Oracle® Database

Client Installation Guide

10*g* Release 1 (10.1) for UNIX Systems: AIX-Based Systems, hp HP-UX, hp Tru64 UNIX, Linux, and Solaris Operating System (SPARC)

Part No. B12087-02

March 2004

ORACLE®

Oracle Database Client Installation Guide, 10*g* Release 1 (10.1) for UNIX Systems: AIX-Based Systems, hp HP-UX, hp Tru64 UNIX, Linux, and Solaris Operating System (SPARC)

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

Preface

This guide describes how to install and configure Oracle Client 10*g* release 1 (10.1) on UNIX systems.

Audience

This guide is intended for anyone responsible for installing Oracle Client 10*g* release 1 (10.1) on a single UNIX system.

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Terminology

The names for UNIX operating systems have been shortened in this guide, as follows:

Operating System	Abbreviated Name
AIX-Based Systems	AIX
hp HP-UX PA-RISC (64-bit) hp HP-UX Itanium	HP-UX **Note:** Where there is a difference between the information for PA-RISC and Itanium systems, this is noted in the text.
hp Tru64 UNIX	Tru64 UNIX
Linux x86 Linux Itanium	Linux **Note:** Where there is a difference between the information for x86 and Itanium systems, this is noted in the text.
Solaris Operating System (SPARC)	Solaris

Typographic Conventions

The following typographic conventions are used in this guide:

Convention	Description
monospace	Monospace type indicates UNIX commands, directory names, usernames, pathnames, and filenames.
italics	Italic type indicates variables, including variable portions of filenames. It is also used for emphasis and for book titles.
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:
	
	`dd if=/dev/rdsk/c0t1d0s6 of=/dev/rst0 bs=10b \`
	`count=10000`

braces { }	Braces indicate required items: `.DEFINE {macro1}`
brackets [ ]	Brackets indicate optional items: `cvtcrt termname [outfile]`
ellipses ...	Ellipses indicate an arbitrary number of similar items: `CHKVAL fieldname value1 value2 ... valueN`
italics	Italic type indicates a variable. Substitute a value for the variable: `library_name`
vertical line |	A vertical line indicates a choice within braces or brackets: `FILE filesize [K|M]`

Accessing Documentation

The documentation for Oracle Client 10*g* release 1 (10.1) for UNIX Systems 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 DVD-ROMs 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 10*g* products is available in both HTML and PDF formats in the following locations:

- On the Oracle Database 10*g* Documentation Library CD-ROM

  To access the documentation from the CD-ROM, use a Web browser to view the `index.htm` file in the top-level directory on the disc.

- In the doc subdirectory on the Oracle Database 10*g* DVD-ROM

  To access the documentation from the DVD-ROM, use a Web browser to view the `welcome.htm` file in the top-level directory on the disc, then select the Oracle Database 10*g* Documentation Library link.

- Online on the Oracle Technology Network (OTN) Web site:

  `http://otn.oracle.com/documentation`

Related Documentation

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

- Oracle Database:

  - *Oracle Database Release Notes* (platform-specific)

  - *Oracle Database Quick Installation Guide* (platform-specific)

  - *Oracle Database Installation Guide for UNIX Systems*

  - *Oracle Real Application Clusters Installation and Configuration Guide*

  - *Oracle Database Administrator's Reference for UNIX Systems*

  - *Oracle Procedural Gateway for APPC Installation and Configuration Guide for UNIX*

  - *Oracle Procedural Gateway for APPC User's Guide for UNIX*

  - *Oracle Procedural Gateway for APPC Messages Guide*

  - *Oracle Transparent Gateway for DRDA Installation and User's Guide for UNIX*

- Oracle Client:

  - *Oracle Database Client Quick Installation Guide* (platform-specific)

  - *Oracle Database Client Installation Guide for UNIX Systems*

- Oracle Database 10*g* Companion CD:

  - *Oracle Database Companion CD Installation Guide for UNIX Systems*

  - *Oracle Database Companion CD Quick Installation Guide* (platform-specific)

Refer to the Oracle Database release notes for your platform for important information that was not available when this book was released. The release notes for Oracle Database 10*g* are updated regularly. You can get the most-recent version from OTN:

```
http://otn.oracle.com/documentation
```

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1

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:

- Installation Overview
- Oracle Client Installation Types
- Installation Considerations

Installation Overview

The Oracle Client installation process consists of four parts:

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

2. **Completing pre-installation tasks:** Chapter 2 describes pre-installation tasks that you must complete before installing the product.

3. **Installing software:** Chapter 3 describes how to use the Oracle Universal Installer to install this product.

4. **Completing post-installation tasks:** Chapter 4 describes recommended and required post-installation tasks.

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 on the local system or on a remote system. It also provides tools that allow you to administer an Oracle database.

- **Runtime:** Enables applications to connect to an Oracle database 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), or Java database connectivity (JDBC) OCI applications. This installation type requires much less disk space than the other Oracle Client installation types.

    See Also: For more information about Instant Client, see the *Oracle Call Interface Programmer's Guide* or the *Oracle Database JDBC Developer's Guide and Reference*.

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 Oracle*MetaLink* Web site for the most up-to-date list of certified hardware platforms and operating system versions. The Oracle*MetaLink* Web site is available at the following URL:

```
http://metalink.oracle.com
```

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

```
http://otn.oracle.com/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 10.1 software into an existing Oracle9*i* Oracle home directory. If you attempt to install this release into an Oracle home directory that contains software from an earlier Oracle release, the installation fails.

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

2

Pre-installation Tasks

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

- Log In to the System as root
- Check the Hardware Requirements
- Check the Software Requirements
- Create Required UNIX Group and User
- Identify Required Software Directories
- Identify or Create an Oracle Base Directory
- Configure the oracle User's Environment

Log 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 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 non-interactive and silent installations, see Appendix B.

- If you are installing the software from an X Window System workstation or X terminal:

    1. Start a local terminal session, for example, an X terminal (`xterm`).

    2. If you are not installing the software on the local system, enter the following command to enable remote hosts to display X applications on the local X server:

       ```
       $ xhost +
       ```

    3. If you want to install the software on a remote system, enter a command similar to the following to connect to that system:

       ```
       $ telnet remote_host
       ```

    4. If you are not logged in as the `root` user, 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:

> **Note:** If necessary, see 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, enter the following command to switch user to `root`:

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

Check the Hardware Requirements

The system must meet the following minimum hardware requirements:

- 256 MB of physical RAM

- 512 MB of swap space

- 400 MB of disk space in the /tmp directory

- Between 180 MB and 1.9 GB of disk space for the Oracle software, depending on the installation type and platform

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

1. To determine the physical RAM size, enter one of the following commands:

Platform	Command
AIX	# /usr/sbin/lsattr -E -l sys0 -a realmem
HP-UX	# /usr/sbin/dmesg | grep "Physical:"
Linux	# grep MemTotal /proc/meminfo
Solaris	# /usr/sbin/prtconf | grep "Memory size"
Tru64 UNIX	# /bin/vmstat -P | grep "Total Physical Memory"

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

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

Platform	Command
AIX	# /usr/sbin/lsps -a
HP-UX	# /usr/sbin/swapinfo -a
Linux	# grep SwapTotal /proc/meminfo
Solaris	# /usr/sbin/swap -s
Tru64 UNIX	# /sbin/swapon -s

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

3. To determine the amount of disk space available in the `/tmp` directory, enter one of the following commands:

- HP-UX:

  ```
  # bdf /tmp
  ```

- Other operating systems:

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

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

- Delete unnecessary files from the `/tmp` directory to achieve the required disk space.

- 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.

4. To determine the amount of free disk space on the system, enter one of the following commands:

- HP-UX:

  ```
  # bdf
  ```

- Other operating systems:

  ```
  # df -k
  ```

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

Platform	Installation Type	Requirement for Software Files (MB)
AIX	Instant Client	150
	Administrator	1900
	Runtime	1000
	Custom (maximum)	1800

Platform	Installation Type	Requirement for Software Files (MB)
HP-UX	Instant Client	150
	Administrator	1500
	Runtime	1000
	Custom	1400
Linux	Instant Client	110
	Administrator	650
	Runtime	350
	Custom (maximum)	650
Solaris	Instant Client	150
	Administrator	1000
	Runtime	600
	Custom (maximum)	850
Tru64 UNIX	Instant Client	150
	Administrator	1900
	Runtime	1000
	Custom (maximum)	1800

5. To determine whether the system architecture can run the software, enter one of the following commands:

> **Note:** If you do not see the expected output, you cannot install the software on this system.

Platform	Command	Expected Output
AIX	# /usr/bin/getconf HARDWARE_BITMODE	64
HP-UX	# /bin/getconf KERNEL_BITS	64

Platform	Command	Expected Output
Linux	`# grep "model name" /proc/cpuinfo`	This command displays the processor type. Verify that the processor architecture matches the Oracle software release that you want to install.
Solaris	`# /bin/isainfo -kv`	`64-bit sparcv9 kernel modules`

Check the Software Requirements

Depending on your operating system, see one of the following sections for information about checking the software requirements:

- Checking the Software Requirements on AIX on page 2-7

- Checking the Software Requirements on HP-UX on page 2-11

- Checking the Software Requirements on Linux on page 2-17

- Checking the Software Requirements on Solaris on page 2-20

- Checking the Software Requirements on Tru64 UNIX on page 2-24

Checking the Software Requirements on AIX

Check that the required software and patches are installed on the system.

Check for Required Software

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 check these requirements.

Installation Type or Product	Requirement
All installations	Operating system version and maintenance level: AIX 5L version 5.2, Maintenance Level 1 or higher

	Operating system filesets:
	
	`bos.adt.base`
	`bos.adt.lib`
	`bos.adt.libm`
	`bos.perf.libperfstat`
	`bos.perf.perfstat`
	`bos.perf.proctools`

Oracle JDBC/OCI Drivers	You can use the following optional IBM JDK versions with the Oracle JDBC/OCI drivers, however they are not required for the installation: ■ JDK 1.4.1.1 (64-bit) ■ JDK 1.3.1.11 (32-bit) ■ JDK 1.2.2.18 **Note:** IBM JDK 1.4.1.2 (32-bit) is installed with this release.

Pro*C/C++, Oracle Call Interface, Oracle C++ Call Interface, Oracle XML Developer's Kit (XDK)	C for AIX Compiler V6.0.0.4:
	
	`vac.C`
	
	VisualAge C++ Compiler V6.0:
	
	`vacpp.cmp.core`

Pro*COBOL	Micro Focus Server Express 2.2

Pro*FORTRAN	IBM XL Fortran Compiler V8.1:
	
	`xlfcmp`
	`xlfrte`

SQL*Module for Ada	OC Systems PowerAda 5.3 or higher **Note:** For more information about OC Systems and PowerAda 5.3, see the following Web site: `http://www.ocsystems.com/contact.html`

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

1. To determine which version of AIX is installed, enter the following command:

   ```
   # oslevel -r
   ```

If the operating system version is lower than AIX 5.2.0.0 Maintenance Level 1 (5200-01), upgrade your operating system to this level. AIX 5L version 5.2 maintenance packages are available from the following Web site:

```
https://techsupport.services.ibm.com/server/aix.fdc
```

2. To determine whether the required filesets are installed and committed, enter a command similar to the following:

```
# lslpp -l bos.adt.base bos.adt.lib bos.adt.libm bos.perf.perfstat \
 bos.perf.libperfstat bos.perf.proctools
```

If a fileset is not installed and committed, then install it. See your operating system or software documentation for information about installing filesets.

Check for Required Patches

Depending on the products that you intend to install, verify that the following patches are installed on the system. The procedure following the table describes how to check these requirements.

Installation Type or Product	Requirement
All installations	Authorized Problem Analysis Reports (APARs):
	■ IY43980: libperfstat.h not ANSI-compliant
	■ IY44810: DSI IN BMRECYCLE
	■ IY45462: Definition of isnan() in math.h incorrect
	■ IY45707: J2 READAAHEAD/CIO INTERACTION
	■ IY46214: dropping partial connections leaves them on so_q0
	■ IY46605: exec of 32 bit application can fail on 64 bit kernel
	■ IY48525: SDK 1.4.1 32-BIT SR1: CA141-20030930
	■ IY51801: race condition in aio_nwait_timeout
Pro*C/C++, Oracle Call Interface, Oracle C++ Call Interface, Oracle XML Developer's Kit (XDK)	Program Technical Fixes (PTFs):
	■ U489726 - vac.C.6.0.0.4 (or later)

Installation Type or Product	Requirement
Pro*FORTRAN	APARs required for XL Fortran:
	IY39855: INTERNAL APAR FOR XLF COMPILER PTF 8.1.0.3
Oracle JDBC/OCI Drivers	**Note:** These APARs are required only if you are using the associated JDK version.
	APARs required for JDK 1.4.1.1 (64-bit):
	■ IY48526: SDK 1.4.1 64-BIT SR1: CAIX64141-20030930
	APARs required for JDK 1.3.1.11 (32-bit):
	■ IY47055: SDK 1.3.1 32-BIT PTF: CA131-20030630A
	APARs required for JDK 1.2.2.18:
	■ IY40034: SDK 1.2.2 PTF: CA122-20030115

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

1. To determine whether an APAR is installed, enter a command similar to the following:

```
# /usr/sbin/instfix -i -k "IY43980 IY44810 IY45462 IY45707 IY46214 IY46605 \
  IY48525 IY51801"
```

   If an APAR is not installed, download it from the following Web site and install it:

   `https://techsupport.services.ibm.com/server/aix.fdc`

2. To determine whether a PTF is installed, enter a command similar to the following:

```
# lslpp -l -B U489726 U485561 ...
```

   If a PTF is not installed, download it from the following Web site and install it:

   `https://techsupport.services.ibm.com/server/aix.fdc`

3. To continue completing pre-installation tasks, go to the "Create Required UNIX Group and User" section on page 2-27.

Checking the Software Requirements on HP-UX

Check that the required software and patches are installed on the system.

Check for Required Software

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 check these requirements.

Installation Type or Product	Requirement
All installations	Operating system version: ■ **PA-RISC (64-bit) systems:** HP-UX 11i (11.11) PA-RISC ■ **Itanium systems:** HP-UX 11i v2 (11.23)
Pro*C/C++, Oracle Call Interface, Oracle C++ Call Interface, Oracle XML Developer's Kit (XDK)	**HP-UX 11i (11.11):** HP C/ANSI C Compiler (B.11.11.08): C-ANSI-C HP aC++ Compiler (C.03.50): ACXX **HP-UX 11i v2 (11.23):** HP C/ANSI C Compiler (C.05.50): C-ANSI-C HP aC++ Compiler (C.05.50): ACXX
Pro*COBOL	Micro Focus Server Express 2.2 or higher
Pro*FORTRAN	**HP-UX 11i (11.11):** HP Fortran 90 Compiler (B.11.11.71): FORTRAN90 **HP-UX 11i v2 (11.23):** HP Itanium Fortran 90 Compiler (B.11.23): FORTRAN90

Installation Type or Product	Requirement
Oracle JDBC/OCI Drivers	You can use the following optional Java SDK versions with the Oracle JDBC/OCI drivers, however they are not required for the installation: **HP-UX 11i (11.11):** ■ Java SDK 1.3.1.02 with the JNDI extension ■ Java SDK 1.2.2.09 **Note:** Java SDK 1.4.2.00 is installed with this release. **HP-UX 11i v2 (11.23):** ■ Java SDK 1.3.1.09 **Note:** With this release, Java SDK 1.4.2.01 is installed on PA-RISC systems and Java SDK 1.4.1.03 is installed on Itanium systems.

Oracle Net protocol support for DCE (PA-RISC only)	DCE (B.11.11.10):
	 `DCE-C-Tools`
	 `DCE-CDS-Server`
	 `DCE-Core`
	 `DCE-CoreAdmin`
	 `DCE-CoreTools`
	 `DCE-SEC-Server`

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

1. To determine which version of HP-UX is installed, enter the following command:

    ```
    # uname -a
    HP-UX hostname B.11.11 U 9000/800 109444686 unlimited-user license
    ```

    In this example, the version of HP-UX 11i is 11.11.

2. To determine whether a bundle, product, or fileset is installed, enter a command similar to the following, where *level* is bundle, product, or fileset:

    ```
    # /usr/sbin/swlist -l level | more
    ```

    If a required bundle, product, or fileset is not installed, you must install it. See your operating system or software documentation for information about installing products.

Check for Required Patches

Depending on the products that you intend to install, verify that the following patches are installed on the system. The procedure following the table describes how to check these requirements.

Note: There may be more recent versions of the patches listed installed on the system. If a listed patch is not installed, determine whether a more recent version is installed before installing the version listed.

Installation Type or Product	Requirement

All installations	Quality Pack bundle:
	
	 HP-UX 11i (11.11):
	
	 HP-UX 11i Quality Pack (GOLDQPK11i), June 2003 or later:
	
	 `GOLDAPPS11i`
	`GOLDBASE11i`
	
	 HP-UX 11i v2 (11.23):
	
	 None currently required

All installations	**Patches for HP-UX 11i (11.11):** ■ PHCO_28123: cumulative SAM patch ■ PHKL_29198: Psets Enablement Patch; top(1) ■ PHNE_28476: Cumulative STREAMS Patch ■ PHNE_28923: LAN product cumulative patch ■ PHSS_28871: ld(1) and linker tools cumulative patch ■ PHSS_28880: HP aC++ -AA runtime libraries (aCC A.03.50) **Patches for HP-UX 11i v2 (11.23):** ■ PHSS_29658: Aries cumulative patch ■ PHSS_29660: linker + fdp cumulative patch

Installation Type or Product	Requirement
All installations	**Patches for JDK on HP-UX 11i (11.11):**
	■ PHCO_26331: mountall cumulative patch, Dev IDs enabler
	■ PHCO_29109: Pthread enhancement and fixes
	■ PHKL_25468: eventport (/dev/poll) pseudo driver
	■ PHKL_25842: Thread Abort
	■ PHKL_25993: thread nostop for NFS, rlimit, Ufalloc fix
	■ PHKL_25994: Thread NOSTOP, Psets Enablement, Ufalloc
	■ PHKL_25995: ufalloc;VxFS3.5;SPP fragmentation
	■ PHKL_26468: Shared synchronization performance support
	■ PHKL_28489: copyin EFAULT, LDCD access type
	Note: See the following Web site for information about additional patches that might be required by JDK 1.4.2:
	`http://www.hp.com/products1/unix/java/patches/index.html`
Pro*C/C++, Oracle Call Interface, Oracle C++ Call Interface, Oracle XML Developer's Kit (XDK)	**Patches for HP-UX 11i (11.11):**
	■ PHSS_29484: ANSI C compiler B.11.11.08 cumulative patch
	■ PHSS_29485: +O4/PBO Compiler B.11.11.08 cumulative patch
	Patches for HP-UX 11i v2 (11.23):
	■ PHSS_29655: aC++ Compiler (A.05.52)
	■ PHSS_29656: HP C Compiler (A.05.52)
	■ PHSS_29657: u2comp/be/plugin library Patch
Pro*FORTRAN	**Patches for HP-UX 11i v2 (11.23):**
	PHSS_29663: Fortran Product Patch, v2.7 to v2.8
Oracle Net protocol support for DCE (PA-RISC only)	**Patches for HP-UX 11i (11.11):**
	■ PHSS_28386: HP DCE/9000 1.8 DCE Client IPv6 patch
	■ PHSS_28387: HP DCE/9000 1.8 Server/DevTools cum. patch
	■ PHSS_28388: HP DCE/9000 1.8 Integrated Login cum. patch
	■ PHSS_29669: HP DCE/9000 1.8 DCE Client IPv6 patch

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

1. On PA-RISC systems only, enter the following command to determine whether the HP-UX 11i Quality Pack is installed:

   ```
   # /usr/sbin/swlist -l bundle | grep GOLD
   ```

   If the Quality Pack is not installed, or if the date is before June 2003, download the latest Quality Pack from the following Web site and install it:

   ```
   http://www.software.hp.com/SUPPORT_PLUS/qpk.html
   ```

2. To determine whether a patch is installed, enter a command similar to the following:

   ```
   # /usr/sbin/swlist -l patch | grep PHSS_28880
   ```

   Alternatively, to list all installed patches, enter the following command:

   ```
   # /usr/sbin/swlist -l patch | more
   ```

   If a required patch is not installed, download it from the following Web site and install it:

   ```
   http://itresourcecenter.hp.com
   ```

   If the Web site shows a more recent version of the patch, download and install that version.

Create Required Symbolic Links

> **Note:** This task is required only if the Motif 2.1 Development
> Environment package (X11MotifDevKit.MOTIF21-PRG) is not
> installed.

To allow you to successfully relink Oracle products after installing this software,
enter the following commands to create required X library symbolic links in the
/usr/lib directory:

```
# cd /usr/lib
# ln -s libX11.3 libX11.sl
# ln -s libXIE.2 libXIE.sl
# ln -s libXext.3 libXext.sl
# ln -s libXhp11.3 libXhp11.sl
# ln -s libXi.3 libXi.sl
# ln -s libXm.4 libXm.sl
# ln -s libXp.2 libXp.sl
# ln -s libXt.3 libXt.sl
# ln -s libXtst.2 libXtst.sl
```

To continue completing pre-installation tasks, go to the "Create Required UNIX
Group and User" section on page 2-27.

Checking the Software Requirements on Linux

Check that the required software and patches are installed on the system.

Check for Required Software

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 check these requirements.

Installation Type or Product	Requirement
All installations	One of the following operating system versions: ■ Red Hat Enterprise Linux AS/ES 2.1 (Update 3) ■ Red Hat Enterprise Linux AS/ES 3 (Update 1) ■ SuSE Linux Enterprise Server (SLES) 8 with service pack 3 or higher
All Installations	The system must be running the following kernel version (or a higher version): **Red Hat Enterprise Linux 2.1 (x86):** 2.4.9, errata e.25 (for example 2.4.9-e.25) **Red Hat Enterprise Linux 2.1: (Itanium):** 2.4.18, errata e.40 (for example 2.4.18-e.40) **Red Hat Enterprise Linux 3:** 2.4.21-4.EL **Note:** This is the default kernel version. **SuSE Linux Enterprise Server 8 (x86):** 2.4.21-138 **SuSE Linux Enterprise Server 8 (Itanium):** 2.4.21-107

Installation Type or Product	Requirement
All Installations	The following packages (or higher versions) must be installed:
	Red Hat Enterprise Linux 2.1:

	`make-3.79`
	`binutils-2.11`
	`glibc-2.2.4-31`
	`gcc-2.96-124`
	`openmotif-2.1.30-11`

	Red Hat Enterprise Linux 3:

	`make-3.79`
	`binutils-2.11`
	`gcc-3.2.3-20`
	`compat-db-4.0.14.5`
	`compat-gcc-7.3-2.96.122`
	`compat-gcc-c++-7.3-2.96.122`
	`compat-libstdc++-7.3-2.96.122`
	`compat-libstdc++-devel-7.3-2.96.122`
	`openmotif-2.2.2-16`
	`setarch-1.3-1`

	SuSE Linux Enterprise Server 8 (x86):

	`make-3.79`
	`binutils-2.11`
	`gcc-3.2.2-38`
	`openmotif-2.2.2-124`

	SuSE Linux Enterprise Server 8 (Itanium):

	`make-3.79`
	`binutils-2.11`
	`gcc-3.2-29`
	`openmotif-2.2.2-125`

Pro*C/C++, Oracle Call Interface, Oracle C++ Call Interface, Oracle XML Developer's Kit (XDK)	The version of Gnu gcc listed previously for your distribution is supported for use with these products.
	Note: Intel C++ Compiler v7.1.0.28 or higher is also supported, however it is not required for installation.
Pro*COBOL (x86 systems only)	Micro Focus Server Express 2.2 or higher

Installation Type or Product	Requirement
Oracle JDBC/OCI Drivers	On x86 systems only, you can use the following optional JDK version with the Oracle JDBC/OCI drivers, however it is not required for the installation:
	■ Sun JDK 1.3.1_09 with the JNDI extension
	Note: With this release, JDK 1.4.2_02 is installed on x86 systems and JDK 1.4.2_03 is installed on Itanium systems.

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

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. On Red Hat Enterprise Linux 2.1 systems only, enter the following command to determine whether the required kernel errata is installed:

```
# uname -r
2.4.9-e.25
```

In this example, the output shows the kernel version (2.4.9) and errata level (e.25) on an x86 system. If the errata level is less than 25 on x86 systems or 40 on Itanium systems, install the latest kernel update. Kernel updates are available from the Red Hat Network.

3. On SuSE Linux Enterprise Server 8 systems only, enter the following command to determine whether Service Pack 3 is installed:

```
# uname -r
2.4.21-138-default
```

In this example, the output shows the kernel version (2.4.21-138) and type (default) on an x86 system. If the kernel version is less than 2.4.21-138 on x86 systems or 2.4.21-107 on Itanium systems, contact SuSE for information about obtaining and installing Service Pack 3 or higher.

4. To determine whether the required packages are installed, enter a command similar to the following:

```
# rpm -q package_name
```

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

5. To continue completing pre-installation tasks, go to the "Create Required UNIX Group and User" section on page 2-27.

Checking the Software Requirements on Solaris

Check that the required software and patches are installed on the system.

Check for Required Software

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 check these requirements.

Installation Type or Product	Requirement
All installations	Operating system versions:
	Solaris 8 or Solaris 9, 64-bit
	Operating system packages:

	`SUNWarc`
	`SUNWbtool`
	`SUNWhea`
	`SUNWlibm`
	`SUNWlibms`
	`SUNWsprot`
	`SUNWsprox`
	`SUNWtoo`
	`SUNWi1of`
	`SUNWi1cs`
	`SUNWi15cs`
	`SUNWxwfnt`

	Note: You might also require additional font packages for Java, depending on your locale. See the following Web site for more information:
	`http://java.sun.com/j2se/1.4.2/font-requirements.html`
Pro*C/C++, Oracle Call Interface, Oracle C++ Call Interface, Oracle XML Developer's Kit (XDK)	Sun ONE Studio 8 (C and C++ 5.5)
Pro*COBOL	Micro Focus Server Express 2.2 or higher
Pro*FORTRAN	Sun ONE Studio 8 (Fortran 95)
Oracle JDBC/OCI Drivers	You can use the following optional JDK versions with the Oracle JDBC/OCI drivers, however they are not required for the installation:
	■ Sun Java 2 SDK Standard Edition 1.3.1_10 and the JNDI extension
	■ Sun Java 2 SDK Standard Edition 1.2.2_17 and the JNDI extension
	Note: JDK 1.4.2_01 is installed with this release.

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

1. To determine which version of Solaris is installed, enter the following command:

   ```
   # uname -r
   ```

   If the operating system version is lower than Solaris 8 (5.8), upgrade your operating system to this level.

2. To determine whether the required packages are installed, enter a command similar to the following:

   ```
   # pkginfo -i SUNWarc SUNWbtool SUNWhea SUNWlibm SUNWlibms SUNWsprot \
    SUNWsprox SUNWtoo SUNWi1of SUNWi1cs SUNWi15cs SUNWxwfnt
   ```

   If a package is not installed, then install it. See your operating system or software documentation for information about installing packages.

Check for Required Patches

Depending on the products that you intend to install, verify that the following patches are installed on the system. The procedure following the table describes how to check these requirements.

> **Note:** The patch versions shown in the following table are minimum versions. Higher versions of the same patches are also supported.

Installation Type or Product	Requirement
All installations	**Patches for Solaris 8:**
	All of the patches included in the J2SE Patch Cluster for Solaris 8:
	■ 108528-23, SunOS 5.8: kernel update patch
	■ 108652-66, X11 6.4.1: Xsun patch
	■ 108773-18, SunOS 5.8: IIIM and X I/O Method patch
	■ 108921-16, CDE 1.4: dtwm patch
	■ 108940-53, Motif 1.2.7 and 2.1.1: Runtime lib. patch for Solaris 8
	■ 108987-13, SunOS 5.8: Patch for patchadd and patchrm
	■ 108989-02, /usr/kernel/sys/acctctl & /.../exacctsys patch
	■ 108993-18, SunOS 5.8: LDAP2 client, libc, ... lib. patch
	■ 109147-24, SunOS 5.8: linker patch
	■ 110386-03, SunOS 5.8: RBAC Feature Patch
	■ 111023-02, SunOS 5.8: /kernel/fs/mntfs and ... sparcv9/mntfs
	■ 111111-03, SunOS 5.8: /usr/bin/nawk patch
	■ 111308-03, SunOS 5.8: /usr/lib/libmtmalloc.so.1 patch
	■ 111310-01, SunOS 5.8: /usr/lib/libdhcpagent.so.1 patch
	■ 112396-02, SunOS 5.8: /usr/bin/fgrep patch
	The following additional patches:
	■ 111721-04, SunOS 5.8: Math Library (libm) patch
	■ 112003-03, SunOS 5.8: Unable to load fontset ... iso-1 or iso-15
	■ 112138-01, SunOS 5.8: usr/bin/domainname patch
All installations	**Patches for Solaris 9:**
	■ 112233-11, SunOS 5.9: Kernel Patch
	■ 111722-04, SunOS 5.9: Math Library (libm) patch

Installation Type or Product	Requirement
Pro*C/C++, Pro*FORTRAN, Oracle Call Interface, Oracle C++ Call Interface, Oracle XML Developer's Kit (XDK)	**Patches for Solaris 8 and Solaris 9:** ■ 112758-02, dbx 7.1: Patch for S1S8CC Debugger ■ 112760-05, C 5.5: Patch for S1S8CC C compiler ■ 112762-06, F95 7.1: Patch for S1S8CC Fortran 95 compiler ■ 112763-06, Compiler Common S1S8CC: Patch for S1S8CC C C++ F77 F95 ■ 113817-03, C++ 5.5: Patch for S1S8CC C++ compiler ■ 113820-02, Compiler Common 7.1: Patch for S1S8CC Math Libraries ■ 113823-03, ILD 4.1: Patch for S1S8CC Incremental Linker

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

1. To determine whether an operating system patch is installed, enter a command similar to the following:

   ```
   # /usr/sbin/patchadd -p | grep patch_number
   ```

   If an operating system patch is not installed, download it from the following Web site and install it:

   ```
   http://sunsolve.sun.com
   ```

2. To continue completing pre-installation tasks, go to the "Create Required UNIX Group and User" section on page 2-27.

Checking the Software Requirements on Tru64 UNIX

Check that the required software and patches are installed on the system.

Check for Required Software

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 check these requirements.

Installation Type or Product	Requirement
All installations	Operating system version:
	HP Tru64 UNIX V5.1B
	Software Development Kit (SDK) v 1.4.2 for the Tru64 UNIX Operating System for the Java Platform (JDK 1.4.2)
	Operating system subsets:

	`OSFCMPLRS`
	 `OSFLIBA`
	 `OSFPGMR`
	 `OSFSER`
	 `OSFX11`

Oracle Net protocol support for DCE	DCE v4.1 or later:

	`DCECDS`
	 `DECRTS`
	 `DCESEC`

Pro*C/C++, Oracle Call Interface, Oracle C++ Call Interface, Oracle XML Developer's Kit (XDK)	Compaq C Compiler V6.5-207 (dtk):
	`DTCCMPLR`
	Compaq C++ Version 6.5-014:

	`CXXBASE`
	 `CXXLIB`
	 `CXXOLD`

Pro*COBOL	Micro Focus Server Express 2.2
Pro*FORTRAN	Compaq Fortran 90 and 77 V5.4A:

	`DFABASE`
	 `DFACOM`
	 `DFARTL`

Oracle JDBC/OCI Drivers	You can use the following optional JDK versions with the Oracle JDBC/OCI drivers, however they are not required for the installation:
	■ SDK v 1.3.1-5
	■ SDK v 1.2.2-12
	Note: SDK v 1.4.2 must be installed before you install the software.

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

1. To determine which version of Tru64 UNIX is installed, enter the following command:

```
# /usr/sbin/sizer -v
Compaq Tru64 UNIX V5.1B (Rev. 2650); Mon Nov  3 10:13:28 PST 200
```

In this example, the version shown is V5.1B. If necessary, see your operating system documentation for information about upgrading the operating system.

2. To determine whether Java SDK 1.4.2 is installed, enter the following command:

```
# /usr/sbin/setld -i JAVA142 | more
```

If Java SDK 1.4.2 is installed, this command displays the paths to all of the installed files. Note the path of the Java home directory. You must specify this value during the installation. The default path is:

```
/usr/opt/java142
```

If this command returns the message Unknown subset, Java SDK 1.4.2 is not installed. Download Java SDK 1.4.2.01 or higher from the following Web site and install it:

```
http://www.compaq.com/java/download/index.html
```

3. To determine whether the required software subsets are installed, enter one of the following commands:

   - To view the list of all software subsets installed on the system, enter the following command:

     ```
     # /usr/sbin/setld -i | more
     ```

   - To determine whether a particular software subset is installed, enter a command similar to the following:

     ```
     # /usr/sbin/setld -i | grep subsetname
     ```

If necessary, install the required software subset. If you require the Compaq C Compiler V6.5-207 (dtk), you can download it from the following Web site:

```
http://www.tru64unix.compaq.com/dtk/
```

Check for Required Patches

Depending on the products that you intend to install, verify that the following patches are installed on the system. The procedure following the table describes how to check these requirements.

Installation Type or Product	Requirement
All installations	Tru64 UNIX V5.1B Patch Kit 2 or higher:
	`T64V51BB22AS0002-20030415`
	HP Tru64 UNIX 5.1B PK2 BL22 Fixes for AdvFS Panic in _OtsMove; and Possible Memory Corruption:
	`T64KIT0020879-V51BB22-E-20031125`

To determine whether the required patch kits are installed, enter the following command:

```
# /usr/sbin/dupatch -track -type kit
```

If this command does not display the identifiers shown in the previous table for the required patch kits (or the identifier for a higher patch kit level), download the latest patch kit from the following Web site and install it (registration is required to access this Web site):

```
http://itrc.hp.com/service/patch/mainPage.do
```

Create Required UNIX 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 UNIX 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, the existing Oracle Inventory group must be the primary group of the UNIX user that you use to install new Oracle software. The following sections describe how to identify an existing Oracle Inventory group.

- The Oracle software owner user (`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. The usual name chosen for this user is `oracle`. This user must have the Oracle Inventory group as its primary group.

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.

The following sections describe how to create the required UNIX user and group.

> **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 see your operating system documentation.

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.

Determine Whether the Oracle Inventory Group Exists

When you install Oracle software on the system for the first time, the 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:

- AIX or Linux:

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

- Other operating systems:

  ```
  # more /var/opt/oracle/oraInst.loc
  ```

If the `oraInst.loc` file exists, 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`).

Create the Oracle Inventory Group

If the `oraInst.loc` file does not exist, create the Oracle Inventory group as
follows, depending on your operating system:

- AIX:

  1. Enter the following command:

     ```
     # smit security
     ```

  2. Choose the appropriate menu items to create the `oinstall` group.

  3. Press F10 to exit.

- Other operating systems:

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

  ```
  # /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 UNIX user

Determine Whether an Existing Oracle Software Owner User Exists

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

- Solaris:

  ```
  # id -a oracle
  ```

- Other operating systems:

  ```
  # id oracle
  ```

If the `oracle` user exists, 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, determine whether you want to use the existing user or create a new user. If you want to use the existing user, ensure that the user's primary group is the Oracle Inventory group. See 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, see the "Identify Required Software Directories" section on page 2-32.

- To modify an existing user, see the "Modify an Existing Oracle Software Owner User" section on page 2-32.

- To create a new user, see the following section.

Create a New Oracle Software Owner User

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

■ AIX:

    1. Enter the following command:

       `# smit security`

    2. Choose the appropriate menu items to create the oracle user, specifying the following information:

      – In the **Primary GROUP** field, specify the Oracle Inventory group, for example oinstall.

      – In the **Group SET** field, specify any required secondary groups.

    Note: The UID for the oracle user must be less than 65536.

---

    3. Press F10 to exit.

    4. Set the password of the oracle user:

       `# passwd oracle`

■ Other operating systems:

    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

    2. Set the password of the oracle user:

       `# passwd oracle`

See the to continue.

Modify an Existing Oracle Software Owner User

If the `oracle` user exists, but its primary group is not `oinstall`, you can modify it as follows depending on your operating system:

- AIX:

    1. Enter the following command:

        ```
        # smit security
        ```

    2. Choose the appropriate menu items to modify the `oracle` user.

    3. In the **Primary GROUP** field, specify the Oracle Inventory group, for example `oinstall`.

    4. In the **Group SET** field, specify any required secondary groups.

    5. Press F10 to exit.

- Other operating systems:

    Enter a command similar to the following, specifying the primary group using the `-g` option and any required secondary groups using the `-G` option:

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

Identify Required Software Directories

You must identify or create three directories for the Oracle software, as follows:

- Oracle base directory
- Oracle Inventory directory
- Oracle home directory

The following subsections describe the requirements for these directories.

Oracle Base Directory

The Oracle base directory acts as a top-level directory for Oracle software installations. It is analogous to the `C:\Oracle` directory used for Oracle software installations on Windows systems. On UNIX 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, `/oracle` or `/opt/oracle` for example.

- *oracle_sw_owner* is the UNIX 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 UNIX users install Oracle software on the same system, 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 might be suitable for your installation and how to create a new Oracle base directory if necessary.

Regardless of whether you create a new 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, the Installer prompts you to specify the path to this directory. Oracle recommends that you choose the following path:

oracle_base/oraInventory

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

> **Note:** All Oracle software installations rely on this directory. Make sure 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 the 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/10.1.0/client_1
```

The 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.

Identify or Create an Oracle Base Directory

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

- Identifying an Existing Oracle Base Directory
- Creating a New Oracle Base Directory

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

Identifying an Existing Oracle Base Directory

Existing Oracle base directories might not have paths that comply with OFA guidelines. However, if you identify an existing Oracle Inventory directory or

existing Oracle home directories, you can usually identify the Oracle base directories, as follows:

- Identify an existing Oracle Inventory directory

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

  - AIX and Linux:

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

  - Other operating systems:

    ```
    # more /var/opt/oracle/oraInst.loc
    ```

  If the `oraInst.loc` file exists, 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.

- Identify existing Oracle home directories

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

  - Solaris:

    ```
    # more /var/opt/oracle/oratab
    ```

  - Other operating systems:

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

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

  ```
  *:/u03/app/oracle/product/10.1.0/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, 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, see the "Configure the oracle User's Environment" section on page 2-37.

  When you are configuring 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 a new Oracle base directory, see the following section.

Creating a New Oracle Base Directory

To identify an appropriate file system, follow these steps:

1. Use the `df -k` command (or `bdf` command on HP-UX) 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, follow these steps:

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
```

If the mount point you identified is /u01 and oracle is the user name of the Oracle software owner, the recommended Oracle base directory path is as follows:

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

2. When you are configuring the oracle user's environment later in this chapter, set the ORACLE_BASE environment variable to specify this directory.

Configure the oracle User's Environment

You run the Installer from the oracle account. However, before you start the 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 and ORACLE_BASE environment variables.

To set the oracle user's environment, follow these steps:

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 +
```

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

4. If you are not logged in as the oracle user, 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 .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 variables are set in the file, 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, 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 the Installer (your workstation or PC).

12. If you determined that the `/tmp` directory has less than 400 MB of free disk space, 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:

a. Use the df -k command (or bdf command on HP-UX) to identify a suitable file system with sufficient free space.

b. 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
```

c. 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. If you intend to use Pro*COBOL, set the following environment variables. If you must specify several values for an environment variable, for example PATH, separate the values with a colon (:).

Environment Variable	Required By	Sample Setting and Description
COBDIR	Pro*COBOL	**AIX:**
		`/opt/lpp/cobol64/cobol`
		HP-UX, Linux, and Solaris:
		`/opt/lib/cobol`
		Tru64 UNIX:
		`/usr/lib/cobol`
		Specifies the directory where COBOL is installed on the system.
PATH	Pro*COBOL	`$COBDIR/bin:$PATH`
		Specifies the directory where the COBOL compiler executable is located.

15. Enter the following command 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, the 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, Oracle recommends that you unset the ORACLE_HOME environment variable and choose the default path suggested by the Installer.

16. 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.

3

Installation Tasks

This chapter describes how to start the Oracle Universal Installer and install Oracle products on your system. It includes information about the following topics:

> **Note:** Review the information in Chapter 1, "Installation Overview" and complete the tasks listed in Chapter 2, "Pre-installation Tasks" before beginning the installation.

- Installation Overview
- Download Oracle Software from the OTN Web Site
- Copy the Oracle Client Software to a Hard Disk
- Install the Oracle Client Software

Installation Overview

The Oracle Client software is available on disc (CD-ROM or DVD-ROM) or you can download it from the Oracle Technology Network (OTN) Web site. In most cases, you use the graphical user interface (GUI) provided by the Oracle Universal Installer to install the software. However, you can also use the Installer to complete non-interactive installations, without using the GUI. See Appendix B for information about non-interactive installations.

This chapter describes how to install Oracle Client from the product media or from the hard disk. To install the software from the hard disk, you must either download it from OTN and unpack it, or copy it from the discs, if you have them. See one of the following sections, depending on the method that you want to use:

- To copy the software to a hard disk, see the "Copy the Oracle Client Software to a Hard Disk" section on page 3-3.

- To install the software from disc or from an existing hard disk location, see the "Install the Oracle Client Software" section on page 3-4.

- To download the software from OTN, see the following section.

Download Oracle Software from the OTN Web Site

This section describes how to download the installation archive files and extract them on your hard disk.

Downloading the Installation Archive Files

To download the installation archive files from OTN:

1. Use any browser to access the software download page on OTN:

    ```
    http://otn.oracle.com/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 filenames.

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 OraCli10g, 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 OTN.

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 commands similar to the following:

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

> **Note:** 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 Disk*n*, where *n* is the disk number identified in the filename.

When you have extracted all of the required installation files, see the "Install the Oracle Client Software" section on page 3-4.

Copy the Oracle Client Software to a Hard Disk

If your system does not have a CD-ROM or DVD-ROM 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 single directory on the hard disk to hold the Oracle software:

   ```
   $ mkdir OraCli10g
   ```

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

   ```
   $ cd OraCli10g
   ```

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, see Appendix A 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 Disk1
   ```

   In this example, /directory_path is the CD-ROM mount point directory or the path of the client directory on the DVD-ROM. The following table lists typical mount point directories for each platform:

Platform	Mount Point
AIX, Tru64 UNIX	/cdrom
HP-UX	/SD_CDROM
Linux (Red Hat)	/mnt/cdrom
Linux (SuSE)	/media/cdrom
Solaris (mounted automatically)	/cdrom/cdrom0
Solaris (mounted manually)	/cdrom

Install the Oracle Client Software

The following sections describe how to install the Oracle software:

- Reviewing Product-Specific Installation Guidelines
- Running the Oracle Universal Installer

Reviewing Product-Specific Installation Guidelines

Review the following guidelines before starting the Installer:

- Oracle Universal Installer

    Do not use the Oracle Universal Installer from an earlier Oracle product release to install components from this release.

- Installations on a Cluster

    If Oracle Cluster Ready Services (CRS) and Oracle Real Application Clusters (RAC) are already installed on the system, the Installer displays the Specify Hardware Cluster Installation Mode screen. You must select **Local Installation** on this screen.

- Re-installing 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 the Oracle Universal Installer

Start the Installer and install the software, as follows:

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

    Some platforms automatically mount discs when you insert them into the drive. If the disc does not mount automatically, see Appendix A for platform-specific information about mounting it.

2. If necessary, log in as the Oracle software owner user (oracle) and set the DISPLAY environment variable.

3. To start the Installer, enter the following commands where *directory_path* is the CD-ROM mount point directory or the path of the client directory on the DVD-ROM:

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

    If the Installer does not appear, see the "X Windows Display Errors" section on page C-2 for information about troubleshooting.

4. Use the following guidelines to complete the installation:

- Follow the instructions displayed in the Installer windows. If you need additional information, click **Help**.

- When the 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
  ```

- On Tru64 UNIX, when prompted for the JDK home directory, specify the location of JDK 1.4.2 on your system.

  To determine the JDK home directory, enter the following command:

  ```
  # /usr/sbin/setld -i JAVA142 | more
  ```

  The default location is /usr/opt/java142.

  Caution: The Oracle Universal Installer automatically installs the Oracle-supplied version of the Java Runtime Environment (JRE). This version is required to run Oracle Universal Installer and several Oracle assistants. Do not modify the JRE except by using a patch provided by Oracle Support Services.

- If you encounter errors while installing or linking the software, see Appendix D for information about troubleshooting.

5. If you chose an installation type that runs Oracle Net Configuration Assistant (NetCA) in interactive mode, you must provide detailed information about configuring your 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 non-interactively.

---

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

7. See Chapter 4, "Post-installation Tasks" for information about tasks that you must complete after you have installed the software.

4

Post-installation Tasks

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

- Required Post-installation Tasks
- Recommended Post-installation Tasks
- Required Product-Specific Post-installation Tasks

You must perform the tasks listed in the "Required Post-installation Tasks" section. Oracle recommends that you perform the tasks listed in the "Recommended Post-installation Tasks" section after all installations.

If you installed and intend to use any of the products listed in the "Required Product-Specific Post-installation Tasks" section, you must perform the tasks listed in the product-specific subsections.

> **Note:** This chapter describes basic configuration only. See the *Oracle Database Administrator's Reference for UNIX Systems* and product-specific administration and tuning guides for more sophisticated configuration and tuning information.

Required Post-installation 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
- Connecting with Instant Client

Downloading and Installing Patches

Check the Oracle*Metalink* Web site for required patches for your installation. 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 10*g* 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. Depending on your platform, set the shared library path environment variable for your system to include the following directories:

Platform	Environment Variable	Required Setting
AIX	LIBPATH	`$ORACLE_HOME/lib32:$ORACLE_HOME/lib:$LIBPATH`
HP-UX	SHLIB_PATH	`$ORACLE_HOME/lib32:$ORACLE_HOME/lib:$SHLIB_PATH`
Linux	LD_LIBRARY_PATH	`$ORACLE_HOME/lib:$LD_LIBRARY_PATH`
Solaris	LD_LIBRARY_PATH	`$ORACLE_HOME/lib32:$ORACLE_HOME/lib:$LD_LIBRARY_PATH`
Tru64 UNIX	LD_LIBRARY_PATH	`$ORACLE_HOME/lib:$LD_LIBRARY_PATH`

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

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

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/10.1.0/client_1
```

The following table shows the appropriate environment variable for each platform:

Platform	Environment Variable
AIX	LIBPATH
HP-UX (32-bit applications)	SHLIB_PATH
Linux, HP-UX (64-bit applications), Solaris, and Tru64 UNIX	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 Post-installation Tasks

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

- Backing Up the root.sh Script

- Setting Up User Accounts

- Generating the Client Static Library

Backing Up 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 the 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.

Setting Up User Accounts

For information about setting up additional user accounts, see the *Oracle Database Administrator's Reference for UNIX Systems*.

Generating the Client Static Library

The client static library (libclntst.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 shell (sh), Bash shell (bash), or Korn shell (ksh):

     ```
     $ ORACLE_HOME=/u01/app/oracle/product/10.1.0/client_1
     $ export ORACLE_HOME
     ```

   - C shell (csh or tcsh):

     ```
     % setenv ORACLE_HOME /u01/app/oracle/product/10.1.0/client_1
     ```

3. Enter the following command:

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

Required Product-Specific Post-installation Tasks

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

- Configuring Oracle Net Services
- Configuring Oracle Precompilers

Configuring Oracle Net Services

> **Note:** The default location for the `tnsnames.ora` file is the `$ORACLE_HOME/network/admin/` directory.

Unless you are using a central `tnsnames.ora` file, copy Oracle Net service names and connect descriptors from the previous release `tnsnames.ora` file to the version of that file used by the new release.

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

Configuring Oracle Precompilers

The following sections describe post-installation tasks for Oracle precompilers:

- Configuring Pro*C/C++
- Configuring Pro*COBOL
- Configuring Pro*FORTRAN
- AIX Only: Configuring SQL*Module for Ada

> **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 commands to verify the path setting, depending on your platform and compiler.

Table 4–1   C/C++ Compiler Directory

Platform	Path	Command
AIX and Tru64 UNIX	/usr/bin	$ which cc
HP-UX	/usr/bin	$ which cc

Table 4–1   C/C++ Compiler Directory

Platform	Path	Command
Linux x86	`/usr/bin`	`$ which gcc`
	`/opt/intel/compiler70/ia32/bin`	`$ which icc`
Linux Itanium	`/usr/bin`	`$ which gcc`
	`/opt/intel/compiler70/ia64/bin`	`$ which ecc`
Solaris	`/opt/SUNWspro/bin`	`$ which cc`

Configuring Pro*COBOL

Complete the following steps to set environment variables for the Pro*COBOL precompiler:

1. Set the COBDIR environment variable to specify the COBOL installation directory.

2. Verify that the PATH environment variable setting includes the directory that contains the COBOL compiler executable (`$COBDIR/bin`).

   Table 4–2 shows the default directory and the appropriate command to verify the path setting, depending on your platform.

Table 4–2   COBOL Compiler Directory

Platform	Path	Command
AIX	`/usr/lpp/cobol64/cobol/bin`	`$ which cob`
	`/usr/lpp/cobol32/cobol/bin`	`$ which cob32`
Linux x86	`/opt/lib/cobol/bin`	`$ which cob`
HP-UX and Solaris	`/opt/lib/cobol/bin`	`$ which cob` `$ which cob32`
Tru64 UNIX	`/usr/lib/cobol/bin`	`$ which cob`

3. Verify that the shared library path environment variable includes the `$COBDIR/lib` directory.

   See Also: See your product-specific COBOL documentation for more information about COBDIR and COBLIB environment variables.

Configuring Pro*FORTRAN

Verify that the PATH environment variable setting includes the directory that contains the FORTRAN compiler executable. Table 4–3 shows the default directory and the appropriate command to verify the path setting, depending on your platform.

Table 4–3   FORTRAN Compiler Directory

Platform	Path	Command
AIX	/usr/bin	$ which xlf
HP-UX	/opt/fortran90/bin	$ which f90
Solaris	/opt/SUNWspro/bin	$ which f95
Tru64 UNIX	/usr/bin	$ which f77

AIX Only: Configuring SQL*Module for Ada

The following sections describe post-installation tasks for SQL*Module for Ada.

Verifying the PATH Environment Variable Setting

Verify that the PATH environment variable setting includes the directory that contains the Ada compiler executable. To display the path of the Ada executable, enter the following command:

```
$ which ada
```

The default directory for the Ada executable is `/usr/lpp/powerada/ada95/bin`.

Verifying the OC Systems PowerAda Compiler Configuration File

Verify that the OC Systems PowerAda 5.3 compiler configuration file is configured. The file is located in the PowerAda installation directory. Check the following file, depending on your shell:

- Korn shell:

  ```
  setup
  ```

- C shell:

  ```
  setup.csh
  ```

See Also: For more information about these setup files, see the PowerAda documentation.

5

Removing Oracle Software

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

> **Note:** If you want to remove an individual product, check the product-specific documentation for requirements and restrictions.

Removing Oracle Software

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

> **Note:** Always use the Oracle Universal Installer to remove Oracle software. Do not delete any Oracle home directories without first using the 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/10.1.0/client_1
     $ export ORACLE_HOME
     ```

- C shell:

  ```
  $ setenv ORACLE_HOME /u01/app/oracle/product/10.1.0/client_1
  ```

3. Start the Installer as follows:

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

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

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

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

6. When the Installer displays a confirmation window asking you to confirm that you want to deinstall the products and their dependant components, click **Yes**.

   The Installer displays a progress indicator as it removes the software.

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

A
Mounting Discs

This Oracle product is delivered on both CD-ROM and DVD-ROM. These discs are in ISO 9660 format with Rockridge extensions. This appendix describes how to mount and unmount a disc on each supported platform. It includes information about the following topics:

- Mounting Discs on AIX on page A-2

- Mounting Discs on HP-UX on page A-3

- Mounting Discs on Linux on page A-4

- Mounting Discs on Solaris on page A-5

- Mounting Discs on Tru64 UNIX on page A-6

Mounting Discs on AIX

To mount a disc, follow these steps:

1. Switch user to `root`:

    ```
    $ su - root
    ```

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

    ```
    # umount /cdrom
    ```

    In this example, `/cdrom` is the mount point directory for the disc drive.

3. Insert the appropriate disc into the disc drive, then enter a command similar to the following to mount it:

    ```
    # /usr/sbin/mount -rv cdrfs /dev/cd0 /cdrom
    ```

    In this example, `/dev/cd0` is the device name of the disc drive and `/cdrom` is the mount point directory.

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

    ```
    /cdrom
    ```

To continue, go to one of the following sections:

-   If you want to copy software to a hard disk, see the "Copy the Oracle Client Software to a Hard Disk" section on page 3-3.

-   If you want to install the software from the discs, see the "Install the Oracle Client Software" section on page 3-4.

Mounting Discs on HP-UX

To mount a disc, follow these steps:

1. Switch user to `root`:

   ```
   $ su - root
   ```

2. If necessary, enter the following command to unmount the currently mounted disc, then remove it from the drive:

   ```
   # /usr/sbin/umount /SD_CDROM
   ```

   In this example, `/SD_CDROM` is the mount point directory for the disc drive.

3. Insert the appropriate disc into the disc drive, then enter a command similar to the following to mount it:

   ```
   # /usr/sbin/mount -F cdfs -o rr /dev/dsk/cxtydz /SD_CDROM
   ```

   In this example, `/SD_CDROM` is the disc mount point directory and `/dev/dsk/cxtydz` is the device name for the disc device, for example `/dev/dsk/c0t2d0`.

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

   ```
   /SD_CDROM
   ```

To continue, go to one of the following sections:

- If you want to copy software to a hard disk, see the "Copy the Oracle Client Software to a Hard Disk" section on page 3-3.

- If you want to install the software from the discs, see the "Install the Oracle Client Software" section on page 3-4.

Mounting Discs on Linux

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 unmount the currently mounted disc, then remove it from the drive:

    - Red Hat:

      ```
      # eject /mnt/cdrom
      ```

    - SuSE:

      ```
      # eject /media/cdrom
      ```

    In these examples, `/mnt/cdrom` and `/media/cdrom` 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/cdrom
      ```

    - SuSE:

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

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:

    - Red Hat:

      ```
      # mount -t is09660 /dev/cdrom /mnt/cdrom
      ```

    - SuSE:

      ```
      # mount -t is09660 /dev/cdrom  /media/cdrom
      ```

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

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

```
/mnt/cdrom
```

To continue, go to one of the following sections:

- If you want to copy software to a hard disk, see the "Copy the Oracle Client Software to a Hard Disk" section on page 3-3.

- If you want to install the software from the discs, see the "Install the Oracle Client Software" section on page 3-4.

Mounting Discs on Solaris

On most Solaris 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 the following command to eject the currently mounted disc, then remove it from the drive:

```
# eject
```

3. Insert the appropriate disc into the disc drive.

4. To verify that the disc mounted automatically, enter the following command:

```
# ls /cdrom/cdrom0
```

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

```
# /usr/sbin/mount -r -F hsfs /dev/dsk/cxtydzs2 /cdrom
```

In this example, /cdrom is the disc mount point directory and /dev/dsk/cxtydzs2 is the device name for the disc device, for example /dev/dsk/c0t2d0s2.

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

- Disc mounted automatically:

  ```
  /cdrom/cdrom0
  ```

- Disc mounted manually:

  ```
  /cdrom
  ```

To continue, go to one of the following sections:

- If you want to copy software to a hard disk, see the "Copy the Oracle Client Software to a Hard Disk" section on page 3-3.

- If you want to install the software from the discs, see the "Install the Oracle Client Software" section on page 3-4.

Mounting Discs on Tru64 UNIX

To mount a disc, follow these steps:

1. Switch user to root:

   ```
   $ su - root
   ```

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

   ```
   # /usr/sbin/umount /cdrom
   ```

   In this example, /cdrom is the mount point directory for the disc drive.

3. Insert the appropriate disc into the disc drive, then enter a command similar to the following to mount it:

   ```
   # /usr/sbin/mount -t cdfs -o nodefperm,noversion /dev/disk/cdrom0c /cdrom
   ```

   In this example, /cdrom is the disc mount point directory, which must exist, and /dev/disk/cdrom0c is the disc device name.

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

   ```
   /cdrom
   ```

To continue, go to one of the following sections:

- If you want to copy software to a hard disk, see the "Copy the Oracle Client Software to a Hard Disk" section on page 3-3.

- If you want to install the software from the discs, see the "Install the Oracle Client Software" section on page 3-4.

B

Non-interactive Installation and Configuration

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

- Introduction
- Create the oraInst.loc File
- Prepare Response Files
- Run the Installer Non-interactively

Introduction

You can install Oracle software non-interactively by specifying a response file when you start the Oracle Universal Installer. The Installer uses the values contained in the response file to provide answers to some or all of the Installer prompts. If you include responses for all of the Installer prompts in the response file, then you can run a completely non-interactive installation without seeing the Installer windows.

To install and configure Oracle products non-interactively, follow these steps:

1. Create the oraInst.loc file.

2. Prepare a response file.

3. Run the Installer non-interactively.

These steps are described in the following sections.

Create the oraInst.loc File

If you plan to install Oracle products non-interactively, you must manually create the oraInst.loc file if it does not already exist. This file specifies the location of the Oracle Inventory directory where the Installer creates the inventory of Oracle products installed on the system.

> **Note:** If Oracle software has been installed previously on the system, the oraInst.loc file might already exist. If the file does exist, you do not need to create a new file.

To create the oraInst.loc file, follow these steps:

1. Switch user to root:

    ```
    $ su - root
    ```

2. On HP-UX, Solaris, and Tru64 UNIX, create the /var/opt/oracle directory if it does not exist:

    ```
    # mkdir -p /var/opt/oracle
    ```

3. Change directory as follows, depending on your operating system:

    -   AIX and Linux:

        ```
        # cd /etc
        ```

- ■ HP-UX, Solaris, and Tru64 UNIX:

    ```
    # cd /var/opt/oracle
    ```

4. Use a text editor to create the `oraInst.loc` file, containing the following lines:

   ```
   inventory_loc=ORACLE_BASE/oraInventory
   inst_group=
   ```

   In this example, `ORACLE_BASE` is the path of the Oracle base directory, for example, `/01/app/oracle`.

5. Enter the following commands to set the appropriate owner, group, and permissions on the `oraInst.loc` file:

   ```
   # chown oracle:oinstall oraInst.loc
   # chmod 664 oraInst.loc
   ```

Prepare Response Files

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

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

Table B–1 lists the response files provided with Oracle Client.

Table B–1   Response Files

Response File	Description
`instantClient.rsp`	Instant Client installation of Oracle Client
`clientAdmin.rsp`	Administrator installation of Oracle Client
`clientRuntime.rsp`	Runtime installation of Oracle Client
`clientCustom.rsp`	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 CD-ROM mount point directory or the `client` directory on the DVD-ROM. 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:** The Installer or configuration assistant fails if you do not correctly configure the response file. See "Silent Response File Error Handling" on page C-6 for more information about troubleshooting a failed non-interactive installation.

Run the Installer Non-interactively

To run the Oracle Universal Installer non-interactively, enter a command similar to the following:

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

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

In the previous example:

- *directory_path* is either the CD-ROM mount point directory, the path of the `client` directory on the DVD-ROM, or the path of the `Disk1` directory on the hard drive

- The `-silent` parameter specifies a completely non-interactive installation

- *filename* is the full path and filename of the installation response file that you configured

C

Troubleshooting

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

- Verify Requirements

- X Windows Display Errors

- What to Do If an Installation Error Occurs

- Reviewing the Log of an Installation Session

- Troubleshooting Configuration Assistants

- Silent 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 pre-installation tasks specified in Chapter 2, "Pre-installation Tasks".

Read the Release Notes

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

```
http://otn.oracle.com/documentation/
```

X Windows Display Errors

If you are running the Installer on a remote system and you want to display the 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, see 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.

2. Enter the following command:

   ```
   $ xhost +
   ```

3. 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 or tcsh shell:

```
% setenv DISPLAY workstation_name:0.0
```

4. 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.

5. If the X clock appears, close X clock and start the Installer again.

What to Do If an Installation Error Occurs

If you encounter an error during installation:

- Do not exit the 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 the Installer is copying or linking files, see the "Reviewing the Log of an Installation Session" section on page C-3.

- If you encounter an error while a configuration assistant is running, see the "Troubleshooting Configuration Assistants" section on page C-5.

- 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-6.

Reviewing the Log of an Installation Session

During an installation, the 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 one of the following commands to determine the location of the `oraInventory` directory:

    -   AIX or Linux:

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

    -   Other operating systems:

        ```
        $ cat /var/opt/oracle/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 the 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 file 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 the Installer or listed in the log file indicates a relinking problem, see 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-3.

- 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 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/installActions*date_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-6.

2. Correct the cause of the fatal error.

3. Reinstall the Oracle software.

Silent Response File Error Handling

To determine whether a silent installation succeeds or fails, see the following log file:

`/oraInventory_location/logs/silentInstalldate_time.log`

If necessary, see 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
- The Installer encounters an error, such as insufficient disk space

The Installer or configuration assistant validates the response file at runtime. If the validation fails, the silent installation or configuration process ends. The 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 the Installer created during the attempted installation and remove the Oracle home directory. Perform the following steps to remove the files:

1. Start the Installer as described in the "Install 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.

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