlier Oracle release to install components from this release.
- Reinstalling Oracle Software

Accessing the Installation Software

The Oracle Client software is available on compact disc (DVD) or you can download it from the Oracle Technology Network Web site. To install the software from the hard disk, you must either download it from Oracle Technology Network and unpack it, or copy it from the discs, if you have them.

You can access and install Oracle Client by using one of the following methods:

- To copy the software to a hard disk, refer to the following section:
["Copying the Software to the Hard Disk"](#) on page 3-3
- To install the software from a disc or from an existing hard disk location, refer to the ["Installing the Oracle Client Software"](#) section on page 3-4.
- To download the software from Oracle Technology Network, refer to the following section.

Downloading Oracle Software from the OTN Web Site

This section describes how to download the installation archive files and extract them on your hard disk. It contains the following topics:

- [Downloading the Installation Archive Files](#)
- [Extracting the Installation Files](#)

Downloading the Installation Archive Files

To download the installation archive files from Oracle Technology Network:

1. Use any browser to access the software download page on Oracle Technology Network:

`http://www.oracle.com/technology/software/`
2. Navigate to the download page for the product that you want to install.
3. On the download page, identify the required disk space by adding the file sizes for each required file.

The file sizes are listed next to the file names.
4. Select a file system with enough free space to store and expand the archive files.

In most cases, the available disk space must be at least twice the size of all of the archive files.
5. On the file system that you selected in step 4, create a parent directory for each product, for example `OraCl110g`, to hold the installation directories.
6. Download all of the installation archive files to the directory that you created in step 5.
7. Verify that the files you downloaded are the same size as the corresponding files on Oracle Technology Network.

Extracting the Installation Files

To extract the installation archive files, perform the following steps:

1. If necessary, change directory to the directory that contains the downloaded installation archive files.
2. To uncompress each file, enter a command similar to the following:

```
$ gunzip filename.cpio.gz
```

This command creates files with names similar to the following:

```
filename.cpio
```

3. To extract the installation files, enter a command similar to the following:

```
$ cpio -idmv < filename.cpio
```

Note: Refer to the download page for information about the correct options to use with the `cpio` command.

Some browsers uncompress files while downloading them, but leave the `.gz` file extension. If these steps do not work, remove the `.gz` extension from the files and repeat step 3.

For each file, this command creates a subdirectory named `Diskn`, where `n` is either 1 or the disk number identified in the file name.

When you have extracted all of the required installation files, refer to ["Installing the Oracle Client Software"](#) on page 3-4.

Copying the Software to the Hard Disk

Before installing Oracle Database Client, you might want to copy the software to the hard disk. This enables the installation process to run a bit faster. Before copying the disc content to the hard disk, you must mount the disc. The following sections describe to mount disc and copy its content to the hard disk.

Mounting Discs

On most Linux systems, the disc mounts automatically when you insert it into the disc drive. If the disc does not mount automatically, follow these steps to mount it:

1. Switch user to `root`:

```
$ su - root
```

2. If necessary, enter a command similar to one of the following to eject the currently mounted disc, then remove it from the drive:

- Red Hat:

```
# eject /mnt/dvd
```

- SUSE:

```
# eject /media/dvd
```

In these examples, `/mnt/dvd` and `/media/dvd` are the mount point directories for the disc drive.

3. Insert the appropriate disc into the disc drive.
4. To verify that the disc mounted automatically, enter one of the following commands depending on your platform:

- Red Hat:

```
# ls /mnt/dvd
```

- SUSE:

```
# ls /media/dvd
```

5. If this command fails to display the contents of the disc, enter a command similar to the following to mount it, depending on your platform:

Note: Before running the following command, ensure that the `/mnt/dvd` and `/media/dvd` directories exist on Red Hat and SUSE Linux, respectively. If not, create the `/mnt/dvd` and `/media/dvd` directories, as required, to mount the DVD.

- Red Hat:

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

- SUSE:

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

In these examples, `/mnt/dvd` and `/media/dvd` are the mount point directories for the disc drive.

6. If Oracle Universal Installer is displaying the Disk Location dialog box, enter the disc mount point directory path, for example:

```
/mnt/dvd
```

To continue, go to one of the following sections:

- If you want to copy software to a hard disk, refer to the "[Copying the Oracle Client Software to a Hard Disk](#)" section on page 3-4.
- If you want to install the software from the discs, refer to the "[Installing the Oracle Client Software](#)" section on page 3-4.

Copying the Oracle Client Software to a Hard Disk

If the system does not have a DVD drive, you can copy the software from the disc to a file system on another system, then either mount that file system using NFS, or use FTP to copy the files to the system where you want to install the software.

To copy the contents of the disc to a hard disk:

1. Create a directory on the hard disk to hold the Oracle software:

```
$ mkdir OraCl10g
```

2. Change directory to the directory you created in step 1:

```
$ cd OraCl10g
```

3. Mount the disc, if it is not already mounted.

Some platforms automatically mount the disc when you insert it into the drive. If the disc does not mount automatically, refer to the "[Mounting Discs](#)" section on page 3-3 for platform-specific information about mounting it.

4. Copy the contents of the mounted disc to the corresponding new subdirectory as follows:

```
$ cp -R /directory_path OraCl10gn
```

In this example, `/directory_path` is the disc mount point directory, for example `/mnt/dvd` on Red Hat systems or `/media/dvd` on SUSE systems, or the path of the client directory on the DVD. The mount point directory is `/dvd`.

5. If necessary, mount the next disc and repeat step 5.

After you have copied all the required discs, refer to the "[Installing the Oracle Client Software](#)" section on page 3-4.

Installing the Oracle Client Software

The following sections describe how to install the Oracle software:

- [Reviewing Product-Specific Installation Guidelines](#)
- [Running Oracle Universal Installer](#)

Reviewing Product-Specific Installation Guidelines

Review the following guidelines before starting Oracle Universal Installer:

- Oracle Universal Installer

Do not use Oracle Universal Installer from an earlier Oracle product release to install components from this release.
- Installations on a cluster

If Oracle Clusterware and Oracle Real Application Clusters (RAC) are already installed on the system, Oracle Universal Installer displays the Specify Hardware Cluster Installation Mode screen. You must select **Local Installation** on this screen.
- Reinstalling Oracle software

If you re-install Oracle software into an Oracle home directory where Oracle Client is already installed, you must also re-install any components that were installed before you began the re-installation.

Running Oracle Universal Installer

Start Oracle Universal Installer and install the software, as follows:

1. If you are installing the software from disc, mount the first disc if it is not already mounted.

Some platforms automatically mount the disc when you insert the disc into the drive.

If the disc does not mount automatically, refer to the "[Mounting Discs](#)" section on page 3-3 for platform-specific information about mounting it.

2. To start Oracle Universal Installer, complete one of the following steps depending on the location of the installation files:

Note: Start Oracle Universal Installer from the terminal session where you logged in as the `oracle` user and set the user's environment (described in [Chapter 2](#)).

- If the installation files are on disc, enter commands similar to the following, where `directory_path` is the path of the client directory on the DVD:

```
$ cd /tmp
$ /directory_path/runInstaller
```

- If the installation files are on the hard disk, change directory to the `client` directory and enter the following command:

```
$ ./runInstaller
```

If Oracle Universal Installer does not appear, refer to the "[X Window Display Errors](#)" section on page C-1 for information about troubleshooting.

3. Use the following guidelines to complete the installation:
 - Follow the instructions displayed on the Oracle Universal Installer screens. If you need additional information, click **Help**.

- When Oracle Universal Installer prompts you to run a script with `root` privileges, enter a command similar to the following in a terminal where you are logged in as the `root` user, then click **Continue** or **OK**:

```
# /script_path/script_name
```

The following table lists the various screens displayed and the recommended actions required for all installation types, except the Custom Installation type.

Screen	Recommended Action
Welcome	Click Next .
Select Installation Type	Select InstantClient , Administrator , or Runtime . Then, click Next .
Specify Home Details	Specify the name and directory path of the Oracle home.
Product-Specific Prerequisite Checks	<p>Verify that all of the prerequisite checks have succeeded, and then click Next.</p> <p>Oracle Universal Installer checks the system to verify that it is configured correctly to run Oracle software. If you have completed all of the preinstallation steps in this guide, then all of the checks should pass.</p> <p>If a check fails, then review the cause of the failure listed for that check on the screen. If possible, rectify the problem and rerun the check. Alternatively, if you are satisfied that your system meets the requirements, then you can select the check box for the failed check to manually verify the requirement.</p>
Summary	Review the information displayed on this screen, and then click Install .
Install	This screen displays status information while the product is being installed.
Configuration Assistants	<p>This screen is displayed only if you select Administrator or Runtime on the Select Installation type screen.</p> <p>This screen displays status information for the Oracle Net Configuration Assistant that configures Oracle Net. When the message is displayed at the end of this process, click OK to continue.</p>
Oracle Net Configuration Assistant: Welcome	<p>This screen is displayed only if you select Administrator or Runtime on the Select Installation Type screen.</p> <p>Review the information on this screen, and then click Next.</p> <p>The Oracle Net Configuration Assistant configures the easy connect naming method. For more information about this naming method, click Help.</p>
Oracle Net Configuration Assistant: Done	Click Finish to continue.
Execute Configuration Scripts	When prompted, read the instructions and then run the script mentioned on this screen. Click OK to continue.
End of Installation	To exit from Oracle Universal Installer, click Exit , and then click Yes .

4. If you chose an installation type that runs Oracle Net Configuration Assistant (NetCA) in interactive mode, you must provide detailed information about configuring the network.

If you need assistance when using NetCA in interactive mode, click **Help** on any screen.

Note: If you chose a default installation, NetCA runs in noninteractive mode.

5. When all of the configuration tools have finished, click **Exit**, then click **Yes** to exit from Oracle Universal Installer.

Refer to [Chapter 4](#) for information about tasks that you must complete after you have installed the software.

Postinstallation Tasks

This chapter describes how to complete postinstallation tasks after you have installed the software. It includes information about the following topics:

- [Required Postinstallation Tasks](#)
- [Recommended Postinstallation Tasks](#)
- [Required Product-Specific Postinstallation Tasks](#)

You must perform the tasks listed in the "[Required Postinstallation Tasks](#)" section. Oracle recommends that you perform the tasks listed in the "[Recommended Postinstallation Tasks](#)" section after all installations.

If you installed and intend to use any of the products listed in the "[Required Product-Specific Postinstallation Tasks](#)" section, then you must perform the tasks listed in the product-specific subsections.

Note: This chapter describes basic configuration only. Refer to *Oracle Database Administrator's Reference for Linux and Solaris Operating Systems* and product-specific administration and tuning guides for more detailed configuration and tuning information.

Required Postinstallation Tasks

You must perform the tasks described in the following sections after completing an installation:

- [Downloading and Installing Patches](#)
- [Running Oracle Enterprise Manager Java Console](#)
- [Updating Instant Client](#)
- [Connecting with Instant Client](#)

Downloading and Installing Patches

Check the *OracleMetaLink* Web site for required patches for your installation.

Note: You cannot update Instant Client by downloading a patch. Use the procedure under "[Updating Instant Client](#)" on page 4-2 to update Instant Client.

To download required patches:

1. Use a Web browser to view the Oracle*MetaLink* Web site:

<http://metalink.oracle.com>

2. Log in to Oracle*MetaLink*.

Note: If you are not an Oracle*MetaLink* registered user, click **Register for MetaLink!** and follow the registration instructions.

3. On the main Oracle*MetaLink* page, click **Patches**.
4. Select **Simple Search**.
5. Specify the following information, then click **Go**:
 - In the **Search By** field, choose Product or Family, then specify RDBMS Server.
 - In the **Release** field, specify the current release number.
 - In the **Patch Type** field, specify Patchset/Minipack.
 - In the **Platform or Language** field, select your platform.

Running Oracle Enterprise Manager Java Console

In addition to using Oracle Enterprise Manager Database Control or Grid Control to manage an Oracle Database 10g database, you can also use the Oracle Enterprise Manager Java Console to manage databases from this release or previous releases. The Java Console is installed by the Administrator installation type.

Note: Oracle recommends that you use Grid Control or Database Control in preference to the Java Console when possible.

To start the Java Console, follow these steps:

1. Set the ORACLE_HOME environment variable to specify the Oracle home directory where you installed Oracle Client.
2. Set the LD_LIBRARY_PATH shared library path environment variable of the system to the following:

```
$ORACLE_HOME/lib:$LD_LIBRARY_PATH
```

3. Enter the following command to start the Java Console:

```
$ $ORACLE_HOME/bin/oemapp console
```

See Also: The "Logging In to Oracle Enterprise Manager Database Control" section in Chapter 5 of *Oracle Database Installation Guide for Linux x86* for information about logging in to Oracle Enterprise Manager Database Control

Updating Instant Client

To update Instant Client:

1. Download Instant Client from Oracle Technology Network (<http://www.oracle.com/technology/index.html>).

2. If you want to place the files in the existing directory, then ensure that the directory is empty.

If you want to place the files into a different directory (and remove the previous files), ensure that you update the `PATH` environment variable setting to reflect the new location.

Caution: A restriction on using Instant Client or Instant Client Light is that you cannot perform patch upgrades on it using the `opatch` utility. The reason is that the Instant Client installation does not create an inventory, which the patch upgrade process needs in order to perform. The absence of an inventory also means that installed interim patch reporting and conflict detection before a patch attempt are not possible.

Connecting with Instant Client

If you installed the Instant Client installation type, you can configure users' environments to enable dynamically linked client applications to connect to a database as follows:

1. Set the appropriate shared library path environment variable for your platform to specify the directory that contains the Instant Client libraries. For the Instant Client installation type, this directory is the Oracle home directory that you specified during the installation, for example:

```
/u01/app/oracle/product/10.2.0/client_1
```

The required environment variable is `LD_LIBRARY_PATH`:

2. Use one of the following methods to specify database connection information for the client application:
 - Specify a SQL connect URL string using the following format:


```
//host:port/service_name
```
 - Set the `TNS_ADMIN` environment variable to specify the location of the `tnsnames.ora` file and specify a service name from that file.
 - Set the `TNS_ADMIN` environment variable and set the `TWO_TASK` environment variable to specify a service name from the `tnsnames.ora` file.

Note: You do *not* have to specify the `ORACLE_HOME` environment variable.

Recommended Postinstallation Tasks

Oracle recommends that you perform the tasks described in the following section after completing an installation:

- [Configuring Instant Client Light](#)
- [Creating a Backup of the `root.sh` Script](#)
- [Connecting Instant Client or Instant Client Light to an Oracle Database](#)
- [Setting Up User Accounts](#)
- [Setting the `NLS_LANG` Environment Variable](#)

- [Generating the Client Static Library](#)

Configuring Instant Client Light

When you install Instant Client, the Instant Client libraries are installed under the `ORACLE_HOME` directory and the Instant Client Light specific library is installed under the `ORACLE_HOME/light` directory. To configure Instant Client Light, you must replace the `ORACLE_HOME/libociei.so` file with the `ORACLE_HOME/light/libociicus.so` file.

After replacing the library file, you must set the `LD_LIBRARY_PATH` environment variable to point to the location of the Instant Client shared library files. For example:

```
$ORACLE_HOME
```

Creating a Backup of the root.sh Script

Oracle recommends that you back up the `root.sh` script after you complete an installation. If you install other products in the same Oracle home directory, then Oracle Universal Installer updates the contents of the existing `root.sh` script during the installation. If you require information contained in the original `root.sh` script, then you can recover it from the backed up `root.sh` file.

Connecting Instant Client or Instant Client Light to an Oracle Database

Before you can connect Instant Client (including Instant Client Light) to an Oracle database, make sure that the `LD_LIBRARY_PATH` environment variable specifies the directory that contains the Instant Client libraries. This directory is the `ORACLE_HOME` directory that you specified during installation.

For example, the shared libraries for Instant Client or Instant Client Light (if you have configured Instant Client Light), are in:

```
/u01/app/oracle/product/10.2.0/client_1
```

After you have checked the `LD_LIBRARY_PATH` environment variable, you can use any of the following methods to specify Oracle Database connection information for client applications:

- [Specifying a Connection by Using the Easy Connect Naming Method](#)
- [Specifying a Connection by Configuring a tnsnames.ora File](#)
- [Specifying a Connection by Using an Empty Connect String and the LOCAL Environment Variable](#)

Specifying a Connection by Using the Easy Connect Naming Method

You can specify a connection address to an Oracle Database directly from a client application, without having to configure a `tnsnames` setting for the Instant Client. This method is convenient in that you do not have to create and manage a `tnsnames.ora` file. However, your application users will need to specify the host name and port number when they want to log in to your application.

For example, suppose you are running SQL*Plus on the client machine and want to connect to the `sales_us` database, which is located on a server whose host name is `shobeen` and port number is `1521`. If you launch SQL*Plus from the command line, then you can log in as follows:

```
Enter user-name: system@admin@//shobeen:1521/sales_us
```

Similarly, in your application code, you can use Oracle Call Interface net naming methods to create the Instant Client-to-Oracle Database connection. For example, the following formats in the `OCIserverAttach()` call specify the connection information:

- Specify a SQL connect URL string using the following format:

```
//host[:port][//service_name]
```

For example:

```
//shobeen:1521/sales_us
```

- Alternatively, you can specify the SQL connect information as an Oracle Net keyword-value pair. For example:

```
"(DESCRIPTION=(ADDRESS=(PROTOCOL=tcp) (HOST=shobeen) (PORT=1521))
(CONNECT_DATA=(SERVICE_NAME=sales_us)))"
```

See Also: *Oracle Call Interface Programmer's Guide* for more information on using Oracle Call Interface Instant Client

Specifying a Connection by Configuring a `tnsnames.ora` File

By default, when you install Instant Client, Oracle Universal Installer does not include a sample `tnsnames.ora` file nor the Oracle Net Configuration Assistant utility normally used to create it. However, if you want to shield users from having to specify actual host names and port numbers, you may want to consider using a `tnsnames.ora` file to set the Client-to-Oracle Database connection.

You can create the `tnsnames.ora` file manually by copying and modifying a version of this file from another Oracle installation, or you can use Oracle Net Configuration Assistant to create and manage it for you.

To install Oracle Net Configuration Assistant:

1. Run Oracle Universal Installer.
2. Select the **Custom** installation type.
3. In the Available Product Components list, select **Oracle Network Utilities** and click **Next**.
4. In the Summary screen, click **Install**, then click **Exit** and **Yes** to exit Oracle Universal Installer.

After you have installed Oracle Net Configuration Assistant, follow the procedure in "Connecting Oracle Database Client to an Oracle Database" on page 4-3 for each client computer.

Then, on each client computer, configure either of the following settings:

- Set the `TNS_ADMIN` environment variable to specify the location of the `tnsnames.ora` file and specify a service name from that file.
- Place the `tnsnames.ora` file in the `$ORACLE_HOME/network/admin` directory, and make sure that the `ORACLE_HOME` environment has been set to this Oracle home.

See Also: *Oracle Call Interface Programmer's Guide* for more information on Oracle Call Interface Instant Client connection strings

Specifying a Connection by Using an Empty Connect String and the LOCAL Environment Variable

You can set the connect string to an empty connect string (""), and then set the LOCAL environment variable to one of the following values:

- A direct address, as described under ["Specifying a Connection by Using the Easy Connect Naming Method"](#) on page 4-4
- Oracle Net keyword-value pair
- A `tnsnames.ora` entry and `TNS_ADMIN` is set to the location of `tnsnames.ora`
- A `tnsnames.ora` entry and the following:
 - `tnsnames.ora` file located in `$ORACLE_HOME/network/admin`
 - The `ORACLE_HOME` environment variable set to this Oracle home

This method allows your applications to specify internally a connection string if the application code itself uses an empty connection string. The benefit of an empty connect string is that the application itself does not need to specify the `tnsnames.ora` entry. Instead, when a user invokes the application, the location of the database is determined by a script or the environment, depending on where you have set the LOCAL environment variable. The disadvantage of using empty strings is that you need to configure this additional information in order for your application to connect to the database.

Setting Up User Accounts

For information about setting up additional user accounts, refer to *Oracle Database Administrator's Reference for Linux and Solaris Operating Systems*.

Setting the NLS_LANG Environment Variable

NLS_LANG is an environment variable that specifies the locale behavior for Oracle software. This variable sets the language and territory used by the client application and the database server. It also sets the character set for the client, which is the character set for data entered or displayed by an Oracle client program, such as SQL*PLUS.

Generating the Client Static Library

The client static library (`libclntst10.a`) is not generated during installation. If you want to link your applications to the client static library, you must first generate it as follows:

1. Switch user to `oracle`.
2. Set the `ORACLE_HOME` environment variable to specify the Oracle home directory used by the Oracle Client installation. For example:
 - Bourne, Bash, or Korn shell:

```
$ ORACLE_HOME=/u01/app/oracle/product/10.2.0/client_1
$ export ORACLE_HOME
```
 - C shell:

```
% setenv ORACLE_HOME /u01/app/oracle/product/10.2.0/client_1
```
3. Enter the following command:

```
$ $ORACLE_HOME/bin/genclntst
```

Required Product-Specific Postinstallation Tasks

The following sections describe platform-specific postinstallation tasks that you must perform if you installed and intend to use the products mentioned:

- [Configuring Oracle Net Services](#)
- [Configuring Oracle Precompilers](#)
- [Configuring OCCI](#)
- [Configuring ODBC](#)

Configuring Oracle Net Services

If you have a previous release of Oracle software installed on this system, you might want to copy information from the Oracle Net `tnsnames.ora` configuration file from the previous release to the corresponding file for the new release.

Note: The default location for the `tnsnames.ora` file is the `$ORACLE_HOME/network/admin/` directory. However, you can also use a central location for this file, for example `/etc`.

If necessary, you can also add connection information for additional database instances to the new file.

Configuring Oracle Precompilers

This section describes postinstallation tasks for Oracle precompilers.

Note: All precompiler configuration files are located in the `$ORACLE_HOME/precomp/admin` directory.

Configuring Pro*C/C++

Verify that the `PATH` environment variable setting includes the directory that contains the C compiler executable.

[Table 4–1](#) shows the default directories and the appropriate command to verify the path setting of the compiler.

Table 4–1 C/C++ Compiler Directory

Path	Command
<code>/usr/bin</code>	<code>\$ which gcc</code>
<code>/opt/intel/compiler70/ia32/bin</code>	<code>\$ which icc</code>

Configuring Pro*FORTRAN

Verify that the `PATH` environment variable setting includes the directory that contains the FORTRAN compiler executable. You can verify the path setting by using the `which xlf` command. The path for the FORTRAN executable is `/usr/bin`.

Configuring OCCI

Two sets of Oracle C++ Call Interface (OCCI) libraries are installed with this release on Red Hat Enterprise Linux 3. One set is for use with GNU C++ compiler version 2.96 and the other set is for use with GNU C++ version 3.2. The libraries are installed in the following locations:

- Libraries for use with GNU C++ version 2.96 supported on Red Hat Enterprise Linux 3 only:

```
$ORACLE_HOME/lib/libocci10_296.a
$ORACLE_HOME/lib/libocci10_296.so.10.1
```

- Libraries for use with GNU C++ version 3.2:

```
$ORACLE_HOME/lib/libocci10.a
$ORACLE_HOME/lib/libocci10.so.10.1
```

- Libraries for use with GNU C++ version 3.3 supported on SUSE Linux Enterprise Server 9:

```
$ORACLE_HOME/lib/libocci10.a
$ORACLE_HOME/lib/libocci10.so.10.1
```

Although the libraries are installed on all Linux distributions, they are not supported on all distributions. The following table shows the supported GNU C++ version for each distribution.

Linux Distribution	GNU C++ Versions Supported
Red Hat Enterprise Linux AS/ES 3	Both 2.96 and 3.2
SUSE Linux Enterprise Server 9	Only 3.3.3-43

To create the required symbolic links in the `$ORACLE_HOME/lib` directory to the appropriate libraries for a distribution, you must create symbolic links to the libraries or overwrite the libraries after taking their backup. For example, you can use the following commands to create symbolic links to the libraries after removing `$ORACLE_HOME/lib/libocci10.a` and `$ORACLE_HOME/lib/libocci10.so.10.1`:

```
$ ln -s $ORACLE_HOME/lib/libocci10_296.a $ORACLE_HOME/lib/libocci10.a
$ ln -s $ORACLE_HOME/lib/libocci10_296.so.10.1 $ORACLE_HOME/lib/libocci10.so.10.1
```

Note: If you run `$ORACLE_HOME/bin/genocci.sh`, then the `libocci.so.10.1` library is regenerated by default. To regenerate the gcc2.96 OCCI shared object when you have not renamed or created symbolic linked the gcc 2.96 OCCI libraries to the default names, you must set the `BUILD_CCC296` environment variable to 1 before running `$ORACLE_HOME/bin/genocci.sh`. This will regenerate the `libocci10_296.so.10.1` library.

Configuring ODBC

The current release of Oracle ODBC Driver for Linux complies with the ODBC 3.52 specification. Features of the Linux version of the ODBC driver are based on the features of the Microsoft Windows version of the same driver. To set up the Oracle ODBC Driver:

1. Add DSN entries for the Oracle ODBC driver in the `odbc.ini` and `odbcinst.ini` files.

The following are sample entries of the `odbc.ini` file:

```
[Oracle10gODBCDriver]
Application Attributes = T
Attributes = W
BatchAutocommitMode = IfAllSuccessful
CloseCursor = F
DisableDPM = F
DisableMTS = T
Driver = Oracle10gODBCDriver
DSN = TestDSN
EXECSchemaOpt =
EXECSyntax = T
Failover = T
FailoverDelay = 10
FailoverRetryCount = 10
FetchBufferSize = 64000
ForceWCHAR = F
Lobs = T
Longs = T
MetadataIdDefault = F
QueryTimeout = T
ResultSets = T
# ServerName is TNS_alias_from_tnsnames.ora
ServerName = OraDB
SQLGetData extensions = F
Translation DLL =
Translation Option = 0
UserID = scott
```

The following are sample entries of the `odbcinst.ini` file:

```
[Oracle10gODBCDriver]
Description      = Oracle 10g Linux ODBC driver
Driver = $ORACLE_HOME/lib/libsqora.so.10.1
Setup            =
FileUsage        =
CPTimeout        =
CPReuse          =
```

See Also: For more information about adding DSN entries, refer to

<http://www.unixodbc.org>

2. If required, set the `ORACLE_HOME` environment variable.
3. Run the following commands to set the `LD_LIBRARY_PATH` environment variable:

- Bourne, Bash, or Korn shell:

```
LD_LIBRARY_PATH=driver_manager_install_directory/lib:$LD_LIBRARY_PATH
LD_LIBRARY_PATH=$ORACLE_HOME/lib:$LD_LIBRARY_PATH
export LD_LIBRARY_PATH
```

- C shell:

```
setenv LD_LIBRARY_PATH
driver_manager_install_directory/lib:$LD_LIBRARY_PATH
setenv LD_LIBRARY_PATH $ORACLE_HOME/lib:$LD_LIBRARY_PATH
```

See Also: Appendix F, "Using Oracle ODBC Driver" of *Oracle Database Administrator's Reference for UNIX-Based Operating Systems*

Removing Oracle Software

This chapter describes how to completely remove all software from an Oracle home directory.

See Also: If you want to remove an individual product, refer to the product-specific documentation for requirements and restrictions.

Removing Oracle Software

The following steps describe how to use Oracle Universal Installer to remove Oracle software from an Oracle home:

Note: Always use Oracle Universal Installer to remove Oracle software. Do not delete any Oracle home directories without first using Oracle Universal Installer to remove the software.

1. If necessary, log in as the `oracle` user:

```
$ su - oracle
```

2. Set the `ORACLE_HOME` environment variable to specify the path of the Oracle home directory that you want to remove:

- Bourne, Bash, or Korn shell:

```
$ ORACLE_HOME=/u01/app/oracle/product/10.2.0/client_1  
$ export ORACLE_HOME
```

- C shell:

```
$ setenv ORACLE_HOME /u01/app/oracle/product/10.2.0/client_1
```

3. Start Oracle Universal Installer as follows:

```
$ $ORACLE_HOME/oui/bin/runInstaller
```

4. In the Welcome window, click **Deinstall Products**.

The Inventory screen appears, listing all of the Oracle homes on the system.

5. In the Inventory screen, select the Oracle home and the products that you want to remove, then click **Remove**.

Oracle Universal Installer displays a confirmation window asking you to confirm that you want to deinstall the products and their dependent components.

6. Click **Yes**.

Oracle Universal Installer displays a progress indicator as it removes the software.

7. When the products have been deleted, click **Cancel** to exit from Oracle Universal Installer, and then click **Yes**.

Installing and Configuring Oracle Database Using Response Files

This appendix describes how to install and configure Oracle products using response files. It includes information about the following topics:

- [Introduction](#)
- [Preparing a Response File](#)
- [Running Oracle Universal Installer in Silent or Suppressed Mode](#)

Introduction

You can automate the installation and configuration of Oracle software, either fully or partially, by specifying a response file when you start Oracle Universal Installer. Oracle Universal Installer uses the values contained in the response file to provide answers to some or all of Oracle Universal Installer prompts:

- If you include responses for all of the prompts in the response file and specify the `-silent` option when starting Oracle Universal Installer, then Oracle Universal Installer runs in silent mode. During a silent-mode installation, Oracle Universal Installer does not display any screens. Instead, it displays progress information in the terminal that you used to start it.
- If you include responses for some or all of the prompts in the response file and omit the `-silent` option, then Oracle Universal Installer runs in suppressed mode. During a suppressed-mode installation, Oracle Universal Installer displays only the screens for which you did not specify all required information. You can also use variables in the response file or command-line options to suppress other installer screens, such as the Welcome screen or Summary screen, that do not prompt for information.

The following table describes several reasons why you might want to run Oracle Universal Installer in silent mode or suppressed mode:

Mode	Uses
Silent	<p>Use silent mode if you want to:</p> <ul style="list-style-type: none"> ■ Complete an unattended installation, which you might schedule using operating system utilities such as <code>at</code> ■ Complete several similar installations on multiple systems without user interaction ■ Install the software on a system that does not have X Window System software installed on it <p>Oracle Universal Installer displays progress information in the terminal that you used to start it, but it does not display any of Oracle Universal Installer screens.</p>
Suppressed	<p>Use suppressed mode if you want to complete similar Oracle software installations on more than one system, providing default answers to some, but not all of Oracle Universal Installer prompts.</p> <p>If you do not specify information required for a particular Installer screen in the response file, Oracle Universal Installer displays that screen. It suppresses screens for which you have provided all of the required information.</p>

Installation Overview

To install and configure Oracle products using Oracle Universal Installer in silent or suppressed mode, follow these steps:

Note: You must complete all required preinstallation tasks on a system before running Oracle Universal Installer in silent or suppressed mode.

1. Prepare a response file.
2. Run Oracle Universal Installer in silent or suppressed mode.

These steps are described in the following sections.

Preparing a Response File

This section describes the methods that you can use to prepare a response file for use during silent-mode or suppressed-mode installations:

- [Editing a Response File Template](#)
- [Recording a Response File](#)

Editing a Response File Template

This method is most useful for the Instant Client, Administrator, or Runtime installation types.

Oracle provides response file templates for each product and installation type, and for each configuration tool. These files are located in the `client/response` directory on the DVD.

Note: If you copied the software to a hard disk, the response files are located in the `Disk1/response` directory.

Table A-1 lists the response files provided with Oracle Client.

Table A-1 Response Files

Response File	Description
<code>instantclient.rsp</code>	Instant Client installation of Oracle Client
<code>clientadmin.rsp</code>	Administrator installation of Oracle Client
<code>clientruntime.rsp</code>	Runtime installation of Oracle Client
<code>clientcustom.rsp</code>	Custom installation of Oracle Client

To prepare a response file:

1. Copy the response file from the response file directory to a directory on your system:

```
$ cp /directory_path/response/response_file.rsp local_directory
```

In this example, `directory_path` is the path of the `client` directory on the DVD. If you have copied the software to a hard drive, you can edit the file in the response directory if you prefer.

2. Open the response file in a text editor:

```
$ vi /local_dir/response_file.rsp
```

3. Edit the file, following the instructions in the file.

Note: Oracle Universal Installer or configuration assistant fails if you do not correctly configure the response file. Refer to the "[Silent-Mode Response File Error Handling](#)" section on page C-4 for more information about troubleshooting a failed silent-mode installation.

Recording a Response File

This method is most useful for Custom or software-only installations.

You can use Oracle Universal Installer in interactive mode to record a response file that you can edit and then use to complete silent-mode or suppressed-mode installations. When you are recording the response file, you can either complete the installation, or you can exit from Oracle Universal Installer on the Summary page, before it starts to copy the software to the system.

Note: You cannot use record mode to create a response file during an installation that uses the Basic Installation method.

To record a new response file:

1. Complete the preinstallation tasks listed in [Chapter 2](#).

When you run Oracle Universal Installer to record a response file, it checks the system to verify that it meets the requirements to install the software. For this reason, Oracle recommends that you complete all of the required preinstallation tasks and record the response file while completing an installation.

2. If you have not installed Oracle software on this system previously, create the `oraInst.loc` file, as described in the previous section.
3. Ensure that the Oracle software owner user (typically `oracle`) has permissions to create or write to the Oracle home path that you will specify when you run Oracle Universal Installer.
4. To record a response file, enter a command similar to the following to start Oracle Universal Installer:

Note: Do not specify a relative path to the response file. If you specify a relative path, Oracle Universal Installer fails.

```
$ /directory_path/runInstaller -record -destinationFile filename
```

In the previous example:

- `directory_path` is the path of the `client` directory on the DVD, or the path of the `Disk1` directory on the hard drive
 - The `-record` parameter specifies that you want to record the responses that you enter in a response file
 - `filename` is the full path and file name of the response file that you want to record
5. On each Installer screen, specify the required information.
 6. When Oracle Universal Installer displays the Summary screen, do one of the following:
 - Click **Install** to create the response file, then continue with the installation.
 - Click **Cancel**, then **Yes** to create the response file but exit from Oracle Universal Installer without installing the software.
- The response file is saved in the location that you specified using the `-destinationFile` option.
7. If you did not complete the installation, delete the Oracle home directory that Oracle Universal Installer created using the path you specified on the Specify File Locations screen.
 8. Before using the recorded response file on another system, use a text editor to edit the file and make any required changes.

Use the comments in the file as a guide when editing it.

Running Oracle Universal Installer in Silent or Suppressed Mode

To run Oracle Universal Installer in silent or suppressed mode, follow these steps:

1. Complete the preinstallation tasks listed in [Chapter 2](#).
2. Log in as the Oracle software owner user (typically `oracle`).
3. If you are completing a suppressed-mode installation, set the `DISPLAY` environment variable.

Note: You do not have to set the `DISPLAY` environment variable if you are completing a silent-mode installation.

4. To start Oracle Universal Installer in silent or suppressed mode, enter a command similar to the following:

Note: Do not specify a relative path to the response file. If you specify a relative path, Oracle Universal Installer fails.

```
$ /directory_path/runInstaller [-silent] [-noconfig] -responseFile filename
```

In this example:

- *directory_path* is the path of the `client` directory on the DVD or the path of the `Disk1` directory on the hard drive.
- `-silent` indicates that you want to run Oracle Universal Installer in silent mode.
- `-noconfig` suppresses running the configuration assistants during installation, and a software-only installation is performed instead.
- *filename* is the full path and file name of the installation response file that you configured.

Note: For more information about other options for the `runInstaller` command, enter the following command:

```
$ /directory_path/runInstaller -help
```

5. When the installation completes, log in as the `root` user and run the `root.sh` script:

```
$ su
# /oracle_home_path/root.sh
```

Globalization Support

This appendix describes these Globalization Support topics:

- [About NLS_LANG Environment Variable](#)
- [Running Oracle Universal Installer in Different Languages](#)

About NLS_LANG Environment Variable

Oracle provides Globalization Support that enables users to interact with a database in their preferred locale and character set settings. Setting the NLS_LANG environment variable specifies locale behavior for Oracle software. It sets the language and territory used by the client application and the database server. It also sets the character set for entering and displaying data by a client program, such as SQL*Plus.

The NLS_LANG environment variable uses the following format:

```
NLS_LANG=language_territory.characterset
```

where:

Parameter	Description
<i>language</i>	Specifies the language used for displaying Oracle messages, sorting, day names, and month names.
<i>territory</i>	Specifies the conventions for default date, monetary and numeric formats.
<i>characterset</i>	Specifies the encoding used by the client application (normally the Oracle character set that corresponds to the character set of the user terminal or the operating system)

The NLS_LANG environment variable is set as a local environment variable for the shell on all UNIX-based platforms. For example, if the operating system locale setting is `en_US.UTF-8`, then the corresponding NLS_LANG environment variable should be set to `AMERICAN_AMERICA.AL32UTF8`.

See Also: *Oracle Database Globalization Support Guide* for information about the NLS_LANG parameter and Globalization Support initialization parameters

Caution: AL32UTF8 is the Oracle Database character set that is appropriate for XMLType data. It is equivalent to the IANA registered standard UTF-8 encoding, which supports all valid XML characters.

Do not confuse Oracle Database database character set UTF8 (no hyphen) with database character set AL32UTF8 or with character encoding UTF-8. Database character set UTF8 has been superseded by AL32UTF8. Do not use UTF8 for XML data. UTF8 supports only Unicode version 3.1 and earlier; it does not support all valid XML characters. AL32UTF8 has no such limitation.

Using database character set UTF8 for XML data could potentially cause a fatal error or affect security negatively. If a character that is not supported by the database character set appears in an input-document element name, a replacement character (usually "?") is substituted for it. This will terminate parsing and raise an exception.

The following table lists some of the valid values for the NLS_LANG environment variable.

Note: Refer to the operating system specific documentation on how to determine the operating system locale environment setting.

Operating system locale	NLS_LANG values
French (France)	FRENCH_FRANCE.WE8ISO8859P15, FRENCH_FRANCE.WE8ISO8859P1, FRENCH_FRANCE.WE8MSWIN1252, FRENCH_FRANCE.AL32UTF8
Japanese (Japan)	JAPANESE_JAPAN.JA16EUC, JAPANESE_JAPAN.JA16SJIS, JAPANESE_JAPAN.AL32UTF8

Running Oracle Universal Installer in Different Languages

Oracle Universal Installer runs by default in the selected language of your operating system. You can also run Oracle Universal Installer in the following languages:

- Brazilian Portuguese
- German
- Japanese
- Simplified Chinese
- Traditional Chinese
- French
- Italian
- Korean
- Spanish

To run Oracle Universal Installer in a different language, you can use any of the following methods:

- Change the language in which the operating system is running before you run Oracle Universal Installer. You can change the language in which the operating

system is running by clicking **Language** on the Login screen and selecting the required language from the list.

- To run Oracle Universal Installer in another language from the shell prompt, use a command similar to the following after changing to the Disk1 directory (or to the directory that contains the `runInstaller` file):

```
# LANG=language_territory.characterset ./runInstaller
```

For example, to run Oracle Universal Installer in German, use the following command:

```
# LANG=de_DE.UTF-8 ./runInstaller
```

See Also: *Oracle Universal Installer and OPatch User's Guide* for information about running Oracle Universal Installer in different languages

Troubleshooting

This appendix contains information about troubleshooting. It includes information about the following topics:

- [Verify Requirements](#)
- [X Window Display Errors](#)
- [What to Do If an Installation Error Occurs?](#)
- [Reviewing the Log of an Installation Session](#)
- [Troubleshooting Configuration Assistants](#)
- [Silent-Mode Response File Error Handling](#)
- [Cleaning Up After a Failed Installation](#)

Verify Requirements

Before performing any of the troubleshooting steps in this appendix, ensure that the system meets the requirements and that you have completed all of the preinstallation tasks specified in [Chapter 2](#).

Read the Release Notes

Read the release notes for the product before installing it. The release notes are available on the Oracle Database 10g disc. The latest version of the release notes is also available on the Oracle Technology Network Web site:

<http://www.oracle.com/technology/documentation/index.html>

X Window Display Errors

If you are running Oracle Universal Installer on a remote system and you want to display Oracle Universal Installer's user interface on your local system, you might see error messages similar to the following:

```
"Failed to connect to server"  
"Connection refused by server"  
"Can't open display"
```

If you see one of these error messages, follow these steps:

Note: This procedure applies only to users of UNIX workstations. If you are using a PC or other system with X server software installed, refer to the X server documentation for information about how to permit remote systems to display X applications on the local system.

1. In a local terminal window, log in as the user that started the X window session. Enter the following command:

```
$ xhost fully_qualified_remote_host_name
```

For example:

```
$ xhost somehost.us.acme.com
```
2. Enter the following commands, where *workstation_name* is the host name or IP address of your workstation:
 - Bourne, Bash, or Korn shell:

```
$ DISPLAY=workstation_name:0.0  
$ export DISPLAY
```
 - C shell:

```
% setenv DISPLAY workstation_name:0.0
```
3. To determine whether X Window applications display correctly on the local system, enter the following command:

```
$ xclock
```

The X clock should appear on your monitor.
4. If the X clock appears, close the X clock and start Oracle Universal Installer again.

What to Do If an Installation Error Occurs?

If you encounter an error during installation:

- Do not exit Oracle Universal Installer.
- If you clicked **Next** after you entered incorrect information on one of the installation screens, click **Back** to return to the screen and correct the information.
- If you encounter an error while Oracle Universal Installer is copying or linking files, refer to the "[Reviewing the Log of an Installation Session](#)" section on page C-2.
- If you encounter an error while a configuration assistant is running, refer to the "[Troubleshooting Configuration Assistants](#)" section on page C-3.
- If you cannot resolve the problem, remove the failed installation by following the steps listed in the "[Cleaning Up After a Failed Installation](#)" section on page C-4.

Reviewing the Log of an Installation Session

During an installation, Oracle Universal Installer records all of the actions that it performs in a log file. If you encounter problems during the installation, review the log file for information about possible causes of the problem.

To view the log file, follow these steps:

1. If necessary, enter the following command to determine the location of the `oraInventory` directory:

```
$ cat /etc/oraInst.loc
```

The `inventory_loc` parameter in this file specifies the location of the `oraInventory` directory.

2. Enter the following command to change directory to Oracle Universal Installer log file directory, where `orainventory_location` is the location of the `oraInventory` directory:

```
$ cd /orainventory_location/logs
```

3. Enter the following command to determine the name of the log file:

```
$ ls -ltr
```

This command lists the files in the order of creation, with the most recent file shown last. Installer log files have names similar to the following, where `date_time` indicates the date and time that the installation started:

```
installActionsdate_time.log
```

4. To view the most recent entries in the log file, where information about a problem is most likely to appear, enter a command similar to the following:

```
$ tail -50 installActionsdate_time.log | more
```

This command displays the last 50 lines in the log file.

5. If the error displayed by Oracle Universal Installer or listed in the log file indicates a relinking problem, refer to the following file for more information:

```
$ORACLE_HOME/install/make.log
```

Troubleshooting Configuration Assistants

To troubleshoot an installation error that occurs when a configuration assistant is running:

- Review the installation log files listed in the "[Reviewing the Log of an Installation Session](#)" section on page C-2.
- Review the specific configuration assistant log file located in the `$ORACLE_HOME/cfgtoollogs` directory. Try to fix the issue that caused the error.
- If you see the "Fatal Error. Reinstall" message, look for the cause of the problem by reviewing the log files. Refer to the "[Fatal Errors](#)" section on page C-4 for further instructions.

Configuration Assistant Failure

Oracle configuration assistant failures are noted at the bottom of the installation screen. The configuration assistant interface displays additional information, if available. The configuration assistant execution status is stored in the following file:

```
oraInventory_location/logs/installActionsdate_time.log
```

The execution status codes are listed in the following table:

Status	Result Code
Configuration assistant succeeded	0
Configuration assistant failed	1
Configuration assistant cancelled	-1

Fatal Errors

If you receive a fatal error while a configuration assistant is running, you must remove the current installation and reinstall the Oracle software, as follows:

1. Remove the failed installation as described in the "[Cleaning Up After a Failed Installation](#)" section on page C-4.
2. Correct the cause of the fatal error.
3. Reinstall the Oracle software.

Silent-Mode Response File Error Handling

To determine whether a silent-mode installation succeeds or fails, refer to the following log file:

```
/oraInventory_location/logs/silentInstalldate_time.log
```

If necessary, refer to the previous section for information about determining the location of the `oraInventory` directory.

A silent installation fails if:

- You do not specify a response file
- You specify an incorrect or incomplete response file
- Oracle Universal Installer encounters an error, such as insufficient disk space

Oracle Universal Installer or configuration assistant validates the response file at run time. If the validation fails, the silent-mode installation or configuration process ends. Oracle Universal Installer treats values for parameters that are of the wrong context, format, or type as if no value was specified in the file.

Cleaning Up After a Failed Installation

If an installation fails, you must remove files that Oracle Universal Installer created during the attempted installation and remove the Oracle home directory. Perform the following steps to remove the files:

1. Start Oracle Universal Installer as described in the "[Installing the Oracle Client Software](#)" section on page 3-4.
2. Click **Deinstall Products** on the Welcome window or click **Installed Products** on any Installer window.
The Inventory window appears, listing installed products.
3. Select the Oracle home that contains the products that you want to remove, then click **Remove**.
4. Manually remove the Oracle home directory created during the failed installation.

5. Reinstall the Oracle software.

Frequently Asked Questions About Installation

Use the following guidelines to decide how to install Oracle Database components:

- [Installing Oracle Database or Oracle Database Client](#)
- [Installing Oracle Database Tools](#)
- [Installing Oracle Database with Oracle Applications](#)
- [Installing Oracle Database Heterogeneous Connectivity Tools \(Gateways\)](#)

Installing Oracle Database or Oracle Database Client

- [I only need one instance of Oracle Database or I just want to install a test database to get familiar with the product.](#)
- [My site needs a database designed for transaction-heavy or data warehousing applications.](#)
- [I need to install multiple Oracle databases.](#)
- [My site requires client connections to the Oracle database.](#)
- [My Oracle Database client nodes have limited disk space.](#)
- [I need to upgrade my Oracle Database.](#)
- [The computers at my site have been configured to run as a cluster. How should I install Oracle Database?](#)
- [I need to migrate my non-Oracle databases to Oracle Database.](#)

I only need one instance of Oracle Database or I just want to install a test database to get familiar with the product.

- If you want a quick installation using the default installation settings, then refer to *Oracle Database Quick Installation Guide for Linux x86*.
- If your site has special requirements, then refer to *Oracle Database Installation Guide for Linux x86*.

My site needs a database designed for transaction-heavy or data warehousing applications.

If you want to create a starter database designed for transaction-heavy or data warehousing applications, then use *Oracle Database Installation Guide for Linux x86*. Select the Advanced Installation method, and then select the database type you want on the Select Database Configuration screen.

See Also: *Oracle Database Data Warehousing Guide* after installation

Alternatively, you can install Oracle OLAP during the Oracle Database installation. Oracle OLAP provides optimal support for database environments that must meet OLAP requirements. To do so, select Advanced Installation, then Custom, and on the Available Product Components screen, select Oracle OLAP.

See Also:

- *Oracle OLAP Application Developer's Guide*
- *Oracle OLAP Reference*
- *Oracle OLAP DML Reference*
- *Oracle OLAP Java API Reference*
- *Oracle OLAP Analytic Workspace Java API Reference*

I need to install multiple Oracle databases.

Use *Oracle Database Installation Guide for Linux x86* and consider running Oracle Universal Installer in noninteractive mode. This method lets you run Oracle Universal Installer at a command line using a response file that contains settings specific to each computer.

My site requires client connections to the Oracle database.

1. Install Oracle Database onto your server by using *Oracle Database Installation Guide for Linux x86*.
2. Use *Oracle Database Client Installation Guide for Linux x86* to install Oracle Database Client on each client node.

If you have many client nodes, consider staging the software centrally, mapping the drive, and running Oracle Universal Installer in noninteractive mode.

If the client nodes only require a default installation into a new Oracle home directory, consider using *Oracle Database Client Quick Installation Guide for Linux x86*.

My Oracle Database client nodes have limited disk space.

1. Install Oracle Database onto your server by using *Oracle Database Installation Guide for Linux x86*.
2. Use *Oracle Database Client Installation Guide for Linux x86* or *Oracle Database Client Quick Installation Guide for Linux x86* to install Oracle Database Client on each client node, and select the Instant Client installation type.

If you have many client nodes, then consider running Oracle Universal Installer in noninteractive mode.

I need to upgrade my Oracle Database.

Refer to *Oracle Database Administrator's Guide*.

The computers at my site have been configured to run as a cluster. How should I install Oracle Database?

Use any of the following installation scenarios:

- If you want to run a single-instance Oracle Database in a clustered environment, then install Oracle Clusterware either before or after you install Oracle Database.

- If you want a consolidated pool of storage for all databases in a cluster, then install Oracle Clusterware first and use Automatic Storage Management to manage this storage. Afterwards, install Oracle Database (which can be either single instance or Real Application Clusters).
- If you plan to use Oracle Real Application Clusters, first install Oracle Clusterware, and then install Oracle Real Application Clusters.

Refer to *Oracle Database Oracle Clusterware and Oracle Real Application Clusters Installation Guide* for the platform to install Oracle Clusterware or Oracle Real Application Clusters. Oracle Clusterware is available on the Oracle Clusterware installation media. *Oracle Database Installation Guide for Linux x86* explains how to install Automatic Storage Management as well as Oracle Database.

Oracle Clusterware is a key component required by Oracle Real Application Clusters installations. Oracle Clusterware is an integrated cluster management solution that can bind multiple servers together to act as a single system referred to as a cluster. It performs workload management and component restart. For example, when an instance supporting a particular service fails, Oracle Clusterware restarts the service on the next available instance that you have configured for that service. Oracle Clusterware can monitor non-Oracle programs, as long as they are defined within the Oracle Clusterware environment using the High Availability API.

I need to migrate my non-Oracle databases to Oracle Database.

Use Oracle Migration Workbench to migrate your non-Oracle databases and applications to Oracle. Oracle Migration Workbench software and documentation are available at:

<http://www.oracle.com/technology/tech/migration/>

Installing Oracle Database Tools

- [I need to install Oracle Application Server.](#)
- [I need to administer and monitor my Oracle Database products.](#)
- [How do I manage security for my Oracle Database products?](#)
- [Does Oracle Database provide OLAP tools so that I can analyze data such as trends and time series in my database?](#)
- [Does Oracle Database provide data mining tools that I can use to discover hidden meaning in my data and predict likely outcomes based on my data?](#)
- [How do I perform backup and recovery operations for Oracle Database?](#)

I need to install Oracle Application Server.

See *Oracle Application Server Installation Guide*. How you install Application Server depends on whether you already have Oracle Database installed:

- If you do not have Oracle Database installed or you do not want Oracle Application Server to use any of your existing Oracle Databases, the Oracle Universal Installer lets you install Oracle Application Server with its own Oracle Database. This database is populated with the metadata that Oracle Application Server needs in order to run.
- If you want Oracle Application Server to use an existing Oracle Database, do the following:

1. From the Oracle Application Server installation media, run Oracle Application Server Repository Creation Assistant to populate your database with the metadata that Application Server needs.
2. Install the remaining Oracle Application Server components by following the instructions in the *Oracle Application Server Installation Guide*.

I need to administer and monitor my Oracle Database products.

To perform regular administrative functions such as creating, configuring, or deleting databases, or managing database templates, use one of the following methods:

To manage only the single database and listener that you are installing:

1. Use *Oracle Database Installation Guide for Linux x86* to install Oracle Database.
2. From Oracle Database, use Database Configuration Assistant to manage your databases.

You can also administer and monitor the database with Oracle Enterprise Manager Grid Control, which is installed by default with Oracle Database. Oracle Enterprise Manager Grid Control includes the Oracle Management Agent, Oracle Management Service, and Oracle Management Repository, as well as Grid Control, a browser-based central console through which administrators can perform all monitoring, administration, and configuration tasks for the enterprise.

See Also: *Oracle Enterprise Manager Grid Control Installation and Basic Configuration* available on the Enterprise Manager Grid Control installation media

To perform advanced administration tasks, such as monitoring Oracle Database and managing multiple hosts, application servers, and databases including the one that you are installing, install Oracle Enterprise Manager as follows:

1. Use *Oracle Database Installation Guide for Linux x86* to install Oracle Database.
If you plan to use Oracle Real Application Clusters, then install Oracle Database by using *Oracle Database Oracle Clusterware and Oracle Real Application Clusters Installation Guide for Linux*.
2. Use *Oracle Enterprise Manager Grid Control Installation and Basic Configuration* to install and configure Oracle Enterprise Manager. For postconfiguration tasks, use *Oracle Enterprise Manager Advanced Configuration*.

How do I manage security for my Oracle Database products?

Oracle provides a wide range of security solutions for your enterprise environment, including centralized administration and security features integrated with Oracle Internet Directory. The set of Oracle security services called Oracle Platform Security integrates the security features built into Oracle Database, Oracle Application Server, and the Oracle Identity Management infrastructure. Combined, these features enable the development and deployment of secure e-business applications.

Oracle Identity Management includes Oracle Internet Directory, a centralized repository that simplifies administration of users and applications in the Oracle environment by means of the following components:

- Oracle Internet Directory client tools, including LDAP command-line tools, the Oracle Internet Directory SDK, and Oracle Directory Manager.

- Oracle Internet Directory server components, including the directory server, the directory replication server, the directory integration server, and various tools for starting and stopping them.

Oracle Database includes the Oracle Internet Directory client tools, but not the Oracle Internet Directory server components. To install the Oracle Internet Directory server components, run Oracle Universal Installer from an Oracle 10g Application Server installation.

See Also:

- *Oracle Application Server Installation Guide* (to install Oracle Identity Management)
- *Oracle Database Security Guide*
- *Oracle Database Advanced Security Administrator's Guide*
- *Oracle Database Enterprise User Administrator's Guide*
- *Oracle Label Security Administrator's Guide*
- *Oracle Application Server Security Guide*
- http://www.oracle.com/technology/Deploy/Security/ols/pdf/OLS9iR2_faq.html for an FAQ on Oracle Label Security on Oracle Technology Network

Does Oracle Database provide OLAP tools so that I can analyze data such as trends and time series in my database?

Yes, install Oracle OLAP, which is provided in the Oracle Database installation. Oracle OLAP provides optimal support for database environments that must meet OLAP requirements.

Use either of the following methods in Oracle Database Installation Guide to install Oracle OLAP:

- Select the Custom installation type, and in the Available Product Components screen, select Oracle OLAP.

See Also: The following manuals after you install Oracle OLAP:

- *Oracle OLAP Application Developer's Guide*
 - *Oracle OLAP Reference*
 - *Oracle OLAP DML Reference*
 - *Oracle OLAP Java API Reference*
 - *Oracle OLAP Analytic Workspace Java API Reference*
- Select the Enterprise Edition installation type, and then on the Select Database Configuration screen, select the Data Warehouse configuration.

See Also: *Oracle Database Data Warehousing Guide* after installation

Does Oracle Database provide data mining tools that I can use to discover hidden meaning in my data and predict likely outcomes based on my data?

Yes. Install Oracle Data Mining, which is provided in the Oracle Database installation. With the Oracle Data Mining option, you can create and execute predictive and descriptive data mining models that use a variety of algorithms.

Use the following method in *Oracle Database Installation Guide for Linux x86* to install Oracle Data Mining:

1. Select the Enterprise Edition installation type.
2. On the Select Database Configuration screen, select the **General Purpose** configuration.

If you want the Database to execute predefined mining models, but not support model creation, install the Data Mining Scoring Engine instead of Oracle Data Mining. Use the following method in Oracle Database Installation Guide to install the Data Mining Scoring Engine:

1. Select the Custom installation type.
2. In the Available Product Components screen, select **Data Mining Scoring Engine**.

See Also: The following manuals after you have installed Oracle Data Mining:

- *Oracle Data Mining Concepts*
- *Oracle Data Mining Administrator's Guide*
- *Oracle Data Mining Application Developer's Guide*
- *Oracle Data Mining Java API Reference*
- *Oracle Database PL/SQL Packages and Types Reference* (search for "Data Mining")
- *Oracle Database SQL Reference* (search for "Data Mining")

How do I perform backup and recovery operations for Oracle Database?

Use Oracle Database Recovery Manager (RMAN), which is a backup and recovery tool integrated into Oracle Database. This tool satisfies the pressing demands of high-performance, manageable backup, and recovery. Recovery Manager is native to the database server, automatically tracks database structure changes, and optimizes operations accordingly. In addition, Recovery Manager is integrated with leading tape media management products, so that Oracle database backups can be integrated with your existing networked data protection infrastructure.

See Also:

- *Oracle Database Backup and Recovery Basics*
- *Oracle Database Backup and Recovery Advanced User's Guide*
- *Oracle Database Backup and Recovery Reference*
- *Oracle Database Backup and Recovery Quick Start Guide*

Installing Oracle Database with Oracle Applications

- [How do I install my Oracle applications with Oracle Database?](#)
- [I need to create Web applications that communicate with Oracle Database.](#)
- [I need to automate and streamline my processes for both traditional applications-based workflow as well as e-business integration workflow.](#)
- [My Oracle applications need a Web Server.](#)
- [I need to migrate my non-Oracle applications to Oracle.](#)

How do I install my Oracle applications with Oracle Database?

In most cases, install Oracle Database itself, then install the Oracle application. The Oracle Universal Installer for that application prompts you for the connection information. Check the application documentation requirements.

If you need to implement your applications with Oracle Real Applications Clusters databases, refer to *Oracle Database Oracle Clusterware and Oracle Real Application Clusters Administration and Deployment Guide*.

I need to create Web applications that communicate with Oracle Database.

Install Oracle HTML DB and Oracle HTTP Server:

1. Use *Oracle Database Installation Guide for Linux x86* to install Oracle Database.
2. Use *Oracle Database Companion CD Installation Guide for Linux x86* to install Oracle HTML DB and Oracle HTTP Server.

The following components are available on the Oracle Database Companion CD installation media:

- Oracle JDBC Development Drivers
- Oracle SQLJ
- Oracle Ultra Search
- JPublisher
- Natively Compiled Java Libraries
- Oracle Database Examples
- Oracle HTML DB
- Oracle HTTP Server
- Oracle Workflow server and middle-tier components
- Oracle Text Supplied Knowledge Bases

If you only need to install Oracle HTML DB and Oracle HTTP Server using the default settings into a new Oracle home, consider using *Oracle Database Companion CD Quick Installation Guide for Linux x86*.

I need to automate and streamline my processes for both traditional applications-based workflow as well as e-business integration workflow.

Install Oracle Workflow:

1. Use *Oracle Database Installation Guide for Linux x86* to install Oracle Database.
2. Use *Oracle Database Companion CD Installation Guide for Linux x86* to install Oracle Workflow.

My Oracle applications need a Web Server.

Install Oracle HTTP Server:

1. Use *Oracle Database Installation Guide for Linux x86* to install Oracle Database.
2. Use *Oracle Database Companion CD Installation Guide for Linux x86* to install Oracle HTTP Server.

I need to migrate my non-Oracle applications to Oracle.

Use Oracle Migration Workbench to migrate your non-Oracle applications to Oracle. Oracle Migration Workbench software and documentation are available at:

<http://www.oracle.com/technology/tech/migration/index.html>

Installing Oracle Database Heterogeneous Connectivity Tools (Gateways)

- [My AS/400 application needs to access data in an Oracle database.](#)
- [My Oracle applications need to access data in a non-Oracle database system.](#)

My AS/400 application needs to access data in an Oracle database.

Use Oracle Access Manager for AS/400, which enables AS/400 applications to access data in an Oracle database. To install Oracle Access Manager for AS/400, use *Oracle Access Manager for AS/400 Installation and User's Guide for IBM iSeries OS/400*.

My Oracle applications need to access data in a non-Oracle database system.

Use the following connectivity tools enable Oracle applications to access data in non-Oracle databases:

- Oracle Transparent Gateway: Integrates a non-Oracle database into your Oracle Database environment.
- Oracle Procedural Gateway: Enables Oracle PL/SQL applications to integrate with APPC-enabled transactions, or access messages in IBM Websphere MQ.

You can install the Gateway product on a computer independent of the Oracle application, Oracle database, and non-Oracle database.

For example, suppose you have the following scenario:

- Oracle Database is installed on a Linux computer.
- The Oracle application is installed on a Microsoft Windows computer and accesses data from the Oracle database on the Linux computer.
- The Oracle application needs to join data in a DB2 database on Solaris Operating System and an Oracle Database on Linux.

You have the option of installing the Transparent Gateway for DRDA on the Solaris computer where DB2 is running, on Linux where Oracle is running, or on a third computer.

[Table D-1](#) lists the non-Oracle database systems that you can access from Oracle applications, and the Gateways products that are available for those systems.

Table D–1 Oracle Gateway Products

Non-Oracle Database	Oracle Gateway Products and Documentation
IBM DB2 Universal Database (UDB)	<p>Transparent Gateway for DRDA. Available on the following platforms:</p> <ul style="list-style-type: none"> ■ Linux x86: Use <i>Oracle Transparent Gateway for DRDA Installation and User's Guide for UNIX</i>. ■ Linux Itanium: Use <i>Oracle Transparent Gateway for DRDA Installation and User's Guide for UNIX</i>. ■ Microsoft Windows (32-bit): Use <i>Oracle Transparent Gateway for DRDA Installation and User's Guide for Microsoft Windows</i>. ■ Solaris Operating System (SPARC 64-Bit): Use <i>Oracle Transparent Gateway for DRDA Installation and User's Guide for UNIX</i>. ■ AIX 5L Based Systems (64-Bit): Use <i>Oracle Transparent Gateway for DRDA Installation and User's Guide for UNIX</i>. ■ IBM zSeries Based Linux: Use <i>Oracle Transparent Gateway for DRDA Installation and User's Guide for UNIX</i>. ■ hp-ux PA-RISC (64-Bit): Use <i>Oracle Transparent Gateway for DRDA Installation and User's Guide for UNIX</i>.
IBM DB2 z/OS	<p>Transparent Gateway for DB2. Available on z/OS. Use <i>Oracle Transparent Gateway for DB2 Installation and User's Guide for IBM z/OS (OS/390)</i>.</p> <p>Transparent Gateway for DRDA. Available on the following platforms:</p> <ul style="list-style-type: none"> ■ Linux x86: Use <i>Oracle Transparent Gateway for DRDA Installation and User's Guide for UNIX</i>. ■ Linux Itanium: Use <i>Oracle Transparent Gateway for DRDA Installation and User's Guide for UNIX</i>. ■ Microsoft Windows (32-bit): Use <i>Oracle Transparent Gateway for DRDA Installation and User's Guide for Microsoft Windows</i>. ■ Solaris Operating System (SPARC 64-Bit): Use <i>Oracle Transparent Gateway for DRDA Installation and User's Guide for UNIX</i>. ■ AIX 5L Based Systems (64-Bit): Use <i>Oracle Transparent Gateway for DRDA Installation and User's Guide for UNIX</i>. ■ IBM zSeries Based Linux: Use <i>Oracle Transparent Gateway for DRDA Installation and User's Guide for UNIX</i>. ■ hp-ux PA-RISC (64-Bit): Use <i>Oracle Transparent Gateway for DRDA Installation and User's Guide for UNIX</i>.
IBM DB2/400	<p>Transparent Gateway for DB2/400. Available on IBM AS/400. Use <i>Oracle Transparent Gateway for DB2/400 Installation and User's Guide for IBM iSeries OS/400</i>.</p> <p>Transparent Gateway for DRDA. Available on the following platforms:</p> <ul style="list-style-type: none"> ■ Linux x86: Use <i>Oracle Transparent Gateway for DRDA Installation and User's Guide for UNIX</i>. ■ Linux Itanium: Use <i>Oracle Transparent Gateway for DRDA Installation and User's Guide for UNIX</i>. ■ Microsoft Windows (32-bit): Use <i>Oracle Transparent Gateway for DRDA Installation and User's Guide for Microsoft Windows</i>. ■ Solaris Operating System (SPARC 64-Bit): Use <i>Oracle Transparent Gateway for DRDA Installation and User's Guide for UNIX</i>. ■ AIX 5L Based Systems (64-Bit): Use <i>Oracle Transparent Gateway for DRDA Installation and User's Guide for UNIX</i>. ■ IBM zSeries Based Linux: Use <i>Oracle Transparent Gateway for DRDA Installation and User's Guide for UNIX</i>. ■ hp-ux PA-RISC (64-Bit): Use <i>Oracle Transparent Gateway for DRDA Installation and User's Guide for UNIX</i>.

Table D-1 (Cont.) Oracle Gateway Products

Non-Oracle Database	Oracle Gateway Products and Documentation
IBM MQSeries	Procedural Gateway for WebSphere MQ. Available on the following platforms: <ul style="list-style-type: none"> ■ Linux x86: Use <i>Oracle Procedural Gateway for WebSphere MQ Installation and User's Guide for UNIX</i>. ■ Microsoft Windows (32-bit): Use <i>Oracle Procedural Gateway for WebSphere MQ Installation and User's Guide for Microsoft Windows</i>. ■ Solaris Operating System (SPARC 64-Bit): Use <i>Oracle Procedural Gateway for WebSphere MQ Installation and User's Guide for UNIX</i>. ■ AIX 5L Based Systems (64-Bit): Use <i>Oracle Procedural Gateway for WebSphere MQ Installation and User's Guide for UNIX</i>. ■ hp-ux PA-RISC (64-Bit): Use <i>Oracle Procedural Gateway for WebSphere MQ Installation and User's Guide for UNIX</i>.
Adabas Advantage CA-Datcom/DB Advantage CA-IDMS Advantage CA-IDMS/SQL FOCUS IMS/DB-DL/1 ISAM Model 04 QSAM Supra System 2000 TOTAL VSAM	Transparent Gateway for iWAY. Available on z/OS. Use <i>Oracle Transparent Gateway for iWay Installation and User's Guide for IBM z/OS (OS/390)</i> .
Advantage CA-IDMS/DC Transaction Server CICS/TS IMSTM	Procedural Gateway for APPC. Available on the following platforms: <ul style="list-style-type: none"> ■ Linux x86: Use <i>Oracle Procedural Gateway for APPC Installation and Configuration Guide for UNIX</i>. ■ Microsoft Windows (32-bit): Use <i>Oracle Procedural Gateway for APPC Installation and Configuration Guide for Microsoft Windows</i>. ■ Solaris Operating System (SPARC 64-Bit): Use <i>Oracle Procedural Gateway for APPC Installation and Configuration Guide for UNIX</i>. ■ AIX 5L Based Systems (64-Bit): Use <i>Oracle Procedural Gateway for APPC Installation and Configuration Guide for UNIX</i>. ■ hp-ux PA-RISC (64-Bit): Use <i>Oracle Procedural Gateway for APPC Installation and Configuration Guide for UNIX</i>.
Microsoft SQL Server	Transparent Gateway for SQL Server. Available on Microsoft Windows (32-Bit). Use <i>Oracle Transparent Gateway Installation Guide for Microsoft Windows (32-Bit)</i> , then <i>Oracle Transparent Gateway for Microsoft SQL Server Administrator's Guide for Microsoft Windows</i> .

Table D-1 (Cont.) Oracle Gateway Products

Non-Oracle Database	Oracle Gateway Products and Documentation
Sybase Adaptive Server	<p>Transparent Gateway for Sybase. Available on the following platforms:</p> <ul style="list-style-type: none"> ■ Microsoft Windows (32-bit): Use <i>Oracle Transparent Gateway Installation Guide for Microsoft Windows (32-Bit)</i>, then <i>Oracle Transparent Gateway for Sybase Administrator's Guide for Microsoft Windows</i>. ■ Solaris Operating System (SPARC 64-Bit): Use <i>Oracle Transparent Gateway Installation Guide for Solaris Operating System, hp-ux, IBM AIX, and hp Tru64 UNIX</i>, then <i>Oracle Transparent Gateway for Sybase Administrator's Guide for Solaris Operating System (SPARC 64-Bit)</i>. ■ AIX 5L Based Systems (64-Bit): Use <i>Oracle Transparent Gateway Installation Guide for Solaris Operating System, hp-ux, IBM AIX, and hp Tru64 UNIX</i>, then <i>Oracle Transparent Gateway for Sybase Administrator's Guide for IBM AIX</i>. ■ hp-ux PA-RISC (64-Bit): Use <i>Oracle Transparent Gateway Installation Guide for Solaris Operating System, hp-ux, IBM AIX, and hp Tru64 UNIX</i>, then <i>Oracle Transparent Gateway for Sybase Administrator's Guide for hp-ux</i>. ■ hp Tru64 UNIX: Use <i>Oracle Transparent Gateway Installation Guide for Solaris Operating System, hp-ux, IBM AIX, and hp Tru64 UNIX</i>, then <i>Oracle Transparent Gateway for Sybase Administrator's Guide for hp Tru64 UNIX</i>.
Teradata	<p>Transparent Gateway for Teradata. Available on the following platforms:</p> <ul style="list-style-type: none"> ■ Microsoft Windows (32-bit): Use <i>Oracle Transparent Gateway Installation Guide for Microsoft Windows (32-Bit)</i>, then <i>Oracle Transparent Gateway for Teradata Administrator's Guide for Microsoft Windows</i>. ■ Solaris Operating System (SPARC 64-Bit): Use <i>Oracle Transparent Gateway Installation Guide for Solaris Operating System, hp-ux, IBM AIX, and hp Tru64 UNIX</i>, then <i>Oracle Transparent Gateway for Teradata Administrator's Guide for Solaris Operating System (SPARC 64-Bit)</i>. ■ hp-ux PA-RISC (64-Bit): Use <i>Oracle Transparent Gateway Installation Guide for Solaris Operating System, hp-ux, IBM AIX, and hp Tru64 UNIX</i>, then <i>Oracle Transparent Gateway for Teradata Administrator's Guide for hp-ux</i>.
Informix Server	<p>Transparent Gateway for Informix. Available on the following platforms:</p> <ul style="list-style-type: none"> ■ Solaris Operating System (SPARC 64-Bit): Use <i>Oracle Transparent Gateway Installation Guide for Solaris Operating System, hp-ux, IBM AIX, and hp Tru64 UNIX</i>, then <i>Oracle Transparent Gateway for Informix Administrator's Guide for Solaris Operating System (SPARC 64-Bit)</i>. ■ hp-ux PA-RISC (64-Bit): Use <i>Oracle Transparent Gateway Installation Guide for Solaris Operating System, hp-ux, IBM AIX, and hp Tru64 UNIX</i>, then <i>Oracle Transparent Gateway for Informix Administrator's Guide for hp-ux</i>.
Ingres II	<p>Transparent Gateway for Ingres II. Available on the following platforms:</p> <ul style="list-style-type: none"> ■ Solaris Operating System (SPARC 64-Bit): Use <i>Oracle Transparent Gateway Installation Guide for Solaris Operating System, hp-ux, IBM AIX, and hp Tru64 UNIX</i>, then <i>Oracle Transparent Gateway for Ingres II Administrator's Guide for Solaris Operating System (SPARC 64-Bit)</i>. ■ hp-ux PA-RISC (64-Bit): Use <i>Oracle Transparent Gateway Installation Guide for Solaris Operating System, hp-ux, IBM AIX, and hp Tru64 UNIX</i>, then <i>Oracle Transparent Gateway for Ingres II Administrator's Guide for hp-ux</i>.
Rdb	<p>Transparent Gateway for Rdb. Available on hp OpenVMS Alpha. Use <i>Oracle Transparent Gateway Installation Guide for hp OpenVMS</i>, then <i>Oracle Transparent Gateway for Rdb Administrator's Guide for hp OpenVMS</i>.</p>
RMS	<p>Transparent Gateway for RMS. Available on hp OpenVMS Alpha. Use <i>Oracle Transparent Gateway Installation Guide for hp OpenVMS</i>, then <i>Oracle Transparent Gateway for RMS Administrator's Guide for hp OpenVMS</i>.</p>

A

Access Manager for AS/400, D-8
Administrator installation type, 1-2
administrator.rsp file, A-3
Advantage family of databases, D-10
AL16UTF16 character set, 2-6
AL32UTF8 character set, 1-3, 2-6
APPC-enabled databases, D-10
APPC-enabled systems, D-10
applications, empty connection strings, 4-6
applications, migrating non-Oracle applications to Oracle, D-8
applications-based workflows, D-7
architecture
 checking system architecture, 2-4
AS/400 applications, accessing Oracle database, D-8

B

backups of database
 Oracle Database Recovery Manager, D-6
base directory
 See Oracle base directory
Bash shell
 default user startup file, 2-13
Basic installation type
 noninteractive installations, A-3
Bourne shell
 default user startup file, 2-13

C

C shell
 default user startup file, 2-13
character sets
 supported by Instant Client Light, 1-3
checking distribution of the operating system, 2-5
checking version of the operating system, 2-5
chmod command, 2-12
chown command, 2-12
client static library, generating, 4-6
Cluster Ready Services (CSS). *See* Oracle Clusterware
clusters
 See also Oracle Clusterware, Oracle Real
 Application Clusters

configuration assistants
 failure, C-3
 troubleshooting, C-3
connectivity tools
 Oracle Procedural Gateway, D-8
 Oracle Transparent Gateway, D-8
 See also databases, non-Oracle
Custom installation type, 1-2
custom.rsp file, A-3

D

Data Mining Scoring Engine
 about, D-6
 installing, D-6
data mining tools
 Data Mining Scoring Engine, D-6
 Oracle Data Mining, D-5
data warehousing tool
 Oracle OLAP, D-5
databases
 migrating non-Oracle databases to Oracle, D-3
 non-Oracle
 APPC-enabled, D-10
 iWay, D-10
 non-Oracle, listed, D-9
 OLAP support (Oracle OLAP), D-5
 recovery with Oracle Backup and Recovery, D-6
 security management, D-4
DB2 database, D-9
DB2 z/OS database, D-9
DB2/400 database, D-9
default file mode creation mask
 setting, 2-12
directory
 Oracle base directory, 2-9
 Oracle home directory, 2-10
 Oracle Inventory directory, 2-10
 oraInventory, 2-10
discs
 mounting, 3-3
disk space
 checking, 2-3
DISPLAY environment variable
 setting, 2-12, 2-14

E

- easy connect naming method for Instant Client to database connection, 4-4
- e-business integration workflows, D-7
- empty connect strings, 4-6
- env command, 2-15
- environment
 - checking settings, 2-15
 - configuring for oracle user, 2-12
- environment variables
 - DISPLAY, 2-12, 2-14
 - LOCAL, 4-6
 - NLS_LANG, B-1
 - ORACLE_BASE, 2-10, 2-12
 - ORACLE_HOME, 2-12, 2-14
 - PATH, 2-12
 - removing from shell startup file, 2-13
 - SHELL, 2-13
 - TEMP and TMPDIR, 2-3, 2-14
 - TNS_ADMIN, 2-14, 4-5
- errata
 - Linux kernel errata, 2-6
- errors
 - configuration assistants, C-3
 - fatal, C-4
 - installation, C-2, C-4
 - noninteractive installation, C-4
 - silent mode, C-4
 - X Window display errors, C-1
- /etc/oraInst.loc file, C-3
- examples
 - Oracle base directories, 2-10

F

- FAQ for installation, D-1
- file mode creation mask
 - setting, 2-12
- file sets, 2-4
- file system
 - appropriate for Oracle base directory, 2-12
- files
 - administrator.rsp, A-3
 - custom.rsp, A-3
 - /etc/oraInst.loc, C-3
 - instantclient.rsp, A-3
 - oraInst.loc, 2-8, 2-11
 - oratab, 2-11
 - runtime.rsp, A-3
 - tnsnames.ora, 4-5, 4-7
- free
 - UNIX command, 2-3
- frequently asked installation questions, D-1

G

- Gateways products FAQ, D-8
- GCC, 2-5
- globalization support, B-1
- GNU C++ version, 4-8

- Grid Control. *See* Oracle Enterprise Manager Grid Control
- groups
 - creating the oinstall group, 2-7

H

- hardware certification, 1-4
- hardware requirements, 2-2
- home directory
 - See* Oracle home directory

I

- IBM DB2 database, D-9
- IBM DB2 z/OS database, D-9
- IBM DB2/400 database, D-9
- IBM DRDA databases, connecting to, D-9
- IBM mainframe data, connecting to, D-10
- IBM WebSphere MQ Series databases, D-10
- Informix Server database, D-11
- Ingres II database, D-11
- installation
 - accessing installation software, 3-1
 - cleaning up after a failed installation, C-4
 - completing, 3-6
 - component-specific guidelines, 3-1
 - errors, C-2, C-4
 - silent mode, C-4
 - FAQ for Oracle Database products, D-1
 - guidelines, 3-5
 - installation types, 1-2
 - log files, C-2
 - noninteractive
 - error handling, C-4
 - reinstalling Oracle software, 3-1
 - response files
 - preparing, A-2
 - silent mode, C-4
 - templates, A-2
 - silent mode, A-4, A-5
 - upgrading, D-2
 - with other components, D-1
- installation considerations
 - certification, hardware and software, 1-4
 - multiple Oracle homes, 1-4
- installation errors
 - steps to resolve, C-2
- installation guidelines, 3-5
 - Oracle Universal Installer, 3-5
 - reinstalling Oracle software, 3-5
- installation overview, 1-1
- installation software
 - copying to a hard disk, 3-4
 - extracting, 3-2
 - reinstalling, 3-5
- installation software, accessing, 3-1
- installation types
 - Administrator, 1-2
 - Custom, 1-2

- disk space requirements, 2-3
- Instant Client, 1-2
- Runtime, 1-2
- Instant Client
 - connecting to database with Oracle Call Interface, 4-5
 - connecting to Oracle Database, 4-4
 - easy connect naming method, 4-4
 - empty connect strings, 4-6
 - Instant Client Light
 - about, 1-3
 - connecting to database, 4-4
 - restrictions, 4-3
 - updates, 4-2
 - LOCAL environment variable, connecting to database, 4-6
 - patch upgrades, 4-3
 - restrictions, 4-3
 - TNS_ADMIN environment variable, connecting to database, 4-5
 - tnsnames.ora file connection method, 4-5
 - updates, 4-2
- Instant Client installation type, 1-2
- Instant Client Light
 - about, 1-3
 - character sets supported by, 1-3
 - connecting to database, 4-4
 - requirements, 2-6
 - restrictions, 4-3
 - updates, 4-2
- Instant Client Light, configuring, 4-4
- Instant Client or Instant Client Light, connecting to an Oracle Database, 4-4
- Instant Client, connecting with, 4-3
- Instant Client, updating, 4-2
- instantclient.rsp file, A-3
- iWay databases, D-10

J

- JDK requirements, 2-4
- JPublisher, D-7

K

- kernel
 - Linux errata, 2-6
- Korn shell
 - default user startup file, 2-13

L

- languages
 - installing Oracle components in different languages, B-2
- Linux
 - kernel errata, 2-6
- LOCAL environment variable, 4-6
- log files, C-2
 - installation, reviewing, C-2
 - troubleshooting, C-2

M

- mask
 - setting default file mode creation mask, 2-12
- memory requirements, 2-2
- Microsoft SQL Server database, D-10
- migrating applications to Oracle, D-8
- migrating databases to Oracle, D-3
- mkdir command, 2-12
- mode
 - setting default file mode creation mask, 2-12
- mount point
 - for Oracle base directory, 2-9
- mount point directories, 3-4

N

- natively compiled Java libraries, D-7
- Net Configuration Assistant
 - troubleshooting, C-3
- NLS_LANG environment variable, B-1
- NLS_LANG environment variable, setting, 4-6
- NLS_LANG parameter
 - about, B-1
- non-interactive installation
 - response files
 - templates, A-2
 - silent mode, A-4, A-5
- noninteractive installation
 - response files
 - preparing, A-2
 - silent mode
 - errors, C-4
- noninteractive installations
 - running
 - Oracle Universal Installer, A-4
- non-Oracle databases, listed, D-9

O

- OC CI, configuring, 4-8
- ODBC, configuring, 4-8
- oinstall group
 - creating, 2-7
 - description, 2-7
- OLAP tools
 - Oracle OLAP, D-1, D-5
- opatch utility, 4-3
- operating system
 - checking distribution and version, 2-5
- operating system groups
 - creating the oinstall group, 2-7
 - oinstall, 2-7
 - requirements, 2-7
- operating system requirements, 2-4
- operating system users
 - creating the oracle user, 2-8
 - oracle, 2-7
 - requirements, 2-7
- Optimal Flexible Architecture
 - recommendations for Oracle base directory, 2-9

- recommended path for Oracle base directory, 2-9
- recommended path for Oracle home directory, 2-10
- recommended path for Oracle Inventory directory, 2-10
- Oracle Application Server, D-3
- Oracle applications
 - APPC-enabled systems, connecting to, D-10
 - IBM DRDA databases, connecting to, D-9
- Oracle applications, installing with Oracle Database, D-7
- Oracle base directory
 - and ORACLE_BASE environment variable, 2-10
 - creating, 2-12
 - creating new, 2-12
 - description, 2-9
 - equivalent directory on Microsoft Windows, 2-9
 - examples, 2-10
 - identifying appropriate file system, 2-12
 - identifying existing, 2-11
 - mount point for, 2-9
 - recommended path, 2-9
 - relationship with Oracle software owner user, 2-10
- Oracle C++ Call Interface requirements, 2-5
- Oracle Call Interface
 - Instant Client connection method, 4-5
 - See also* Instant Client
- Oracle Call Interface requirements, 2-5
- Oracle Clusterware
 - about, D-3
 - used with Oracle Real Application Clusters, D-3
- Oracle Data Mining
 - about, D-5
 - installing, D-5
- Oracle Database
 - administering and monitoring, D-4
 - AS/400 applications, D-8
 - connecting to Instant Client, 4-4
 - installing with Oracle applications, D-7
 - installing with other Oracle components, D-1
 - security management, D-4
 - upgrading, D-2
 - Web application development tools (Oracle HTML DB), D-7
 - Web servers, D-7
 - workflows, D-7
- Oracle Database Client, D-2
- Oracle Database Companion CD
 - components, D-7
- Oracle Database components
 - administering and monitoring, D-4
 - connectivity FAQ, D-8
 - FAQ for installing, D-1
 - FAQ on installing, D-1
 - installing with Oracle applications, D-7
 - installing with Oracle Database tools, D-3
- Oracle Database Examples, D-7
- Oracle Database Recovery Manager (RMAN)
 - about, D-6
- Oracle Enterprise Manager Java Console,
 - running, 4-2
- Oracle home directory
 - description, 2-10
 - recommended path, 2-10
 - requirement for, 2-10
 - requirements, 2-10
 - using to identify Oracle base directory, 2-11
- Oracle home name, 2-10
- Oracle HTML DB, D-7
- Oracle HTTP Server, D-7
- Oracle Internet Directory, D-5
- Oracle Inventory
 - description, 2-10
 - pointer file, 2-8
- Oracle Inventory directory
 - description, 2-10
 - recommended path, 2-10
- Oracle Inventory group
 - creating, 2-7
 - description, 2-7
- Oracle JDBC development drivers, D-7
- Oracle JDBC/OCI driver requirements, 2-5
- Oracle Migration Workbench, D-3, D-8
- Oracle Net
 - configuration file directory, 4-7
- Oracle Net Configuration Assistant
 - installing, 4-5
- Oracle Net Services
 - postinstallation tasks, 4-7
- Oracle ODBC driver requirements, 2-5
- Oracle OLAP, D-1, D-5
- Oracle precompilers
 - Pro*FORTRAN, 4-7
- Oracle precompilers, configuring, 4-7
- Oracle Procedural Gateway
 - about, D-8
 - listed products, D-8
- Oracle Real Application Clusters (RAC)
 - installing with Oracle Enterprise Manager, D-4
 - Oracle Clusterware
 - about, D-3
- Oracle software
 - removing, 5-1
- Oracle software owner user
 - configuring environment for, 2-12
 - creating, 2-8
 - description, 2-7
 - determining default shell, 2-13
 - relationship with Oracle base directory, 2-10
- Oracle SQLJ, D-7
- Oracle Text supplied knowledge bases, D-7
- Oracle Transparent Gateway
 - about, D-8
 - listed products, D-8
- Oracle Ultra Search, D-7
- Oracle Universal Installer
 - installation guidelines, 3-1, 3-5
 - response files
 - list of, A-3

- running, 3-5
- running in different languages, B-2
- oracle user
 - configuring environment for, 2-12
 - creating, 2-8
 - description, 2-7
 - determining default shell, 2-13
 - relationship with Oracle base directory, 2-10
- Oracle Workflow, D-7
- Oracle XML Developer's Kit (XDK)
 - requirements, 2-5
- ORACLE_BASE environment variable, 2-10, 2-12
 - removing from shell startup file, 2-13
 - setting, 2-12
- ORACLE_HOME environment variable
 - removing from shell startup file, 2-13
 - unsetting, 2-14
- ORACLE_SID environment variable
 - removing from shell startup file, 2-13
- oraInst.loc file, 2-8, 2-11
 - location, 2-8
- oraInventory directory
 - See Oracle Inventory directory
- oratab file, 2-11
 - formats, 2-11
 - location of, 2-11
- OTN Web site
 - downloading installation software from, 3-2

P

- packages, checking, 2-6
- passwd command, 2-9
- patches
 - installing and downloading, 4-1
 - Instant Client/Instant Client Light
 - restrictions, 4-3
 - opatch utility, 4-3
- PATH environment variable
 - setting, 2-12
- permissions
 - for Oracle base directory, 2-12
- PL/SQL native compilation requirements, 2-5
- postinstallation
 - recommended tasks
 - client static library, generating, 4-6
 - Instant Client Light, configuring, 4-4
 - Instant Client or Instant Client Light,
 - connecting to an Oracle Database, 4-4
 - NLS_LANG environment variable, setting, 4-6
 - root.sh script, backing up, 4-4
 - user accounts, setting up, 4-6
 - required tasks, 4-1
 - Instant Client, connecting with, 4-3
 - Instant Client, updating, 4-2
 - OCI, configuring, 4-8
 - ODBC, configuring, 4-8
 - Oracle Enterprise Manager Java Console,
 - running, 4-2
 - Oracle Net Services, configuring, 4-7

- Oracle precompilers, configuring, 4-7
 - patches, installing and downloading, 4-1
- postinstallation tasks
 - Instant Client-to-database connection, 4-4
- Pro*C/C++
 - configuring, 4-7
 - See also C compiler
- Pro*C/C++ requirements, 2-5
- Pro*FORTRAN
 - configuring, 4-7
 - See also FORTRAN compiler
- processor
 - checking system architecture, 2-4

R

- RAM requirements, 2-2
- Rdb database, D-11
- recording, A-3
- recovery of databases
 - Oracle Backup and Recovery, D-6
- Red Hat
 - operating system requirements, 2-4
- Red Hat Package Manager
 - See RPM
- reinstalling Oracle software, 3-1
- requirements
 - hardware, 2-2
- response files, A-3
 - administrator.rsp, A-3
 - custom.rsp, A-3
 - instantclient.rsp, A-3
 - runtime.rsp, A-3
- RMS database, D-11
- roadmap for installing Oracle Database
 - components, D-1
- root user, 3-5, 3-6
 - logging in as, 2-1
- root.sh script
 - backing up, 4-4
- root.sh script, backing up, 4-4
- RPM
 - checking, 2-6
 - rpm command, 2-6
 - Runtime installation type, 1-2
 - runtime.rsp file, A-3

S

- security
 - management tools, D-4
- shell
 - determining default shell for oracle user, 2-13
- SHELL environment variable
 - checking value of, 2-13
- shell startup file
 - removing environment variables, 2-13
- silent mode installation, A-4, A-5
- software certification, 1-4
- software requirements, 2-4

- checking, 2-5
- SQL Server database, D-10
- SUSE
 - operating system requirements, 2-4
- swap space
 - requirements, 2-2
- Sybase Adapter Server database, D-11
- system architecture
 - checking, 2-4

T

- TEMP environment variable, 2-3
 - setting, 2-14
- temporary directory, 2-3
- temporary disk space
 - checking, 2-3
 - freeing, 2-3
 - requirements, 2-2
- Teradata database, D-11
- /tmp directory
 - checking space in, 2-3
 - freeing space in, 2-3
- TMPDIR environment variable, 2-3
 - setting, 2-14
- TNS_ADMIN environment variable, 4-5
 - unset, 2-14
- tnsnames.ora file, 4-5, 4-7
 - Instant Client-to-database connection, 4-5
- troubleshooting, C-1
 - fatal errors, C-4

U

- umask, 2-15
- umask command, 2-12, 2-15
- UNIX commands, 2-15
 - chmod, 2-12
 - chown, 2-12
 - env, 2-15
 - free, 2-3
 - mkdir, 2-12
 - passwd, 2-9
 - rpm, 2-6
 - swap, 2-3
 - swapon, 2-3
 - umask, 2-12
 - unset, 2-14
 - unsetenv, 2-14
 - useradd, 2-9
 - xhost, 2-1
 - xterm, 2-2
- UNIX workstation
 - installing from, 2-1
- unset command, 2-14
- unsetenv command, 2-14
- updating Instant Client, 4-2
- user accounts, setting up, 4-6
- useradd command, 2-9
- users

- creating the oracle user, 2-8
- Oracle software owner user, 2-7

W

- Web applications, Oracle HTML DB, D-7
- Web servers (Oracle HTTP Server), D-7
- WebSphere MQ Series database, D-10
- Windows
 - analogy for Oracle base directory, 2-9
- workflows
 - applications based, D-7
 - e-business integration, D-7

X

- X Window system
 - enabling remote hosts, 2-1, 2-2
- xhost command, 2-1
- xterm command, 2-2