Oracle8*i* ™

Installation Guide

Release 2 (8.1.6) for Sun SPARC Solaris

December 1999

Part No. A77181-01

Topics Include:
System Requirements
Pre-Installation
Installation
Post-Installation
Oracle8i Products

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Oracle8*i* Installation Guide, Release 2 (8.1.6) for Sun SPARC Solaris

Part No. A77181-01

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Oracle8*i* Installation Guide, Release 2 (8.1.6) for Sun SPARC Solaris

Part No. A77181-01

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

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  USA

If you would like a reply, please provide your name, address, and telephone number.

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

Preface

Purpose

This guide and the *Oracle8i Administrator's Reference* provide instructions for installing and configuring Oracle8*i* Release 2 (8.1.6) on Sun SPARC Solaris systems. Product-specific documentation is in the Oracle8*i* Generic Documentation Set.

Audience

This document is intended for anyone responsible for installing Oracle8*i* Release 2 (8.1.6) on Sun SPARC Solaris systems.

Oracle8*i* and Oracle8*i* Enterprise Edition

Unless noted otherwise, features and functionality described in this document are common to both Oracle8*i* and Oracle8*i* Enterprise Edition.

Typographic Conventions

`monospace`	Monospace type indicates UNIX commands, directory names, usernames, pathnames, and filenames.
brackets [ ]	Words enclosed in brackets indicate key names (for example, Press [Return]). Note that brackets have a different meaning when used in command syntax.
italics	Italic type indicates a variable, including variable portions of filenames. It is also used for emphasis.
UPPERCASE	Uppercase letters indicate Structured Query Language (SQL) reserved words, initialization parameters, and environment variables.

Command Syntax

UNIX command syntax appears in `monospace` font and assumes the use of the Bourne shell. The "`$`" character at the beginning of UNIX command examples should not be entered at the prompt. Because UNIX is case-sensitive, conventions in this document may differ from those used in other Oracle documentation.

backslash \	A backslash indicates a command that is too long to fit on a single line. Enter the line as printed (with a backslash) or enter it as 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`*`]` Note that brackets have a different meaning when used in regular text.
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: *`SIZE filesize [K|M]`*

Accessing Online Documentation

Oracle8*i* for Sun SPARC Solaris Documentation

Oracle8*i* for Sun SPARC Solaris documentation includes this guide and the *Oracle8i Administrator's Reference for Sun SPARC Solaris.*

To access the documentation in HTML and PDF formats, use a UNIX browser to open the `index.htm` file at the top level of the Oracle8*i* CD-ROM. This file contains links to product and Solaris-specific documentation.

Oracle Product Documentation

Oracle8*i* product documentation is on the Oracle8*i* Generic Documentation CD-ROM. Instructions for accessing and installing the documents on the CD-ROM are found in the README file on the top level directory of the CD-ROM.

Related Documentation

If you are unfamiliar with the concepts or terminology associated with relational database management systems, read Chapter 1 in *Oracle8i Concepts* before beginning your installation.

Information about system administration and tuning for a production database system is provided in these documents:

- *Oracle8i Administrator's Reference for Sun SPARC Solaris*
- *Oracle8i System Administrator's Guide*
- *Net8 Administrator's Guide*
- *Oracle8i Designing and Tuning for Performance*

Information about migrating or upgrading from a previous release of the Oracle Server is provided in *Oracle8i Migration.*

Oracle Services and Support

A wide range of information about Oracle products and global services is available on the Internet, from:

```
http://www.oracle.com
```

The sections below provide URLs for selected services.

Oracle Support Services

Technical Support contact information worldwide is listed at:

```
http://www.oracle.com/support
```

Templates are provided to help you prepare information about your problem before you call. You will also need your CSI number (if applicable) or complete contact details, including any special project information.

Products and Documentation

For U.S.A. customers, Oracle Store is at:

```
http://store.oracle.com
```

Links to Stores in other countries are provided from this site.

Product documentation can be found at:

```
http://docs.oracle.com
```

Customer Service

Global Customer Service contacts are listed at:

```
http://www.oracle.com/support/
```

Education and Training

Training information and worldwide schedules are available from:

```
http://education.oracle.com
```

Oracle Technology Network

Register with the Oracle Technology Network (OTN) at:

```
http://technet.oracle.com
```

OTN delivers technical papers, code samples, product documentation, self-service developer support, and Oracle's key developer products to enable rapid development and deployment of applications built on Oracle technology.

1

System Requirements

Completing a quick, successful installation depends on the local system satisfying the software dependencies and space requirements for Oracle software. This chapter describes the requirements for installing Oracle8*i* on Sun SPARC Solaris and any restrictions with this release. Before starting the installation, verify that your system meets the requirements described in this chapter

- Installation Overview
- System Installation Requirements
- Solaris and Installation-Specific Issues and Restrictions

Installation Overview

Installing Oracle8*i* involves the following steps:

1. *Satisfy Prerequisites:* Make sure the local system satisfies the hardware, software, memory, and disk space requirements for the products you want to install. These requirements and restrictions are described in this chapter.

2. *Pre-Installation:* Make sure the UNIX environment is properly set up and complete pre-installation tasks for the products you want to install. See Chapter 2, "Pre-Installation".

3. *Install:* Use the new Oracle Universal Installer provided on your software CD-ROM to install Oracle products. See Chapter 3, "Installation".

4. *Post-Installation:* Create database objects, establish the user environment, and configure the installed Oracle products for the local system. See Chapter 4, "Post-Installation".

5. *Client Installations:* If you want to install client tools, applications, and client interfaces not included with the Oracle8*i* Release 2 (8.1.6) CD-ROM, check the requirements and instructions in the documentation for those products.

Product Installation Categories and Installation Types

There are three categories of products included with Oracle8*i* Release 2 (8.1.6) for Sun SPARC Solaris.

- Oracle8*i* Enterprise Edition

- Oracle8*i* Management Infrastructure

- Oracle8*i* Client

Each category of products consists of multiple installation types. An overview of these product categories and types follows in Table 1–1, "Oracle8i Product Installation Categories and Types" on page 1-3. For descriptions and version numbers of individual software products included on the Oracle8*i* Release 2 (8.1.6) for Sun SPARC Solaris CD-ROM, refer to Appendix A, "Oracle8i Products".

Table 1–1   Oracle8i Product Installation Categories and Types

This Installation Category...	Consists of These Installation Types:
Oracle8i Enterprise Edition	**Typical**
	Installs a preconfigured starter database, licensable Oracle options, networking services, Oracle utilities, enterprise management tools, and online documentation. This type of installation is recommended for users who want the complete database package.
	Minimal
	Gives you the option of installing a preconfigured starter database, networking services, enterprise management tools, and Oracle utilities. This type of installation is recommended for users who want a minimal database package.
	Custom
	Lets you selectively install products from the above installation types.
Oracle8i Management Infrastructure	**Oracle Management Server**
	Installs a management console, management tools, networking services, utilities, basic client software, and online documentation.
	Oracle Internet Directory
	Installs components that enable the Oracle Internet Directory directory server to be implemented as an application on the Oracle8i database.
	Custom
	Lets you selectively install products from the above installation types.
Oracle8i Client	**Administrator**
	Installs a management console, management tools, networking services, utilities, basic client software, and online documentation.
	Programmer
	Installs development tools and interfaces for creating applications that access an Oracle8i database. This installation package includes precompilers, networking services, and documentation.
	Application User
	Provides networking services and support files that enable database application users to connect to and interact with an Oracle8i database.
	Custom
	Lets you selectively install products from the above installation types.

System Installation Requirements

Verify that your system meets the requirements described in the following sections before you install Oracle8*i* Release 2 (8.1.6) products.

> **Note:** You will not be able to complete an installation if your system does not meet the minimum requirements for the Oracle products you select.

- Hardware Requirements
- Disk Space Requirements
- Operating System Software Requirements
- Online Documentation Requirements
- Additional Product-Specific Installation Requirements

Hardware Requirements

To install Oracle8*i* products included with this release, your Sun SPARC Solaris system must meet the minimum hardware requirements listed in Table 1–2.

Table 1–2   Hardware Requirements

Hardware	Requirements
Memory	A minimum of 128 MB RAM is required to install Oracle8*i* products. Oracle8*i* Client products require 64 MB of RAM
Swap Space	Twice the amount of RAM or at least 400 MB, whichever is greater, is recommended for most systems.
CD-ROM Device	A CD-ROM drive supported by Solaris is required. Oracle uses ISO 9660 format CD-ROM disks with RockRidge extensions.

To determine the amount of RAM memory installed on your system, enter the following command:

```
$ /usr/sbin/prtconf | grep size
```

To determine the bytes of swap space currently configured on your system, enter the following command and multiply the BLOCKS column by 512:

```
$ swap -l
```

Disk Space Requirements

The Oracle Universal Installer allows you to choose your installation category and type as described in "Product Installation Categories and Installation Types" on page 1-2. Your choices will determine how much disk space you will need as shown in Table 1–3, Table 1–4, and Table 1–5. Disk space requirements do not account for the size of your database. A production Oracle database server supporting many users requires significantly greater disk space and memory.

> **Note:** These are approximate values that might vary slightly at install time.

Table 1–3   Disk Space Requirements for Oracle8i Enterprise Edition

Installation Type	Required Disk Space
Typical	1000 MB
Minimal	800 MB
Custom	Up to a maximum of 1020 MB

Table 1–4   Disk Space Requirements for Oracle8i Management Infrastructure

Installation Type	Required Disk Space
Oracle Management Server	310 MB
Oracle Internet Directory	680 MB
Custom	Up to a maximum of 790 MB

Table 1–5   Disk Space Requirements for Oracle8i Client

Installation Type	Required Disk Space
Administrator	350 MB
Programmer	260 MB
Application User	150 MB
Custom	Up to a maximum of 470 MB

Operating System Software Requirements

To install Oracle8*i* products included with this release, your Sun SPARC Solaris system must meet the operating system requirements listed in Table 1–6.

Table 1–6   Operating System Software Requirements

OS Software	Requirements
Operating System	Solaris 2.6 or Solaris 7.
Operating System Patch	Use the latest kernel patch from Sun Microsystems. Sun provides patch information at: http://sunsolve.sun.com Solaris 2.6 requires at least kernel jumbo patch revision #105181-15 for successful installation of Release 2 (8.1.6). See Table 1–12, "Solaris 2.6 Patches for JRE 1.1.8_10" and Table 1–13, "Solaris 7 Patches for JRE 1.1.8_10" on page 1-13 for patches required on Solaris for the JRE.
Operating System Packages	SUNWarc, SUNWbtool, SUNWhea, SUNWlibm, SUNWlibms, SUNWsprot, SUNWtoo
Window Manager	X-windows must be installed on the system from where the Installer is run. Use any Sun-supported X-windows server, for example, dtwm, twm, olwm, that supports Motif. Character mode installs are not supported for Release 2 (8.1.6). See "Character Mode" on page 1-13.
Required Executables	The following executables must be present in the /usr/ccs/bin directory: make, ar, ld, nm.

To determine your current operating system information, enter the following command:

```
$ uname -a
```

To determine which operating system patches are installed, enter the following command:

```
$ showrev -p
```

To determine which operating system packages are installed, enter the following command:

```
$ pkginfo -i [package_name]
```

If you enter `pkginfo -i`, all installed packages are listed.

To determine if your X-windows system is working properly on your local system, enter the following command:

```
$ xclock
```

If a clock is not displayed on your screen, X-windows is not configured correctly. See "DISPLAY" on page 2-8 for instructions on configuring X-windows.

To determine if you are using the correct system executables, enter the following commands:

```
$ /usr/bin/which make
$ /usr/bin/which ar
$ /usr/bin/which ld
$ /usr/bin/which nm
```

Each of the four commands above should point to the `/usr/ccs/bin` directory. If not, add `/usr/ccs/bin` to the beginning of the PATH environment variable in the current shell. See "PATH" on page 2-9 for instructions on setting the PATH variable.

Online Documentation Requirements

To view online documentation included with the Oracle8*i* CD-ROM, use a web browser such as Netscape Navigator 4.0 or higher running on a UNIX system. To view PDF documents, you need Adobe Acrobat Reader version 3.0 or higher. Online documentation included with Oracle8*i* Release 2 (8.1.6) for Sun SPARC Solaris can only be viewed on UNIX systems.

Additional Product-Specific Installation Requirements

This section provides product-specific information in addition to hardware and software requirements provided earlier in this chapter. For descriptions of these products, see Appendix A, "Oracle8i Products".

Oracle8*i* and Options

Table 1–7   Restrictions, Requirements, and Installation Tasks for Oracle8i and Options

Product Name	Restrictions and Requirements
Oracle Parallel Server, 8.1.6	Requires Sun Enterprise Cluster 2.1 or higher
Oracle *inter*Media, 8.1.6	You must have at least 10 MB of disk space available for the *inter*Media Text data dictionary.
Oracle Visual Information Retrieval, 8.1.6	Requires Oracle *inter*Media, 8.1.6
Oracle Internet Directory, 2.0.6	Requires an installation of Oracle8*i* Enterprise Edition, Release 2 (8.1.6) with character set AMERICAN_AMERICA.UTF8 and an instance dedicated to the Oracle Internet Directory. If this installation does not already exist, the Oracle Universal Installer will install it automatically.

Tools and Precompilers

Table 1–8   Restrictions, Requirements, and Installation Tasks for Tools and Precompilers

Product Name	Restrictions and Requirements
Java Runtime Environment (JRE), 1.1.8	See Table 1–12, "Solaris 2.6 Patches for JRE 1.1.8_10" and Table 1–13, "Solaris 7 Patches for JRE 1.1.8_10" on page 1-13 for patches required on Solaris for the JRE.
Oracle JServer, 8.1.6 (includes Java Virtual Machine (JVM) and Java utilities)	See the Java README on the Oracle8*i* CD-ROM for restrictions and requirements
Oracle Data Migration Assistant, 8.1.6	An Oracle7 database must be at least release 7.1.4 to be migrated. An Oracle8 database must be at least release 8.0.3.0 to be upgraded. An Oracle8*i* database must be at least version 8.1.5 to be upgraded.
Pro*COBOL, 8.1.6	Requires Micro Focus COBOL 3.2 or higher, or Sun Nihongo COBOL 1.0.1
Pro*C/C++, 8.1.6	Requires SPARCworks/Workshop C compiler 4.2 or higher
Pro*COBOL, 1.8.51	Requires Micro Focus COBOL 3.2 or higher, or Sun Nihongo COBOL 1.0.1
Pro*FORTRAN, 1.8.51	Requires FORTRAN77 3.0.1 or higher
SQL*Module Ada, 8.1.6	Requires Sun ADA 2.1 or higher

Networking and System Management Products

All network products require the underlying software and operating system libraries for the supported network. The network software must be installed and running *prior* to installation of Net8 products. Refer to operating system and third party vendor networking product documentation for more information. Net8 Release 8.1.6 products require Oracle8*i* Release 2 (8.1.6) and Net8 Release 8.1.6.

Table 1–9   Restrictions and Requirements for Networking and System Management Products

Product Name	Restrictions and Requirements
Oracle Enterprise Manager, 2.1.0	A system running: ■ only the Console and DBA Management Pack must be at least a Sun SPARC 20 - 266 Mhz ■ the Oracle Management Server must be at least a Sun SPARC Ultra 1 - 300 Mhz ■ the entire Oracle Enterprise Manager bundle (Console, DBA Management Pack, Oracle Management Service, and database repository) must be at least a Sun SPARC Ultra 1 - 400 Mhz. If tracing is enabled, an additional 50 MB of disk space should be allocated for trace logs. Access to an Oracle database, release 7.3 or later, is required to create a new Enterprise Manager repository. Running Oracle Enterprise Manager from a website requires special configuration. See the *Oracle Enterprise Manager Configuration Guide* for more information.
Oracle Advanced Security: Export Edition, 8.1.6	See Table 1–10 for information about Oracle Advanced Security authentication support requirements.
Legato Storage Manager, Version 5.5	See Table 1–11 for Legato Storage Manager Software Requirements. **Note:** Legato Storage Manager (LSM) can be installed either through the Installer or manually according to the instructions in the section "Installing Legato Storage Manager Manually" in Chapter 3.
Oracle TCP/IP with SSL Protocol Support, 8.1.6	SSL 3.0 or later
Oracle LU6.2 Protocol Support, 8.1.6	Sun SNA 9.1, or higher
Oracle SPX/IPX Protocol Support, 8.1.6	Sun PC Protocol Services 1.1

Oracle Advanced Security

Oracle Advanced Security is an add-on product to the standard Net8 Server or Net8 Client. It must be purchased and installed on both the client and the server.

Oracle Advanced Security release 8.1.6 requires Net8 release 8.1.6 and supports Oracle8i Enterprise Edition. Install Oracle Advanced Security on each client and server where Oracle Advanced Security is required.

Table 1–10 describes requirements for authentication protocols supported by Oracle Advanced Security. See the *Oracle Advanced Security Administrator's Guide* for additional information.

Table 1–10   Supported Authentication Methods and Requirements

Authentication Method	Requirements
Kerberos	MIT Kerberos Version 5, release 1.1
	The Kerberos authentication server must be installed on a physically secure machine.
CyberSafe TrustBroker	CyberSafe GSS Runtime Library, version 1.1 or later, installed on both the system that runs the Oracle client and on the machine that runs the Oracle server.
	CyberSafe TrustBroker, release 1.2 or later installed on a physically secure machine that runs the authentication server.
	CyberSafe TrustBroker Client, release 1.2 or later installed on the machine that runs the Oracle client.
SecurID	ACE/Server release 3.3 or higher running on the authentication server.
Identix Biometric	Identix hardware and driver installed on each Biometric Manager station and client.
RADIUS	A RADIUS server that is compliant with the standards in the Internet Engineering Task Force (IETF) RFC #2138, *Remote Authentication Dial In User Service* (RADIUS) and RFC #2139, *RADIUS Accounting*
	To enable challenge-response authentication, you must run RADIUS on a platform that supports the Java Native Interface as specified in release 1.1 of the Java Development Kit from JavaSoft
Secure Socket Layer (SSL)	A wallet that is compatible with the Oracle Wallet Manager version 2.1. Wallets created in earlier releases of the Oracle Wallet Manager are not forward compatible.

> **Note:** No additional authentication protocol software is required to relink Oracle products. However, Oracle does not provide the third-party authentication servers (e.g. Kerberos, RADIUS). The appropriate authentication server for these protocols must be installed and configured separately. Secure Socket Layer is provided and always installed with Oracle Advanced Security.

Software Requirements for Legato Storage Manager

Legato Storage Manager is a restricted-functionality version of Legato NetWorker.

> **Note:** If you have Legato NetWorker already installed on your system, you will not have the option of installing Legato Storage Manager. To install the version of Legato Storage Manager included with this release of Oracle8*i*, you must first de-install any present version of Legato NetWorker. See "Removing an Existing Legato Storage Manager Installation" on page 2-15.

The software requirements in Table 1–11 apply to a default installation of Legato Storage Manager, with no relocation of the software components.

Table 1–11   Legato Storage Manager Software Requirements

Components	Default Location	Space Requirement
GUI	/usr/bin	17 MB
Daemon and utility command files	/usr/sbin	26 MB
Library files	/usr/lib	10 MB
Online client file and server indexes; media database	/nsr	100 MB
Online manual pages	/usr/share/man	1 MB
Device Drivers	/usr/kernel	0.1 MB
	/etc/LGTOuscsi	15 MB
		169.1 MB

Solaris and Installation-Specific Issues and Restrictions

The following issues and restrictions can affect the installation or use of Oracle8*i* on Sun SPARC Solaris. Check the Release Notes that accompany this release and the README files in the $ORACLE_HOME/relnotes directory before using Oracle8*i*. For Release 2 (8.1.6), the README files are uncompressed and linked to the top-level HTML file in the doc directory. README files for other products on the Oracle8*i* CD-ROM are in the doc or admin/doc directories for the respective products.

New ORACLE_HOME

Do not install Oracle8*i* Release 2 (8.1.6) into an ORACLE_HOME directory containing any Oracle Software earlier than 8.1.5. If you install Oracle8*i* Release 2 (8.1.6) into an 8.1.5 ORACLE_HOME, Oracle Universal Installer removes most existing 8.1.5 products before the 8.1.6 products are installed. Do not remove 8.1.5 products that remain after the upgrade to 8.1.6.

Oracle Corporation recommends that you install Oracle8*i* Release 2 (8.1.6) products into a new ORACLE_HOME.

Java Runtime Environment (JRE)

The JRE shipped with Oracle8*i* is used by Oracle Java applications such as the Oracle Universal Installer and is the only one supported to run with these applications. Customers should not modify this JRE, unless it is done through a patch provided by Oracle Support Services.

The inventory can contain multiple versions of the JRE, each of which can be used by one or more products or releases. The Installer creates the oraInventory directory the first time it is run to keep an inventory of products that it installs on your system as well as other installation information. The location of oraInventory is defined in /var/opt/oracle/oraInst.loc.

Products in an ORACLE_HOME access the JRE through a symbolic link in $ORACLE_HOME/JRE to the actual location of a JRE within the inventory. Customers should not modify the symbolic link unless it is done through a patch provided by Oracle Support Services.

The Solaris patches Table 1–12 and Table 1–13are required or recommended for JRE 1.1.8_10 and can be obtained from:

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

Table 1–12   Solaris 2.6 Patches for JRE 1.1.8_10

Patch ID	Description	Required or Recommended?
106040-11	X Input and Output Method patch	Required
105181-15	Kernel patch	Required
105284-25	Motif Runtime Library Patch	Recommended
105490-07	Dynamic linker patch	Recommended
106409-01	Chinese TrueType fonts patch (1)	Recommended
105633-21	OpenWindows 3.6: Xsun patch (1)	Recommended
105568-13	Libthread patch	Recommended
105210-19	LibC patch	Recommended
105669-07	CDE 1.2: libDTSvc patch (dtmail)	Recommended

Table 1–13   Solaris 7 Patches for JRE 1.1.8_10

Patch ID	Description	Required or Recommended?
107636-01	X Input and Output Method patch	Required
106980-05	Libthread patch	Recommended
107607-01	Motif fontlist, fontset, libxm	Recommended
107078-10	Open Windows 3.6.1 Xsun patch (1)	Recommended

To determine which operating system patches are installed, enter the following command:

```
$ showrev -p
```

Character Mode

Installation can no longer be performed using character mode. However, you can configure the Oracle Universal Installer to perform a non-interactive installation of Oracle products. The Installer can be run in non-interactive mode directly from your system's X-windows console or via an X-terminal or PC X-terminal on a remote system. For more information on the non-interactive installation of Oracle products, see "Non-Interactive Installation and Configuration" on page 3-21.

Upgrading and Migrating

If you are upgrading an existing system, there are issues which exceed the scope of this manual. See *Oracle8i Migration* for details on upgrade and migration procedures. If you are upgrading an Oracle Enterprise Manager repository, see the *Oracle Enterprise Manager Configuration Guide*.

It is possible to migrate an Oracle7 database, release 7.1.4 or higher, or upgrade an Oracle8 database, release 8.0.3 or higher, to Oracle8*i* Release 2 (8.1.6). To migrate from an Oracle7 database lower than 7.1.4, you must first upgrade to an Oracle7 database, release 7.1.4 or higher, and then use the Oracle Data Migration Assistant to migrate to Oracle8*i*.

> **Note:** The Migration Utility is available as a stand-alone product.

File Systems

Oracle8*i* Server must be able to verify that file writes have been made to disk. File systems that do not support this verification are not supported for use with Oracle databases, although Oracle software can be installed on them.

Optimal Flexible Architecture

Optimal Flexible Architecture (OFA), Oracle's standard set of configuration guidelines for Oracle databases, is supported, but not enforced, by the Oracle Universal Installer. The starter database included with the Typical installation type of Oracle8*i* Enterprise Edition is created under a single mount point. See "Identifying Your Database Environment" on page 2-22 for more information about the databases you can create during installation.

For more information about OFA, see Appendix A, "Optimal Flexible Architecture", in the *Oracle8i Administrator's Reference*.

Solaris 2.3, 2.4, and 2.5

Solaris 2.3, 2.4, and 2.5 are not supported for use with Oracle8*i* Release 2 (8.1.6). You must be using Solaris 2.6 or Solaris 7. See Table 1–6 on page 1-6 for details of operating system and patch level requirements.

Very Large Files

Oracle8*i* Release 2 (8.1.6) includes native support for files greater than 2 GB. Check your shell to determine whether it will impose a limit.

To check current soft shell limits, enter the following command:

```
$ ulimit -Sa
```

To check maximum hard limits, enter the following command:

```
$ ulimit -Ha
```

The `file (blocks)` value should be multiplied by 512 to obtain the maximum file size imposed by the shell. A value of `unlimited` is the operating system default and is the maximum value of 1 TB. See Table 1–14, "Oracle File Size Limits" for Oracle-specific file size limits. The `db_block_size` parameter is defined in the `$ORACLE_HOME/dbs/init`*sid*`.ora` file.

Table 1–14   Oracle File Size Limits

File Type	Maximum Size in Bytes
Datafiles where db_block_size=2048	8,589,932,544
Datafiles where db_block_size=4096	17,179,865,088
Datafiles where db_block_size=8192	34,359,730,176
Datafiles where db_block_size=16384	68,719,460,352
Import/Export file	2,147,483,647
SQL*Loader file	2,147,483,647

Oracle Parallel Server Restriction

Because all Oracle databases on a cluster linked in Parallel Server mode must match the word size of the Cluster Group Services executable, they must *all* run only a 32-bit executable. Mixing word sizes of parallel server executables, even across different databases, will not work in 8.1.x. This restriction does not apply to Oracle executables that are not linked in Parallel Server modes.

2

Pre-Installation

After you have verified that your system meets the requirements described in Chapter 1, "System Requirements", use this chapter to help you prepare your system for installing Oracle8*i*,

- UNIX System Configuration
- Setup Tasks to Perform as the root User
- Setup Tasks to Perform as the oracle User
- Setup Tasks for Oracle Products
- Understanding Net**8** Configuration
- Identifying Your Database Environment

UNIX System Configuration

Table 2–1 summarizes the requirements for installing Oracle8*i* on your Solaris system. If your system fails to satisfy any listed requirement, perform the tasks listed on page 2-3 as necessary to configure your system to meet these requirements.

Table 2–1   UNIX System Configuration Summary

System Factor	Requirement for Oracle8*i*	
UNIX Kernel Parameters:		
Shared Memory	SHMMAX	4294967295
		This setting does not affect how much shared memory is needed or used by Oracle8*i* or the operating system. It is used only to indicate the maximum allowable size. This setting also does not impact operating system kernel resources.
	SHMMIN	1
	SHMMNI	100
	SHMSEG	10
Semaphores	SEMMNI	100
	SEMMSL	Set to 10 plus the largest PROCESSES parameter of any Oracle database on the system.
		The PROCESSES parameter can be found in each init*sid*.ora file, located in the $ORACLE_HOME/dbs directory. The default value of PROCESSES for the preconfigured database created by Oracle Database Configuration Assistant is 50.
	SEMMNS	Set to the sum of the PROCESSES parameter for each Oracle database, adding the largest one twice, then add an additional 10 for each database. See "Configure the UNIX Kernel for Oracle8i" on page 2-4 for an example of this formula.
	SEMOPM	100
	SEMVMX	32767

Note: If any of the kernel parameters above are less than your current values, continue to use the current value. These are the requirements for Oracle8*i* only. If you have other programs which use shared memory and semaphores, you will need to adjust the values accordingly. Take into account that a system reboot is necessary for kernel changes to take effect when planning for current and future database requirements.

Table 2–1   UNIX System Configuration Summary

System Factor	Requirement for Oracle8*i*
Mount Points (Storage Devices)	Oracle Universal Installer requires only two mount points: one for the software, and one for the database files. An Optimal Flexible Architecture (OFA)-compliant database requires at least four mount points, all at the same level of the directory structure. One is for the software, three are for database files. See the Oracle8*i* Administrator's Reference for information on implementing OFA on UNIX.
UNIX Groups for Oracle Roles	A UNIX group is required for the OSDBA role. This book assumes that the group is named dba. The OSOPER role may belong to the same group as the OSDBA or to a different group.
Special UNIX Group to own the Oracle Universal Installer oraInventory	All users installing Oracle products in any ORACLE_HOME must have oinstall set as their primary UNIX group. The Installer's inventory is shared by all ORACLE_HOMEs on a system and is group writable. Install Oracle products with oinstall set as the current group.
UNIX Accounts	A UNIX account that is dedicated solely to installing and upgrading Oracle products. The account must have the oinstall group as its primary group and the OSDBA group as a secondary group. This book assumes the account is called *oracle*.
Permissions for File Creation	Set umask to 022 for the *oracle* account.
ORACLE_BASE	Recommended as part of an OFA-compliant installation. See "ORACLE_BASE" on page 2-10 for further information.

Setup Tasks to Perform as the root User

Log in as the root user and perform the following tasks to set up your environment for Oracle8*i*:

❏ Configure the UNIX Kernel for Oracle8i

❏ Create Mount Points

❏ Create UNIX Groups for Database Administrators

❏ Create a UNIX Group for the Oracle Universal Installer Inventory

❏ Create a UNIX Account to Own Oracle Software

> **Note:** In addition to these setup tasks, you will need `root` privileges near the start of the installation if the file `/var/opt/oracle/oraInst.loc` does not exist. You will also need `root` privileges near the end of the installation to run the `root.sh` script.

▶▶ Configure the UNIX Kernel for Oracle8*i*

Configure the UNIX kernel Interprocess Communication (IPC) parameters to accommodate the Shared Global Area (SGA) structure of Oracle8*i*. You will not be able to start up the database if the system does not have adequate shared memory to accommodate the SGA.

1. Use the `ipcs` command to obtain a list of the system's current shared memory and semaphore segments, and their identification number and owner.

   Because the shared memory in Solaris is dynamically loaded, when you run `ipcs` you may receive a message that the shared memory facility is not in the system. The shared memory driver is loaded after the Oracle8*i* instance is started. You can check the `/etc/system` file to verify that the system has been configured with enough shared memory.

2. Set the kernel parameters corresponding to the:

   - maximum size of a shared memory segment (SHMMAX)
   - minimum size of shared memory segment (SHMMIN)
   - maximum number of shared memory identifiers in the system (SHMMNI)
   - maximum number of shared memory segments a user process can attach (SHMSEG)
   - maximum number of semaphore identifiers in the system (SEMMNI)
   - maximum number of semaphores in a set (SEMMSL)
   - maximum number of semaphores in the system (SEMMNS)
   - maximum number of operations per `semop` call (SEMOPM)
   - semaphore maximum value (SEMVMX)

   The total allowable shared memory is determined by the formula:

   ```
   SHMMAX * SHMSEG
   ```

Table 2–1 on page 2-2 shows the required settings, which should be acceptable for most installations.

Set to the sum of the PROCESSES parameter for each Oracle database, adding the largest one twice, then add an additional 10 for each database. For example, consider a system that has three Oracle instances with the PROCESSES parameter in their init*sid*.ora files set to the following values:

```
ORACLE_SID=A, PROCESSES=100
ORACLE_SID=B, PROCESSES=100
ORACLE_SID=C, PROCESSES=200
```

The value of SEMMNS is calculated as follows:

SEMMNS = [(A=100) + (B=100)] + [(C=200) * 2] + [(# of instances=3) * 10] = 630

Setting parameters too high for the operating system can prevent the machine from booting up. Refer to Sun Microsystems Sun SPARC Solaris system administration documentation for parameter limits.

The following lines are examples of additions to the /etc/system file to configure the UNIX kernel with the minimum recommended values:

```
set shmsys:shminfo_shmmax=4294967295
set shmsys:shminfo_shmmin=1
set shmsys:shminfo_shmmni=100
set shmsys:shminfo_shmseg=10
set semsys:seminfo_semmni=100
set semsys:seminfo_semmsl=100
set semsys:seminfo_semmns=200
set semsys:seminfo_semopm=100
set semsys:seminfo_semvmx=32767
```

3. Reboot the system if you have modified the kernel, shared memory, or semaphore parameters.

▶▶ Create Mount Points

Oracle8*i* requires at least two mount points: one for the software and at least one for the database files. It requires at least four mount points when creating an OFA-compliant installation: one for the software and at least three for database files.

All software and database mount point names used for Oracle8*i* should match the pattern /p*m*, where *p* is a string constant and *m* is a fixed-length key to distinguish between mount points. Table 2–2, "Sample Mount Point Naming Scheme", on page 2-6 shows a sample naming scheme.

Table 2–2   Sample Mount Point Naming Scheme

Software Mount Point	Database Mount Points
/u01	/u02
	/u03
	/u04

> **See Also:**   Optimal Flexible Architecture is described in detail in Appendix A, "Optimal Flexible Architecture" of the *Oracle8i Administrator's Reference for Sun SPARC Solaris.*

▶▶ Create UNIX Groups for Database Administrators

During installation, two Oracle roles are created: SYSDBA and SYSOPER. Database administrators are granted these roles by virtue of their membership in corresponding UNIX groups. Oracle8*i* documentation refers to these UNIX groups as the OSDBA and OSOPER groups. Create the group(s) for these roles before you log in as the `oracle` user and start the Oracle Universal Installer. You may assign the roles to two separate UNIX groups, or to a single group.

Use the `admintool` or `groupadd` utility to create a group named `dba` or another name of your choosing. If you plan to assign the SYSOPER role to a separate group, create that group also.

The Oracle Universal Installer gives both Oracle SYSDBA and SYSOPER privileges to members of the UNIX group `dba` by default. If you perform a Custom installation of Oracle8*i*, or if the `oracle` user is not a member of a group called `dba`, Oracle Universal Installer will prompt you to enter the group(s) you have created for these roles.

▶▶ Create a UNIX Group for the Oracle Universal Installer Inventory

Use the `admintool` or `groupadd` utility to create a group named `oinstall`. The `oinstall` group will own the Oracle Universal Installer's `oraInventory` directory. The `oracle` user account that runs the installation must have the `oinstall` group as its primary group.

▶▶ Create a UNIX Account to Own Oracle Software

The `oracle` account is the UNIX user account that owns the Oracle8*i* software after installation. Run Oracle Universal Installer with this user account.

Use the `admintool` or `useradd` utility to create an *oracle* account with the following properties:

Table 2–3   Properties of the oracle Account

Login Name	Any name, but this document refers to it as the *oracle* account.
Primary GID	The `oinstall` group.
Secondary GID	The `dba` group.
Home Directory	Choose a home directory consistent with other user home directories. The home directory of the *oracle* account does not have to be the same as the ORACLE_HOME directory.
Login Shell	The default shell can be `/usr/bin/sh`, `/usr/bin/csh`, or `/usr/bin/ksh`, but the examples in this document assume the Bourne shell (`/usr/bin/sh`).

Note: Use the *oracle* account only for installing and maintaining Oracle software. Never use it for purposes unrelated to the Oracle**8***i* Server. Do not use `root` as the *oracle* account.

Sites with multiple ORACLE_HOMEs on one system may install Oracle software with the same *oracle* account, or separate ones. Each *oracle* account must have `oinstall` as its primary group.

Setup Tasks to Perform as the *oracle* User

Log in to the *oracle* account and perform the following tasks as necessary:

❏ Set Permissions for File Creation

❏ Set Environment Variables

❏ Update the Environment for Current Session

▶️ Set Permissions for File Creation

Set `umask` to `022` for the *oracle* account to ensure `group` and `other` have read and execute permissions, but not write permission, on files installed.

1. Enter the `umask` command to check the current setting.

2. If the umask command does not return 22, set it in the .profile or .login file of the *oracle* account and execute the following command:

```
$ umask 022
```

▶▶ Set Environment Variables

Before starting the Oracle Universal Installer, set the DISPLAY and PATH environment variables and any of the other variables as appropriate. Table 2–4, "Environment Variable Summary", provides a brief summary of the variables listed in this section. Refer to each variable's entry in this section for instructions on setting the variable correctly.

> **Note:** If an Oracle Server already exists on your system, its settings may have a bearing on the settings that you choose for the new environment.

Table 2–4   Environment Variable Summary

Variable	Description and Example Setting	Required?
DISPLAY	The the name, server number, and screen number of the system where the Oracle Universal Installer will display.	Yes
PATH	Shell's search path for executables.	Yes
ORACLE_BASE	Directory at the top of the Oracle software and administrative file structure.	No
ORACLE_HOME	Directory containing Oracle software for a given release.	No
NLS_LANG	Character set to use when installing.	No
ORA_NLS33	Location of National Language Support character set data.	No
ORACLE_SID	The Oracle server instance identifier to use during installation.	No
ORACLE_DOC	Directory where documentation will be installed.	No

DISPLAY

On the system where you will run Oracle Universal Installer, set DISPLAY to the system name or IP address, X server, and screen used by your workstation. Do not use the hostname or IP address of the system where the software is being installed unless you are performing the installation from that system's X-windows console. Use the machine name or IP of your own workstation if you are installing from a

remote system. If you are not sure what the X server and screen should be set to, use 0 (zero) for both.

If you get an Xlib error similar to "Failed to connect to server" or "Connection refused by server" or "Can't open display" when starting the Installer, run the Bourne/Korn shell or C shell commands below on your X workstation:

For the Bourne or Korn shells:

On the server where the Oracle database will be installed, enter the following:

```
$ DISPLAY=workstation_name:0.0
$ export DISPLAY
```

In the session on your workstation:

```
$ xhost +server_name
```

For the C shell:

On the server where the Oracle database will be installed, enter the following:

```
$ setenv DISPLAY workstation_name:0.0
```

In the session on your workstation:

```
$ xhost +server_name
```

If you are using a PC X server, refer to your PC X server documentation for instructions on how to configure the PC X server to allow remote X clients to connect.

Check that the DISPLAY variable is correctly set as detailed above.

PATH
Set the shell's search path to include the following:

- `$ORACLE_HOME/bin`, `/usr/bin`, `/etc`, `/usr/ccs/bin`, `/usr/openwin/bin`

- the local `bin` directory, `/usr/local/bin`, if it exists

> **Note:** If you require `/usr/ucb` in your search path, make sure it comes after `/usr/ccs/bin` in the PATH setting.

ORACLE_BASE

ORACLE_BASE specifies the directory at the top of the Oracle software and administrative file structure. The OFA-recommended value is `software_mount_point/app/oracle`. For example: `/u01/app/oracle`. If you are not using an OFA-compliant system, you do not have to set ORACLE_BASE, but it is highly recommended that you do set it.

ORACLE_HOME

ORACLE_HOME specifies the directory containing the Oracle software for a given release. The Optimal Flexible Architecture recommended value is:
`$ORACLE_BASE/product/release.`
For example:
`/u01/app/oracle/product/8.1.6.`

Ensure that the value of ORACLE_HOME points to a directory that does not already contain any Oracle software prior to Oracle8*i* Release 1 (8.1.5).

NLS_LANG

Set NLS_LANG if you will create a database that uses a character set other than US7ASCII (the default). If you will install Oracle Internet Directory, set NLS_LANG to AMERICAN_AMERICA.UTF8. A complete list of valid character sets is available in the *Oracle8i National Language Support Guide*.

ORA_NLS33

Set ORA_NLS33 if you will create a database with a storage character set other than US7ASCII. Set ORA_NLS33 to `$ORACLE_HOME/ocommon/nls/admin/data` before starting the Installer or creating the database. For more information, see the *Oracle8i National Language Support Guide*.

ORACLE_SID

If you plan on creating a database during installation, you have the option of setting ORACLE_SID to the value of the Oracle server instance identifier (referred to in this installation guide as the `sid`). If you choose to create a database during installation, the Installer will prompt you to confirm this value. See "ORACLE_SID" on page 4-8 for more information.

ORACLE_DOC

ORACLE_DOC specifies the directory where online documentation will be installed. See "Accessing Installed Documentation" on page 4-23 to determine where documentation is installed if you do not set ORACLE_DOC.

▶▶ **Update the Environment for Current Session**

With a text editor, add the settings for the environment variables listed in "Set Environment Variables" to the .profile or .login file of the *oracle* account. Once you have finished editing these initialization files, you can quickly update the environment in the current shell session before beginning installation by using the appropriate shell command.

For the Bourne or Korn shell:

```
$ . ./.profile
```

For the C shell:

```
% source .login
```

Setup Tasks for Oracle Products

Before beginning your installation, complete the following tasks for products that you will install:

- Oracle Options

- Tools and Precompilers

- Networking and System Management Products

Oracle Options

▶▶ **Pre-Installation Steps for Oracle Parallel Server**

These steps should be completed in conjunction with steps listed in the *Oracle8i Parallel Server Setup and Configuration Guide*.

Complete the following steps before installing the Parallel Server:

1. Create raw devices.

   All files associated with an Oracle Parallel Server database must reside on raw volumes so they can be accessed by all nodes in the cluster. Control and data

files are shared by all instances. Each instance has its own log files, but all instances must have access to all log files during recovery.

> **See Also:** *Oracle8i Administrator's Reference* for information on creating raw devices.

> **Note:** The following two steps only apply if you are performing a Typical installation of Oracle8*i*. These steps are not required for the Custom Installation type. See "Using Oracle Universal Installer" on page 3-2 for more information.

2. On the node from which you will run Oracle Universal Installer, create an ASCII file with entries for each database object and the corresponding raw device file name. This file will be used Oracle Database Configuration Assistant to configure the database for Oracle Parallel Server.

> **See Also:** *Oracle8i Parallel Server Setup and Configuration Guide* for information and examples on creating the ASCII mapping file.

3. Set the environment variable DBCA_RAW_CONFIG to point to the ASCII mapping file. When Oracle Database Configuration Assistant creates the database, it looks for the environment variable, reads in the ASCII file, and uses the file names indicated when building the tablespaces.

Steps to Perform as the root User

1. Make sure you have a UNIX group defined in the /etc/group file on all nodes of the cluster that will serve as the OSDBA group. The OSDBA group name and number (and OSOPER group if you plan to designate one during installation) must be identical for all nodes of a UNIX cluster accessing a single database. The default UNIX group name for the OSDBA and OSOPER groups is dba.

2. Create a UNIX account on each node of the cluster so that:

   - the account has the oinstall group as the primary group.

   - the account has the dba group as the secondary group.

   - the account is used only to install and update Oracle software.

   - the account has write permissions on remote directories.

3. Create a mount point directory on each node to serve as the top of your Oracle software directory structure so that:

- the name of the mount point on each node is identical to that on the initial node.

- the *oracle* account has read, write, and execute privileges.

  See Also: Recommended naming conventions for Oracle mount points are discussed in "Create Mount Points" on page 2-5.

4. Apply the Sun Cluster software patch that is provided on the Oracle8*i* CD-ROM. To install the patch, follow the directions in the opspatch directory on your CD-ROM. This patch provides the Cluster Membership Monitor (CMM) and is required before you attempt to install Oracle Parallel Server.

5. After applying the CMM patch on each node, restart the cluster management software.

   For the first node, run the following commands:

   ```
   # cd /opt/SUNWcluster/bin
   # scadmin startcluster cluster_name
   ```

   Then run these commands on each of the other nodes in the cluster:

   ```
   # cd /opt/SUNWcluster/bin
   # scadmin startnode cluster_name
   ```

   For information about cluster management software and the scadmin command, see your Solaris Enterprise 2.1 documentation.

6. On the node from which you will run Oracle Universal Installer, set up user equivalence by adding entries for all nodes in the cluster, including the local node, to either the .rhosts file of the *oracle* account or the /etc/hosts.equiv file.

7. Exit the root account when you are done.

Steps to Perform as the *oracle* User

1. Verify that the Cluster Membership Monitor (CMM) is running:

   ```
   $ ps -ef | grep clustd
   ```

   If the CMM program clustd does not appear in the process listing, repeat step 5 on page 2-13.

2. Check for user equivalence for the *oracle* account by performing a remote login (rlogin) to each node in the cluster. If you are prompted for a password,

the *oracle* account has not been given the same attributes on all nodes. The Installer cannot use the `rcp` command to copy Oracle products to the remote directories without user equivalence.

If you have not set up user equivalence, you must perform Step **6** in "Steps to Perform as the root User" above.

Tools and Precompilers

Complete the tasks for the following tools and precompilers before installing them.

▶▶ Pre-Installation Steps for the Pro*COBOL Precompiler

1. Verify that the COBOL compiler executable is included in the PATH setting.

2. Verify that $COBLIB is included in the setting for LD_LIBRARY_PATH.

3. Set the COBDIR environment variable to the directory where the COBOL compiler is installed.

> **See Also:** To determine the settings for COBDIR and COBLIB environment variables see your product specific COBOL documentation

▶▶ Pre-Installation Steps for the Pro*C/C++ Precompiler

Verify that the C compiler executable is included in the PATH setting. The SPARCworks C compiler executable is usually located in /opt/SUNWspro/bin.

▶▶Pre-Installation Steps for Pro*FORTRAN Precompiler

Verify that the FORTRAN compiler executable is included in the PATH setting.

▶▶Pre-Installation Steps for the SQL*Module Ada

Verify that the Ada executable is included in the PATH setting, and that the Sun Ada 2.1 compiler configuration file has been set up.

▶▶Pre-Installation Steps for Legato Storage Manager (LSM)

The LSM installation script modifies the following system files during installation:

- /etc/rpc
- /etc/syslog.conf

Make copies of the original versions of these files before you install Legato Storage Manager.

Removing an Existing Legato Storage Manager Installation

If you want to install LSM from the Oracle8*i* distribution, but it is already on your system, you must first remove the installed version.

1. Log in as the `root` user and shut down the LSM daemons:

```
# nsr_shutdown
```

2. Use the `pkgrm` command to remove individual Legato Storage Manager packages, or all of the Legato Storage Manager packages at the same time.

> **Caution:** Some LSM software packages depend on each other. Remove packages only in the following order: ORCLman, ORCLserv, ORCLnode, ORCLclnt, ORCLdrvr. Do not remove any existing LSM index files in the **/nsr** directory.

```
# pkgrm package_name
```

where *package_name* is one of the following:

ORCLman	NetWorker Man Pages
ORCLserv	NetWorker Server
ORCLnode	NetWorker Storage Node
ORCLclnt	NetWorker Client
ORCLdrvr	NetWorker Device Drivers

Networking and System Management Products

▶▶ Configuring LDAP Services

Lightweight Directory Access Protocol (LDAP) Version 3 is the Internet open standard for directory access protocol. Some products included with Oracle8*i* Release 2 (8.1.6) can be configured to use the LDAP V3 directory service provided by Oracle Internet Directory. This directory service is included for use by the Oracle8i database to centralize the storage of database user, Net8 network connector, and database listener parameters.

If you plan to configure Oracle products to use LDAP directory services, Oracle Internet Directory should be available prior to installing and configuring those products. Install Oracle Internet Directory if it is not already available to your system. For optimal directory performance, Oracle corporation recommends installing Oracle Internet Directory on a system separate from other Oracle software. See "Pre-Installation Steps for Oracle Internet Directory" and Chapter 3, "Installation". For information on LDAP and Oracle Internet Directory, refer to the *Oracle Internet Directory Administrator's Guide*.

▶▶ Pre-Installation Steps for Oracle Internet Directory

These steps should be completed in addition to those steps listed in the *Oracle Internet Directory Administrator's Guide*.

1. Set the NLS_LANG environment variable to AMERICAN_AMERICA.UTF8. See "Set Environment Variables" on page 2-8 for information on setting environment variables. See the *Oracle8i National Language Support Guide* for information about valid settings.

2. If Oracle8*i* Release 2 (8.1.6) is already installed on your system, make sure that:

   - Oracle8*i* Server is running

   - you can connect to the database as user "internal" without a password; for example:

     ```
     $ sqlplus internal
     ```

     If you cannot connect as internal without a password, refer to the *Oracle8i Administrator's Guide* for instructions on configuring the internal account to not require a password.

   - the Net8 listener serving connections to the database is running; use the following command:

     ```
     $ lsnrctl status [listener_name]
     ```

     The *listener_name* field is required if the listener has a name other than the default, listener.

If Oracle8*i* Release 2 (8.1.6) is not already installed on your system, then Oracle Universal Installer will install it with Oracle Internet Directory.

▶▶ Pre-Installation Steps for Net8

If Net8 Server is already installed on your system, shut down all listeners before installing Net8. To determine if any listeners are running, enter:

```
$ lsnrctl status [listener_name]
```

The *listener_name* field is required if the listener has a name other than the default, listener.

Shut down a running listener with the following command:

```
$ lsnrctl stop listener_name
```

See "Understanding Net8 Configuration" on page 2-17 to determine how to be install and configure Net8 on your system.

▶▶ **Pre-Installation Steps for Oracle Supported Protocols**

Before installing any protocol, verify that the underlying network is functioning and configured properly.

TCP/IP

The TCP/IP protocol is installed automatically with all Oracle8*i* Server installations.

Verify that the network is functioning properly by transferring a test file using the ftp utility.

```
$ ftp remote_server_name
ftp> put test_filename
ftp> get test_filename
```

▶▶ **Pre-Installation Steps for Oracle Enterprise Manager**

If you plan to upgrade or migrate an existing Oracle Enterprise Manager repository to the current version, backup or export the repository so that it can be recovered in the event of a unexpected error.

If you want to create a new Enterprise Manager Repository without installing a new database, you must have access to an Oracle database, release 7.3 or later in which to create the Enterprise Manager repository.

For details on upgrading, migrating, or creating a repository, refer to the *Oracle Enterprise Manager Configuration Guide.*

Understanding Net8 Configuration

Net8 Configuration Assistant is a graphical user interface (GUI) tool that enables you to configure your Oracle client/server network environment. Net8

Configuration Assistant is automatically started from within Oracle Universal Installer for all installation types or manually started as a stand-alone tool.

> **Note:** This chapter describes running Net8 Configuration Assistant from within Oracle Universal Installer. See the *Net8 Administrator's Guide* or "Net8 Configuration Assistant" on page 4-22 for information on running Net8 Configuration Assistant in stand-alone mode.

Depending on the installation type selected, Net8 Configuration Assistant configures your network in one of two ways:

- automatically configures your network for standard database connection methods (user input is minimal)
- creates a customized network by prompting you for extensive input

Configuration consists of creating and modifying of network files located in the `$ORACLE_HOME/network/admin` directory.

Server Network Configuration

The type of network configuration created with the server installation types and the amount of user input required are described below. Review the selections below and identify the network configuration that best matches your requirements and network configuration expertise.

If You Select These Installation Types...	Then...
Oracle8*i* Enterprise Edition or Oracle8*i* ■ *Typical* ■ *Minimal*	Net8 Configuration Assistant creates a net service name to use in connecting to a database. Net8 Configuration Assistant then automatically creates your Net8 server environment by configuring the following files: ■ `listener.ora` Configures and starts a listener named listener with protocol addresses for both the Oracle8*i* database using your operating system's preferred protocol (typically TCP/IP on port 1521) and for external procedures using the IPC protocol. Configures services information for external procedures. ■ `sqlnet.ora` Configures the server's domain as the default domain (the domain in which your computer is located). This domain is automatically appended to any unqualified name. Configures the naming methods the server uses to resolve a name to a connect descriptor. ■ `tnsnames.ora` Creates a net service name (EXTPROC_CONNECTION_DATA) in the `tnsnames.ora` file to use for external procedures. Oracle Database Configuration Assistant configures additional Net8 Server information in the following files after successful creation of the Oracle8*i* database. ■ `listener.ora` Configures static service information for the Oracle8*i* database. **Note**: You cannot configure access to an LDAP directory service through the *Typical* or *Minimal* installation types. LDAP directory configuration is available through the *Custom* installation type.

If You Select These Installation Types...	Then...
Oracle8*i* Enterprise Edition or Oracle8*i* ■ *Custom* (and then select Net8 Server and Net8 Client)	Net8 Configuration Assistant first prompts you to: ■ Complete directory service access configuration, including entering a directory server type and location and verifying the administrative context from which the server can look up, create, and modify net service names. You are prompted for this information if you have never configured this ORACLE_HOME for directory service access. ■ Create a listener(s) and select network protocols to use for database connections ■ Select the naming methods to use to connect to databases (for example, selecting the local naming method enables the `tnsnames.ora` file to be used). Depending on your selection, you are prompted for additional information (for selecting the local naming method, you are prompted to enter a net service name, database SID, and networking protocol to use). Net8 Configuration Assistant then automatically creates your Net8 server environment by configuring the following files: ■ `listener.ora` Configures a listener with a name and protocol address that you choose. A protocol address and static service information for external procedures is also configured. ■ `sqlnet.ora` Configures the server's domain as the default domain (the domain in which your computer is located). This domain is automatically appended to any unqualified name. Configures the naming methods the server uses to resolve a name to a connect descriptor. ■ `tnsnames.ora` Creates a net service name entry to use for external procedure connections. ■ `ldap.ora` Configures directory service access by identifying the directory server type. It may also identify the location and the administrative context. Oracle Database Configuration Assistant automatically configures additional Net8 server information in the following file during creation of the Oracle8*i* database: ■ `listener.ora` Configures static service information

Client Network Configuration

The type of network configurations created with the client installation types and the amount of user input required are described below. Review the selections below and identify the network configuration that best matches your network requirements and configuration expertise:

If You Select These Installation Types...	Then...
Oracle8*i* Client ■ *Administrator* ■ *Programmer* ■ *Application User*	Net8 Configuration Assistant first prompts you to select one of the following methods by which to configure access to your Oracle8*i* database: ■ Directory Naming Enables you to directory service to make client connections to Oracle8*i* databases using information registered with the directory service when the databases were created. ■ Local Naming Specify a net service name to enable client connections to Oracle8*i* databases using information in Net8 configuration files on the local system. Depending on what you select, you are prompted to provide additional information. Net8 Configuration Assistant then automatically creates your Net8 client environment by configuring the following files: ■ `ldap.ora` Configures directory service access by identifying the directory server type (if directory naming was selected). It may also identify the location and the administrative context. ■ `tnsnames.ora` Specifies a net service name (if local naming was selected) ■ `sqlnet.ora` Configures the client's domain as the default domain (the domain in which your computer is located). This domain is automatically appended to any unqualified net service name given in the connect string. An unqualified net service name does not contain a network domain. Configures the naming methods the client uses to resolve a name to a connect descriptor.

If You Select These Installation Types...	Then...
Oracle8*i* Client	Net8 Configuration Assistant first prompts you to:
■ *Custom* (and then select Net8 Client)	■ Complete directory service access configuration, including entering a directory server type and location and verifying the administrative context from which the server can look up, create, and modify net service names. You are prompted for this information if you have never configured this ORACLE_HOME for directory service access.
	■ Select the naming methods to use to connect to databases (for example, selecting the local naming method enables the tnsnames.ora file to be used). Depending on your selection, you are prompted for additional information (for selecting the local naming method, you are prompted to enter a net service name, database SID, and networking protocol to use).
	Net8 Configuration Assistant then automatically creates your Net8 client environment by configuring the following files:
	■ sqlnet.ora
	Configures the client to request operating system authenticated connections (OPS$).
	Configures the clients domain as the default domain (the domain in which your computer is located). This domain is automatically appended to any unqualified name.
	Configures the naming methods the server uses to resolve a name to a connect descriptor.
	■ tnsnames.ora
	If local naming was selected above, specifies a net service name.
	■ ldap.ora
	If directory naming was selected above, configures directory service access by identifying the directory server type. It may also identify the location and the administrative context.

Identifying Your Database Environment

Oracle Universal Installer enables you to create an Oracle8*i* database that operates in one of the following environments. To identify the environment appropriate for your Oracle8*i* database, refer to Table 2–5, "Oracle8i Database Environment Descriptions":

Table 2–5   Oracle8i Database Environment Descriptions

Environment	Description
Online Transaction Processing (OLTP)	Many concurrent users performing numerous transactions requiring rapid access to data. Availability, speed, concurrence, and recoverability are key issues.
	Transactions consist of reading (SELECT statements), writing (INSERT and UPDATE statements), and deleting (DELETE statements) data in database tables.
Warehousing	Users perform numerous, complex queries that process large volumes of data. Response time, accuracy, and availability are key issues.
	These queries (typically read-only) range from a simple fetch of a few records to numerous complex queries that sort thousands of records from many different tables. Warehousing environments are also known as Decision Support System (DSS) environments
Multipurpose	Both types of applications can access this database.

Your database environment selection affects the values for the following database settings:

- DB_BLOCK_BUFFERS initialization file parameter

- DB_BLOCK_SIZE initialization file parameter

- PROCESSES initialization file parameter

- SHARED_POOL_SIZE initialization file parameter

- Rollback tablespace information

Selecting a Database Creation Method

Oracle Database Configuration Assistant is a graphical user interface (GUI) tool that enables you to create an Oracle8*i* database for an OLTP, Warehousing, or Multipurpose environment. Oracle Database Configuration Assistant will be automatically started from within Oracle Universal Installer when you choose to create an Oracle8*i* database during installation. It can also be manually run as a stand-alone tool.

> **Note:** This chapter describes running Oracle Database Configuration Assistant from within Oracle Universal Installer. See "Oracle Database Configuration Assistant" on page 4-23 for information on running Oracle Database Configuration Assistant in stand-alone mode.

Each installation type of Oracle8*i* Enterprise Edition enables you to create an Oracle8*i* database. The types of databases (OLTP, Warehousing, and Multipurpose) created with the Typical, Minimal, and Custom installation types and the amount of user input required are described below. Review these selections and identify the database that best matches your database requirements and your database creation expertise.

If You Perform These Steps...	Then...
1. Select the *Typical* installation type.	Oracle Database Configuration Assistant automatically starts at the end of installation and creates a pre-configured, ready-to-use multipurpose starter database with:
	■ Default initialization parameters.
	■ Automatic installation and configuration of Oracle options and *inter*Media[1].
	■ Advanced replication capabilities.
	■ Database configuration of dedicated server mode[2].
	■ Archiving mode of NOARCHIVELOG.
	■ No user input is required other than the global database name and SID you are prompted to enter.

[1] Oracle Database Configuration Assistant configures options that were installed through Oracle Universal Installer.

[2] See Chapter 5 of *Oracle8i Administrator's Guide* for descriptions of dedicated server mode and multi-threaded server mode (also known as shared server mode).

If You Perform These Steps...	Then...
1. Select the *Minimal* installation type. 2. Select "Yes" when prompted to create a starter database. **Note:** If you select "No", all server products except a database are installed. You can create your database later by manually running Oracle Database Configuration Assistant or with a SQL script. See the *Oracle8i System Administrator's Guide* for instructions. **Note:** A database is also installed through the Oracle Internet Directory installation type of Oracle8*i* Management Infrastructure. This database is only used for storing Oracle Internet Directory information.	Oracle Database Configuration Assistant automatically starts at the end of installation and creates the same Oracle8*i* database that you receive with *Typical,* with the following exceptions: ■ No installation and configuration of Oracle options and *inter*Media products is available. ■ Database configuration of dedicated server mode.

If You Perform These Steps...	Then...
1. Select the *Custom* installation type. **2.** Select Oracle Server and additional products in the *Available Products* window. **3.** Select "Yes" when prompted to create a starter database. **4.** Oracle Database Configuration Assistant prompts you to select either the Typical or Custom database creation methods.	**If You Select the Custom database creation method...** Oracle Database Configuration Assistant guides you in the creation of a database fully customized to match the environment (OLTP, Warehousing, or Multipurpose) and database configuration mode (dedicated server or multi-threaded server) you select. Options and *inter*Media components (if installed) and advanced replication (if selected) are also automatically configured. Select this option only if you are experienced with advanced database creation procedures, such as customizing: ■ Data, control, and redo log file settings. ■ Tablespace and extent sizes. ■ Database memory parameters. ■ Archiving modes, formats, and destinations. ■ Trace file destinations. ■ Character set values. **If You Select the Typical database creation method...** You have two choices. Oracle Database Configuration Assistant's role in database creation depends on your selection: ■ *Copy existing files from CD* Oracle Database Configuration Assistant creates the same Oracle8*i* database as described under *Typical* on the previous page. Options and *inter*Media (if installed) are also automatically configured. No user input is required other than the global database name and SID you are prompted to enter.[1] ■ *Create new database files* Oracle Database Configuration Assistant prompts you to answer several questions, including selecting a database environment (OLTP, Warehousing, or Multipurpose) and specifying the number of concurrent connections. Oracle Database Configuration Assistant then dynamically creates a database. Options and *inter*Media (if installed) and advanced replication (if selected) are also automatically configured.[2]

[1] If you selected Oracle JServer for installation, the database is created in multi-threaded server mode for IIOP clients.

[2] If you select OLTP as your database environment and enter 20 or more for the number of concurrent database connections, your database is created in multi-threaded server mode. Otherwise, the server mode is dedicated.

3

Installation

This chapter describes how to start the Oracle Universal Installer and install Oracle8*i* products on your system. Review and complete the tasks listed in Chapter 1, "System Requirements" and Chapter 2, "Pre-Installation" before beginning the installation.

- Using Oracle Universal Installer

- Installing Legato Storage Manager Manually

- Non-Interactive Installation and Configuration

Using Oracle Universal Installer

Complete these tasks to start Oracle Universal Installer:

❑ Mount the Oracle8i CD-ROM

❑ Start Oracle Universal Installer

> **Note:** Using the old Oracle Installer (the pre-Oracle Universal Installer shipped with releases 7.*x* and 8.0.*x*) to install products into a release 8.1 ORACLE_HOME directory is *not* supported. Likewise, you cannot install release 8.1 products into a release 7.*x* or 8.0.*x* ORACLE_HOME.

▶▶ Mount the Oracle8*i* CD-ROM

The Oracle8*i* CD-ROM is in ISO 9660 format with Rockridge extensions. If you are using Volume Management software (available by default on Solaris) the CD-ROM is mounted automatically to /cdrom/oracle8i when you put it into the disk drive. Proceed to "Start Oracle Universal Installer" on page 3-3.

If you are not using the Volume Management software, you must mount the CD-ROM manually. You must have root privileges to mount or unmount the CD-ROM manually. Be sure to unmount the CD-ROM before removing it from the drive by using the umount command

1. Place the Oracle8*i* CD-ROM in the CD-ROM drive.

2. Log in as the root user and create a CD-ROM mount point directory:

```
$ su root
# mkdir cdrom_mount_point_directory
```

3. Mount the CD-ROM drive on the mount point directory and exit the root account:

```
# mount options device_name cdrom_mount_point_directory
# exit
```

Example 3–1   Mounting the CD-ROM Without Using Volume Management Software

```
$ su root
# mkdir /cdrom
# mount –r –F hsfs device_name /cdrom
# exit
```

◗◗ Start Oracle Universal Installer

> **Caution:**   Do not run the Installer as the `root` user.

To start the Installer:

1.   Log in as the *oracle* user.

2.   Go to the CD-ROM mount-point directory:

`cd cdrom_mount_point_directory`

3.   Start the Installer by entering `./runInstaller`.

> **Note:**   The Installer is capable of running a non-interactive installation of Oracle products and can optionally be configured for a "silent" mode which does not display anything on the screen. For instructions on using this feature of the Installer, see "Non-Interactive Installation and Configuration" on page 3-21.

Once the Installer is started, the *Welcome* window appears.

4.   Click Next.

The *File Locations* window appears. Do not change the text in the *Source* field. This is the location of files for installation.

Figure 3–1   Oracle Universal Installer "File Locations" Window
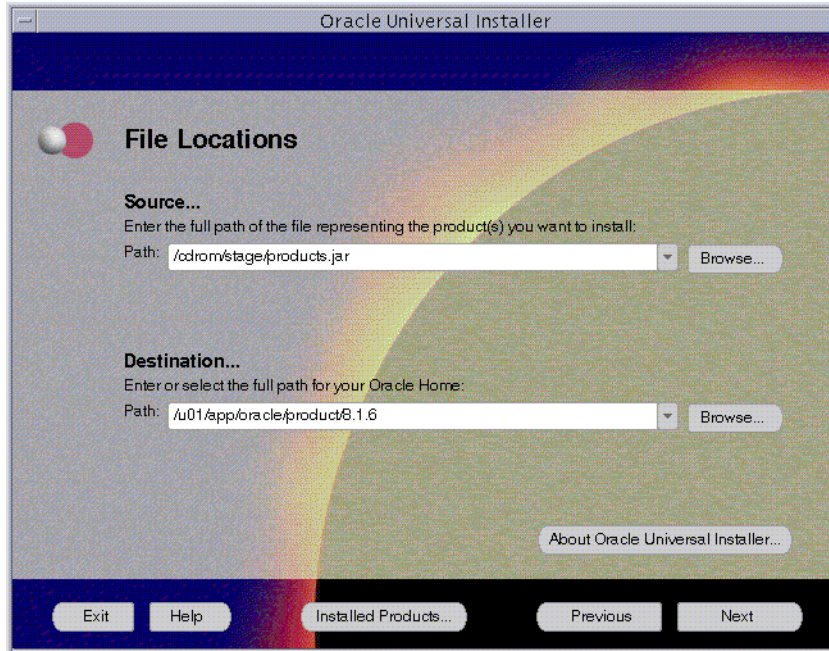
5. Enter the ORACLE_HOME directory path in which to install Oracle8*i* products in the *Destination* fields. The default location is the ORACLE_HOME environment variable if you set it prior to starting the Installer.

If the destination directory you choose contains Oracle8*i* Release 1 (8.1.5) software, the older versions of the software will be upgraded to Release 2 (8.1.6). Oracle Corporation recommends that you install Release 2 (8.1.6) products into a new ORACLE_HOME.

> **Caution: If you have an existing ORACLE_HOME created with a pre-8.1.*x* release, you *must* change the default installation location to a different location.**

> **Note:** If you install Oracle8*i* into an ORACLE_HOME directory that already contains Oracle client software, the listener is not created. To create the listener, install Oracle8*i* in a different ORACLE_HOME.

6. Click Next.

If this is the first time any Oracle8*i* products are installed on the current system, the "UNIX Group Name" window appears. Otherwise, go to Step 8.

In the "UNIX Group Name" field, specify the group which will have permission to update Oracle software on your system. This group should typically be the `oinstall` group that you created in "Create a UNIX Group for the Oracle Universal Installer Inventory" on page 2-6.

7. Click Next.

If `/var/opt/oracle/` does not exist or is not writable by the *oracle* user, you will also be prompted in the window that appears to run `/tmp/OraInstall/orainstRoot.sh` in another terminal window as the `root` user. After you have done so, click Retry to continue the installation.

The *Available Products* window appears.

Figure 3–2 Oracle Universal Installer "Available Products" Window
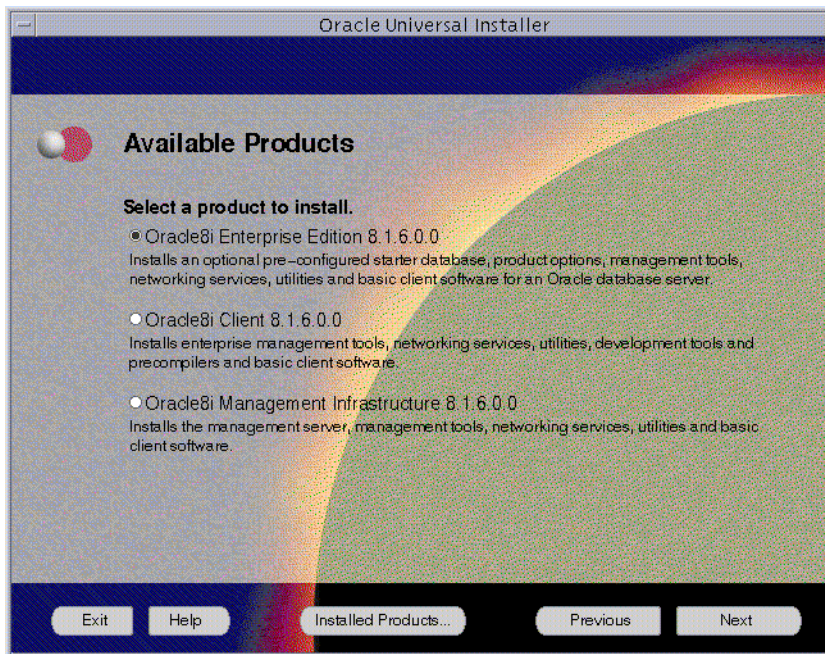
8. Select the Oracle8*i* installation category you want to install and click Next. See "Product Installation Categories and Installation Types" on page 1-2 for a description of each category.

> **Note:** For a list of products installed with each installation type, see the appropriate product section in Appendix A, "Oracle8i Products".

9. Proceed to one of the following sections based on the selection you made in step 8.

If You Selected...	See this Section...
Oracle8*i* Enterprise Edition	"Oracle8i Enterprise Edition" on page 3-7.
Oracle8*i* Client	"Oracle8i Client" on page 3-10.
Oracle8*i* Management Infrastructure	"Oracle8i Management Infrastructure" on page 3-12.

Oracle8*i* Enterprise Edition

The *Installation Types* window appears.

1. Select one of the types of installations and click Next.

2. Proceed to one of the following sections based on the selection you made in step 1.

If You Selected...	See this Section...
Typical or Minimal	"Typical or Minimal" on page 3-7.
Custom	"Custom" on page 3-10.

Typical or Minimal

1. If Oracle Universal Installer detects an earlier version of an Oracle database on your system, you are prompted to upgrade your database with the Oracle Data Migration Assistant. Select the *Upgrade or Migrate an Existing Database* check box to have Oracle Data Migration Assistant start immediately *after* installation to migrate your database to an Oracle8*i* Release 2 (8.1.6) database.

2. Click Next

   If you selected Minimal, the *Select Starter Database* window appears. If you selected Typical, go to step 5 (an Oracle8*i* database is installed without prompting you. See "Identifying Your Database Environment" on page 2-22).

3. Select Yes to install an Oracle8*i* database. Selecting No installs all server products except a database. You can create your database later by manually running Oracle Database Configuration Assistant or with a SQL script.

4. Click Next

   If the `oracle` user is not a member of the `dba` group created in "Create UNIX Groups for Database Administrators" on page 2-6, or if there is a UNIX group with a name other than `dba` that serves as the OSDBA group, the *Privileged*

Operating System Groups window appears. Enter the name of a UNIX group of which the `oracle` user is a member that will serve as the OSDBA group. If a separate UNIX group will server as the OSOPER group, specify it in this window as well.

5. Click Next

   The *Database Identification* window appears.

6. Enter the Global Database Name and SID in the fields provided:

This Field...	Is the...
Global Database Name	Full database name that uniquely distinguishes it from any other database in your network domain. For example: `sales.acme.com` where `sales` is the name you want to call your database and `acme.com` is the network domain in which the database is located.
SID	System Identifier (SID), the database instance name that uniquely distinguishes it from any other database on your system. The SID field defaults to the database name portion of the Global Database Name (`sales` in the example above) (until you reach eight characters or enter a period). You can accept or change the default value.

7. Click Next.

   The *Database File Location* window appears.

8. In the Directory for Database Files field, enter the path of the database file mount point. You can also use the *Browse...* button to navigate to the path of the mount point.

9. Click Next.

   The *Summary* window appears.

10. Review the information to ensure that you have enough disk space. You cannot make any product or space allocation changes once the installation begins

11. Click Install. Wait until the selected products are installed.

12. When prompted, run the `root.sh` script. See "Run the root.sh Script" on page 3-16 for instructions.

The *Configuration Tools* window appears at the end of installation and, based on your selections above, starts the following assistants to create and configure your database and network environments.

Table 3–1   Configuration Assistants

This Assistant...	Starts...	And...
Net8 Configuration Assistant	In all cases	Automatically configures your Net8 server networking software. See "Understanding Net8 Configuration" on page 2-17 for a description of the configuration procedures performed.
Oracle Database Configuration Assistant	If you selected: ■ Typical ■ Minimal or Custom, then answered "Yes" when prompted to install an Oracle8*i* database.	Automatically creates an Oracle8*i* Release 8.1.6 database. See "Identifying Your Database Environment" on page 2-22.
Oracle Database Migration Assistant	If you selected to migrate or upgrade a database when prompted at step 1.	Migrates or upgrade the selected database to Oracle8*i* release 8.1.6.
Oracle Enterprise Manager Configuration Assistant	If you selected to install Oracle Management Server in the Custom installation type.	Creates or configures an Enterprise Manager repository. See step 4 of "Oracle Management Server" on page 3-13 and refer to the *Oracle Enterprise Manager Configuration Guide* for instructions on how to use the assistant.

The *Configuration Tools* window displays the results of running these assistants.

13. Click Next to continue.

The *End of Installation* window appears.

14. Click Exit to exit Oracle Universal Installer, or click Next Install to install additional products. Clicking Next Install returns you to the "Oracle Universal Installer "File Locations" Window" on page 3-4.

15. See section "Reviewing a Log of an Installation Session" on page 3-16 for information about accessing Oracle Universal Installer log files.

Custom

The *Available Products* window displays all products available for installation.

1. Select appropriate products to install and click Next.

2. Provide appropriate responses to any windows that appear.

The *Summary* window appears.

3. Review the information to ensure that you have enough disk space. You cannot make any product or space allocation changes once the installation begins

4. Click Install. Wait until the selected products are installed.

5. When prompted, run the root.sh script. See "Run the root.sh Script" on page 3-16 for instructions.

The *End of Installation* window appears.

6. Click Exit to exit Oracle Universal Installer or click Next Install to install additional products. Clicking Next Install returns you to the "Oracle Universal Installer "File Locations" Window" on page 3-4.

7. See "Reviewing a Log of an Installation Session" on page 3-16 for information about accessing Oracle Universal Installer log files.

Oracle8*i* Client

> **Note:** For a list of products installed with each installation type, see the appropriate product section in Appendix A, "Oracle8i Products".

The *Installation Types* window appears.

1. Select the Oracle installation type you want to install and click Next.

2. Proceed to one of the following sections based on the selection you made in step 1.

If You Selected...	See this Section...
Administrator, Programmer, or Application User	"Administrator, Programmer or Application User" on page 3-11.
Custom	"Custom" on page 3-11.

Administrator, Programmer or Application User

1. Click Next.

The *Summary* window appears.

2. Review the information to ensure that you have enough disk space. You cannot make any product or space allocation changes once the installation begins

3. Click Install. Wait until the selected products are installed.

4. When prompted, run the `root.sh` script. See "Run the root.sh Script" on page 3-16 for instructions.

The *End of Installation* window appears.

5. Click Exit to exit Oracle Universal Installer, or click Next Install to install additional products. Clicking Next Install returns you to the "Oracle Universal Installer "File Locations" Window" on page 3-4.

6. See "Reviewing a Log of an Installation Session" on page 3-16 for information about accessing Oracle Universal Installer log files.

Custom

The *Available Products* window displays all products available for installation.

1. Select appropriate products to install and click Next.

2. Provide appropriate responses to any windows that appear.

The *Summary* window appears.

3. Review the information to ensure that you have enough disk space. You cannot make any product or space allocation changes once the installation begins

4. Click Install. Wait until the selected products are installed.

5. When prompted, run the `root.sh` script. See "Run the root.sh Script" on page 3-16 for instructions.

The *End of Installation* window appears.

6. Click Exit to exit Oracle Universal Installer, or click Next Install to install additional products. Clicking Next Install returns you to the "Oracle Universal Installer "File Locations" Window" on page 3-4.

7. See section "Reviewing a Log of an Installation Session" on page 3-16 for information about accessing Oracle Universal Installer log files.

Oracle8*i* Management Infrastructure

> **Note:**   For a list of products installed with each installation type, see the appropriate product section in Appendix A, "Oracle8i Products".

The *Installation Types* window appears.

1. Select one of the types of installations and click Next.

2. Proceed to one of the following sections based on the selection you made in step 1.

If You Selected...	See this Section...
Oracle Management Server	"Oracle Management Server" on page 3-12.
Oracle Internet Directory	"Oracle Internet Directory" on page 3-14.
Custom	"Custom" on page 3-15.

Oracle Management Server

The *Oracle Management Server Repository* window appears.

1. Select the repository to use with the Oracle Management Server.

Type	In this Situation...
Existing repository	A Release 2.1 repository has already been created and configured for the environment to be managed and you want this management server to share the existing 2.1 repository, or you want to upgrade or migrate an existing repository from a previous release.
New repository	Neither a Release 2.1 repository, nor an existing repository is available to the environment to be managed.

The *Summary* window appears.

2. Review the information to ensure that you have enough disk space. You cannot make any product or space allocation changes once the installation begins

3. Click Install. Wait until the selected products are installed.

Oracle Enterprise Manager Configuration Assistant starts at the end of installation.

4. Provide responses to Oracle Enterprise Manager Configuration Assistant based on the selection you made in step 1.

If You Selected...	You are Prompted to...
existing repository	Provide the following repository connection information:
	■ user name and password for the existing repository.
	■ database service containing the existing repository, specified with the format:
	hostname:*port_number*:*SID*
	If the existing repository is 1.*x*, you cannot migrate until a 2.1 repository exists. First choose *new repository* to create a new repository, then exit and use the Oracle Enterprise Manager Migration Assistant to migrate to a 2.1 repository.
	■ verify new repository connection information.
new repository	Enter the following information regarding the database in which to create the new repository:
	■ username (with DBA privileges) and password.
	■ database service containing the new repository, specified with the format:
	hostname:*port_number*:*SID*
	Additional windows appear to help you create a repository in the selected database. See the *Oracle Enterprise Manager Configuration Guide* for additional information.

> **Note:** The default port number used by most databases is 1521.

5. When prompted, run the `root.sh` script. See "Run the root.sh Script" on page 3-16 for instructions.

The *End of Installation* window appears.

6. Click Exit to exit Oracle Universal Installer, or click Next Install to install additional products. Clicking Next Install returns you to the "Oracle Universal Installer "File Locations" Window" on page 3-4.

7. See "Reviewing a Log of an Installation Session" on page 3-16 for information about accessing Oracle Universal Installer log files.

Oracle Internet Directory

> **Note:** If an Oracle8*i* database release 8.1.6 is not currently installed, Oracle Universal Installer automatically installs one in the same ORACLE_HOME directory in which Oracle Internet Directory is installed. If Oracle Universal Installer detects an existing Oracle8*i* database in this location, it does not install another one. However, for optimal results, Oracle corporation recommends that you install Oracle Internet Directory on a system that does not currently have an Oracle8*i* database.

> **Note:** If an Oracle8*i* Release 2 (8.1.6) database is currently installed, ensure that the database and the listener are running, and that you can connect with the `internal` user account without being prompted for a password:
>
> ```
> $ sqlplus internal
> ```
>
> If you were prompted for a password, see Chapter 1 of the *Oracle8i Administrator's Guide* for information on configuring the `internal` user account to log in without a password.

The following information is automatically set during installation:

The...	Is Automatically Set to...
Use of an Encrypted Password	Yes
Approximate number of directory entries to be stored in Oracle Internet Directory	Under 10,000 entries
Password of the Administrator Distinguished Name	welcome

The *Oracle Internet Directory Database File Location* window appears.

1. Enter a directory location in which to install the Oracle Internet Directory database files. Oracle Corporation recommends installing database files and Oracle software on separate drives. These database files contain Oracle Internet Directory-specific tables and schema created during configuration.

2. Click Next.

   The *Summary* window appears.

3. Review the information to ensure that you have enough disk space. You cannot make any product or space allocation changes once the installation begins

4. Click Install. Wait until the selected products are installed.

5. When prompted, run the `root.sh` script. See "Run the root.sh Script" on page 3-16 for instructions.

   The *End of Installation* window appears.

6. Click Exit to exit Oracle Universal Installer, or click Next Install to install additional products. Clicking Next Install returns you to the "Oracle Universal Installer "File Locations" Window" on page 3-4.

7. See "Reviewing a Log of an Installation Session" on page 3-16 for information about accessing Oracle Universal Installer log files.

Custom

The *Available Products* window displays all products available for installation.

1. Select appropriate products to install and click Next.

2. Provide appropriate responses to any windows that appear.

   > **Note:** For a list of products installed with each installation type, see the appropriate product section in Appendix A, "Oracle8i Products".

   The *Summary* window appears.

3. Review the information to ensure that you have enough disk space and click Install.

4. When prompted, run the `root.sh` script. See "Run the root.sh Script" on page 3-16 for instructions.

The *End of Installation* window appears.

5. Click Exit to exit Oracle Universal Installer, or click Next Install to install additional products. Clicking Next Install returns you to the "Oracle Universal Installer "File Locations" Window" on page 3-4.

6. See "Reviewing a Log of an Installation Session" on page 3-16 for information about accessing Oracle Universal Installer log files.

Run the root.sh Script

The Installer creates the `root.sh` script in the ORACLE_HOME directory and prompts you to run the `root.sh` script when it finishes installing Oracle products. Log in as the `root` user and run the script to set the necessary file permissions for Oracle products, and perform other `root`-related configuration activities:

```
# cd $ORACLE_HOME
# ./root.sh
```

If you install Oracle Parallel Server, you must run the `root.sh` script on every node in the cluster.

The `root.sh` script prompts you to confirm the environment before it performs any actions. If you need to reset the environment, terminate the `root.sh` script. If you terminate the script, you must re-run it. You do not need to run Oracle Universal Installer again. Click OK in the alert window after `root.sh` runs successfully to continue the installation.

Depending on the products you installed, messages are displayed to inform you of the progress of `root.sh`. You might also be prompted for user names and be given additional instructions.

You will be asked by the `root.sh` script to specify the local `bin` directory. If this directory does not already exist, `root.sh` creates it for you.

Reviewing a Log of an Installation Session

The Installer creates the `oraInventory` directory the first time it is run to keep an inventory of products that it installs on your system as well as other installation information. The location of `oraInventory` is defined in `/var/opt/oracle/oraInst.loc`.

Do not delete or manually alter the `oraInventory` directory or its contents. Doing so can prevent the Installer from locating products that you install on your system.

The latest log file is *oraInventory_location*/logs/installActions.log.
Log file names of previous installation sessions take the form
installActions*datetime*.log. For example:
installActions1999-07-14_09-00-56-am.log

Installing Oracle Parallel Server

During installation, software products are installed on the node from which the
Oracle Universal Installer is run and pushed to the other selected nodes in the
cluster.

> **See Also:** The *Oracle 8i Parallel Server Setup and Configuration
> Guide.*

Re-Installing Oracle Parallel Server

If the installation fails before completion and you have to re-install, you must click
the Yes button to all the Installer dialog boxes that ask "Do you want to re-install
name of a product?". Otherwise the remote copy operation to the other nodes will
miss the products for which you declined the re-install.

Cleaning Up After a Failed Installation

If an installation fails, you might need to remove files that the Installer created
during the last session before you attempt another installation.

To clean up after a failed installation:

1. Start the Oracle Universal Installer.

2. Click the De-install Products button and select any products that were left after
   the failed installation.

3. Click the Remove button.

To complete the clean up, you might need to manually remove the
ORACLE_HOME directory.

Installing Legato Storage Manager Manually

The usual procedure for installing Legato Storage Manager is to select Legato
Storage Manager when you use the Oracle Universal Installer to install Oracle
software using the Custom installation type of Oracle8*i* Enterprise Edition. If you

do not install Legato Storage Manager using Oracle Universal Installer, you can manually install it with the following steps:

> **Note:** If you are updating Legato Storage Manager, be sure to perform a partial removal of Legato Storage Manager using the procedure in the section "Removing an Existing Legato Storage Manager Installation" in Chapter 2. Be sure not to remove any existing Legato Storage Manager files in the /nsr directory. For more information on updating, refer to the section "Updating Legato Storage Manager".

1. Be sure no Legato Storage Manager or NetWorker software is installed on your system. The Legato Storage Manager installer, lsminst (step 3 below), attempts to detect existing Legato software. If Legato software exists but is not detected, both the existing Legato software and the Legato Storage Manager might not function properly.

2. From the Oracle8*i* Release 2 (8.1.6) CD-ROM mount point, go to the lsm directory:

   ```
   $ cd lsm
   ```

3. As root user, install the Legato Storage Manager software using the following lsminst command:

   ```
   # ./lsminst cd_rom_mount_point/stage/Components/lsm
   ```

   For each prompt asking if you want to continue the installation, enter Yes.

   When prompted for a directory to use for client and server information, you can accept the default or enter another directory name. To check that the directory used has sufficient disk space, see the "Legato Storage Manager Software Requirements" table on page 1-11.

   When prompted for a device name, you can enter either a carriage return ([ENTER]) or a proper no-rewind, BSD-semantics tape device name. The device is used by Legato Storage Manager for backups after it has been properly configured in the LSM Administrator GUI. For details on device configuration, see Chapter 3 in the *Legato Storage Manager Administrator's Guide*.

   For all other prompts displayed by lsminst, press [ENTER].

4. Update the MANPATH and PATH environment variables as required. MANPATH must include /usr/share/man, the pathname of the directory

where the Legato Storage Manager man pages are installed. PATH must include
`/usr/bin` and `/usr/sbin`, the pathnames of the directories where the Legato
Storage Manager binaries are installed.

5. For each ORACLE_HOME to be enabled for Legato Storage Manager backups,
   follow these steps:

   > **Note:** If you later install another ORACLE_HOME on your
   > system, you must follow these steps to enable Legato Storage
   > Manager backups from that ORACLE_HOME.

   a. Log in as the *oracle* user.

   b. Copy `stage/Components/lsm/lib/liblsm.so` from the Oracle8*i*
      CD-ROM to the file `$ORACLE_HOME/lib/liblsm.so`:

      ```
      $ cp stage/Components/lsm/lib/liblsm.so $ORACLE_HOME/lib/liblsm.so
      ```

   c. Shut down all Oracle instances that use this ORACLE_HOME.

   d. Remove the symbolic link `$ORACLE_HOME/lib/libobk.so` and create a
      symbolic link from `$ORACLE_HOME/lib/libobk.so` to
      `$ORACLE_HOME/lib/liblsm.so`:

      ```
      $ cd $ORACLE_HOME/lib
      $ rm libobk.so
      $ ln -s liblsm.so libobk.so
      ```

   e. Restart all Oracle instances that use this ORACLE_HOME.

Updating Legato Storage Manager

To update to a newer version of Legato Storage Manager, follow these steps:

1. Perform a partial removal of Legato Storage Manager using the procedure in
   the section "Removing an Existing Legato Storage Manager Installation" in
   Chapter 2.

   Do not remove any existing Legato Storage Manager files in the `/nsr` directory.

2. Install the updated version of Legato Storage Manager using the procedure in
   the section "Installing Legato Storage Manager Manually".

Removing Legato Storage Manager Version 5.5

> **Note:** You cannot remove Legato Storage Manager by using the Installer. Use the following steps to remove Legato Storage Manager version 5.5.

To remove Legato Storage Manager version 5.5, follow these steps:

1. For each ORACLE_HOME on your system enabled for backups, follow these steps to remove the Media Management API of Legato Storage Manager:

   a. Shut down Oracle instances that use ORACLE_HOMEs enabled for backups.

   b. Remove `$ORACLE_HOME/lib/liblsm.so` and create a symbolic link from `$ORACLE_HOME/lib/libobk.so` to `$ORACLE_HOME/lib/libdsbtsh8.so`:

   ```
   $ cd $ORACLE_HOME/lib
   $ rm libobk.so
   $ rm liblsm.so
   $ ln -s libdsbtsh8.so libobk.so
   ```

   c. Restart all Oracle instances that use this ORACLE_HOME.

2. As `root` user, stop the Legato Storage Manager daemons by using the `nsr_shutdown` command:

   ```
   # nsr_shutdown
   ```

3. As `root` user, remove the Legato Storage Manager software by using the following `pkgrm` command:

   ```
   # pkgrm ORCLman ORCLserv ORCLnode ORCLdrvr ORCLclnt
   ```

   > **Note:** Be sure to remove the software packages in the exact order shown in step 3.

For each prompt displayed by the `pkgrm` command, enter "Yes."

> **Warning:** This procedure does not remove the `/nsr` directory, containing the Legato Storage Manager client and media index files and resource configuration files.

4. To remove the Legato Storage Manager index and resource configuration files, remove the `/nsr` directory by running the following command as `root` user:

```
# rm –rf /nsr/* /nsr
```

If you remove the `/nsr` directory containing the index and configuration information, you will not be able to restore from the Legato Storage Manager backups. If you later re-install Legato Storage Manager or install another Legato product, you will need to rebuild the configuration.

Non-Interactive Installation and Configuration

You can perform a non-interactive installation of Oracle8*i* products by supplying the Oracle Universal Installer with a *response file*. The Installer uses the variables and values contained in this text file to provide answers to some or all of the Installer's user prompts. If you include responses for all of the Installer's prompts in the response file, you can run a "silent" installation that displays no graphical output. You can also run Oracle Data Migration Assistant, Net8 Configuration Assistant, Oracle Database Configuration Assistant, and Oracle Enterprise Manager Configuration Assistant non-interactively by using response files.

Preparing the Response File

There are ten Oracle Universal Installer response files, one for each install category and type, and four configuration tool response files included on the Oracle8*i* Release 2 (8.1.6) CD-ROM. You will need to edit the response file to suit your environment. In particular, the custom response files need extensive editing before you can use them for a non-interactive session.

To use a response file, copy the response file from the Oracle8*i* CD-ROM to a drive mounted on your system. For example:

```
$ cd cdrom_mount_point_directory/stage/Response/
$ cp svrtypical.rsp local_directory
```

Edit the response file you want to use with any text editor to include information specific to your system. Each file contains instructions for properly configuring the response file. Table 3–2 lists the response files included on the Oracle8*i* CD-ROM.

Table 3–2   Response Files

File Name	Provides Responses for...
svrtypical.rsp	Typical installation of Oracle8*i* Enterprise Edition
svrminimal.rsp	Minimal installation of Oracle8*i* Enterprise Edition
svrcustom.rsp	Custom installation of Oracle8*i* Enterprise Edition
omioms.rsp	Oracle Management Server installation of Oracle8*i* Management Infrastructure
omioid.rsp	Oracle Internet Directory installation of Oracle8*i* Management Infrastructure
omicustom.rsp	Custom installation of Oracle8*i* Management Infrastructure
clientadmin.rsp	Administrator installation of Oracle8*i* Client
clientprogmr.rsp	Programmer installation of Oracle8*i* Client
clientappuser.rsp	Application User installation of Oracle8*i* Client
clientcustom.rsp	Custom installation of Oracle8*i* Client
dbca.rsp	Oracle Database Configuration Assistant
net8ca.rsp	Net8 Configuration Assistant
emca.rsp	Oracle Enterprise Manager Configuration Assistant

Specifying a Response File

To make the Installer use the response file at install time, follow the same steps as described in the section "Start Oracle Universal Installer" on page 3-3, but specify the location of the response file that you wish to use as a parameter when starting the Installer. To make a configuration assistant use a response file, invoke it at the command line using the same parameters.

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

To perform a completely silent installation or configuration session, use the -silent parameter. In silent mode, the DISPLAY environment variable must still be set as described in "DISPLAY" on page 2-8.

To run the Oracle Enterprise Manger Configuration Assistant in non-interactive mode, you must use both the `-silent` and `-responseFile` parameters.

The success or failure of the installation is logged in the `silentInstall.log` file. If an Oracle Inventory exists on your system, then the `silentInstall.log` file is created there. Otherwise, it is created in the *oraInventory_location*/logs/ directory. The detailed results of the non-interactive installation session are found in the
oraInventory_location/logs/installActions.log file. See "Reviewing a Log of an Installation Session" on page 3-16.

> **Note:** The Installer or configuration assistant will fail if you attempt a non-interactive session without appropriately configuring a response file.

Error Handling

Values for variables that are of the wrong context, format, or type are treated as if no value were specified. Variables which are outside any section are ignored.

A non-interactive installation fails if no response file is specified or if you attempt a silent installation with an incorrect or incomplete response file. If you attempt a silent installation and the Installer encounters an error, such as insufficient disk space, the installation fails. The results of your non-interactive installation is recorded in the installation session's log file. See "Reviewing a Log of an Installation Session" on page 3-16.

Validation of Values from Response File

The Installer or configuration assistant performs calculation and validation of the response file at run time. Failure of the validation process ends the installation or configuration.

4

Post-Installation

You must perform certain post-installation steps and configure Oracle8*i* after completing the Oracle Universal Installer session. This chapter describes the required steps, as well as some optional ones.

- Configuration Tasks to Perform as the root User

- Configuration Tasks to Perform as the oracle User

- Post-Installation for Oracle Products

- Oracle Configuration Assistants

- Accessing Installed Documentation

- De-installing Oracle Software

> **Note:** This chapter describes *basic configuration only.* The more sophisticated configuration and tuning typically required for production systems is described in the *Oracle8i Administrator's Reference for Sun SPARC Solaris* and in product administration and tuning guides.

Configuration Tasks to Perform as the root User

Log in as the `root` user and perform the following tasks:

❑ Create Additional UNIX Accounts

❑ Verify Database File Security

❑ Automate Database Startup and Shutdown (Optional)

▶▶ Create Additional UNIX Accounts

If necessary, create additional UNIX accounts with a system administration utility such as `admintool` or `useradd`. Each DBA user on the system must be a member of the OSDBA group.

Query the data dictionary view using SQL*Plus to list the accounts in the default database. Accounts in the database are based upon the products chosen in the Installer.

```
SQL> SELECT username from dba_users;
```

You should delete accounts you do not need.

▶▶ Verify Database File Security

If you configure Oracle8*i* in a way similar to a United States NCSC C2 or European ITSEC E3 security evaluation configuration, verify database file security to ensure the integrity of the Oracle software installation. This task is optional if security is not an issue.

Many files must be protected to prevent unauthorized access to secure data. The recommended file modes and ownership are as follows:

■ The *oracle* account should have read, write, and execute privileges all files and directories in an Oracle installation.

■ The `oinstall` group should have read, write, and execute privileges on the `oraInventory` directory, but should not have write permissions on anything else.

■ No user outside the *oracle* account or the `oinstall` group should have write access on any files or directories in an Oracle installation.

Table 4–1, "Access Permissions on Oracle Directories and Files", on page 4-3 summarizes the directory and file permissions for different types of files.

> **Note:** These permissions are the default values and should not be changed.

Table 4–1   Access Permissions on Oracle Directories and Files

Directories/Files	Permissions	Comments
All database, redo log, and control files (extensions for these files are typically `.dbf`, `.log`, and `.ctl`)	640 `rw-r----`	To maintain discretionary access to data, all databases, redo logs, and control files must be readable only by the *oracle* account and `oinstall` group.
`$ORACLE_HOME/bin/`	751 `rwxr-x--x`	Must be writable by the *oracle* software owner, and executable by all users.
The `oracle` executable, and the following network executables: `$ORACLE_HOME/bin/oracle` and `$ORACLE_HOME/bin/dbsnmp`	6751 `rws-r-s--x`	The 6 sets the setuid bit and the setgid bit so the executables run as the *oracle* user and `dba` group, regardless of who executes them.
All other executables.	751 `rwxr-x--x`	Must be writable by the *oracle* account and executable by all users.
`$ORACLE_HOME/lib/`	755 `rwxr-xr-x`	The directory is readable, writable, and executable by the owner, readable and executable by all other users.
All files under `$ORACLE_HOME/lib/`	644 `rw-r--r--`	The files are readable and writable by the owner, read-only for all other users.
`$ORACLE_HOME/rdbms/log`	751 `rwxr-x--x`	Restricts access to files in the directory to the *oracle* account and `oinstall` group.
Product subdirectories such as `$ORACLE_HOME/sqlplus` or `$ORACLE_HOME/rdbms`	751 `rwxr-x--x`	Restricts access to log files to the *oracle* account and `oinstall` group.
Files in `$ORACLE_HOME/sqlplus` or `$ORACLE_HOME/rdbms`	644 `rw-r--r--`	The files are readable and writable by the owner, read-only for all other users.

Table 4–1   Access Permissions on Oracle Directories and Files

Directories/Files	Permissions	Comments

`$ORACLE_HOME/`
`network/trace`
	777
	
	`rwxrwxrwx`
	
	or
	
	730
	
	`rwx-wx---`
		777 allows broad access to view and create trace files during development. Use 730 in a production environment to ensure that only the *oracle* account and members of the `oinstall` group have access to trace files.

All files under product `admin` directories, like `$ORACLE_HOME/rdbms\` `/admin` and `$ORACLE_HOME/sqlplus/\` `admin`	644 `-rw-r--r--`	SQL scripts should typically be run as the SYS user.

▶▶ Automate Database Startup and Shutdown (Optional)

You can configure your system to automatically start Oracle databases when your system starts up and to shut down Oracle databases when your system shuts down. Automating database startup is optional, but automatic shutdown is recommended because it guards against improper shutdown of the database.

The dbshut and dbstart scripts are located in the `$ORACLE_HOME/bin` directory and can be used to automate database startup and shutdown.

The dbstart and dbshut scripts reference the same entries in the oratab file, so the scripts must apply to the same set of databases. For example, you cannot have dbstart automatically start up databases sid1, sid2, and sid3, and dbshut shut down only databases sid1 and sid2. You can, however, specify that dbshut shut down a set of databases while dbstart is not used at all. To do this, include the dbshut entry in the shutdown file but omit the dbstart entry from the system startup files.

> **See Also:**   For a description of system startup and shutdown procedures, check information about the init command in your Sun SPARC Solaris documentation.

Automating Database Startup and Shutdown
This process must be completed for every new database that you want to configure for automated startup and shutdown. Perform the following tasks to set up the dbstart and dbshut scripts so that they are called at system startup:

1. Edit the `/var/opt/oracle/oratab` file.

    Database entries in the `oratab` file appear in the following format:

    ORACLE_SID:*ORACLE_HOME*:{Y|N}

    where Y or N specifies whether you want the `dbstart` and `dbshut` scripts to start up and shut down the database. Find the entries for all the databases that you want to start up. They are identified by the *sid* in the first field. Change the last field for each to Y.

2. Create a file named `dbora` in the `/etc/init.d` directory (if it does not already exist).

3. Create entries similar to the following at the end of the `dbora` file (if they do not already exist). Be sure to give the full path of the `dbstart` utility.

    ```sh
    #!/bin/sh
    # Set ORA_HOME to be equivalent to the ORACLE_HOME
    # from which you wish to execute dbstart and
    # dbshut
    # set ORA_OWNER to the user id of the owner of the
    # Oracle database in ORA_HOME
    ORA_HOME=/u01/app/oracle/product/8.1.6
    ORA_OWNER=oracle
    if [! -f $ORA_HOME/bin/dbstart]
    then
    echo "Oracle startup: cannot start"
    exit
    fi
    case "$1" in
    'start')

    # Start the Oracle databases:
    # The following command assumes that the oracle login will not prompt the
    # user for any values

    su - $ORA_OWNER -c $ORA_HOME/bin/dbstart &
    ;;
    'stop')

    # Stop the Oracle databases:
    # The following command assumes that the oracle login will not prompt the
    # user for any values

    su - $ORA_OWNER -c $ORA_HOME/bin/dbshut &
    ```

```
        ;;
        esac
```

4. Link dbora by entering:

```
# ln -s /etc/init.d/dbora /etc/rc0.d/K10dbora
# ln -s /etc/init.d/dbora /etc/rc2.d/S99dbora
```

Configuration Tasks to Perform as the *oracle* User

Perform the following tasks as the `oracle` user.

❏ Update UNIX Account Startup Files

❏ Update the oratab File

❏ Apply Any Required Oracle Patches

❏ Set Initialization Parameters

▶▶ Update UNIX Account Startup Files

Update the startup files of the `oracle` account and the UNIX accounts of Oracle users.

Set Environment Variables

Set the following environment variables in the `.profile` or `.login` file of the `oracle` account before using Oracle8*i* products. Table 4–2, "Environment Variable Settings" shows the recommended settings. The settings that you use here should correspond to the settings you used during installation as described in "Set Environment Variables" on page 2-8. The syntax for setting environment variables is as follows.

For the Bourne or Korn shell:

```
variable_name=value; export variable_name
```

For the C shell:

```
setenv variable_name value
```

> **Note:** You should not define environment variables with names that are identical to those used for Oracle processes, for example: CKPT, PMON, and DBWR.

Table 4–2   Environment Variable Settings

Environment Variable	Recommended Setting
LD_LIBRARY_PATH	Set it to include $ORACLE_HOME/lib.
ORACLE_BASE	*software_mount_point*/app/oracle
ORACLE_HOME	$ORACLE_BASE/product/8.1.6
ORACLE_SID	If you do not remember the value you entered when you were prompted by the Oracle Universal Installer, you can find it listed in the Installer log file located in *oraInventory_location*/logs/installActions.log The *oraInventory_location* is defined in /var/opt/oracle/oraInst.loc
PATH	Make sure the new $ORACLE_HOME/bin directory is included in the PATH setting. See Chapter 2, "Pre-Installation" for other PATH requirements.
CLASSPATH	CLASSPATH must include the following: *JRE_Location*, $ORACLE_HOME/jlib, $ORACLE_HOME/product/jlib **Note:** *JRE_Location* is defined as $ORACLE_HOME/JRE
TNS_ADMIN	Set it to the location of the Net8 configuration files. This variable only needs to be set if Net8 configuration files are not located in one of the default locations.
TWO_TASK	Set TWO_TASK to the Net8 connect string alias defined in tnsnames.ora which client software will use by default to connect to a server.

LD_LIBRARY_PATH
Required when using Oracle products that use shared libraries. Set LD_LIBRARY_PATH to include $ORACLE_HOME/lib.

ORACLE_BASE
Specifies the directory at the top of the Oracle software and administrative file structure. The OFA-recommended value is:

software_mount_point/app/oracle.

For example:

/u01/app/oracle

ORACLE_HOME
Specifies the directory containing the Oracle software for a given release. The Optimal Flexible Architecture recommended value is:

$ORACLE_BASE/product/*release*.

For example:

/u01/app/oracle/product/8.1.6.

ORACLE_SID
Specifies the Oracle System Identifier, or *sid*, which is the name of the Oracle Server instance. Because the *sid* is incorporated into many filenames, Oracle Corporation recommends restricting it to no more than four characters to avoid filename problems on different operating systems.

PATH
After installation of Oracle software, the search path should include all of the following:

- $ORACLE_HOME/bin, /bin, /usr/bin, and /usr/ccs/bin

- the local bin directory specified when the root.sh script was run, usually /usr/local/bin

> **Note:** If you require /usr/ucb in your search path, make sure it comes after /usr/ccs/bin in the search order.

CLASSPATH
The CLASSPATH variable is used for Java functionality. CLASSPATH is different for various products. Refer to your product documentation for more information. In addition to any pre-existing settings, CLASSPATH must include the following JRE location(s):

$ORACLE_HOME/JRE:$ORACLE_HOME/jlib:$ORACLE_HOME/*product*/jlib

The variable *product* indicates any product directory in the ORACLE_HOME, such as `rdbms` or `network`, where a JRE or file required for Java functionality are located.

TNS_ADMIN

To place the Net8 configuration files in a location other than the default locations (`/var/opt/oracle` or `$ORACLE_HOME/network/admin`), set the TNS_ADMIN environment variable to the directory where Net8 configuration files are located. For example, if `tnsnames.ora` resides in the `/tns` directory, set TNS_ADMIN to `/tns`.

Oracle products will look for the `tnsnames.ora` file in the following order:

1. `.tnsnames.ora` file in the current user's home directory (Note the dot before the file name).

2. `$TNS_ADMIN/tnsnames.ora`

3. `/var/opt/oracle/`

4. `$ORACLE_HOME/network/admin/`

Check that a `tnsnames.ora` file exists in one of these locations; otherwise, you may be unable to connect to a database through Net8 using local naming.

TWO_TASK

If you have a Client/Server configuration, you can set TWO_TASK to the net service name of the database where client software will connect by default. When TWO_TASK is set, you do not have to specify the net service name of the database to connect to it with Oracle client software. See the *Net8 Adminstator's Guide* and the *Oracle8i Administrator's Reference for Sun SPARC Solaris* for more information about net service names.

Initialize the oraenv (coraenv) Script

You have the option of using the `oraenv` or `coraenv` scripts to set a common environment for oracle users. Follow the instructions below for a single-instance or multiple-instance configuration for the `oraenv` script, or the `coraenv` script if you are running the C shell.

Single-Instance Machine

On a single-instance machine, set the environment variable ORACLE_SID in the `.profile` or `.login` file of the *oracle* account followed by these commands to initialize the `oraenv` (`coraenv`) file at login.

For the Bourne or Korn shell:

```
ORAENV_ASK=NO
. /usr/local/bin/oraenv
```

For the C shell:

```
set ORAENV_ASK = NO
source /usr/local/bin/coraenv
unset ORAENV_ASK
```

Multiple-Instance Machine

On a multiple-instance machine, include a list of instance names and the commands necessary to initialize the oraenv (coraenv) file at the end of the startup file of the *oracle* account.

For the Bourne or Korn shell:

```
#!/usr/bin/sh
echo "The SIDs on this machine are:"
cat /var/opt/oracle/oratab | awk -F: '{print $1}' | grep -v "#"
ORAENV_ASK="YES"
. /usr/local/bin/oraenv
```

For the C shell:

```
#!/usr/bin/csh
echo "The SIDs on this machine are:"
cat /var/opt/oracle/oratab | awk -F: '{print $1}' | grep -v "#"
set ORAENV_ASK="YES"
source /usr/local/bin/coraenv
```

Update Other Oracle User Startup Files

To create the same environment for all *oracle* accounts, update each user startup file to include the following line at the end of the startup file:

- for .profile files used by the Bourne or Korn shells:

  ```
  . /usr/local/bin/oraenv
  ```

  for .login files used by the C shell:

  ```
  source /usr/local/bin/coraenv
  ```

- Settings for the ORACLE_BASE, ORACLE_HOME, and PATH environment variables as described in "Set Environment Variables" on page 4-6.

▶▶ **Update the oratab File**

If you have created a database manually instead of using Oracle Database Configuration Assistant, you must ensure the system configuration is reflected in the `/var/opt/oracle/oratab` file.

Add an entry for each Server instance on the system in the following format:

```
ORACLE_SID:ORACLE_HOME:{Y|N}
```

where Y or N indicates whether you want to activate the dbstart and dbshut scripts. Oracle Database Configuration Assistant automatically adds an entry for each database it creates.

▶▶ **Apply Any Required Oracle Patches**

The Oracle8*i* release, which this manual accompanies, includes patches that must be applied to Oracle8*i* or other products. Patches can be found on the Oracle8*i* Release 2 (8.1.6) CD-ROM in the `cd_rom_mount_point`/patch directory. Review the README file included with each patch for installation instructions.

▶▶ **Set Initialization Parameters**

The default init*sid*.ora file shipped with the distribution is located in the `$ORACLE_BASE/admin/sid/pfile` directory. A template init.ora file is also in `$ORACLE_HOME/dbs`. The file contains settings for small, medium, and large databases, with the settings for medium and large databases commented out. The size settings are relative to each other, but do not represent an empirical size of the database.

Modify init*sid*.ora Parameters

When you create a database using Oracle Database Configuration Assistant your init*sid*.ora parameters are automatically set. You can manually modify the initialization parameters in the init*sid*.ora with a UNIX text editor. Activate the modified init*sid*.ora file by shutting down and restarting the database.

Do not use symbolic character representations such as question marks (?) for ORACLE_HOME in parameter files.

To bring rollback segments online automatically with database startup, you must uncomment the rollback_segments in the init*sid*.ora file.

For example, change:

```
#rollback_segments = (r0, r1, r2, r3)
```

to:

```
rollback_segments = (r0, r1, r2, r3)
```

> **See Also:** *Oracle8i Administer's Reference for Sun SPARC Solaris* for information on init*sid.ora* parameters.

Post-Installation for Oracle Products

Perform the product-specific steps as necessary for your installation. Not all products require post-installation setup.

To review online documentation before you configure your Oracle products, see "Accessing Installed Documentation" on page 4-23. It is not necessary to read product documentation before completing the configuration tasks in this manual, but more sophisticated tuning requires information in the product documentation.

The following products have post-installation steps:

- Net8
- Oracle Internet Directory
- Oracle Enterprise Manager
- Oracle Options
- Recovery Manager
- Multi-Threaded Server
- Oracle Parallel Server Management
- Oracle Precompilers (Pro*COBOL, Pro*C/C++, Pro*FORTRAN, SQL*Module Ada)
- Oracle Supported Protocols
- Legato Storage Manager

Net8

Configuring a complete Oracle network is beyond the scope of this manual and is covered in detail in the *Net8 Administrator's Guide*.

Basic configuration of Net8 is done by Net8 Configuration Assistant when it is invoked by Oracle Universal Installer during installation of Net8. For an explanation of how Net8 Configuration Assistant configures your installation, see

"Understanding Net8 Configuration" on page 2-17. For information on running Net8 Configuration Assistant as a stand-alone tool, see "Net8 Configuration Assistant" on page 4-22.

Verify and complete your initial configuration with the following steps:

1. Log in as `root` and reserve a port for the Net8 listener by making the following entry in the `/etc/services` file:

```
listener_name 1521/tcp              #Net8 listener
```

> **Note:** 1521 is the default port. If you chose a different port when you configured the Net8 listener, specify that port in the `/etc/services` file.

2. Check the status of the listener following installation by using the command:

```
$ lsnrctl status [listener_name]
```

The `listener_name` field is required if the listener has a name other than the default, `listener`.

If the listener is not running, start it with the following command:

```
$ lsnrctl start listener_name
```

3. Install and configure Oracle client software on a remote system, if necessary, then start SQL*Plus to test the connection to the server.

```
$ sqlplus username/password@net_service_name
```

If you can successfully connect to the server with SQL*Plus, you have established network connectivity over TCP/IP. For more advanced network configuration, refer to the *Net8 Administrator's Guide*.

Oracle Internet Directory

To complete installation of Oracle Internet Directory, you must perform the following tasks.

❏ Start the Directory Server

❏ Configure Security

▶▶ **Start the Directory Server**

See the *Oracle Internet Directory Administrator's Guide* for instructions on starting Oracle Internet Directory.

▶▶ **Configure Security**

When you first install Oracle Internet Directory, the default configuration grants to all users complete access to the directory. One of the first things you will want to do is to establish and implement an access control policy to ensure that each user receives the appropriate authorization.

Also, in the process of loading directory entries, you are also creating a hierarchy of directory entries. You must establish the following:

- Permissions to load entries into this hierarchy
- Directory access to clients who need read, modify, and write access to the entries

Before attempting to add directory entries, see the chapters on SSL and managing directory access control in the *Oracle Internet Directory Administrator's Guide* for a detailed explanation of security options and instructions for setting up security.

Oracle Enterprise Manager

If you installed Oracle Enterprise Manager through the Oracle Management Server or Custom installation types of the Oracle8*i* Management Infrastructure category, Oracle Enterprise Manager Configuration Assistant will automatically start at the end of the installation to guide you through repository configuration. If you installed Oracle Enterprise Manager through any other installation type, Oracle Enterprise Manager will not start automatically at the end of the installation.

Manually start Oracle Enterprise Manager Configuration Assistant after installation if a repository needs to be created configured, upgraded, or dropped.For information on running Oracle Enterprise Manager Configuration Assistant as a stand-alone tool, see "Oracle Enterprise Manager Configuration Assistant" on page 4-23.

There are further post-installation steps for Oracle Enterprise Manager that exceed the scope of this manual and are discussed in detail in the *Oracle Enterprise Manager Configuration Guide.*

Oracle Options

Oracle *inter*Media

> **Note:** There is no upgrade from previous releases of ConText
> Cartridge to Oracle *inter*Media Text 8.1. However, there is a
> migration that can be performed manually. See the *Oracle8i ConText
> to interMedia Text Migration* guide for documentation of this process.

For *inter*Media Text, include $ORACLE_HOME/ctx/lib in the LD_LIBRARY_PATH
environment variable.

If you intend to install Oracle *inter*Media Text after your initial installation, ensure
you have at least 10 MB of disk space for the data dictionary.

Your database must include tablespaces specific to *inter*Media Text data. Verify that
tablespaces exist to serve as default and temporary tablespaces for Oracle
*inter*Media Text. Oracle *inter*Media Text uses the DRSYS tablespace for its default
and temporary tablespaces. If tablespaces for Oracle *inter*Media Text do not exist or
you do not want to use the DRSYS tablespace, create additional tablespaces before
proceeding.

> **See Also:** *Oracle8i SQL Reference* for information on creating
> tablespaces.

Configuring the Database for Oracle Options

If you install additional Oracle Options after the initial installation, use Oracle
Database Configuration Assistant to configure your database for the options you
install.

1. Start up the Oracle Database Configuration Assistant by executing dbassist,
    which is located at:

    $ORACLE_HOME/bin/dbassist

2. Select [Modify Database].

3. Select the appropriate database SID from the list of those detected by the Oracle
    Database Configuration Assistant. The database that you want to modify must
    already be running.

4. Choose the options you wish to enable from the list and click the [Finish]
    button.

Execute privileges will be granted to PUBLIC for all of the options and packages.

Recovery Manager

Recovery Manager is an automated recovery utility that is installed as part of Oracle8*i*. It stores information in a recovery catalog in a separate Oracle8*i* database. This second Oracle8*i* database should be installed on a separate machine to provide maximum fault resistance.

> **Note:** If the installation and maintenance of a second Oracle8*i* database is impractical, Recovery Manager can also be used in a restricted mode without a recovery catalog.

To create a recovery catalog, perform the following steps:

1. Install Oracle8*i* on a separate machine from any other Oracle8*i* system and create a database for the recovery catalog.

   If you do not to write a custom script to create the database, create a typical, preconfigured database with Oracle Database Configuration Assistant. The default database is adequate for the recovery catalog.

2. Create a user in the recovery catalog database to be the RECOVERY_CATALOG_OWNER.

3. As the RECOVERY_CATALOG_OWNER, run the `createCatalog` command at the Oracle Recovery Manager prompt.

   > **See Also:** For more detail on Recovery Manager, see the *Oracle8i Backup and Recovery Guide.*

Multi-Threaded Server

Oracle servers configured with Multi-Threaded Server require a higher setting for the initialization parameter SHARED_POOL_SIZE or a custom configuration that uses LARGE_POOL_SIZE. If you installed your server with Oracle Universal Installer, the value of SHARED_POOL_SIZE is set for you automatically by Oracle Database Configuration Assistant. However, if you created a database manually you should raise SHARED_POOL_SIZE in the `init`*sid*`.ora` file. Typically, you should add 1 KB for each anticipated concurrent user. See *Oracle8i Designing and Tuning for Performance* for further information on configuring Multi-Threaded Server.

Oracle Parallel Server Management

1. To start the Oracle Parallel Server Communication Daemon automatically when the machine is rebooted, log in as the `root` user and add a line similar to the following in the system startup file:

```
su - oracle -c "opsd log=/tmp/opsd.log"
```

The above entry is optional. The default entry is:

```
/tmp/opsdlog
```

On Sun SPARC Solaris, the startup file is `/etc/init.d/dbora`.

> **Note:** The following two steps are not necessary if Oracle Database Configuration Assistant was used to create the database

2. Determine the node numbers for all nodes of the cluster, by entering:

```
$ORACLE_HOME/bin/lsnodes -n
```

3. Create the Oracle Parallel Server configuration file, `$ORACLE_HOME/ops/opsname.conf`, and install a copy on each node. This file contains parameters describing the configuration of Oracle Parallel Server instances and related services.

> **See Also:** The *Oracle Parallel Server Setup and Configuration Guide*.

Oracle Precompilers

> **Note:** You cannot use Oracle Precompilers independently of Oracle8*i* to convert embedded PL/SQL.

Pro*C/C++

The configuration file `pcscfg.cfg` in `$ORACLE_HOME/precomp/admin` must be customized for your environment before using Pro*C/C++. This file is installed without content and may be configured with any text editor according to your site-specific requirements. See the *Pro*C/C++ Programmer's Guide* for information on how to configure this file.

> **See Also:** The *Programmer's Guide to the Pro*C/C++ Precompiler* for further information on configuring the `pcscfg.cfg` file for your environment.

Pro*COBOL

The configuration file `pcbcfg.cfg` is installed without content and may be configured with any text editor according to your site-specific requirements. See the *Pro*COBOL Programmer's Guide* for information on how to configure this file.

Pro*FORTRAN

The configuration file is `pccfor.cfg`. This file is installed without content and may be configured with any text editor according to your site-specific requirements. See you FORTRAN77 documentation to determine how to configure this file.

SQL*Module Ada

The configuration file is `pmscfg.cfg`. This file is installed without content and may be configured with any text editor according to your site-specific requirements. See the *SQL*Module for Ada Programmer's Guide* for information on how to configure this file.

Oracle Supported Protocols

All Supported Protocols

Perform the following steps after installing any protocol:

> **Note:** This procedure fails if the TNS_ADMIN environment variable is not set or if `listener.ora` is not in one of the default locations (`/var/opt/oracle` or `$ORACLE_HOME/network/admin`).

1. Verify that you have created and installed the necessary configuration files for the network.

2. To start the listener automatically when the machine is rebooted, log in as the `root` user and add a line similar to the following in the system startup file:

```
su - oracle -c "lsnrctl start"
```

On Sun SPARC Solaris, the startup file is /etc/init.d/dbora.

3. If you have a client/server configuration, you must set the TWO_TASK environment variable on the clients to point to the server. Set the TWO_TASK environment variable on the client machines to the service name for the server (available from the tnsnames.ora file). See "Set Environment Variables" on page 4-6 for information on setting environment variables.

4. Start the listener on the server:

```
$ lsnrctl start
```

5. Check the listener process:

```
$ lsnrctl status
```

6. As the *oracle* user, start SQL*Plus, to test the connection:

```
$ sqlplus username/password@service_name
```

SPX/IPX

Before starting the Net8 listener, start the ntisbsdm executable:

```
$ ntspxctl
ntspxctl> startup
```

The command's output confirms the status of the executable.

Configuring the Secure Socket Layer

Once the Secure Socket Layer is installed, you must run Net8 Configuration Assistant to properly configure it for your system.

> **See Also:** For more detail on Secure Socket Layer, refer to the installed documentation *Configuring Secure Socket Layer Authentication* in the *Oracle Advanced Security Administrator's Guide* in the generic documentation set.

Legato Storage Manager

You can install Legato Storage Manager with the Installer by running the root.sh script as described in "Run the root.sh Script" on page 3-16. Instructions for manually installing Legato Storage Manager from the Oracle8*i* CD-ROM are described in "Installing Legato Storage Manager Manually" on page 3-17.

1. After the LSM installation has completed, verify that all the required packages were installed:

```
# pkginfo | grep -i LSM
application ORCLclnt      LSM (Backup/Recover) Client
system ORCLdrvr          LSM (Backup/Recover) Device Drivers
application ORCLman       LSM (Backup/Recover) Man Pages
application ORCLnode      LSM (Backup/Recover) Storage Node
application ORCLserv      LSM (Backup/Recover) Server
```

2. Configure the driver software to provide support for Legato Storage Manager to back up data to the SCSI storage devices attached to the system. For more information, refer to the *Legato Storage Manager Administrator's Guide.*

Integrating SAP R/3 with Legato Storage Manager

To perform archive, backup, and recover operations, Legato Storage Manager provides a means to integrate SAP R/3 and Oracle8*i* backup and recovery. The backup and recovery is initiated from SAPDBA along with the SAP br-tools (brbackup, brarchive, and brrestore) with the LSM server.

On the Oracle8*i* software CD-ROM, the directory containing the Legato Storage Manager software has a subdirectory named SAP with the following files for SAP R/3 on Oracle:

- backint - SAP API that integrates SAP R/3 backup and recovery with third-party utilities.

- init.utl - Parameter file that specifies the variables used by backint during backup, recover, and archive operations.

- README - Text file that describes the SAP R/3 files and where to install them.

To set up and configure Legato Storage Manager with SAP R/3 on your system, perform the following tasks:

1. With SAP R/3 already installed, install Legato Storage Manager on your system. Follow the installation instructions in "Installing Legato Storage Manager Manually" on page 3-17.

2. Include the pathname of the directory containing the Legato Storage Manager executables (/usr/sbin) in the PATH environment variable for the *oracle* user.

3. Configure a client resource for the Oracle8*i* server in Legato Storage Manager, according to the instructions in Chapter 2 of the *Legato Storage Manager*

Administrator's Guide, which is included on the Oracle Online Generic Documentation CD-ROM.

4. From the subdirectory named SAP in the Legato Storage Manager directory on the Oracle8*i* CD-ROM, copy the backint program file into the directory where the SAP br-tools reside.

5. From the subdirectory named SAP in the Legato Storage Manager directory on the Oracle8*i* CD-ROM, copy the file init.utl into the directory where you installed LSM, /usr/sbin.

6. Instruct the SAP Database Administration program to use the backint program by setting the backup_dev_type parameter in the SAP initialization file, init*sid*.sap. In init*sid*.sap, set the parameter as follows:

   ```
   backup_dev_type = util_file
   ```

7. Instruct the SAP Database Administration program to use the file init*sid*.utl for backint-specific parameters by setting the util_par_file parameter in the SAP initialization file, init*sid*.sap.

   In init*sid*.sap, set the parameter as follows:

   ```
   util_par_file = ?/dbs/initsid.utl
   ```

The session report, backint*sid*.log, is created after the first backup session using SAP R/3 integrated with Legato Storage Manager. The report, typically located in the directory /nsr/logs, is appended to after each backup, recover, or archive.

Oracle Configuration Assistants

The following Oracle configuration assistants are described in this section:

- Net8 Configuration Assistant

- Oracle Data Migration Assistant

- Oracle Database Configuration Assistant

- Oracle Enterprise Manager Configuration Assistant

These configuration assistants are usually run during and installation session, but can also be run in a stand-alone mode. Like Oracle Universal Installer, each of these assistants can also be run non-interactively using a response file. See "Non-Interactive Installation and Configuration" on page 3-21 for information on using response files with the product assistants.

Net8 Configuration Assistant

When the Net8 Server or Net8 Client is installed, the Net8 Configuration Assistant is automatically launched by Oracle Universal Installer. See "Understanding Net8 Configuration" on page 2-17 for a description of how Net8 Configuration Assistant configures your installation.

If you create a database using the Oracle Database Configuration Assistant during or after installation, it will automatically update the Net8 configuration with any configuration information necessary for the new database. Oracle Database Configuration Assistant either registers the database in a supported directory service so that clients can use the directory to connect to the database, or it will create an entry in the local naming file (tnsnames.ora) that can then be distributed to client machines to connect to the database.

If you choose to do a separate Oracle8*i* Client install, the Net8 Configuration Assistant will automatically create a profile that is consistent with any selections you made during install. The Installer will automatically run the Net8 Configuration Assistant to set up a net service name in the Local Naming file found in the $ORACLE_HOME/network/admin directory of your client installation.

After installation is complete, more detailed configuration can be accomplished using the Net8 Configuration Assistant with the following command:

```
$ netasst
```

For information on the use and configuration of Net8, see the *Net8 Administrator's Guide.*

Oracle Data Migration Assistant

If you have installed Oracle8*i* to use with an existing database from a prior software release, and you did not choose to upgrade the database during the installation, upgrade or migrate the database prior to mounting it using Oracle8*i*.

You can start Oracle Data Migration Assistant with the following command:

```
$ odma
```

The process of migrating a database exceeds the scope of this manual. See *Oracle8i Migration* for detailed instructions and information.

Oracle Database Configuration Assistant

Oracle Database Configuration Assistant can create a default or customized database or it can be used to configure an existing database to use Oracle options. The assistant can create the database or output a collection of shell scripts and SQL script which you can inspect, modify, and run at a later time. See "Identifying Your Database Environment" on page 2-22 for information on the types of databases that you can install using Oracle Database Configuration Assistant.

You can start Oracle Database Configuration Assistant with the following command:

```
$ dbassist
```

For help invoking Oracle Database Configuration Assistant, use the -help or -h command line parameters with dbassist.

Oracle Enterprise Manager Configuration Assistant

Oracle Enterprise Manager Configuration Assistant is a tool that enables you to create, configure, drop, or upgrade the Oracle Enterprise Manager repository.

You can start Oracle Enterprise Manager Configuration Assistant with the following command:

```
$ emca
```

For detailed information about the Oracle Enterprise Manager Configuration Assistant, see the *Oracle Enterprise Manager Configuration Guide*.

Accessing Installed Documentation

You can install documentation in HTML and PDF (Adobe Portable Document Format, which requires Acrobat Reader) formats. Solaris-specific documentation files are installed from the Oracle8*i* CD-ROM. Generic documentation files are installed from the Online Generic Documentation CD-ROM. The location of the documentation files is determined according to the following rules:

- If ORACLE_DOC is defined in the environment, the files are installed in that directory.

- If ORACLE_DOC is not defined but ORACLE_BASE is defined, the files are installed under the $ORACLE_BASE/doc directory.

- If neither ORACLE_DOC nor ORACLE_BASE are defined in the environment, the files are installed under the $ORACLE_HOME/doc directory.

To access the documentation, point your browser to either index.htm or products.htm (the latter does not a require a frames-enabled browser). If you prefer paper documentation, you can print the PDF files.

You can also access documentation directly from the CD-ROM as described in

Oracle Information Navigator

Oracle Information Navigator is a Java-based search and navigation utility provided with Oracle online documentation. If you are using a Java-enabled browser, Information Navigator is launched automatically when you open the index.htm file at the top level of the CD-ROM. Information Navigator can be used with Oracle documentation, whether you are reading from the CD-ROM or from installed files.

De-installing Oracle Software

If you are completely de-installing Oracle software from your system, then you must de-configure Net8 with the Net8 Configuration Assistant and remove any installed databases with the Oracle Database Configuration Assistant. Both assistants must be run **before** you use the Installer to completely de-install Oracle software. A partial de-installation of Oracle software does not necessarily require you to run either Oracle Database Configuration Assistant or Net8 Configuration Assistant.

To de-install an Oracle database with Oracle Database Configuration Assistant:

1. Start the Oracle Database Configuration Assistant

   ```
   $ dbassist
   ```

2. From the initial screen, select "Delete a Database."

3. Click Next.

4. Select the instance for the database that you want to delete.

5. Click Finish. Verify that you want to delete the database in the windows that appear.

Because you can only delete one database at a time, you must run Oracle Database Configuration Assistant and repeat these steps for each database that you want to delete.

After you have run Oracle Database Configuration Assistant, run the Net8 Configuration Assistant in de-install mode by invoking it at the command line with the /deinst parameter:

```
$ netca /deinst
```

To de-install Oracle software using Oracle Universal Installer:

1. Start the Installer as described in "Using Oracle Universal Installer" on page 3-2.

2. Click the [De-install Products] button on the "Welcome" dialog box or the [Installed Products...] button available on any Installer screen. The "Inventory" dialog box appears, listing installed products.

3. In the "Inventory" dialog box, select any product(s) to be de-installed, then click the [Remove] button.

A

Oracle8*i* Products

This appendix provides descriptions of products included with Oracle8*i* Release 2 (8.1.6) for Sun SPARC Solaris.

- Determining Which Products are Installed
- Product Descriptions

Determining Which Products are Installed

Refer to the following sections to determine what products are installed by each installation category and type:

- "Oracle8i Enterprise Edition" on page A-2

- "Oracle8i Client" on page A-7

- "Oracle8i Management Infrastructure" on page A-11

See "Product Installation Categories and Installation Types" on page 1-2 for an overview of these installation categories.

Note: The "Custom" installation type is not listed in these tables as it allows you to choose to install any product in the current installation category. Some products can only be installed in a custom installation. Such products have an availability "No" listed for other installation types in the tables in this appendix.

Oracle8*i* Enterprise Edition

Table A–1, "Oracle8i Enterprise Edition Installable Products" lists products available for the Oracle8*i* Enterprise Edition installation types.

Table A–1   Oracle8i Enterprise Edition Installable Products

Product	Typical	Minimal
Legato Storage Manager	No	No
Net8 Client, includes:	Yes	Yes
Net8 Assistant	Yes	Yes
Net8 Configuration Assistant	Yes	Yes
Protocol Support	Yes	Yes
Note: When Net8 Client is installed through the Typical or Minimal installation type, protocol support is automatically installed for the networking protocols detected. When installed through the Custom installation type, you are prompted to select the networking protocols for which you want support (TCP/IP, SPX/IPX, Named Pipes, and LU6.2).		
Net8 Server	Yes	Yes
Oracle Connection Manager	No	No

Table A–1   Oracle8i Enterprise Edition Installable Products

Product	Typical	Minimal
Object Type Translator	Yes	Yes
Oracle Advanced Security - Export Edition, includes:	Yes	No
Oracle Enterprise Login Assistant	Yes	Yes
Note: Oracle Enterprise Login Assistant is a feature of Oracle Advanced Security and can only be used if you have purchased an Oracle Advanced Security license.		
Oracle Enterprise Security Manager	Yes	No
Note: Oracle Enterprise Security Manager is a feature of Oracle Advanced Security included with Oracle Enterprise Manager and can only be used if you have purchased an Oracle Advanced Security license.		
Oracle Wallet Manager	Yes	Yes
Note: Oracle Wallet Manager is a feature of Oracle Advanced Security and can only be used if you have purchased an Oracle Advanced Security license.		
Encryption and Integrity Support, includes:	Yes	No
DES-40 Encryption Support	Yes	No
RC4-40 Encryption Support	Yes	No
DES56 Encryption Support	Yes	No
RC4-56 Encryption Support	Yes	No
MD5 Integrity Support	Yes	No
Thin JDBC Java-based Encryption, includes:	Yes	No
DES-40 Encryption Support	Yes	No
RC4-40 Encryption Support	Yes	No
DES56 Encryption Support	Yes	No
RC4-56 Encryption Support	Yes	No
MD5 Integrity Support	Yes	No
Authentication Support, includes:	Yes	No
Entrust Authentication Support (Beta)	No	No
Kerberos Authentication Support	Yes	No
RADIUS Authentication Support	Yes	No

Table A–1   Oracle8i Enterprise Edition Installable Products

Product	Typical	Minimal
SecurID Authentication Support	Yes	No
CyberSafe Authentication Support	No	No
Identix Authentication Support	Yes	No
DCE Authentication Support	No	No
SSL Authentication Support	Yes	No
Note: Authentication support methods appear in a window during installation, but are not displayed in the *Available Products List* window under Custom.		
Oracle Call Interface	Yes	Yes
Oracle Data Migration Assistant	Yes	Yes
Oracle Database Configuration Assistant	Yes	Yes
Solaris Documentation (online)	Yes	Yes
Oracle Enterprise Manager, includes:	Yes	Yes
Oracle Enterprise Manager Console	Yes	Yes
Oracle DBA Management Pack, includes:	Yes	Yes
Oracle DBA Studio	Yes	Yes
Oracle Instance Manager	No	No
Oracle Schema Manager	No	No
Oracle Security Manager	No	No
Oracle Storage Manager	No	No
SQL*Plus Worksheet	Yes	Yes
Oracle Enterprise Manager Integrated Applications, includes:	Yes	No
Oracle Parallel Server Management	Yes	No
Oracle *inter*Media Text Manager	Yes	No
Oracle Replication Manager	Yes	Yes
Oracle Applications Manager	Yes	No
Oracle Distributed Access Manager	Yes	No
Oracle Developer Server Forms Manager	Yes	No

Table A–1   Oracle8i Enterprise Edition Installable Products

Product	Typical	Minimal
Oracle Spatial Index Advisor	No	No
Oracle Directory Manager	Yes	No
Oracle Enterprise Manager Quick Tours	Yes	No
Oracle Enterprise Manager Web Site, includes:	No	No
Oracle Application Server Listener	No	No
Oracle Intelligent Agent, includes:	Yes	Yes
Data Collection Services	Yes	Yes
Oracle Management Server, includes:	Yes	No
Oracle Enterprise Manager Configuration Assistant	Yes	No
Oracle *inter*Media, includes:	Yes	No
*inter*Media Audio	Yes	No
*inter*Media Common Files	Yes	No
Note: Installed with all *inter*Media except *inter*Media Text.		
*inter*Media Image	Yes	No
*inter*Media Locator Service	Yes	No
*inter*Media Text	Yes	No
*inter*Media Video	Yes	No
Oracle JDBC Drivers, includes:	Yes	Yes
Oracle Thin JDBC Driver for JDK 1.2	Yes	Yes
Oracle Thin JDBC Driver for JDK 1.1	Yes	Yes
Oracle JDBC/OCI Driver for JDK 1.2	Yes	Yes
Oracle JDBC/OCI Driver for JDK 1.1	Yes	Yes
Oracle JServer (either JServer Enterprise Edition or JServer), includes:	Yes	Yes
Enterprise JavaBeans and CORBA Tools	Yes	Yes
Java Virtual Machine	Yes	Yes
Oracle Java Tools	Yes	Yes
Oracle's version of Java Runtime Environment	Yes	Yes

Table A–1   Oracle8i Enterprise Edition Installable Products

Product	Typical	Minimal
Oracle Names	No	No
Oracle Parallel Server includes:	Yes	No
Oracle Parallel Server Management	Yes	No
Note: Oracle Parallel Server is only installed if a cluster is detected.		
Oracle Partitioning	Yes	No
Oracle Spatial	Yes	No
Oracle Time Series	Yes	No
Oracle Universal Installer	Yes	Yes
Oracle Utilities	Yes	Yes
Oracle Visual Information Retrieval	Yes	No
Oracle8*i* Server (either Oracle8*i* Enterprise Edition or Oracle8*i*)	Yes	Yes
SQL*Plus	Yes	Yes
SQLJ	Yes	No
SQLJ Runtime	Yes	No
SQLJ Translator	Yes	No

Oracle8*i* Client

Table A–2, "Oracle8i Client Installable Products" lists products available for the Oracle8*i* Client installation types.

Table A–2   Oracle8i Client Installable Products

Product	Administrator	Programmer	Application User
Net8 Client, includes:	Yes	Yes	Yes
Net8 Assistant	Yes	Yes	Yes
Net8 Configuration Assistant	Yes	Yes	Yes
Protocol Support	Yes	Yes	Yes
Note: When Net8 Client is installed through the Typical or Minimal installation type, protocol support is automatically installed for the networking protocols detected. When installed through the Custom installation type, you are prompted to select the networking protocols for which you want support (TCP/IP, SPX/IPX, Named Pipes, and LU6.2).			
Object Type Translator	Yes	Yes	No
Oracle Advanced Security - Export Edition, includes:	Yes	Yes	Yes
Oracle Enterprise Login Assistant	Yes	Yes	Yes
Note: Oracle Enterprise Login Assistant is a feature of Oracle Advanced Security included with Oracle Enterprise Manager and can only be used if you have purchased an Oracle Advanced Security license.			
Oracle Enterprise Security Manager	Yes	No	No
Note: Oracle Enterprise Security Manager is a feature of Oracle Advanced Security included with Oracle Enterprise Manager.			
Oracle Wallet Manager	Yes	Yes	Yes
Note: Oracle Wallet Manager is a feature of Oracle Advanced Security and can only be used if you have purchased an Oracle Advanced Security license.			
Encryption and Integrity Support, includes:	Yes	Yes	Yes
DES-40 Encryption Support	Yes	Yes	Yes

Table A–2   Oracle8i Client Installable Products

Product	Administrator	Programmer	Application User
RC4-40 Encryption Support	Yes	Yes	Yes
DES56 Encryption Support	Yes	Yes	Yes
RC4-56 Encryption Support	Yes	Yes	Yes
MD5 Integrity Support	Yes	Yes	Yes
Thin JDBC Java-based Encryption, includes:	Yes	Yes	Yes
DES-40 Encryption Support	Yes	Yes	Yes
RC4-40 Encryption Support	Yes	Yes	Yes
DES56 Encryption Support	Yes	Yes	Yes
RC4-56 Encryption Support	Yes	Yes	Yes
MD5 Integrity Support	Yes	Yes	Yes
Authentication Support, includes:	Yes	Yes	Yes
Entrust Authentication Support (Beta)	Yes	Yes	Yes
Kerberos Authentication Support	Yes	Yes	Yes
RADIUS Authentication Support	Yes	Yes	Yes
SecurID Authentication Support	Yes	Yes	Yes
CyberSafe Authentication Support	Yes	Yes	Yes
Identix Authentication Support	Yes	Yes	Yes
DCE Authentication Support	Yes	Yes	Yes
SSL Authentication Support	Yes	Yes	Yes
Note: Authentication support methods appear in a window during installation, but are not displayed in the *Available Products List* window under Custom.			
Oracle Call Interface	Yes	Yes	Yes
Solaris Documentation (online)	Yes	Yes	Yes
Oracle Enterprise Manager, includes:	Yes	No	No
Oracle Enterprise Manager Console	Yes	No	No
Oracle DBA Management Pack, includes:	Yes	No	No

Table A–2   Oracle8i Client Installable Products

Product	Administrator	Programmer	Application User
Oracle DBA Studio	Yes	No	No
Oracle Instance Manager	No	No	No
Oracle Schema Manager	No	No	No
Oracle Security Manager	No	No	No
Oracle Storage Manager	No	No	No
SQL*Plus Worksheet	Yes	No	No
Oracle Enterprise Manager Integrated Applications, includes:	Yes	No	No
Oracle Parallel Server Management	Yes	No	No
Oracle *inter*Media Text Manager	Yes	No	No
Oracle Replication Manager	Yes	No	No
Oracle Applications Manager	Yes	No	No
Oracle Distributed Access Manager	Yes	No	No
Oracle Developer Server Forms Manager	Yes	No	No
Oracle Spatial Index Advisor	No	No	No
Oracle Directory Manager	Yes	No	No
Oracle Enterprise Manager Quick Tours	Yes	No	No
Oracle *inter*Media Client	Yes	Yes	No
Oracle JDBC Drivers, includes:	Yes	Yes	No
Oracle Thin JDBC Driver for JDK 1.2	Yes	Yes	No
Oracle Thin JDBC Driver for JDK 1.1	Yes	Yes	No
Oracle JDBC/OCI Driver for JDK 1.2	Yes	Yes	No
Oracle JDBC/OCI Driver for JDK 1.1	Yes	Yes	No
Oracle Java Tools	Yes	Yes	No
Enterprise JavaBeans	Yes	Yes	No
Oracle's version of Java Runtime Environment	Yes	Yes	Yes
Oracle Universal Installer	Yes	Yes	No

Table A–2   Oracle8i Client Installable Products

Product	Administrator	Programmer	Application User
Oracle Utilities	Yes	Yes	No
Oracle8*i* Client	Yes	Yes	Yes
Pro*C\C++	Yes	Yes	No
Pro*Cobol	Yes	Yes	No
Pro*FORTRAN	No	No	No
SQL*Module Ada	No	No	No
SQLJ	Yes	Yes	No
SQLJ Runtime	Yes	Yes	No
SQLJ Translator	Yes	Yes	No
SQL*Plus	Yes	Yes	No

Oracle8*i* Management Infrastructure

Table A–3, "Oracle8i Management Infrastructure Installable Products" lists products available for the three install types of the Oracle8*i* Enterprise Edition installation category.

Table A–3   Oracle8i Management Infrastructure Installable Products

Product	Oracle Management Server	Oracle Internet Directory
Legato Storage Manager	No	No
Net8 Client, includes:	Yes	Yes
Net8 Assistant	Yes	Yes
Net8 Configuration Assistant	Yes	Yes
Protocol Support	Yes	Yes
Note: When Net8 Client is installed through the Typical or Minimal installation type, protocol support is automatically installed for the networking protocols detected. When installed through the Custom installation type, you are prompted to select the networking protocols for which you want support (TCP/IP, SPX/IPX, and LU6.2).		
Net8 Server:	No	Yes
Oracle Connection Manager	No	No
Object Type Translator	No	Yes
Oracle Call Interface	No	No
Oracle Data Migration Assistant	No	Yes
Oracle Database Configuration Assistant	No	Yes
Oracle Directory Manager	No	Yes
Solaris Documentation (online)	Yes	Yes
Oracle Enterprise Manager, includes:	Yes	No
Oracle Enterprise Manager Console	Yes	No
Oracle Management Server, includes:	Yes	No
Oracle Enterprise Manager Configuration Assistant	Yes	No
Oracle Enterprise Manager DBA Management Pack, includes:	Yes	Yes
Oracle DBA Studio	Yes	No

Table A–3   Oracle8i Management Infrastructure Installable Products

Product	Oracle Management Server	Oracle Internet Directory
Oracle Instance Manager	No	No
Oracle Schema Manager	No	No
Oracle Security Manager	No	No
Oracle Storage Manager	No	No
SQL*Plus Worksheet	Yes	No
Oracle Enterprise Manager Integrated Applications, includes:	Yes	No
Oracle Parallel Server Management	Yes	No
Oracle *inter*Media Text Manager	Yes	No
Oracle Replication Manager	Yes	No
Oracle Applications Manager	Yes	No
Oracle Distributed Access Manager	Yes	No
Oracle Developer Server Forms Manager	Yes	No
Oracle Spatial Index Advisor	No	No
Oracle Directory Manager	Yes	No
Oracle Enterprise Security Manager	Yes	No
Note: Oracle Enterprise Security Manager can only be used if you have purchased an Oracle Advanced Security license.		
Oracle Enterprise Manager Quick Tours	Yes	No
Oracle Enterprise Manager Web Site, includes:	Yes	No
Oracle Application Server Listener	Yes	No
Oracle *inter*Media, includes:	No	No
*inter*Media Audio	Yes	No
*inter*Media Common Files	No	No
Note: Installed with all *inter*Media except *inter*Media Text.		
*inter*Media Image	No	No
*inter*Media Locator Service	No	No
*inter*Media Text	No	No

Table A–3   Oracle8i Management Infrastructure Installable Products

Product	Oracle Management Server	Oracle Internet Directory
*inter*Media Video	No	No
Oracle Internet Directory	No	Yes
Oracle Internet Directory Client Toolset	No	Yes
Oracle JDBC Drivers, includes:	No	No
Oracle Thin JDBC Driver for JDK 1.2	No	No
Oracle Thin JDBC Driver for JDK 1.1	No	No
Oracle JDBC/OCI Driver for JDK 1.2	No	No
Oracle JDBC/OCI Driver for JDK 1.1	No	No
Oracle JServer (either JServer Enterprise Edition or JServer), includes:	No	No
Enterprise JavaBeans and CORBA Tools	No	No
Java Virtual Machine	No	No
Oracle Java Tools	No	No
SQLJ	No	No
SQLJ Runtime	No	No
SQLJ Translator	No	No
Oracle Names	No	No
Oracle Partitioning	No	No
Oracle Spatial	No	No
Oracle Time Series	No	No
Oracle Universal Installer	Yes	Yes
Oracle's version of Java Runtime Environment	Yes	Yes
Oracle Visual Information Retrieval	No	No
Oracle8*i* Server (either Oracle8*i* Enterprise Edition or Oracle8*i*)	No	Yes
SQL*Plus	Yes	Yes

Product Descriptions

Table A–4, "Product Descriptions" provides descriptions and release numbers of products available for installation. References are made to documentation that more fully describes these products. Some products described below are automatically installed with other products. See "Determining Which Products are Installed" for the installation types under which these products are installed.

Table A–4   Product Descriptions

Product	Release	Description	See...
Assistant Common Files (installed with Oracle assistants, such as Oracle Database Configuration Assistant and Net8 Assistant)	8.1.6	A collection of automatically installed files required by Oracle assistants. These files include: ■ BaliShare 1.0.8 (compressed) ■ DBUI 1.1.2 ■ EWT 3.3.6 (compressed) ■ ICE Browser 4.06.6 (compressed) ■ Java Swing Components 1.1.1 (compressed) ■ Kodiak 1.1.2 ■ Oracle Help for Java 3.1.3 (compressed) ■ SMUI 1.0.7	N/A
Data Collection Services (installed with Oracle Intelligent Agent)	2.1	Works as an extension of Oracle Intelligent Agent to collect system performance data (for example, file I/O or CPU usage data) for Capacity Planner and Performance Manager, which are data-collecting applications in the Oracle Diagnostics Pack.	*Oracle Enterprise Manager Administrator's Guide* and *Oracle Enterprise Manager Concepts Guide*
Enterprise JavaBeans	8.1.6	An architecture for developing transactional applications as distributed components in Java.	*Oracle8i Enterprise JavaBeans and CORBA Developer's Guide*
***inter*Media Image** (installed with Oracle *inter*Media, formerly Oracle Image Cartridge)	8.1.6	Provides for the storage, retrieval, and processing of two-dimensional, static bitmapped images. Images are stored efficiently using popular compression schemes in industry-standard desktop publishing image interchange formats.	*Oracle8i interMedia Audio, Image, and Video User's Guide and Reference*

Table A–4   Product Descriptions

Product	Release	Description	See...
*inter*Media Audio (installed with Oracle *inter*Media, formerly Oracle Audio Cartridge)	8.1.6	Provides for the storage, retrieval and management of digitized audio data within an Oracle database.	*Oracle8i interMedia Audio, Image, and Video User's Guide and Reference*
*inter*Media Common Files (installed with Oracle interMedia)	8.1.6	A set of files used by Oracle *inter*Media components.	N/A
*inter*Media Video (installed with Oracle *inter*Media, formerly Oracle Video Cartridge)	8.1.6	Provides for the storage, retrieval, and management of digitized video data within an Oracle database.	*Oracle8i interMedia Audio, Image, and Video User's Guide and Reference*
*inter*Media Text (installed with Oracle *inter*Media, formerly Oracle ConText Cartridge)	8.1.6	Manages and search for text in the database as quickly and easily as any other type of data. *inter*Media Text's search techniques make text a standard datatype in the Oracle database that you can create, modify, and delete. Additionally, with *inter*Media Text, new text-based developments or extensions to existing applications are easy and cost-effective to build with standard SQL tools. With *inter*Media Text, you can search for data in any Oracle database application that uses text — from search-enabling a comments field in an existing application to implementing large-scale document management systems dealing with multiple document formats and complex search criteria. *inter*Media Text also supports basic full-text searches in most languages supported by the Oracle database.	*Oracle8i interMedia Text Reference*
*inter*Media Locator Service (installed with Oracle *inter*Media)	8.1.6	Enables Oracle8*i* to support online internet-based geocoding facilities for locator applications and proximity queries.	*Oracle8i interMedia Locator User's Guide and Reference*
Java Runtime Environment (Oracle's version)	1.1.8_10	Required for running Java applications, such as Oracle Universal Installer. Sun Microsystems' JRE Version 1.1.8 is the minimum standard Java platform for running Java programs.	N/A

Table A–4   Product Descriptions

Product	Release	Description	See...
Legato Storage Manager (LSM)	5.5	If you are using Recovery Manager (RMAN) for Oracle database backups, a media management product such as LSM is required for backing up and restoring from tape storage. You can choose to install the media management product on your CD-ROM, which is LSM, or use a third-party media management product that also complies with Oracle's Backup Solutions Program. LSM also includes a scaled-down version of Legato NetWorker.	*Legato Storage Manager Administrator's Guide*
		The Oracle Universal Installer prompts you to confirm whether or not you want to install LSM. When you confirm installation, LSM is installed automatically. to manually install LSM without using the installer, see "Installing Legato Storage Manager Manually" on page 3-17. For more information on this product, call toll free (1) 888-8-LEGATO in the United States of America, or visit the Oracle backup and recovery website:	
		`http://www.backup-oracle.com/`	
Logical Unit Type 6.2 (LU6.2) protocol support	8.1.6	The adapter is part of the IBM Advanced Program-to-Program Communication (APPC) architecture.	*Net8 Administrator's Guide*
		APPC is the IBM peer-to-peer (program-to-program) protocol for a System Network Architecture (SNA) network. SNA is an IBM reference model similar to the Open Systems Interconnect (OSI) model of the International Standards Organization (ISO).	
		APPC architecture lets the client and host communicate over an SNA network without forcing the client to emulate a terminal (as in terminal-to-host protocols). APPC architecture allows peer-to-peer communication; the client can initiate communication with the server.	
		An SNA network with the LU6.2 and Physical Unit Type 2.1 (PU2.1) protocols provides APPC. The LU6.2 protocol defines a session between two application programs; LU6.2 is a product-independent LU-type.	
		The LU6.2 protocol support enables an Oracle application on a PC to communicate with an Oracle database. This communication occurs over an SNA network with the Oracle database on a host system that supports APPC.	

Table A–4 Product Descriptions

Product	Release	Description	See...
Net8 Assistant (Installed with Net8 Client)	8.1.6	Used by network administrators and DBAs to configure Net8. See the *Net8 Administrator's Guide* for additional information.	*Net8 Administrator's Guide*
Net8 Client	8.1.6	Provides products that enable client connections to databases across a network. A client-side application sends a request to Net8 to be transported across the network to the server.	*Net8 Administrator's Guide*
		Net8 Client (and not Oracle Universal Installer) installs TCP/IP and Named Pipes and auto-detects SPX. SPX is only installed in the installation packages if the appropriate software is detected on your system. If you explicitly select this product through the Custom installation type, it will be installed even if you do not have the appropriate software on your computer.	
Net8 Configuration Assistant (Installed with Net8 Client)	8.1.6	Automatically started during installation to configure directory service access and Net8 client and server components. Net8 Configuration Assistant can also be run in stand-alone mode to configure Net8 after installation.	*Net8 Administrator's Guide*
Net8 Server	8.1.6	Provides products that allow the listener, through a protocol, to accept connections from client applications on the network.	*Net8 Administrator's Guide*
		Note: Net8 Server is not installable through any Oracle8*i* Client installation types.	
		Net8 clients communicate with Oracle servers through net service names that are easy-to-remember aliases for database addresses. Net8 resolves net service names using the following naming methods:	
		■ Host Naming	
		■ Local Naming	
		■ Oracle Names	
		■ Directory Naming	
Object Type Translator	8.1.6	Used to create C-struct representations of Abstract Data Types (ADTs) that have been created and stored in an Oracle database. To take advantage of objects, run Object Type Translator against the database, and a header file is generated that includes the C-structs.	*Oracle Call Interface Programmer's Guide*

Table A–4 Product Descriptions

Product	Release	Description	See...
Oracle Advanced Security—Export Edition	8.1.6	Provides security services for Oracle8*i*. Secures connections over all protocols into Oracle8*i* and integrates a Public Key Infrastructure (PKI). Provides data encryption and integrity; integrates with third-party authentication, authorization and single sign-on solutions; delivers public-key solutions including Secure Sockets Layer (SSL) and X.509 certificates; and utilizes Oracle Internet Directory for storing database authorizations. Also enables enterprise user management and access to multiple accounts and applications with a single password.	*Oracle Advanced Networking Option Administrator's Guide*
Oracle Application Server Listener (installed with Oracle Enterprise Manager Web Site)	2.1	Provides a preconfigured, ready-to-use listener for use with the browser-based Oracle Enterprise Manager. By using this listener, you do not need to install and configure any other webserver for the browser based Oracle Enterprise Manager.	*Oracle Enterprise Manager Configuration Guide*
Oracle Applications Manager (part of Oracle Enterprise Manager Integrated Applications)	2.1	Administers Concurrent Managers, the batch-process scheduling subsystem of Oracle Applications. With this tool, an administrator can improve system performance by creating, configuring, and monitoring all Concurrent Managers on multiple Oracle Applications instances from the Oracle Applications Manager Console. Using the console, you can view details for all processes and requests, cancel or put holds on requests, and start, stop, and define new Concurrent Managers.	*Oracle Enterprise Manager Concepts Guide*
Oracle Call Interface	8.1.6	An application programming interface (API) for accessing an Oracle database from a C or C++ program. You make calls directly to the Oracle Call Interface functions from within your C or C++ program to direct the execution of your SQL statements.	*Oracle Call Interface Programmer's Guide*
Oracle Connection Manager	8.1.6	Acts like a router through which client connection requests can either be sent to the next hop or directly to a server. Clients who route their connection requests through a Connection Manager can take advantage of the connection concentration, Net8 access control, or multi-protocol support features configured on that Connection Manager.	*Net8 Administrator's Guide*
Oracle Data Migration Assistant	8.1.6	Migrates existing Oracle7 databases (release 7.1.3.3.6 or later) to an Oracle8*i* database and upgrades Oracle8 databases to the current database release.	*Oracle8i Migration*

Table A–4   Product Descriptions

Product	Release	Description	See...
Oracle Database Configuration Assistant	8.1.6	Automates the process of creating, modifying, and deleting an Oracle database.	*Oracle8i Administrator's Guide*
Oracle DBA Management Pack	2.1	A set of tools and utilities bundled with Oracle Enterprise Manager. The Oracle DBA Management Pack can be used to perform most of your database administration tasks, and supports all versions of Oracle databases.	*Oracle Enterprise Manager Administrator's Guide*
Oracle DBA Studio (part of Oracle DBA Management Pack)	2.1	Integrates the functionality of schema, security, storage, and instance management into one management tool.	*Oracle Enterprise Manager Administrator's Guide*
Oracle Developer Server Forms Manager	2.1	Allows you to control and monitor Forms Listener, Forms Server, Load Balancer Server, and Load Balancer Client. In addition to providing some basic controls such as start up and shut down, this tool can also monitor events that include service down, excessive memory usage, and excessive CPU usage. It can also automatically fix the problem when it occurs.	*Oracle Enterprise Manager Concepts Guide*
Oracle Distributed Access Manager (part of Oracle Enterprise Manager Integrated Applications)	2.1	Monitors and configures a distributed access system, which provide users with access to Oracle and non-Oracle systems.	*Oracle Enterprise Manager Concepts Guide*
Oracle Documentation	8.1.6	Online version of Oracle8i documentation for Sun SPARC Solaris available in HTML and PDF format.	"Accessing Installed Documentation" on page 4-23
Oracle Enterprise Login Assistant	1.1	Enables single sign on, which implements a subset of the Wallet Manager functionality for opening a user wallet and enabling applications to use it.	*Oracle Advanced Security Administrator's Guide*
Oracle Enterprise Manager	2.1	Provides an integrated solution for centrally managing your heterogeneous environment. Oracle Enterprise Manager combines a graphical console, Oracle Management Servers, Oracle Intelligent Agents, common services, and tools to provide an integrated, comprehensive systems management platform for managing Oracle products.	*Oracle Enterprise Manager Concepts Guide*

Table A–4   Product Descriptions

Product	Release	Description	See...
Oracle Enterprise Manager Configuration Assistant (part of Oracle Management Server)	2.1	Assists administrators with Oracle Enterprise Manager repository creation, removal, upgrade, and configuration.	*Oracle Enterprise Manager Configuration Guide*
Oracle Enterprise Manager Console	2.1	Client interface for the first tier of Oracle Enterprise Manager, which ■ Centrally administers, diagnoses, and tunes multiple databases ■ Manages other Oracle products and services ■ Monitors and responds to the status of Oracle components and third-party services 24 hours a day ■ Schedules jobs on multiple nodes at varying time intervals ■ Monitors networked services for events ■ Customizes your display by organizing databases and other service into logical administrative groups	*Oracle Enterprise Manager Administrator's Guide*
Oracle Enterprise Manager Integrated Applications	2.1	Applications integrated and installed with Oracle Enterprise Manager that are used to manage your Oracle environment. The applications can be accessed from the Oracle Enterprise Manager Navigator pane, the console application drawers, or from your operating system.	*Oracle Enterprise Manager Concepts Guide*
Oracle Enterprise Manager Quick Tours	2.1	HTML-based training tools that provide a fast and easy way to learn a variety of Oracle Enterprise Manager products without having to actually install them. Quick tours are provided for the following components: ■ Oracle Enterprise Manager Console ■ Oracle DBA Management Pack	*Oracle Enterprise Manager Administrator's Guide*
Oracle Enterprise Manager Web Site	2.1	Enables administrators to access the Oracle Enterprise Manager Console from a Web browser.	*Oracle Enterprise Manager Configuration Guide*
Oracle Enterprise Security Manager (part of Oracle Enterprise Manager)	2.0	Helps you administer the Oracle environment for user security using an LDAP-compliant directory server. This tool allows an administrator to manage enterprise-level role authorization among multiple databases simultaneously.	*Oracle Enterprise Manager Concepts Guide*

Table A–4   Product Descriptions

Product	Release	Description	See...
Oracle Instance Manager (part of Oracle DBA Management Pack)	2.1	Manages database instances and sessions in your Oracle environment.	*Oracle Enterprise Manager Administrator's Guide*
Oracle Intelligent Agent	2.1	Monitors services on the managed node for registered events and scheduled jobs sent by the console.	*Oracle Intelligent Agent User's Guide*
Oracle *inter*Media	8.1.6	Oracle enables file management in a variety of media, including text, audio, and video. Files in each medium are managed through a specific component of interMedia. *This multi-component product requires a separate license.*	*Oracle8i interMedia Text Reference*
Oracle *inter*Media Client (part of Oracle *inter*Media)	8.1.6	Provides an Oracle8i *inter*Media Audio, Image, and Video Java interface that lets you use client-side applications to manipulate and/or modify multimedia data stored in a network accessible database on the server.	*Oracle8i interMedia Text Reference*
Oracle *inter*Media Text Manager (part of Oracle Enterprise Manager Integrated Applications)	2.1	A application for administering *inter*Media Text functionality.	*Oracle Enterprise Manager Concepts Guide*
Oracle Internet Directory	2.0.6	An Oracle8i database-based LDAP V3 directory service, included for exclusive use by the Oracle8i database, which can be configured prior to server installation for use in centralizing database user, Net8 network connector, and database listener parameters. Oracle8i Custom installation prompts for the LDAP directory server to use for storing these "entry attributes". A typical installation scenario is to install the Oracle Internet Directory on a dedicated server (distinct from the target of a particular Oracle8i database installation).	*Oracle Internet Directory Administrator's Guide*
Oracle Internet Directory Client Toolset	2.0.6	The command line tools and Oracle Directory Manager use with Oracle Internet Directory.	*Oracle Internet Directory Administrator's Guide*

Table A–4   Product Descriptions

Product	Release	Description	See...
Oracle Internet Directory Manager (Oracle Directory Manager)	2.0.6	A Java-based tool for administering most functional areas of Oracle Internet Directory and its related processes.	*Oracle Internet Directory Administrator's Guide*
Oracle Java Database Connectivity (JDBC) Drivers	8.1.6	A standard set of Java classes, specified by JavaSoft, that provides vendor-independent access to relational data from Java.	*Oracle8i JDBC Developer's Guide and Reference*
Oracle JServer Enterprise Edition		Provides Oracle's Java Virtual Machine, a CORBA 2.0 Object Request Broker, embedded JDBC drivers, a SQLJ translator, and an Enterprise JavaBeans transaction server.	*Oracle8i Java Developer's Guide*
Oracle Java Tools	8.1.6	Provides Java tools to build and deploy Java stored procedures, CORBA objects, and Enterprise JavaBeans with Oracle's Java Virtual Machine.	*Oracle8i SQLJ Developer's Guide and Reference*
Oracle Management Server	2.1	The middle tier of Oracle Enterprise Manager, which provides centralized intelligence and distribution control between console clients and managed nodes.	*Oracle Enterprise Manager Administrator's Guide*
Oracle Names	8.1.6	A distributed naming service developed for Oracle environments to help simplify the setup and administration of global, client/server computing networks. Oracle Names does this by establishing and maintaining an integrated system of Names servers. Oracle Names servers work like a directory service storing addresses for all the database services on a network and making them available to clients that want to make a connection.	*Net8 Administrator's Guide*
Oracle Objects Functionality	8.1.6	Lets you create and manipulate objects, as well as to integrate objects with standard relational functionality.	
Oracle Parallel Server	8.1.6	Enables multiple Oracle instances to share a single Oracle database. *This product requires a separate license.*	*Oracle8i Parallel Server Setup and Configuration*

Table A–4   Product Descriptions

Product	Release	Description	See...
Oracle Parallel Server Management (installed with Oracle Enterprise Manager)	8.1.6	Oracle Parallel Server Manager is an extension to the Oracle Enterprise Manager Console, which enables administration of databases that use the Oracle Parallel Server Option. Once discovered, Parallel Server Databases appear in the Databases folder of the Console's navigator panel alongside single-instance databases. Parallel Servers behave similarly to single-instance databases, and the database administrator can start up, shut down, or check the status of Parallel Server databases.	*Oracle8i Parallel Server Setup and Configuration*
Oracle Parallel Server Manager (part of Oracle Enterprise Manager Integrated Applications)	2.1	Discovers and manages databases that use the Oracle Parallel Server option. An extension to the Oracle Enterprise Manager Console, Oracle Parallel Server Management lists all discovered parallel servers alongside single-instance databases in the Navigator's Databases folder. Using property sheets, you can start up and shut down databases using the Parallel Server option, as well as check the status of instances, datafiles, in-doubt transactions, profiles, redo log groups, roles, rollback segments, schema objects, users, and tablespaces.	*Oracle8i Parallel Server Setup and Configuration* and *Oracle Enterprise Manager Concepts Guide*
Oracle Partitioning	8.1.6	Provides more control in managing tables and indexes by directing all maintenance operations to individual partitions rather than to tables and index names. T*his product requires a separate license.*	
Oracle Replication Manager (part of Oracle Enterprise Manager Integrated Applications)	2.1	Enables an administrator to quickly set up, configure, and manage an Oracle Replication environment. This tool provides a comprehensive wizard to prepare a database for supporting multimaster and/or snapshot replication. Once set up, additional wizards help you replicate schema objects using either multimaster or a combination of multimaster/snapshot replication. After configuring your replication environment, you can use the Oracle Enterprise Manager Navigator tree and property pages to monitor and modify your replication environment.	*Oracle Enterprise Manager Concepts Guide*
Oracle Schema Manager (part of Oracle DBA Management Pack)	2.1	Enables you to create, alter, or drop schema objects such as clusters, indexes, snapshots, tables, and views.	*Oracle Enterprise Manager Administrator's Guide*

Table A–4   Product Descriptions

Product	Release	Description	See...
Oracle Security Manager (part of Oracle DBA Management Pack)	2.1	Manages database users and their corresponding privileges, profiles, and roles.	*Oracle Enterprise Manager Administrator's Guide*
Oracle Spatial (formerly Oracle Spatial Data Cartridge)	8.1.6	Oracle Spatial makes the storage, retrieval, and manipulation of spatial data easier and more intuitive to users. *This product requires a separate license.*	*Oracle8i Spatial User's Guide and Reference*
Oracle Spatial Index Advisor (part of Oracle Enterprise Manager Integrated Applications)	2.1	Helps you analyze and tune spatial indexes on data. With the analyzer, you can see if indexes are properly defined for optimum query performance. The analyzer also provides an understanding of distribution of the data through visual inspection.	*Oracle Enterprise Manager Concepts Guide*
Oracle Storage Manager (part of Oracle DBA Management Pack)	2.1	Enables you to administer tablespaces, datafiles, redo logs, and rollback segments for optimum database storage.	*Oracle Enterprise Manager Administrator's Guide*
Oracle8i Server	8.1.6	The database component of the Oracle8i Enterprise Edition or Oracle8i software	*Getting to Know Oracle8i*
Oracle Time Series (formerly Oracle8i Time Series Cartridge)	8.1.6	Oracle Time Series stores and retrieves time-stamped data through object data types (ODTs). *This product requires a separate license.*	*Oracle8i Time Series User's Guide*
Oracle Universal Installer	1.7.0.*x*	A GUI application that lets you quickly install, update, and remove Oracle products.	*Oracle8i Installation Guide*
Oracle Utilities	8.1.6	A suite of products used for database administration. Oracle Utilities include Server Manager, Export Utility, Import Utility, ORADIM, SQL*Loader, DBVERIFY, TKPROF, Migration Utility, Recovery Manager, OCOPY, Server Manager, and the Password Utility.	*Oracle8i Utilities*

Table A–4   Product Descriptions

Product	Release	Description	See...
Oracle Visual Information Retrieval (formerly Oracle8*i* Visual Information Retrieval)	8.1.6	Provides image storage, content-based retrieval, and format conversion capabilities through an object data type. This option is a building block for various imaging applications, rather than being an end-user application. Some common applications for this option consist of digital art galleries and museums, real estate marketing, document imaging, and stock photo collections for fashion designers and architect. A demonstration is also available.	*Oracle8i Visual Information Retrieval User's Guide and Reference*
Oracle Wallet Manager	2.1	Generates a public-private key pair, creates a certificate request for submission to a certificate authority, and Installs and configures a trusted certificate for the identity.	*Oracle Advanced Security Administrator's Guide*
Pro∗C/C++	8.1.6	The Pro*C/C++ precompiler takes SQL statements embedded in your C and C++ program and converts them to standard C code. When you precompile this code, the result is a C or C++ program that you can compile and use to build applications that access an Oracle database. *This product requires a separate license as a part of Oracle Programmer.*	*Pro*C/C++ Precompiler Programmer's Guide*
Pro∗COBOL	8.1.6	The Pro*COBOL precompiler takes SQL statements embedded in your COBOL program and converts them to standard COBOL code. When you precompile this code, the result is a COBOL program that you can compile and use to build applications that access an Oracle database. *This product requires a separate license as a part of Oracle Programmer.*	*Pro*COBOL Precompiler Programmer's Guide*
Pro∗FORTRAN	8.1.6	The Pro*FORTRAN precompiler takes SQL statements embedded in your FORTRAN program and converts them to standard FORTRAN code. When you precompile this code, the result is a FORTRAN program that you can compile and use to build applications that access an Oracle database. *This product requires a separate license as a part of Oracle Programmer.*	*Pro*Fortran Supplement to the Oracle Precompilers Guide (7.3.4)*

Table A–4   Product Descriptions

Product	Release	Description	See...
SQL*Module Ada	8.1.6	The SQL*Module Ada precompiler takes SQL statements embedded in your Ada program and converts them to standard Ada code. When you precompile this code, the result is a Ada program that you can compile and use to build applications that access an Oracle database. *This product requires a separate license as a part of Oracle Programmer.*	*SQL*Module for Ada Programmer's Guide (8.0.4)*
SQL*Plus	8.1.6	Command line interface that allows you to use the SQL and PL/SQL database languages with an Oracle database	*SQL*Plus User's Guide and Reference*
SQL*Plus Worksheet	2.1	Graphical user interface for manually entering SQL, PL/SQL, and DBA commands or running stored scripts.	*Oracle Enterprise Manager Administrator's Guide*
SQLJ	8.1.6	Oracle SQLJ, a standard way to embed SQL statements in Java programs.	*Oracle8i SQLJ Developer's Guide and Reference*
SQLJ Runtime (installed with SQLJ)	8.1.6	A thin layer of pure Java code that runs above the JDBC driver. When Oracle SQLJ translates your SQLJ source code, embedded SQL commands in your Java application are replaced by calls to the SQLJ runtime.	*Oracle8i SQLJ Developer's Guide and Reference*

Table A–4   Product Descriptions

Product	Release	Description	See...
SQLJ Translator (installed with SQLJ)	8.1.6	A preprocessor for Java programs that contain embedded SQL statements. Oracle SQLJ Translator converts the SQL statements to JDBC calls.	*Oracle8i SQLJ Developer's Guide and Reference*
SPX Protocol Support	8.1.6	Enables client/server conversation over a network using SPX/IPX and Net8. This combination of Oracle products enables an Oracle application on a client to communicate with remote Oracle databases through SPX/IPX (if the Oracle database is running on a host system that supports network communication using SPX/IPX). This protocol is predominantly used in Novell Netware environments.	*Net8 Administrator's Guide*
TCP/IP Protocol Support	3.510.300 2.13	Enables client/server conversation over a network using TCP/IP and Net8. This combination of Oracle products enables an Oracle application on a client to communicate with remote Oracle databases through TCP/IP (if the Oracle database is running on a host system that supports network communication using TCP/IP). Multi-Threaded Server Support (MTS) is available in TCP/IP networks. Connection Pooling is available only with MTS on TCP/IP networks.	*Net8 Administrator's Guide*

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