Oracle9*i*

Installation Guide

Release 1 (9.0.1) for UNIX Systems

AIX-Based Systems, Compaq Tru64 UNIX, HP 9000 Series HP-UX, Linux Intel and Sun SPARC Solaris

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ORACLE

Oracle9*i* Installation Guide Release 1 (9.0.1) for UNIX Systems
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Part No. A90346-01

Primary Author: Doug Williams.

Editors: Caroline Johnston and Tom Leah-Martin.

Contributors: Pallavi Bhowmik, Oanh Duong, Sutapa M. Kuthiala, Leslie Marder and Joycelyn Wee.

Technical Contributors: Corinne Arne, Harish Akali, Tanya Bagerman, Walter Battistella, Kevin Benson, Jamie Brown, Jack Cai, Dimas Chbane, Chelsea Christenson, Toby Close, Caragh Cooney, Jonathan Creighton, Dan Damon, Saheli Dey, Mark Fallon, Nicole Haba, Jackie Gosselin, Richard Gulledge, Bryan Higgs, Amit Khare, Sana Karam, Ravi Kuntamukkala, Terri Landry, Stephen Lee, Bennet Leve, Allen Lui, Miranda Nash, Anu Natarajan, Michele Resta, Sanhita Sarkar, Brandie Smith, Ajay Srivastava, Deborah Steiner, Binoy Sukumaran, Karen Thrift, Sandy Vella, Petros Xides and Huiping Wang.

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

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- Do you need more information? If so, where?
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- E-mail - osdwrite_us@oracle.com
- FAX - 650.413.0176 Attn: Corinne Arne
- Postal service:
  UNIX Documentation Manager
  Oracle Corporation
  500 Oracle Parkway, Mailstop 501ip4
  Redwood Shores, CA 94065
  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 *Oracle9i Administrator's Reference Release 1 (9.0.1) for UNIX Systems* provide instructions for installing and configuring Oracle9*i* release 1 (9.0.1) on UNIX systems. Documentation for products included with the software is in the Oracle9*i* Generic Documentation Set.

Audience

This document is intended for anyone responsible for installing Oracle9*i* release 1 (9.0.1) on UNIX systems.

Oracle9*i* Standard Edition and Oracle9*i* Enterprise Edition

Unless noted otherwise, features and functionality described in this document are common to both Oracle9*i* Standard Edition and Oracle9*i* Enterprise Edition.

Terminology

The names for the UNIX operating systems have been shortened for this guide and the *Oracle9i Administrator's Reference Release 1 (9.0.1) for UNIX Systems.* The names are as follows:

Operating System	Abbreviated Name
AIX-Based Systems	AIX
HP 9000 Series HP-UX	HP

Operating System	Abbreviated Name
Linux Intel	Linux
Sun SPARC Solaris	Solaris
Compaq Tru64 UNIX	Tru64

Typographic Conventions

The following typographic conventions are used in this guide:

`monospace`	Monospace type indicates UNIX commands, directory names, user names, path names, and file names.
italics	Italic type indicates a variable, including variable portions of file names. It is also used for emphasis and for book titles.
UPPERCASE	Uppercase letters indicate Structured Query Language (SQL) reserved words, initialization parameters, and environment variables.
<cr>	Indicates a line break.

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 displayed (with a backslash) or enter 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 Installed Documentation

Oracle9*i* release 1 (9.0.1) for UNIX Systems documentation includes this guide and the *Oracle9i Administrator's Reference Release 1 (9.0.1) for UNIX Systems*. You can install documentation in HTML and PDF (Adobe Portable Document Format, which requires Acrobat Reader) formats. UNIX-specific documentation files are located on the Oracle9*i* CD-ROM. Generic documentation files are located on the Online Generic Documentation CD-ROM. The exact location of the documentation files is determined according to the following rules:

- If the ORACLE_DOC environment variable is defined in the environment, then the files are installed in the directory defined by the variable.
- If the ORACLE_DOC environment variable is not defined but the ORACLE_BASE environment variable is defined, then the files are installed in the `$ORACLE_BASE/doc` directory.
- If neither the ORACLE_DOC nor the ORACLE_BASE environment variables are defined in the environment, then the files are installed in the `$ORACLE_HOME/doc` directory.

To access the documentation, navigate to the documentation directory. If you want to access the HTML documentation, use a browser to open the `index.htm` file. If you prefer paper documentation, open and print the PDF files.

Oracle Product Documentation

Oracle9*i* product documentation is on the Oracle9*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.

Documentation Library

The documentation library on the Generic Documentation CD-ROM includes a web-based search tool that enables you to search through the complete library of Oracle9*i* documents. You may search for information on a particular product,

parameter, file name, procedure, error message, or other area of interest. The tool also makes it possible to construct a “virtual book” that consists of topics and procedures relevant for your needs drawn from the complete documentation library. The library also includes a comprehensive Master Index, as well as lists of SQL and PL/SQL keywords, initialization parameters, catalog views and data dictionary views.

Related Documentation

If you are unfamiliar with the concepts or terminology associated with relational database management systems, then refer to *Oracle9i Concepts* before beginning your installation. Read the *Quick Installation Procedure* for an overview of the installation process. Use the *Installation Checklist* to ensure that you have required information and that you have completed necessary pre-installation steps for a successful installation.

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

- *Oracle9i Administrator’s Reference Release 1 (9.0.1) for UNIX Systems*
- *Oracle9i Database Administrator’s Guide*
- *Oracle9i Net Services Administrator’s Reference*
- *Oracle9i Net Services Reference Guide*
- *Oracle9i Database Performance Guide and Reference*

Information about migrating from a previous version of the Oracle Server is provided in *Oracle9i Database Migration.*

Information on installing Oracle Workflow is provided in *Oracle Workflow Server Installation Notes* and *Oracle Workflow Client Installation Notes (Release 2.6).*

Oracle Services and Support

The Oracle corporate web page is located at:

`http://www.oracle.com`

Oracle Corporation offers a wide range of services to help facilitate corporate system solutions, including Oracle Education courses, Oracle Consulting services, and Oracle Worldwide Customer Support from the website. In addition, Oracle

Corporation provides free trial software, updates on Oracle products and service, and technical brochures and data sheets.

Oracle Support Services

Technical Support registration and contact information worldwide is available at:

http://www.oracle.com/support

At the Oracle support site, templates are available to help you prepare information about your problem before you call so that you may be helped more quickly. You must also provide your CSI number (if applicable) or complete contact details, including any special project information.

Oracle MetaLink

Oracle MetaLink is Oracle Corporation's web service for technical information. Members of Oracle MetaLink can search for updates, alerts, patches, and other information about products, releases, and operating systems, or set preferences to be notified automatically of new information. MetaLink offers a variety of services to assist in setting up and administrating Oracle products, including procedures, scripts, commentary, and tuning and configuration best-practices bulletins. In addition, it offers forums for information sharing among Oracle customers, and direct communication with Oracle Support. Oracle MetaLink is available to Product Support Customers at no extra cost. Sign up for free membership for this service at:

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

Use your Support Access Code (SAC) number to register.

Oracle Support Services

Technical Support registration and contact information worldwide is available at:

http://www.oracle.com/support

At Oracle's support site, you will find templates to help you prepare information about your problem before you call so that you may be helped more quickly. You will also need your CSI number (if applicable) or complete contact details, including any special project information.

Oracle MetaLink

Oracle MetaLink is Oracle Corporation's web service for technical information. Members of Oracle MetaLink can search for updates, alerts, patches, and other information on products, releases, and operating systems, or set preferences to be

notified automatically of new information. MetaLink offers a variety of services to assist in setting up and administrating Oracle products, including procedures, scripts, commentary, and tuning and configuration best-practices bulletins. In addition, it offers forums for information sharing among Oracle customers, and direct communication with Oracle Support. Oracle MetaLink is available to Product Support Customers at no extra cost. Sign up for free membership for this service at the following site:

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

Use your Support Access Code (SAC) number to register.

Products and Documentation

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

http://oraclestore.oracle.com

Links to Stores in other countries are provided at 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 at:

http://www.oracle.com/education/

Oracle Technology Network

Register with the Oracle Technology Network (OTN) at:

http://otn.oracle.com/index.html

OTN delivers technical papers, code samples, product documentation, an Oracle on-line community and self-service developer support. It also offers the Oracle key developer products to enable rapid development and deployment of applications built on Oracle technology.

Documentation Accessibility

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

JAWS, a Windows screen reader, may not always correctly read the Java code examples in this document. The conventions for writing Java code require that

closing braces should appear on an otherwise empty line; however, JAWS may not always read a line of text that consists solely of a bracket or brace.

For additional information, visit the Oracle Accessibility Program web site at:

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

Support for Hearing and Speech Impaired Customers

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

- For technical questions, call:

  1.800.446.2398

- For non-technical questions, call:

  1.800.464.2330

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Oracle9*i* Installation Planning

This chapter describes Oracle9*i* product installations, database configurations, Oracle Configuration Assistants, and other installation concepts.

Oracle9*i* Installation Overview

Installing Oracle9*i* products consists of four stages:

1. **Planning your installation:** Use this chapter and the Quick Installation Procedure for your platform to help you to plan and prepare for your installation. This chapter provides information about products, installation types, database configurations, and concepts you should be aware of in planning an installation. The Quick Installation Procedure provides information about the installation process.
2. **Completing pre-installation tasks:** Refer to the release notes for your platform and to Chapter 2, "Pre-Installation" in this guide to complete pre-installation tasks.
3. **Installing software:** Refer to Chapter 3, "Installation" in this guide to assist you in using the Oracle Universal Installer to install Oracle9*i* software. Use the Installation Worksheet to organize information you need during installation. If you plan to install Legato Storage Manager, refer also to Appendix B, "Legato Storage Manager." If you plan to install an Oracle Transparent Gateway, refer also to Appendix C, "Oracle Transparent Gateway."
4. **Completing post-installation tasks:** Refer to Chapter 4, "Post-Installation" in this guide to assist you in completing post-installation tasks and configuration.

Oracle9*i* Products for Installation

During installation, you are asked to choose one of three products. These products are:

- Oracle9*i* Database
- Oracle9*i* Client
- Oracle9*i* Management and Integration

Following are descriptions of each of these products.

Oracle9*i* Database

The Oracle9*i* Database is an object-oriented relational database management system, which consists of an Oracle database and an Oracle instance. It may be installed in one of three installation types: Enterprise Edition, Standard Edition or Custom installation.

- **Enterprise Edition:** If you select this type, then the Oracle Universal Installer installs a preconfigured seed database, networking services, licensable Oracle Options, database environment tools, the Oracle Enterprise Manager framework of management tools, including Console, Management Server, and Intelligent Agent, Oracle utilities and online documentation. It also contains those products most commonly used for data warehousing and transaction processing.
- **Standard Edition:** If you select this type, then the Oracle Universal Installer installs a preconfigured seed database, networking services, Oracle Enterprise Manager Console and Oracle utilities.
- **Custom:** If you select this type, then the Oracle Universal Installer prompts you to select individual components to install from the components available with Enterprise Edition and Standard Edition installations.

Oracle9*i* Client

The Oracle9*i* Client is a front-end database application that connects to the database through one or more application servers. There are three Client installation types: Administrator, Runtime and Custom.

- **Administrator:** If you select this type, then the Oracle Universal Installer installs the Oracle Enterprise Manager Console, including enterprise management tools, networking services, utilities, basic client software and online documentation.
- **Runtime:** If you select this type, then the Oracle Universal Installer installs networking services and support files.
- **Custom:** If you select this type, then the Oracle Universal Installer prompts you to select individual components to install from the components available with Administrator and Runtime.

Oracle9*i* Management and Integration

Oracle9*i* Management Server is a central processing and distribution system for management tasks. It enables distributed control between clients and managed nodes. Oracle9*i* Integration Server is a suite of software that provides internet and intranet tools to integrate applications within and across organizations.

There are four Management and Integration installation types: Oracle Management Server, Oracle Internet Directory, Oracle Integration Server and Custom.

- **Oracle Management Server:** If you select this type, then the Oracle Universal Installer installs the Oracle Management Server, which processes all system management tasks and administers the distribution of these tasks to Intelligent Agents on managed nodes across the enterprise. In addition, the installer installs basic client software and online documentation.
- **Oracle Internet Directory:** If you select this type, then the Oracle Universal Installer installs a Lightweight Directory Access Protocol (LDAP)-enabled Oracle Internet Directory Server, LDAP-enabled client tools and the Oracle Internet Directory database schema.
- **Oracle Integration Server:** If you select this type, then the Oracle Universal Installer installs XML-enabled components that integrate enterprise applications. Components include Oracle9*i* JVM, a workflow engine and advanced queuing.
- **Custom:** If you select this type, then the Oracle Universal Installer prompts you to select individual components to install from the components available with Oracle Management Server, Oracle Internet Directory and Oracle Integration Server.

Oracle9*i* Database Configurations

When you select to install the Oracle9*i* Database product, you are prompted to select a database configuration suited to your needs. Select from one of five Oracle9*i* database configurations:

1. General Purpose
2. Transaction Processing
3. Data Warehouse
4. Customized
5. Software only

Choices one through three are preconfigured databases that you can use for the Oracle9*i* Database. Each preconfigured database is designed to provide optimal support for particular database needs. Choices four and five are configurations for special needs. Table 1–1, "Oracle9i Database Configurations" describes these configurations.

Table 1–1 Oracle9i Database Configurations

Environment	Description
General Purpose	Users perform a variety of database tasks, ranging from simple transactions to complex queries. Select this database environment for general purpose usage.
Transaction Processing (OLTP)	Users perform large numbers of concurrent transactions, where each transaction is a relatively simple operation processing a small amount of data. Transactions consist of reading, writing and deleting data in database tables. Billing databases, such as those commonly found on internet commerce sites, are the most common example of this database configuration. These are also known as online transaction processing (OLTP) databases.
Data Warehouse or Decision Support System (DSS)	Users perform very complex queries that access and process large volumes of data. These queries are typically read-only and range from a simple query of a few records to complex queries that sort thousands of records from many different tables. Historical databases are the most common example of this database configuration. Warehousing databases are also known as decision support systems (DSS).
Customized	Allows you to create a customized database configuration or a custom installation of Oracle products that meets specialized requirements. Select this choice only if you are prepared to provide detailed product and database environment choices. Choosing this option requires a longer installation session than choosing a preconfigured database.
Software only	Allows you to install Oracle products without creating a database. Select this choice only if you are prepared to provide extensive database configuration information when you create a database. Oracle Corporation recommends that you install at least one seed database to serve as a template for database configuration.

See Also: For more information on database environment issues, refer to *Oracle9i Concepts*, *Oracle9i Tuning* and *Oracle9i Real Application Clusters Installation and Configuration*.

For more information on the process of choosing database configurations, refer to "Oracle Database Configuration Assistant" on page 1-7.

Many of the Oracle documents included on the Oracle9*i* Generic Documentation CD-ROM provide information about database environments, the effect database environment settings have on performance, and how your database can be tuned to maximize performance.

Oracle Configuration Assistants

Oracle Configuration assistants are graphical user interface (GUI) tools included with the Oracle9*i* software to assist you with configuring and fine-tuning your environment and system for optimal performance. Many of them start automatically when installation is completed, depending on the selections you make when you run the installer. You can also manually start the configuration assistants as standalone tools.

- Apache Web Server Configuration Assistant automatically starts when you install Oracle HTTP Server powered by Apache.
- Oracle Database Configuration Assistant automatically starts when you create an Oracle9*i* database during installation.
- Oracle Data Migration Assistant automatically starts when you select the Upgrade or Migrate an Existing Database check box. You can also choose not to select the check box and run Oracle Data Migration Assistant independently after completing installation.
- Oracle Enterprise Manager Configuration Assistant automatically starts when you select the Oracle Management Server type from the Oracle Management and Integration product installation types window, or when you explicitly select the Oracle Management Server type from an Oracle Management and Integration Custom install or a Custom Database install. With any other installation process, the Enterprise Manager Configuration Assistant will not automatically launch; you must manually launch it after the installer exits.
- Oracle Internet Directory Configuration Assistant automatically starts when you select Oracle Internet Directory from Oracle Management and Integration

product installation types window, or when you explicitly select Oracle Internet Directory during an Oracle Management and Integration Custom installation.

- Oracle Net Configuration Assistant automatically starts for all Database installation types. The Oracle Net Configuration Assistant creates and modifies network files located in the `$ORACLE_HOME/network/admin` directory. Depending on the installation type selected, Oracle Net Configuration Assistant configures the network for standard database connection methods or a customized network.
- Oracle Workflow Configuration Assistant automatically starts when you select Oracle Integration Server from the Oracle Management and Integration installation type or when you explicitly select Workflow from Oracle Management and Integration custom installation type. It installs and configures the Oracle Workflow Schema in the Oracle9*i* database.

Apache Web Server Configuration Assistant

The Apache Web Server Configuration Assistant starts the HTTP listener in non-SSL mode (non-Secure Sockets Layer mode) on port 7777.

> **See Also:** For more information about configuring Apache to use the HTTPS (HTTP over SSL) protocol, refer to the Apache documentation at the following location:
>
> `http://www.apache.org`

Oracle Database Configuration Assistant

Oracle Database Configuration Assistant enables you to copy an Oracle9*i* seed database, or create a fully customized database to match your selected environment and database configuration. Also use Database Configuration Assistant to unlock and reset passwords for Oracle administrative user accounts. It starts automatically after you create an Oracle9*i* database during Oracle9*i* installation.

When installing Oracle9*i* software using any database configuration option other than Custom, the Oracle Universal Installer prompts for a global database name and system identifier. After Oracle9*i* installation is completed, the Oracle Database Configuration Assistant uses this information to create the database. In addition, the Oracle Database Configuration Assistant automatically configures the static service information for Oracle Net in the `listener.ora` file.

The following is a list of database configurations with descriptions:

- General Purpose configuration: If you select this option with an Enterprise Edition or Standard Edition installation, then the Oracle Database Configuration Assistant creates a preconfigured, ready-to-use, multipurpose seed database with the following:
  - Default initialization parameters
  - Automatic installation and configuration of Oracle Options and *inter*Media
  - Advanced replication capabilities
  - Database configuration of dedicated server mode
  - Archiving mode of NOARCHIVELOG
- Transaction Processing option: If you select this option, then the Oracle Database Configuration Assistant creates a pre-configured, ready-to-use OLTP database.
- Data Warehouse option: If you select this option, then the Oracle Database Configuration Assistant creates a pre-configured, ready-to-use data warehousing or DSS database.
- Customized installation option: If you select this option, then the Oracle Database Configuration Assistant guides you in creating a fully customized database. You can choose to configure Options, Oracle Text components and advanced replication either automatically or manually.

  Select this option only if you are experienced with advanced database creation procedures. You will need to customize some or all of the following settings or parameters:
  - 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
- Software Only option: If you select this option, then the Oracle Universal Installer only installs Oracle9*i* software. Oracle Database Configuration Assistant does not start up after installation, and no seed database is installed.

See Also: For more information about running Oracle Database Configuration Assistant in standalone mode, refer to "Using Oracle Database Configuration Assistant" on page 4-20.

For more information on database character sets, refer to *Oracle9i Globalization and National Language Guide*.

Oracle Data Migration Assistant

Oracle Data Migration Assistant enables you to migrate an existing database to Oracle9*i* when you have completed an Oracle9*i* installation. You must complete a number of steps prior to beginning a migration with Oracle Data Migration Assistant. These include performing a full backup of your current production database, and reviewing required planning and backup preparations prior to beginning a migration.

See Also: For more information about migration issues, refer to "Installation With Existing Oracle Databases" on page 1-13. For more information on planning, preparing and completing a database migration with Oracle Data Migration Assistant, refer to *Oracle9i Database Migration*.

Oracle Enterprise Manager Configuration Assistant

Oracle Enterprise Manager Configuration Assistant enables you to configure Oracle Management Server on a local system. It can create, upgrade or delete a repository, and edit existing configurations. A repository is a set of database tables that must be located in any Oracle database accessible to the Oracle Management Server. The Oracle Management Server uses a repository to store all system data, application data, information about the state of managed nodes, and information about any system management packs.

See Also: For more information on using Oracle Enterprise Manager Configuration Assistant, refer to *Oracle9i Enterprise Manager Configuration Guide*.

Oracle Internet Directory Configuration Assistant

Oracle Internet Directory Configuration Assistant configures Oracle Internet Directory on a local system. As part of the post-configuration process, the installer launches Oracle Internet Directory Configuration Assistant to create a database instance containing Oracle Internet Directory metadata. The configuration assistant automatically starts Oracle Internet Directory Server. In addition, the assistant loads

the default Oracle Schema, which defines the types of objects, called *object classes*, that can be stored in the directory server. Finally, the assistant loads the default Oracle Context, which is an entry under which a directory stores all information pertaining to Oracle software and from which your system can access and create Oracle Net entries. You can also manually create the Oracle Directory Schema and Context using Oracle Net Configuration Assistant.

You can only access Oracle Internet Directory Configuration Assistant during the installation process. There is no standalone mode for Oracle Internet Directory Configuration Assistant.

> **See Also:** For more information on installing or configuring Oracle Internet Directory, refer to *Oracle Internet Directory Administrator's Guide*.

Oracle Net Configuration Assistant

Oracle Net Configuration Assistant enables you to configure the Oracle client/server network environment. Review the Oracle Net Configuration Assistant procedure for your product installation choice.

Oracle9*i* Database Enterprise Edition and Standard Edition Installation

For Enterprise and Standard installations, the Oracle Net Configuration Assistant does the following tasks:

- Creates a net service name to use when connecting to a database.
- Configures the Oracle Net server environment by configuring the following files:
  - The `listener.ora` file configures a listener named `listener`. The listener is configured with protocol addresses for both the Oracle9*i* database using the operating system's preferred protocol (typically TCP/IP on port 1521), and the external procedures using the IPC protocol. It also configures services information for external procedures.
  - The `sqlnet.ora` file stores the network domain. The domain is usually set to be the same as the network domain of your system and is automatically appended to any unqualified net service name given in the connect string.
  - The `tnsnames.ora` file defines a net service name parameter for connections to external procedures named `EXTPROC_CONNECTION_DATA`.

Oracle9*i* Database Custom Installation

For Custom Database installation, Oracle Net Configuration Assistant prompts you for the following information:

- Complete directory server usage configuration. This requires that you enter a directory server type and location. Also specify the directory location that contains the Oracle Context. You are prompted for this information if you have never configured the Oracle home directory for directory service access.
- Create listeners to use for database connections.
- Select the naming method to use when connecting to the local database. By default, the local naming method is selected. In most circumstances, Oracle Corporation recommends that you use this default. You also have the option to use one of the following naming methods: local naming, directory naming, Oracle Names, host naming and external naming.

  Oracle Net Configuration Assistant then automatically creates your Oracle Net server environment. This affects the following files:

  - `listener.ora` file: Oracle Net Services configures a listener with the name and protocol address you select. Oracle Net Services also configures a protocol address and static service information for external procedures.
  - `sqlnet.ora` file: Oracle Net Services configures the server's network domain as the default domain, which is the same domain as your computer's domain. This domain is automatically appended to any unqualified name. The `sqlnet.ora` file also configures the naming methods the server uses to resolve a name to a connect descriptor.
  - `tnsnames.ora` file: Oracle Net Services creates a net service name entry to use for external procedure connections.

    See Also: For more information on installation, naming methods, service name configuration and client configuration, refer to *Oracle9i Net Services Administrator's Reference*.

Client Installation

For Oracle9*i* Administrator and Runtime Client installation, the local or directory naming method is selected for you based on your existing directory usage configuration. For Oracle9*i* Custom Client installation, Oracle Net Configuration Assistant prompts you to:

- Select a naming method to use for accessing the database.

- Local naming specifies a net service name to resolve network addresses. This name is configured and stored in configuration files on each individual client.
- Directory naming specifies a directory server to resolve service names and network addresses. Clients then use the information registered with the directory service to connect to Oracle9*i* databases. Directory usage is also configured.

Depending on the naming method you select, you are prompted to provide additional information.

Oracle Net Configuration Assistant then automatically creates your Oracle Net client environment by configuring the following files:

- The `sqlnet.ora` file configures the naming methods a client uses to resolve a name to a connect descriptor. The Assistant configures the client's domain as the default domain which is the same as the client's domain. This domain is automatically appended to any unqualified net service name given in the connect string.
- The `tnsnames.ora` file configures a net service name if using local naming.

See Also: For more information about running Oracle Net Configuration Assistant in standalone mode, refer to *Oracle9i Net Services Administrator's Reference* or "Using Oracle Net Configuration Assistant" on page 4-19.

For more information on naming methods, configuring service names and client configurations, refer to *Oracle9i Net Services Administrator's Reference*.

Oracle Workflow Configuration Assistant

The Oracle Workflow Configuration Assistant automatically creates an Oracle Workflow database account to which the Oracle Workflow database objects are installed. Oracle Workflow is only installed automatically if you install it at the same time as you create your database. If you run the Oracle Universal Installer to install Oracle Workflow on an existing database, then the Oracle Universal Installer only copies the Oracle Workflow files to your file system; it does not automatically run those files to perform the installation. You must manually run an installation / upgrade script to complete the installation. This precaution helps ensure that any previous installation of Oracle Workflow in an existing database is upgraded correctly.

See Also: For more information on Oracle Workflow Configuration Assistant, manual installation and post-installation procedures, refer to *Oracle Workflow Server Installation Notes.*

Installation With Existing Oracle Databases

You can access different versions of Oracle on the same computer system at the same time using SQL*Net, Net8 or Oracle Net Services, depending on which version of Oracle you need to access. However, you can only access Oracle8*i* and Oracle9*i* databases separately; you cannot submit a single query to access both databases. To make data in existing Oracle databases fully accessible for OLAP or other analytical queries, you must migrate or upgrade existing databases to Oracle9*i*.

See Also: For more information about compatibility and interoperability issues, and for information about connecting different client versions to the database, refer to *Oracle9i Database Migration* and *Oracle9i Database Administrator's Guide.*

Migration and Upgrading Existing Oracle Databases

Migration is the process of installing a new database version (such as Oracle9*i*) and using the Import utility or Oracle Data Migration Assistant to convert an existing database version to the new version. Migrate if you want to test a new installation with a copy of your old database prior to bringing it online in a production environment, or if your existing database version is too old to upgrade.

Oracle7 release 7.3.4 or later databases, Oracle8 release 8.0.6 or later databases and Oracle8i release 8.1.5 or later databases can be migrated to Oracle9i. Oracle7 databases earlier than release 7.3.4 must be upgraded to Oracle7 release 7.3.4 and then migrated to Oracle9i. Oracle8 databases earlier than 8.0.6 must be upgraded to Oracle8 release 8.0.6 and then migrated to Oracle9*i*. Use the Oracle Data Migration Assistant when migrating your data.

Upgrading is the process of overwriting existing database software with a newer version of Oracle software. Upgrade if testing a new installation is not an issue and migrating the database is not required.

All Oracle8*i* versions are supported for upgrading to Oracle9*i* release 1 (9.0.1).

Migration Issues

If you have an existing Oracle installation, then Oracle Corporation recommends that you install Oracle9*i* release 1 (9.0.1) products into a new Oracle home directory.

It is not possible to have more than one Oracle release in the same Oracle home. If you must install Oracle9*i* into an Oracle home directory that contains previously installed Oracle8*i* products, then use the Oracle Universal Installer to remove the previously installed products before beginning the new installation.

> **See Also:** Before deciding to migrate or upgrade an existing database, refer to *Oracle9i Database Migration* to determine which is the correct choice for your needs.

Oracle9*i* Re-installation

If you re-install Oracle9*i* Database into an Oracle home directory where Oracle9*i* Database is already installed, you must also re-install any component selections, such as Oracle Partitioning, that were enabled before you began the re-installation.

Oracle9*i* Installation Restrictions

There are restrictions that can affect the installation or use of Oracle9*i* software on UNIX platforms. For the latest information on these restrictions, refer to the release notes and the `README` files that accompany this release. Release notes are located in the `$ORACLE_HOME/relnotes` directory. `README` files are uncompressed and located in the `doc` or `admin/doc` directories.

Release notes are updated regularly online and are available with the rest of Oracle documentation at the following location:

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

In addition, if you have hardware or operating system software versions that are released after this installation guide and you are an Oracle Support customer, then review the certification matrix on MetaLink to determine if Oracle9*i* release release 1 (9.0.1) is certified for these products or versions. The technical libraries link on MetaLink also provides alerts, technical notes and additional information that you may find helpful in planning to install Oracle9*i*. Register at the following site for access to MetaLink:

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

See Also: For more information on Oracle MetaLink, see "Oracle MetaLink" on page -xv.

Installing in Character Mode

You cannot perform an Oracle9*i* installation using character mode. However, you can configure the Oracle Universal Installer to perform a non-interactive installation. Non-interactive mode can be run directly from an X Window System console or through an X-terminal or PC X-terminal on a remote system.

See Also: For more information about the non-interactive installation of Oracle products, refer to "Non-Interactive Installation and Configuration" on page 3-38.

Writing To File Systems

Oracle9*i* Server must be able to verify that writes to a disk were completed successfully. NFS file systems may not be able to guarantee writes to a disk were completed successfully, which could lead to possible datafile corruption. Oracle Corporation recommends that you do not have datafiles located on NFS mount points unless your storage vendor and storage device are listed in the Oracle Storage Compatibility Program Member list. This list can be accessed from the following URL:

```
http://www.oracle.com/ip/deploy/database/storage/
```

Restrictions for Installing Oracle Real Application Clusters

The word size for Oracle Real Application Clusters databases must match the bit mode of the Cluster Group Services. All Oracle instances on a cluster started with the Oracle Applications Clusters option must match the bit mode of the Cluster Group Services executable. 32-bit instances cannot share the same 9.0.1 database with 64-bit instances. Depending on the platform, for example, 32-bit and 64-bit Oracle9i Real Application Clusters executables cannot be used at the same time within the same cluster domain. This is because some cluster manager implementations may not be able to concurrently handle 32-bit and 64-bit clients. If a database is not set up with the Oracle Real Application Clusters option, then this restriction does not apply to the Oracle executables.

Installing with Server Manager Line Mode

The Server Manager line mode utility is not supported in Oracle9*i*. Oracle Corporation recommends that you use SQL*Plus.

Using Hummingbird Exceed X Window Emulator

An X Window emulator is a software package that emulates the X Window System, which is a network-based graphics window system that is the industry standard windowing system for UNIX systems. If you intend to install Oracle9*i* on a server from a client terminal whose operating system is a non-UNIX system, such as Microsoft Windows, then you must obtain an X Window emulator.

If you use the Hummingbird Exceed X Window emulator while installing and using Oracle9*i*, set the window manager to run in Native mode so that Microsoft Windows functions as the window manager. See your Exceed documentation for instructions on configuring the window manager.

The following are common problems with the Hummingbird Exceed X Window emulator:

- Exceed does not handle screen coordinates correctly. The installer window and related installer dialogs and configuration assistants can encounter display problems when run through the emulator. If Exceed causes display problems, then exit the entire X Window session and start a new session.
- Display problems exist in the *AQ Database Information* dialog window of the Oracle Applications InterConnect installation. The last text field in this dialog window prompts for Consumer Name which appears truncated when viewed through Exceed. The dialog window displays correctly when viewed through a native X Window on a UNIX system.

  Perform the following steps to correct any problems with hidden dialog fields:

  1. Select the xconfig application under the Exceed Program Group from the Windows Start Menu.
  2. Select the Fonts applet.
  3. Select the Font Database button in the *Font Settings* dialog.
  4. Deselect the Automatic Font Substitution option in the *Font Database* dialog.
  5. Select the Add... button.

     The *Add Font Directory* dialog is displayed.
  6. Select the Server radio button in the *Add Font Directory* dialog.

7. Enter the host name for your machine in the Host Name field in the A*dd Font Server* dialog.
8. Leave all other entries at their default settings.
9. Select OK.
10. Select Close on all dialogs to save the settings.

Checking Soft and Hard Limits For a Shell

Oracle9*i* software includes native support for files greater than 2 GB but some systems shells impose a lower limit. Currently used values are referred to as soft limits. Maximum values are referred to as hard limits. The soft limits can be temporarily raised to the hard limits. The file size shell limits for all users connected to an Oracle9*i* database must be higher than the size of the largest datafile. Oracle Corporation recommends that the file size shell limit be set to `unlimited`, which means that the shell will not impose a files size limit. You can check your shell to determine whether it will impose limits using the following commands:

1. To check currently used (soft) shell limits, enter:

   ```
   $ ulimit -Sa
   ```

2. To check current maximum (hard) limits, enter:

   ```
   $ ulimit -Ha
   ```

3. Multiply the `file (blocks)` value 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.

Table 1–2 lists the Oracle file size limits. Block size is defined in the `db_block_size` parameter of the `$ORACLE_HOME/dbs/init`*`sid`*`.ora` file.

Table 1–2 Oracle File Size Limits

File Type	Maximum Size in Bytes
data file with block size 2048	8,589,932,544
data file with block size 4096	17,179,865,088
data file with block size 8196	34,359,730,176
data file with block size 16,384	68,719,460,352
data file with block size 32,768	137,438,920,704

Table 1–2 Oracle File Size Limits

File Type	Maximum Size in Bytes
Import/Export file	2,147,483,647
SQL*Loader file	2,147,483,647

2

Pre-Installation Requirements

This chapter describes pre-installation steps required for an Oracle9*i* software installation.

Installation Requirements

Use the release notes for your platform provided with the CD-ROM to verify that your system meets hardware, disk space, operating system, kernel parameter settings, and other requirements for Oracle9*i*.

In order to provide you with the latest information on products, new patches, and software, Oracle Corporation now provides ongoing updates of the release notes for your platform. These updated release notes are posted on the Oracle Documentation Center. Access them at the following site:

`http://docs.oracle.com`

Product-Specific Requirements

This section provides product-specific system configuration requirements. Make these additional system configuration changes to use the optional Oracle products.

Oracle9*i* Options

Table 2–1 lists additional restrictions and requirements for installing Oracle9*i* Options on a UNIX system.

Table 2–1 Additional Restrictions and Requirements for Installing Oracle9i Options

Product Name	Platform	Restrictions and Requirements
Oracle Real Application Clusters, version 9.0.1 (formerly Oracle Parallel Server)	AIX	HACMP/ES Version 4.4, or higher, which requires patches IY03478, IY04109, and IY06749. PSSP 3.2 which requires patches IY04109, IY04149, and IY04767. (For IBM RS/6000 SP).
	HP	MC/ServiceGuard 11.09 OPS Edition.
	Linux	Can be installed through custom installation only. The Cluster Management Software is available in the Oracle9*i* package, and will be installed on the specified nodes.
	Solaris	For 32-bit: Sun Enterprise Cluster 2.2 or later. For 64-bit: Sun Enterprise Cluster 3.0.
	Tru64	Compaq TruCluster Software 5.1, with patchkit 3 and patch T64V5117_C0038300_<unique id and mfg dat>.tar minimums, or Compaq TruCluster Software 5.1, with patchkit 4 or greater.

Table 2–1 Additional Restrictions and Requirements for Installing Oracle9i Options

Product Name	Platform	Restrictions and Requirements
Oracle HTTP Server Powered By Apache	AIX	JDK 1.2.2.04 or JDK 1.2.2 on AIX Version 4.3.3.
	HP	JDK 1.2.2.07. The JDK install home location is prompted during Oracle9*i* installation. Refer to the Hewlett-Packard company support websites for OS patches for JDK 1.1.8.05.
	Linux	IBM's JDK 1.1.8
	Solaris	JDK 1.2.2_07. Refer to the Oracle9*i* Release Notes for Sun SPARC Solaris to determine required JRE patches.
	Tru64	JDK 1.2.2-8
Oracle Spatial, 9.0.1	AIX	Not applicable
	HP	Not applicable
	Linux	The following software packages are required to build Spatial's sample programs only: XFree86-devel
	Solaris	The following software packages are required to build Spatial's sample programs only: Window Motif
	Tru64	Not applicable

Precompilers and Tools

Table 2–2 lists the restrictions and requirements for precompilers and tools.

Table 2–2 Precompilers and Tools Restrictions and Requirements

Product Name	Platform	Restrictions and Requirements
Pro*C / C++, 9.0.1	AIX	VAC 5.0 (5.0.1.1) or newer
		Gcc 2.95.2 19991024
	HP	HP ANSI C compiler release A.11.01.20 or later
		Gcc 2.9-hppa-000310
		HP C++ A.03.27
	Linux	Gnu gcc 2.95.2
	Solaris	Sun Forte Workshop 6.1 109513-03
		109505-02
	Tru64	Tru64 5.0A requires Compaq C DTK V6.3-129 Tru64 5.1 C compiler is installed with the operating system
Pro*COBOL, 1.8.75	AIX	Merant Server Express 2.0.10
	HP	Merant Server Express 2.0.10
	Linux	Not applicable
	Solaris	Merant Server Express 2.0.10
	Tru64	Merant Server Express 2.0.00
Pro*COBOL, 9.0.1	AIX	Merant Server Express 2.0.10
	HP	Merant Server Express 2.0.10
	Linux	Not applicable
	Solaris	Merant Server Express 2.0.10
	Tru64	Merant Server Express 2.0.00
Pro*FORTRAN, 1.8.75	AIX	XL FORTRAN 6.1
	HP	HP FORTRAN / 9000 B.11.00
	Linux	Not applicable
	Solaris	Sun WorkShop 6 update 1 Fortran 77
	Tru64	Compaq FORTRAN 5.4A

Table 2–2 Precompilers and Tools Restrictions and Requirements

Product Name	Platform	Restrictions and Requirements
SQL*Module Ada, 9.0.1	AIX	OCS Power ADA 3.1
	HP	Not applicable
	Linux	Not applicable
	Solaris	SPARC Compiler ADA 3.0
	Tru64	Not applicable
Oracle Data Migration Assistant, 9.0.1	All platforms	An Oracle7 database must be at least release 7.3.4 to be migrated; an Oracle8 database must be at least release 8.0.6 to be migrated or upgraded; and an Oracle8*i* database must be at least version 8.1.5 to be migrated or upgraded to Oracle9*i*. Note: For information on supported migration paths, refer to the release notes for your platform.

Network 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 installing the Oracle Net products.

Table 2–3 lists the restrictions and requirements for networking and system management products.

Table 2–3 Networking and System Management Restrictions and Requirements

Product Name	Restrictions and Requirements
Legato Storage Manager	For information on Legato requirements, see Appendix B, "Legato Storage Manager".
Oracle Advanced Security: Export Edition, 9.0.1	For information about Oracle Advanced Security authentication support requirements, see Table 2–4, "Supported Authentication Methods and Requirements".
Oracle Enterprise Manager, 9.0.1	No additional system configuration is necessary for Oracle Enterprise Manager and its components.
Oracle TCP / IP with SSL Protocol Support, 9.0.1	SSL 3.0 or later.

Table 2–3 Networking and System Management Restrictions and Requirements

Product Name	Restrictions and Requirements
LU6.2 protocol	LU6.2 protocol support is obsolete in this release. Install and configure support for one of the following protocols: ■ TCP/IP ■ TCP/IP with SSL ■ Named Pipes ■ VI

See Also: For more information on network and system management products, refer to your operating system and third-party vendor networking product documentation.

For more information on installing Oracle networking and system management products separately after the installation of Oracle9*i*, see Chapter 4, "Post-Installation".

Oracle Advanced Security

Oracle Advanced Security is an add-on product to the standard Oracle Net Server or Oracle Net Client that is available for purchase. It must be installed on both the server and the client systems. Oracle Advanced Security release 9.0.1 requires Oracle Net release 9.0.1 and supports Oracle9*i* Database.

Table 2–4 describes requirements for authentication protocols supported by Oracle Advanced Security. No additional authentication protocol software is required to relink Oracle products.

Table 2–4 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.

Table 2–4 Supported Authentication Methods and Requirements

Authentication Method	Requirements
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, run RADIUS on a platform that supports the Java Native Interface as specified in release 1.1 of the Java Development Kit from JavaSoft. Oracle does not provide the RADIUS authentication server. To use it, you must install and configure it separately.
Secure Sockets 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. Oracle Advanced Security provides and installs Secure Sockets Layer.

See Also: For more information on Oracle Advanced Security and system management products, refer to the *Oracle Advanced Security Administrator's Guide*.

Installation Recommendations

Oracle Corporation recommends the following installation configuration step.

Using Optimal Flexible Architecture

Oracle Corporation recommends that the Optimal Flexible Architecture (OFA) standard be implemented when installing and configuring Oracle9*i* databases. The OFA standard is a set of configuration guidelines for creating fast, highly available, reliable Oracle databases that require little maintenance. Following are some of the characteristics of an OFA-compliant database:

- Organizes file systems to allow for easy administration
- Accommodates scalability, such as adding data into existing databases, or adding users to the system

- Distributes I/O loads across disk drives to prevent performance bottlenecks caused by multiple read/write commands issued simultaneously to a single drive
- Distributes applications across more than one drive to safeguard against disk failure
- Ensures integrity of login home directories when home directories are added, moved, or deleted by the DBA
- Allows multiple versions of the application software for concurrent execution of application software tasks

---

NOTE: The Oracle Universal Installer supports, but does not require, OFA. The seed database included with the Database installation type of Oracle9*i* Database is created under a single mount point and is, therefore, not OFA-compliant.

See Also: For more information on OFA, refer to *Oracle9i Administrator's Reference Release 1 (9.0.1) for UNIX Systems.*

Setup Tasks to Perform as root User

The following pre-installation setup tasks configure your system and set up accounts, groups, variables and permissions needed to run the Oracle9*i* database. If you choose not to perform these tasks prior to installation, then you will be given the option during the installation process to log in as `root` user and run the `orainstRoot.sh` script. The `orainstRoot.sh` script performs many of these setup tasks for you but might not provide a satisfactory environment for your system. Oracle Corporation recommends that you perform these steps manually.

Log in as the `root` user and perform the following tasks for your platform to set up your environment for Oracle9*i*:

- ❏ Configure Kernel Parameters
- ❏ 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
- ❏ Create a UNIX Account to Own the Apache Server

❑ Set Permissions for File Creation

Configure Kernel Parameters

Review your kernel parameter settings to ensure that they meet Oracle9*i* requirements. If you do not do this, you might experience errors during installation, or operational errors after installation.

Review the Oracle9*i* release notes for your platform for information on how to check your existing parameter settings, and how to change them to the settings required for Oracle9*i*.

Note: To ensure that Oracle Corporation is able to communicate any new recommendations to customers as rapidly as possible, constantly updated release notes are available online at the following site:

`http://docs.oracle.com`

Create Mount Points

The Oracle9*i* installation requires at least two mount points:

- one for the software
- at least one for the database files

An Optimal Flexible Architecture (OFA)-compliant installation requires at least four mount points:

- one for the software
- at least three for the database files

All software and database mount point names use the syntax */pm*, where *p* is a string constant and *m* is a unique fixed-length key (typically a two-digit number) used to distinguish each mount point. For example: `/u01` and `/u02`, or `/disk01` and `/disk02`.

See Also: For more information on Optimal Flexible Architecture, refer to the *Oracle9i Administrator's Reference Release 1 (9.0.1) for UNIX Systems*.

Create UNIX Groups for Database Administrators

Oracle requires database administration groups to complete installation and to control database operations that are executed when a database is not mounted. Database administration groups enable operating system user authentication for Oracle administrative privileges, both for internal database accounts and for users to whom you may choose to grant privileges. These privileges are similar to those granted to INTERNAL in previous Oracle versions. Granting these privileges through operating system authentication allows convenience while providing greater security.

Oracle documentation refers to these administrative UNIX groups as OSDBA, typically named `dba`, and OSOPER, typically named `oper`.

- You must create the OSDBA group. By default, the Oracle Universal Installer searches for a group called `dba`. If you choose to assign the OSDBA group privilege to a group with a name other than `dba`, you are prompted for the group name during installation.

  Users that belong to the OSDBA group are granted SYSDBA privileges which comprise all database system privileges. These privileges include the right to grant or revoke system privileges, as well as all other administrative privileges. Grant OSDBA group membership only to database administrators.

  For HP users, the OSDBA group must be granted RTSCHED, RTPRIO and MLOCK privileges. Refer to the Oracle9*i* Release Notes for HP for further information.

- You can choose to create the OSOPER group.

  Users that belong to the OSOPER group are granted SYSOPER privileges which comprise privileges required for basic system maintenance. SYSOPER privileges are a subset of those granted to SYSDBA. These include database startup and shutdown, and other privileges required for database operation. Users granted access to OSOPER group privileges may include application developers, application administrators, database users, and network administrators.

Table 2–5 lists utilities with which you can create the OSDBA group, and other database administration groups. Use the utility that corresponds to your platform to create the OSDBA group.

Table 2–5 Utility to Add a Group

Platform	Utility
AIX	`smit`
HP	System Administrator's Menu (SAM)
Linux	`groupadd`
Solaris	`admintool` or `groupadd`
Tru64	`addgroup` or `groupadd`

If you perform a Custom installation of Oracle9*i*, or if the `oracle` account is not a member of a group called `dba`, then the Oracle Universal Installer prompts you to enter the group(s) you have created for these system privileges.

Create a UNIX Group for the Oracle Universal Installer Inventory

The ORAINVENTORY group is the group that will own the Oracle Universal Installer's `oraInventory` directory. The oraInventory is a repository of all installed Oracle products. The oraInventory is usually located in a directory named `oraInventory`, and its contents may only be modified by the Oracle Universal Installer. Any user who will be installing, removing, or patching Oracle products must be a member of the ORAINVENTORY group.

If you plan to have only one OSDBA group on a single system, then you can set the ORAINVENTORY group to the same name as the OSDBA group, which typically is `dba`. In this case, skip ahead to "Create a UNIX Account to Own Oracle Software" on page 2-12.

If you plan to have multiple installations on a single system and plan on having a unique OSDBA group for each install, then you will need a separate ORAINVENTORY group. The software owner, typically `oracle`, must have the ORAINVENTORY group as the primary group.

> **Note:** You are prompted for the ORAINVENTORY group only for the first Oracle product installed on the system. Subsequent installs on the system will reuse the group name you entered the first time.

Scenario for Creating an ORAINVENTORY Group

The following is a typical business scenario for which a separate ORAINVENTORY group is needed:

- You have an operating system user named `oracle1` with an OSDBA group of `dba1`.
- The `oracle1` user works with a database named `db11`.
- You have another operating system user named `oracle2` with an OSDBA group of `dba2`.
- The `oracle2` user works with a database named db22.
- The `db11` and `db22` databases are installed in different ORACLE_HOME directories.
- The `oracle1` user should have SYSDBA privileges in the `db11` database, but should not have SYSDBA privileges in the `db22` database.
- The `oracle2` user should have SYSDBA privileges in the `db22` database, but should not have SYSDBA privileges in the `db11` database.

In this situation, it is important to remember that the oraInventory can only be updated by a single operating system group. In order to maintain this central repository of installed Oracle products, the `oracle1` and `oracle2` users must share a common group, which Oracle Corporation refers to as the ORAINVENTORY group. The ORAINVENTORY group can be named anything, but it is usually named `oinstall`. In this scenario, by creating the ORAINVENTORY group and making it the primary group for both the `oracle1` and `oracle2` users, any new entries created by the Oracle Universal Installer for the `oracle1` user can be read or updated by the Oracle Universal Installer for the `oracle2` user.

Even though both `oracle1` and `oracle2` share Oracle software information in the ORAINVENTORY group, their different OSDBA group memberships preserve a separate database administrative access. `oracle1` has `dba1` as its secondary group. `oracle2` has `dba2` as its secondary group. The ORAINVENTORY group keeps the oraInventory repository of all Oracle executables and datafiles, but none of these files, except the oraInventory, are group writable. Only the owner of the executables or datafiles can modify them. `oracle1` owns all files installed by `oracle1`. `oracle2` owns all files installed by `oracle2`.

Create a UNIX Account to Own Oracle Software

The `oracle` account is the UNIX user account that owns Oracle9*i* software after installation. You must run the Oracle Universal Installer with this user account. Table 2–6 describes the properties for the `oracle` account.

Table 2–6 oracle Account Properties

Property	Description
Login Name	Any name, but this guide refers to it as the `oracle` account.
Primary GID	The ORAINVENTORY group.
Secondary GID	The `OSDBA` 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 guide assume that the Bourne shell (`/usr/bin/sh`).

Table 2–7 lists the utilities to create the `oracle` account. Use the utility that corresponds to your platform.

Table 2–7 Utility to Add the oracle Account

Platform	Utility
AIX	`smit`
HP	System Administrator's Menu (SAM)
Linux	`useradd`
Solaris	`admintool` or `useradd`
Tru64	`adduser` or `useradd`

Caution: Use the `oracle` account only for installing and maintaining Oracle software. Never use it for purposes unrelated to the Oracle9*i* Server. Do not use the `root` account as the `oracle` account.

Sites with multiple Oracle home directories on one system may install Oracle software with the same `oracle` account or different ones. Each `oracle` account must have the ORAINVENTORY group as its primary group.

Additional Steps for Creating Multiple oracle Accounts

If you will have multiple `oracle` accounts that must access the same ORAINVENTORY group, as described in the preceding "Scenario for Creating an ORAINVENTORY Group", then verify that you have set up each account correctly. Table 2–8 describes the appropriate command for each platform.

Table 2–8 Command to Ensure oracle Account Access to ORAINVENTORY

Platform	Command
AIX	`$ id`
HP	`$ id`
Linux	`$ id`
Solaris	`$ id -a`
Tru64	`$ id`

You should see the ORAINVENTORY group after `gid=`. You should see the OSDBA group in the `groups=` list. If this is not so, ensure that both `oracle1` and `oracle2` accounts are listed in the `/etc/groups` file for the ORAINVENTORY group, that `oracle1` is listed for the OSDBA1 group, and that `oracle2` is listed for the OSDBA2 group.

Create a UNIX Account to Own the Apache Server

The APACHE account is a UNIX user account that owns the Apache server after installation. If you use a default configuration (one that listens to ports lower than 1024, which are reserved to `root`), Oracle Corporation recommends that you set up a separate account to own Apache processes after installation for security reasons. This may affect the performance of other Oracle products.

> **See Also:** Oracle Corporation will have further updates on maintaining security with Oracle products and Apache at the following site:
>
> `http://www.oracle.com/support`
>
> For more information on Apache configuration and examples, refer to *Apache version 1.3 User's Guide*.

Setting up the Apache Server for Installation

During installation, the user account that owns the Apache server software must be a member of the ORAINVENTORY group in order to complete installation. The

Apache server also must be started by `root` user in order for ports reserved to `root` to be made available to the database and applications. However, for security reasons, Oracle Corporation recommends that provisions are made to change the Apache server group membership to a low-privileged group, and to transfer ownership of Apache server processes from `root` to a low-privileged account.

Improving Apache Server Security After Installation

To improve security for database and application processes, create the Apache user. Configure the Apache server to transfer ownership of its processes from `root` to the Apache user by using the Apache configuration parameter `user`, which resets user ownership of processes spawned by Apache once the server starts. Assign ownership of listener and module actions for the Apache server to this user. This post-installation process is described in Changing Group Membership of the Apache User on page 4-4.

Assign required access privileges to all Apache related module components to this user so as to allow apache and its modules to function as expected while minimizing security risks.

The Apache user should have minimal user privileges, and should not be a member of any groups whose files are not intended to be visible to the public. The `nobody` user account that many UNIX systems have may serve as a model for the Apache user. Be aware that all web servers open to the public are at risk of being compromised, and take measures accordingly to minimize exposure to that risk

---

Caution: Configuring the Apache user with OSDBA group or `oracle` user privileges compromises database security. If the Apache user needs additional rights to run programs, use the Apache `suEXEC` feature to obtain additional rights for the Apache user.

If a user other than `root` starts the Apache server, any scripts, servlets, or programs that the Apache server spawns will have the same privileges as that user.

Table 2–9 describes the properties of the APACHE account.

Table 2–9 Properties of the Apache User for Installation

Property	Description
Login Name	The Apache user may be given any name, but this guide refers to it as the Apache user.

Table 2–9 Properties of the Apache User for Installation

Property	Description
Primary GID	The primary group must be the same group that owns the oraInventory directory. The location of the oraInventory directory is defined in the `/etc/oraInst.loc` file for AIX. The location of the oraInventory directory is defined in the `/var/opt/oracle/oraInst.loc` file for HP, Linux, Solaris, and Tru64. The default group name that has ownership of the oraInventory directory is the ORAINVENTORY group. For security reasons, this group ownership must be changed after installation. See "Changing Group Membership of the Apache User" on page 4-4 for more information.
Secondary GID	The secondary group should be one in which only the Apache user is a member.
Home Directory	Choose a home directory consistent with other user home directories.

Table 2–10 lists the utilities to create the Apache user. Use the utility that corresponds to your platform.

Table 2–10 Utility to Add the Apache User

Platform	Utility
AIX	`smit`
HP	System Administrator's Menu (SAM)
Linux	`useradd`
Solaris	`admintool` or `useradd`
Tru64	`adduser` or `useradd`

Caution: Oracle Corporation recommends caution when adding servlet classes, modifying or upgrading to Apache modules not certified with this version of Oracle9*i*, or upgrading the Apache server to later versions than the one certified with this version of Oracle9*i*. Oracle-provided patches for Apache and configurations of Apache will be supported, but it is possible for users to change Apache in ways that are difficult or impossible for Oracle Corporation to support.

See Also: For more information on security features and examples of how to configure Apache to meet your system requirements and environment, refer to *Apache 1.3 User's Guide*.

Set Permissions for File Creation

It is necessary to set the `umask` parameter to `022` for the `oracle` user to ensure group and others have read and execute permissions, but not write permission, on the installed files.

1. Check the current setting by entering the following command:

   ```
   $ umask
   ```

2. If the `umask` command does not return the value `022`, then set it for the `oracle` user by adding the following line to the `.profile` or `.login` file:

   ```
   umask 022
   ```

3. Execute the following command:

   ```
   $ umask 022
   ```

Setup Tasks to Perform as the oracle User

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

- ❏ Set Environment Variables
- ❏ Update the Environment for Current Session

Set Environment Variables

It is necessary to set the DISPLAY and PATH environment variables before running the Oracle Universal Installer. Other environmental variables such as the

documentation directory or executables path may also be set before running the Oracle Universal Installer.

Table 2–11 provides a brief summary of the variables listed in this section. See each variable's entry in this section for instructions on setting the variable appropriately.

Note: If an Oracle Server already exists on your system, then its settings may affect the settings that you choose for the new environment.

Table 2–11 Environment Variable Summary

Variable	Description	Required?
DISPLAY	The name, server number, and screen number of the system where the Oracle Universal Installer displays.	Yes
PATH	Shell's search path for executables.	Yes
ORA_NLS33	Location of Global Technology character set data.	No
ORACLE_BASE	Directory at the top of the Oracle software and administrative file structure.	No
ORACLE_DOC	Directory where documentation is installed.	No
ORACLE_HOME	Directory containing Oracle software for a given release.	No
ORACLE_SID	The Oracle server instance identifier to use during installation.	No

DISPLAY

The DISPLAY variable specifies the name, server number, and screen number of the system where the Oracle Universal Installer displays. On the system where you will run Oracle Universal Installer, set the DISPLAY variable to include the system name or IP address, the X server value, and the screen value used by your workstation. If you are unsure of the value to which you should set the X server and screen, use 0 (zero) for both. 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 Window console.

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

For the Bourne or Korn shells:

In the session on your workstation, enter the following:

```
$ xhost +server_name
```

From your workstation where you will run the installation, connect to the server to which you intend to install Oracle9*i* and enter the following:

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

For the C shell:

In the session on your workstation, enter the following:

```
% xhost +server_name
```

Connect from your workstation where you will run the installation, to the server to which you intend to install Oracle9*i*. Enter the following:

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

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

PATH

The PATH variable specifies the shell's search path for executables. Set the shell's search path to include the information in the table below.

Table 2–12 lists the paths for the PATH variable that correspond to your platform.

Table 2–12 Shell Search Paths

Platform	Paths
AIX	`$ORACLE_HOME/bin`, `/usr/bin`, `/etc`, `/usr/lbin`, `/usr/bin/X11`, and `/usr/local/bin`, if it exists
HP	`$ORACLE_HOME/bin`, `/usr/ccs/bin`, `/usr/bin`, `/etc`, `/usr/bin/X11`, and `/usr/local/bin`, if it exists
Linux	`$ORACLE_HOME/bin`, `/usr/bin`, `/bin`, `/usr/bin/X11/`, and `/usr/local/bin`, if it exists
Solaris	`$ORACLE_HOME/bin`, `/usr/ccs/bin`, `/usr/bin`, `/etc`, `/usr/openwin/bin`, and `/usr/local/bin`, if it exists

Table 2–12 Shell Search Paths

Platform	Paths
Tru64	`$ORACLE_HOME/bin`, `/usr/bin`, `/etc`, `/usr/bin/X11`, and `/usr/local/bin`, if it exists

ORA_NLS33

The ORA_NLS33 variable specifies the directory location of the `*.nlb` files. The `*.nlb` files define languages, territories, character sets, and linguistic sorting orders. Set this variable only if the `*.nlb` files are in a non-default location, which is `$ORACLE_HOME/ocommon/nls/admin/data`.

> **See Also:** For more information on languages, territories, character sets and sorting orders, refer to *Oracle9i Globalization and National Language Support Guide*.

ORACLE_BASE

The ORACLE_BASE variable specifies the directory at the top of the Oracle software and administrative file structure. The recommended value for an OFA-compliant configuration is */software_mount_point*`/app/oracle`. For example:

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

> **Note:** Set the ORACLE_BASE variable even if you are not using an OFA-compliant configuration.

ORACLE_DOC

The ORACLE_DOC variable specifies the directory to install the online documentation.

> **See Also:** For more information on how to determine where documentation will be installed if the variable is not set, see "Accessing Installed Documentation" on page xiii.

ORACLE_HOME

The ORACLE_HOME variable specifies the directory containing the Oracle software for a given release. Ensure that the value of ORACLE_HOME points to a directory that does not contain any Oracle software prior to the Oracle9*i* software.

The Optimal Flexible Architecture recommended value is $ORACLE_BASE/product/*release*. For example:

```
/u01/app/oracle/product/9.0.1
```

ORACLE_SID

The ORACLE_SID variable specifies the system identifier (sid) for the Oracle server instance to use during installation. If you plan on creating a database during installation, then you have the option of setting ORACLE_SID to the value of the *sid*. The Oracle Universal Installer will prompt you to confirm this value.

Update the Environment for Current Session

Use a text editor to set the environment variables in the `.profile` or `.login` file of the `oracle` account. You can update the environment in the current shell session before beginning installation by using the appropriate shell command.

For the Bourne or Korn shells:

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

```
$ cd
$ . $HOME/.profile
```

For the C shell:

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

```
% cd
% source $HOME/.login
```

Setup Tasks for Oracle Products

The following products require pre-installation steps to be completed before you install Oracle9*i* software:

- Oracle9i Components
- Oracle Real Application Clusters
- Precompilers and Tools
- Network and System Management Products

Oracle9*i* Components

Perform the following pre-installation steps for Oracle9*i* components.

Configure Apache Server

Create the Apache user if you have not done so yet. The steps for creating the account are in "Setup Tasks to Perform as root User" on page 2-8.

Additional Step for AIX

The Apache module requires JDK to be pre-installed for AIX. The installed JDK home will be prompted at the time of installation. For AIX version 4.3.3, install JDK 1.1.8 or 1.2.2.

Oracle Real Application Clusters

Perform the following pre-installation steps to install Real Application Clusters.

> **See Also:** For more information on pre-installation steps for Real Application Clusters, refer to *Oracle9i Real Application Clusters Installation and Configuration*.

Steps to Perform as the root User for Real Application Clusters Installation

1. Log in as the `root` user.
2. Make sure you have the OSDBA group defined in the `/etc/group` file on all nodes in the cluster. The OSDBA group name and number, and OSOPER group if you plan to designate one, must be identical for all nodes of a UNIX cluster accessing a single database. The default UNIX group name for the OSDBA group is `dba`.
3. Create the `oracle` account on each node of the cluster so that:
   - the account has the ORAINVENTORY 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
4. Create a mount point directory on each node to serve as the top of the 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

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

   See Also: For more information on the recommended naming conventions for Oracle mount points, see "Create Mount Points" on page 2-9.

   To check RSH equivalence, execute a command on every node as the `oracle` user. For example, enter:

   ```
   $ rsh another_host pwd
   ```

   To check RCP equivalence, copy a small file from every node to every node. For example, enter:

   ```
   $ rcp /tmp/dummy_file another_host:/tmp/dummy file
   ```

   This is required for Oracle Universal Installer to know on which nodes to install Oracle Real Application Clusters.

Additional steps to Perform as the root user for Installing Real Application Clusters on HP or Solaris

If you are installing Real Application Clusters on HP or Solaris, then you must complete additional steps as the `root` user. See the following sections for your platform:

- Additional root user information for HP
- Additional root user information for Solaris

Additional root user information for HP

Start MC / ServiceGuard by entering the following command:

```
$ /usr/sbin/cmruncl
```

See Also: For more information on configuring Real Application Clusters, refer to Hewlett-Packard's *Configuring OPS Clusters with MC/ServiceGuard OPS Edition*.

Additional root user information for Solaris

1. Apply the Sun Cluster software patch that is provided on the Oracle9*i* CD-ROM. To install the patch, follow the directions provided in the `opspatch` directory on your CD-ROM. This patch provides the Cluster Membership Monitor (CMM) that is required before you install Oracle Real Application Clusters.
2. Restart the cluster management software.
   a. For the first node, enter the following commands:

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

   b. Run the following commands on each of the other nodes in the cluster:

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

   See Also: For more information about cluster management software and the `scadmin` command, refer to your Solaris Enterprise 2.1 documentation.

Steps to Perform as the oracle user for Oracle Real Application Clusters

1. Log in as the `oracle` account.

   If you are performing the pre-installation steps on HP, then verify that the MC/ServiceGuard is running by entering the following command:

```
$ /usr/sbin/cmviewcl
```

2. Verify that the Cluster Membership Monitor (CMM) is running. Table 2–13 lists the appropriate command for each platform.

Table 2–13 Command to Verify Cluster Membership Monitor is Running

Platform	Command

AIX	HACMP
	`$ /usr/bin/lssrc -ls grpsvcs`
	Note: Verify that the CLSTRMGR_<cluster_id> has number of providers equal to the number of nodes.
	PSSP 3.2
	`$ /usr/bin/lssrc - ls hags`
	Note: Verify that `css` has the correct number of nodes. There should also be a local provider.

HP	`$ /usr/sbin/cmvicwcl`
Linux	`$ ps -efl | egrep 'watchdogd|oranm|oracm'` ■ if all of `watchdogd`, `oranm`, and `oracm` program appears in the process list, Oracle cluster management software is running. ■ if all of `watchdogd`, `oranm`, and `oracm` program does not appear in the process list, restart the Oracle cluster management software.
Solaris	`$ ps -ef | grep clustd` ■ if the `clustd` program appears in the process list, `clustd` is running. ■ if the `clustd` program does not appear in the process list, restart the Cluster Membership Monitor.
Tru64	`$ /usr/sbin/clu_get_info` Note: Verify that the correct number of cluster members are configured. Member state for all nodes should be "up".

3. Check for user equivalence of 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 does not have user equivalence. Ensure that you gave the same attributes to all the nodes in the cluster. The Oracle Universal 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 5 in "Setup Tasks to Perform as root User" on page 2-8.

Precompilers and Tools

Complete pre-installation tasks for the precompilers and tools required for your platform.

Parameters for the Pro*C/C++ Precompiler

Verify that the C compiler executable is in the PATH setting. Table 2–14 describes the usual path settings and the appropriate command to verify the path depending on your platform.

Table 2–14 Pro*C/C++ Precompiler Directory

Platform	Path	Command
AIX	`/usr/bin`	`$ which cc`
HP	`/usr/ccs/bin`	`$ which cc`
Linux	`/usr/bin`	`$ which gcc`
Solaris	`/opt/SUNWspro/bin`	`$ which cc`
Tru64	`/usr/bin`	`$ which cc`

Parameters and Environment Variables for the Pro*COBOL Precompiler

1. Set the COBDIR environment variable to the directory where the COBOL compiler is installed.
2. Verify that the PATH setting includes the COBOL compiler executable.
3. Verify that the LD_LIBRARY_PATH setting includes the `$COBDIR/lib` directory.

Note: If you do not set the COBDIR environment variable prior to starting the installation session, then Pro*COBOL precompiler linking fails.

See Also: For more information on the COBDIR and COBLIB environment variables, refer to your product-specific COBOL documentation.

Pro*COBOL Restriction

The use of incorrectly aligned binary data (such as COMP-1) in Pro*COBOL applications will generate unaligned access warnings that will prevent optimum compiler performance, but not affect the application's results. The warnings may appear as follows:

```
Unaligned access pid=12227

<unaligned> va=11ffffb84

pc=1200010e0 ra=120001060 type=ldq
```

Parameters for Pro*FORTRAN Precompiler

Verify that the PATH setting includes the FORTRAN compiler executable. Table 2–15 describes the usual path settings for the platforms and the appropriate command to verify the path depending on your platform.

Table 2–15 Pro*FORTRAN Precompiler Directory

Platform	Path	Command
AIX	`/usr/bin`	`$ which xlf`
HP	`/opt/Fortran/bin`	`$ which f77`
Linux	Not applicable	Not applicable
Solaris	Not applicable	`$ which f77`
Tru64	`/usr/bin`	`$ which f77`

Parameters for SQL*Module Ada

Verify that the PATH setting includes the Ada executable. Table 2–16 describes the usual path settings for the platforms and the appropriate command to verify the path depending on your platform.

Table 2–16 SQL*Module Ada Precompiler Directory

Platform	Path	Command
AIX	`/usr/lpp/powerada`	`$ which ada95`
HP	Not applicable	Not applicable
Linux	Not applicable	Not applicable
Solaris	Not applicable	`$ which ada`
Tru64	Not applicable	Not applicable

Additional SQL*Module Ada Step for AIX

Verify that the OC Systems PowerAda 3.1 compiler configuration file has been set up. The file is located in the same directory where you have installed PowerAda. The file name will be as follows:

- `setup` for the Korn shell
- `setup.csh` for the C shell

Network and System Management Products

This section describes tasks that need to be completed prior to installation if you have existing network and system management products.

Setup Tasks for Oracle Net Services

If you have an existing installation of Oracle Net8 Server, then shut down all listeners before installing Oracle Net. To determine if any listeners are running, enter the following command:

```
$ lsnrctl status listener_name
```

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

To shut down a running listener, enter the following command:

```
$ lsnrctl stop listener_name
```

See Also: For information on planning the installation and configuration of Oracle Net on your system, see "Oracle Net Configuration Assistant" on page 1-10.

Verify Oracle Supported Protocols

Oracle Universal Installer automatically installs the TCP/IP protocol with all Oracle9*i* Database installations. Before installing any protocol, verify that the underlying network is functioning and configured properly.

To verify that the network is functioning properly, transfer and retrieve a test file using the `ftp` utility by entering the following command:

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

Setup Tasks for Oracle Enterprise Manager

Before you install Oracle Management Server, you need to determine if you will use an existing Enterprise Manager repository or create a new Enterprise Manager repository.

IMPORTANT: All Oracle Enterprise Manager products must be of the same release. Do not migrate the Management Server and repository until all Oracle Enterprise Manager users have upgraded their software to release 1 (9.0.1). If you migrate your Management Server and repository to release 1 (9.0.1), and do not upgrade the Enterprise Manager users' software, then the users will not be able to use their version of Enterprise Manager with the new version.

To Use an Existing Repository:

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

If you choose to use an existing Oracle Enterprise Manager repository version earlier than release 1 (9.0.1), then you must migrate the existing repository to release 1 (9.0.1). Review the following information to upgrade your repository.

Release 2.2 or 2.1: Migrate the older repository to the current release by running Enterprise Manager Configuration Assistant release 1 (9.0.1).

> **See Also:** For more information on installing and configuring a new repository, or migrating a repository, refer to *Oracle Enterprise Manager Configuration Guide*.

To Create a New Repository:

If you decide to create a new release 1 (9.0.1) repository, then you must first install and start the database. The Enterprise Manager Configuration Assistant is automatically launched during the configuration phase of the Oracle9*i* Database Custom installation, the Management and Integration Management Server installation, and the Management and Integration Custom installation.

> **See Also:** For more information on installing and configuring a new repository, or migrating a repository, refer to *Oracle Enterprise Manager Configuration Guide*.

3

Installation

This chapter describes how to start the Oracle Universal Installer and install Oracle9*i* products on your system. Review and complete the tasks listed in Chapter 1, "Oracle9i Installation Planning" and Chapter 2, "Pre-Installation Requirements" before beginning the installation. This chapter contains the following sections:

- Installation Mount Options
- Oracle Universal Installer
- Non-Interactive Installation and Configuration
- Oracle Real Application Clusters

Installation Mount Options

The Oracle9*i* installation process uses more than one CD-ROM. The Oracle9*i* CD-ROMs are in ISO 9660 format with Rockridge extensions. You can choose to install Oracle9*i* directly from the CD-ROMs, or to copy the CD-ROM contents and install from your system hard drive. Complete the procedures required for the install method you choose before starting the Oracle Universal Installer.

- Installing Oracle9i from the CD-ROMs
- Installing Oracle9i from the Hard Drive

Note: Oracle Corporation does not support using the Oracle Installer shipped with releases 7.0, 8.0.x, and 8.1.x to install components into a release 1 (9.0.1) Oracle home directory. In addition, you cannot install release 1 (9.0.1) components into a release 7.x, 8.0.x, or 8.1.x Oracle home directory.

Installing Oracle9*i* from the CD-ROMs

Use the following procedures to install Oracle9*i* from the CD-ROMs. Refer to this process during installation as necessary.

For operating systems that do not support automatic mounting of CD-ROMs, Oracle9*i* release 1 (9.0.1) CD-ROMs must be mounted manually. You must have `root` privileges to mount or unmount a CD-ROM. Be sure to unmount a CD-ROM before removing it from the drive.

Mounting and Installing from the CD-ROMs

Refer to these mounting procedures during installation as necessary.

- Mounting CD-ROMs for AIX
- Mounting CD-ROMs for HP
- Mounting CD-ROMs for Linux
- Mounting CD-ROMs for Solaris
- Mounting CD-ROMs for Tru64

Mounting CD-ROMs for AIX

Mount disk 1 to begin the installation. Mount the subsequent disk or disks when prompted to do so. Follow these steps to mount the Oracle9*i* CD-ROM manually:

1. Place Oracle9*i* CD-ROM disk 1 in the CD-ROM drive.
2. Log in as the `root` user and create a CD-ROM mount point directory, if one does not already exist, by using the following commands:

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

3. Use the following command to determine the *`device_name`*:

   ```
   # lsdev  -Cc cdrom
   ```

   The output should be similar to the following:

   ```
   cd0 Available 10-60-00-4, 0 SCSI Multimedia CD-ROM Drive
   ```

   In the preceding output, `/dev/cd0` is the CD-ROM device.

4. Mount the CD-ROM drive on the mount point directory, then exit the `root` account by using the following commands:

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

   Example 3–1 shows how to mount the CD-ROM manually.

Example 3–1 Mounting the AIX CD-ROM Manually

```
$ su root
# mkdir /cdrom
# mount -rv cdrfs /dev/cd0 /cdrom
# exit
```

Caution: Do not run the Installer while the CD-ROM directory is the current directory or you will be unable to unmount the next CD-ROM when prompted to do so.

Mounting CD-ROMs for HP

Mount disk 1 to begin the installation. Mount the subsequent disk or disks when prompted to do so. You must have `root` privileges to mount or unmount a CD-ROM. Be sure to unmount the CD-ROM before removing it from the drive. Follow these steps to mount the Oracle9*i* CD-ROM manually:

1. Use the following command to determine the *`device_file`*:

```
$ ioscan -fun -C disk
```

The output should be similar to the following:

```
disk     10  10/12/5.2.0   sdisk       CLAIMED   DEVICE    TOSHIBA CD-ROM
XM-5701TA /dev/dsk/c4t2d0   /dev/rdsk/c4t2d0
```

2. If there is not already an entry in the `/etc/pfs_fstab` file for your CD-ROM device, you must add one. As the `root` user, use a system editor to add a line to the `/etc/pfs_fstab` file following this format:

   device_file mount_point filesystem_type translation_method

   In the preceding format, the first entry is the CD-ROM device, the second entry is the mount point, and the third entry indicates that the CD-ROM to be mounted is in ISO9660 format with Rockridge extensions.

   The *device_file* in this example is `/dev/dsk/c4t2d0`. For a CD-ROM device with the path `/dev/dsk/c4t2d0`, you would enter the following:

   ```
   /dev/dsk/c4t2d0 /SD_CDROM pfs-rrip xlat=unix 1 0
   ```

3. Log in as the `root` user with the following command:

   ```
   $ su root
   ```

4. Enter the following commands:

   ```
   # nohup /usr/sbin/pfs_mountd &
   # nohup /usr/sbin/pfsd &
   ```

5. Place Oracle9*i* CD-ROM disk 1 in the CD-ROM drive and mount the CD-ROM by entering the following command:

   ```
   # /usr/sbin/pfs_mount /SD_CDROM
   ```

6. Log out of the `root` account.

   ```
   # exit
   ```

If you run the Installer while the current working directory is in the CD-ROM, follow these steps to mount the next CD-ROM:

1. Change to your system's root directory and log in as the root user with the following commands:

   ```
   $ cd /
   $ su root
   ```

2. To unmount the CD-ROM, use the following command:

   ```
   # /usr/sbin/pfs_umount /SD_CDROM
   ```

3. Remove the CD-ROM from the CD-ROM drive.

4. Insert the required CD-ROM into the CD-ROM drive and mount it with the following command:

   ```
   # /usr/sbin/pfs_mount /SD_CDROM
   ```

5. Enter the correct mount point in the *Installation* dialog box.

6. Click OK to continue.

Mounting CD-ROMs for Linux

Mount disk 1 to begin the installation. Mount the subsequent disk or disks when prompted to do so.

Mounting CD-ROMs for Linux with Auto Mounting Software If you are using auto mounting software, the CD-ROM is mounted automatically to the directory specified in your auto mount configuration when you insert it into the CD-ROM drive. Proceed to "Oracle Universal Installer" on page 3-11.

To check if you have auto mounting software, use the following command:

```
$ ps aux | grep automount
```

If you have auto mounting software, the output should be similar to the following:

```
root 628 0.0 0.2 1148 588 ? S 17:32 0:00 /usr/sbin/automount /misc file
/etc/auto.misc
```

In the preceding output, the `/etc/auto.misc` entry defines the directory under the `/misc` file where the CD-ROM will be mounted.

- If the auto mounting software is running and configured properly, the CD-ROM is mounted automatically. Proceed to "Oracle Universal Installer" on page 3-11.
- If no lines are returned, the auto mounting software is not running, and you will have to mount the CD-ROM manually. Proceed to "Mounting CD-ROMs for Linux Manually".

Follow these steps to mount subsequent CD-ROMs:

1. Remove the CD-ROM from the CD-ROM drive by using the following commands:

```
$ cd /
$ eject
```

2. Insert the next CD-ROM into the CD-ROM drive and enter the correct mount point in the *Installation* dialog box.
3. Click OK to continue.

Mounting CD-ROMs for Linux Manually To mount the Oracle9*i* CD-ROM manually, use the following steps:

1. Place Oracle9*i* CD-ROM disk 1 in the CD-ROM drive.
2. Log in as the `root` user and, if necessary, create a CD-ROM mount point directory by using the following commands:

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

3. Mount the CD-ROM drive on the mount point directory by using the following commands:

```
# mount options device_name cdrom_mount_point_directory
```

4. Exit the `root` account.

```
# exit
```

If you are unsure of the correct *`device_name`*, consult your system administrator. Typically, the *`device_name`* is `/dev/cdrom`.

Example 3–2 shows how to mount the CD-ROM manually.

Example 3–2 Mounting the Linux CD-ROM Manually

```
$ su root
# mkdir /cdrom
# mount -t -iso9660 /dev/cdrom / cdrom
# exit
```

If you run the Installer while the current working directory is in the CD-ROM, follow these steps to mount the next CD-ROM:

1. Change directory to the root directory of your system and log in as the `root` user by using the following commands:

   ```
   $ cd /
   $ su root
   ```

2. Unmount the CD-ROM by using the following command:

   ```
   # umount cdrom_mount_point_directory
   ```

3. Remove the CD-ROM from the CD-ROM drive.

4. Insert and mount the next CD-ROM into the CD-ROM drive by using the following command:

   ```
   # mount cdrom_mount_point_directory
   ```

5. Enter the correct mount point in the *Installation* dialog box.
6. Click OK to continue.

Mounting CD-ROMs for Solaris

Mount disk 1 to begin the installation. Mount the subsequent disk or disks when prompted to do so.

Mounting CD-ROMs for Solaris with Volume Management Software If you are using Volume Management software (available by default on UNIX), the CD-ROM is mounted automatically to the `/cdrom/orcl901_1` directory when you insert it into the CD-ROM drive. Proceed to "Oracle Universal Installer" on page 3-11.

To check if you have Volume Management software, use the following command:

```
$ ps -e | grep vold
```

If you have Volume Management software, the output should be similar to the following:

```
404 ? 16:03 vold
```

- If the Volume Management software is running, the CD-ROM is mounted automatically. Use the following commands to mount subsequent CD-ROMs:

  ```
  $ cd /
  $ eject
  ```

After entering these commands, proceed to "Oracle Universal Installer" on page 3-11.

- If no lines are returned, then Volume Management software is not running, and you will have to mount the CD-ROM manually. Proceed to "Mounting CD-ROMs for Solaris Manually".

Follow these steps to mount subsequent CD-ROMs:

1. Remove the CD-ROM from the CD-ROM drive by using the following commands:

```
$ cd /
$ eject
```

2. Insert the next CD-ROM into the CD-ROM drive and enter the correct mount point in the *Installation* dialog box.
3. Click OK to continue.

Mounting CD-ROMs for Solaris Manually Follow these steps to mount the Oracle9*i* CD-ROM manually:

1. Place Oracle9*i* CD-ROM disk 1 in the CD-ROM drive.
2. Log in as the `root` user and, if necessary, create a CD-ROM mount point directory by using the following commands:

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

3. Mount the CD-ROM drive on the mount point directory, then exit the `root` account by using the following commands:

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

If you are unsure of the correct *`device_name`*, consult your system administrator. Typically, the *`device_name`* is `/dev/dsk/c0t6d0s0`.

Example 3–3 shows how to mount the CD-ROM manually.

Example 3–3 Mounting the Solaris CD-ROM Manually

```
$ su root
# mkdir /cdrom
# mount -r -F hsfs /dev/dsk/c0t6d0s0 /cdrom
# exit
```

If you run the Installer while the current working directory is in the CD-ROM, follow these steps to mount the next CD-ROM:

1. Change directory to the root directory of your system and log in as the `root` user by using the following commands:

   ```
   $ cd /
   $ su root
   ```

2. Unmount the CD-ROM by using the following command:

   ```
   # umount cdrom_mount_point_directory
   ```

3. Remove the CD-ROM from the CD-ROM drive.

4. Insert and mount the next CD-ROM into the CD-ROM drive by using the following command:

   ```
   # mount cdrom_mount_point_directory
   ```

5. Enter the correct mount point in the *Installation* dialog box.
6. Click OK to continue.

Mounting CD-ROMs for Tru64

Follow these steps to mount the Oracle9*i* CD-ROM manually:

1. Place Oracle9*i* CD-ROM disk 1 in the CD-ROM drive.
2. Log in as the `root` user and create a CD-ROM mount point directory, if one does not already exist, by using the following commands:

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

3. Use the following command to determine the *device_name*:

   ```
   $ ls /dev/disk/cdrom*c
   ```

   The command should return a line similar to the following:

   ```
   /dev/disk/cdrom0c
   ```

4. Mount the CD-ROM drive on the mount point directory, by using the following commands:

```
# mount options device_name cdrom_mount_point_directory
```

5. Exit the `root` account.

```
# exit
```

Example 3–4 shows how to mount the CD-ROM manually.

Example 3–4 Mounting the Tru64 CD-ROM Manually

```
$ su root
# mkdir /cdrom
# mount -t cdfs -r -o nodefperm,noversion,rrip /dev/disk/cdrom0c /cdrom
# exit
```

If you run the Installer while the current working directory is in the CD-ROM, follow these steps to mount the next CD-ROM:

1. Change directory to the root directory of your system and log in as the `root` user by using the following commands:

```
$ cd /
$ su root
```

2. Unmount the CD-ROM by using the following command:

```
# umount cdrom_mount_point_directory
```

3. Remove the CD-ROM from the CD-ROM drive.

4. Insert and mount the next CD-ROM into the CD-ROM drive by using the following command:

```
# mount options device_name cdrom_mount_point_directory
```

5. Enter the correct mount point in the *Installation* dialog box.
6. Click OK to continue.

Installing Oracle9*i* from the Hard Drive

You can avoid the need to mount and unmount CD-ROMs during installation by copying the contents of each CD-ROM to your system's hard drive. You should have a filesystem that is not in use by other applications and have at least 2 GB of disk space available.

1. Copy the CD-ROMs to your system hard drive. Copy each CD-ROM to a directory on a single mount point with the same name as the CD-ROM. For example, copy disk 1 to a directory named disk 1.
2. Start the Oracle Universal Installer. The Installer automatically finds the contents of each CD-ROM and does not prompt for the location of any CD-ROM during the course of the installation.

Oracle Universal Installer

The following procedure describes the installation of products with Oracle Universal Installer.

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

---

1. Log in as the `oracle` user.
2. Start the Installer from the CD-ROM mount-point directory at the root directory level with the following command:

   ```
   $ /cdrom_mount_point_directory/runInstaller
   ```

Note: The Oracle Universal Installer is capable of running a non-interactive installation of Oracle products and can optionally be configured for “non-interactive” mode. For instructions on using this feature of the Installer, see "Non-Interactive Installation and Configuration" on page 3-38.

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

After the Installer starts, the *Welcome* window appears.

3. Click Next.

- If this is the first time any Oracle9*i* products are installed on the current system, the *File Locations* window appears. Specify the base directory where you want to install the files.
- If this is not the first time any Oracle9*i* products are installed on the current system, go to step 8.

4. Click Next.

   The *UNIX Group Name* window appears. In the *UNIX Group Name* field, specify the ORAINVENTORY group. Members of this group are granted permission to update Oracle software on the system. Review "Create a UNIX Group for the Oracle Universal Installer Inventory" on page 2-11 if you are not sure what group to specify to own `oraInventory` files.

5. Click Next.

   If the `/etc` directory does not exist on AIX `or` the `/var/opt/oracle/` directory does not exist on HP, Linux, Solaris, or Tru64, or is not writable by the `oracle` user, an *Installer* window appears prompting you to run the `/tmp/OraInstall/orainstRoot.sh` script in another terminal window as the `root` user. When the script has finished running, click Retry to continue the installation.

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

   Attention: A note window opens only if you have not completed all the required pre-installation steps. If you choose to run the `orainstRoot.sh` script, the `oraInventory` file and other files *`oracle`* account uses will be written in the `$ORACLE_HOME` directory to ensure that *`oracle`* account has write access. This configuration may not be optimal for your system or your needs. Oracle Corporation recommends that you complete the steps described in Chapter 2, "Pre-Installation Requirements."

   ---

6. Enter the Oracle home directory path in the *Destination* field. The directory path is where you want to install Oracle9*i* products. If you set the ORACLE_HOME environment variable before starting the Installer, the Installer uses this directory path as the default value in the *Destination* field.

   You must install Oracle9*i* products into a new Oracle home directory. You cannot install Oracle9*i* products into a directory that contains older versions of the software.

Caution: If you have an existing Oracle home directory created with a pre-9.0.*x* release, you must change the default Oracle9*i* installation location to a different location.

7. Click Next.
8. The *Available Products* window appears. Select the Oracle9*i* installation category you want to install and click Next.
9. Proceed to one of the following installation guide sections based on your selection:

If you select...	See...
Oracle9*i* Database	"Installing Oracle9i Database" on page 3-13.
Oracle9*i* Client	"Installing Oracle9i Client" on page 3-20.
Oracle9*i* Management and Integration	"Installing Oracle9i Management and Integration" on page 3-23.

See Also: For more information on product installation types, see "Oracle9i Products for Installation" on page 1-2.

For more information on the products installed with each installation type, see Appendix A, "Oracle9i Components".

Installing Oracle9*i* Database

After selecting Oracle9*i* Database from the *Available Products* window, the *Installation Types* window appears. Follow these procedures to install Oracle9*i* Database:

1. Select Enterprise, Standard, or Custom Installation, then click Next.
2. Go to one of the following sections based on the selection you made in step 1.

If you select...	See...
Enterprise Edition or Standard Edition	"Oracle9i Enterprise Edition or Standard Edition Installation" on page 3-14.
Custom	"Oracle9i Database Custom Installation" on page 3-18.

Oracle9*i* Enterprise Edition or Standard Edition Installation

When you select Enterprise Edition or Standard Edition Installation, the *Database Configuration Types* window appears.

1. Select the appropriate database and click Next.

If you select...	Then Oracle Universal Installer...
General Purpose	Installs a preconfigured database optimized for general purpose usage.
Transaction Processing	Installs a preconfigured database optimized for transaction processing.
Data Warehouse	Installs a preconfigured database optimized for data warehousing.
Customized	Allows you to create a customized database. This option takes longer than the pre-configured options.
Software only	Installs software only and does not run any configuration tools.

The *Privileged Operating System Groups* window appears if the `oracle` account is not a member of the OSDBA group created in "Create UNIX Groups for Database Administrators" on page 2-10, or if there is a UNIX group with a name other than *dba* that serves as the OSDBA group.

2. Enter the UNIX group name that serves as the OSDBA group. If a separate UNIX group serves as the OSOPER group, specify it in this window as well.
3. Click Next.
4. If Oracle Universal Installer detects an earlier version of an Oracle database on your system, you are prompted to migrate 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 Oracle9*i* database.

   If you choose to migrate your database, go to step 8.

Note: Do not upgrade an Oracle9*i* database configured for use with Oracle Internet Directory through this installation type. Oracle9*i* database and Oracle Internet Directory upgrades must be performed by following the procedures in "Oracle Internet Directory Installation" on page 3-27.

5. Click Next.

   The *Database Identification* window appears.

6. Enter the Global Database Name and System Identifier (SID) in the appropriate fields:

In this field...	Enter 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, 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 it reaches eight characters in length or you 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 directory location of the database file. Alternatively, use the Browse... button to navigate to the directory location of the database file.

   Note: Oracle Corporation recommends that database files and Oracle software files be installed on separate disks.

9. Click Next.

The *Database Character Set* window appears. Choose the database character set that you want to use from the available options.

10. Click Next.

    The *Summary* window appears.

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

    The *Install* window appears and displays a progress meter. The Installer goes through the install and relinking phases, so the meter adjusts for each phase completion.

12. If you are installing from the CD-ROMs, you will be prompted to insert the subsequent disks to continue with installation.

13. Run the `root.sh` script when prompted.

    The Installer creates the `root.sh` script in the Oracle home directory and prompts you to run the script when it finishes installing Oracle products. Log in as the `root` user and run the script. The `root.sh` script sets the necessary file permissions for Oracle products and performs other `root`-related configuration activities. To run the `root.sh` script use the following commands:

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

    If you install Real Application Clusters, then you must run the `root.sh` script on every node in the cluster.

    When the `root.sh` script runs successfully, return to the Oracle Universal Installer, and click OK in the *Alert* window.

14. The *Configuration Tools* window appears at the end of installation depending on the selections you made previously.

    The configuration assistants help you create and configure the database and network environment. Table 3–1 describes the configuration assistants.

Table 3–1 Configuration Assistants

The...	Starts...	And...
Apache Web Server Configuration Assistant	In all cases except if you selected the Software only configuration type	Starts the HTTP Listener in non-SSL mode on port 7777.

Table 3–1 Configuration Assistants

The...	Starts...	And...
Oracle Database Configuration Assistant	If you selected not to migrate an existing instance and to create a database	Automatically creates an Oracle9*i* database. See "Oracle Database Configuration Assistant" on page 1-7 for information on database types.
Oracle Data Migration Assistant	If you selected to migrate a database	Migrates the selected database to Oracle9*i*.
Oracle Net Configuration Assistant	In all cases except if you selected the Software only configuration type	Guides you to configure your Oracle Net listener networking software. See "Oracle Net Configuration Assistant" on page 1-10 for a description of the configuration procedures.

Note: If you are installing a database and want to unlock administrative user passwords after installation, click the Password Management button in the Database Assistant dialog box.

For more information on password management, see "Reviewing User Names and Passwords" on page 4-29.

The *End of Installation* window appears if the configuration assistants are successful.

If a configuration assistant fails, the *Configuration Tools* window displays the results of running these assistants. Correct the cause of the failure and click Retry to re-install, or click Next to continue.

The *End of Installation* window appears.

15. Click Exit to exit the Oracle Universal Installer, or click Next Install to install additional products. Selecting Next Install returns you to the Oracle Universal Installer *File Locations* window.

See Also: Oracle Universal Installer creates a log file to keep an inventory of products that it installs on your system. For more information on the log file, see "Reviewing a Log of an Installation Session" on page 3-37. If errors occurred during installation of Enterprise Edition, see "Completing Installation of Oracle9i Server Enterprise Edition" on page 3-38.

Oracle9*i* Database Custom Installation

When you select Custom Installation, the *Available Product Components* window appears. It displays all products and components available for installation. A typical Custom installation configuration is selected by default.

1. Select the products you want to install or deselect products you do not want to install and click Next.
2. Provide responses to any window prompts that appear.

   The *Summary* window appears.

   The Installer notifies you if you do not have enough disk space to install the products you have selected. If necessary, deselect products in order to select a configuration suitable for your system. If this is not necessary, click Install.

   The *Install* window appears.
3. Run the `root.sh` script when prompted.

   The Installer creates the `root.sh` script in the Oracle home directory and prompts you to run the script when it finishes installing Oracle products. Log in as the `root` user and run the script. The `root.sh` script sets the necessary file permissions for Oracle products and performs other `root`-related configuration activities. To run the `root.sh` script, use the following command:

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

   If you install Oracle9*i* Real Application Clusters, you must run the `root.sh` script on every node in the cluster.

   When the `root.sh` script runs successfully, return to the Oracle Universal Installer, and click OK in the *Alert* window.
4. The *Configuration Tools* window appears at the end of installation, depending on the selections you made previously.

The configuration assistants help you create and configure the database and network environment. Table 3–2 describes the configuration assistants.

Table 3–2 Configuration Assistants

The...	Starts...	And...
Apache Web Server Configuration Assistant	If you selected the Oracle HTTP Server in the *Available Products* window	Starts the HTTP Listener in non-SSL mode on port 7777.
Oracle Database Configuration Assistant	If you selected: ■ Oracle9*i* Server in the product selection screen AND ■ you chose not to migrate AND ■ you selected Yes when prompted to install an Oracle9*i* database.	Guides you in creating an Oracle9*i* database. See "Oracle Database Configuration Assistant" on page 1-7.
Oracle Data Migration Assistant	If you selected to migrate a database	Migrates the selected database to Oracle9*i*.
Oracle Enterprise Manager Configuration Assistant	If you selected to install Oracle Management Server in the *Available Products* window	Allows you to configure the local Oracle Management Server to use an existing release 9.0.0 repository or to create a new release 9.0.1 repository. **See Also:** For information on how to use this assistant, refer to *Oracle Enterprise Manager Configuration Guide*.
Oracle Net Configuration Assistant	If you selected any products that require network configuration	Guides you to configure your Oracle Net listener networking software. See "Oracle Net Configuration Assistant" on page 1-10 for a description of the configuration procedures.

The *End of Installation* window appears if the configuration assistants are successful.

If a configuration assistant fails, the *Configuration Tools* window displays the results of running these assistants. Correct the cause of the failure and click Retry to re-install, or click Next to continue. Then the *End of Installation* window appears.

5. Click Exit to exit the Oracle Universal Installer, or click Next Install to install additional products. Selecting Next Install returns you to the *File Locations* window.

> **See Also:** Oracle Universal Installer creates a log file to keep an inventory of products that it installs on your system. For more information on the log file, see "Reviewing a Log of an Installation Session" on page 3-37.

Installing Oracle9*i* Client

> **Note:** For a list of products installed with each installation type, see the appropriate product section in Appendix A, "Oracle9i Components".

After selecting Oracle9*i* Client from the *Available Products* window, the *Installation Types* window appears.

1. Select the Oracle Client installation type you want to install, then click Next.
2. Go to one of the following sections based on the selection you made in step 1.

If you selected...	See...
Administrator and Runtime	"Oracle9i Client Administrator and Runtime Installation" on page 3-20.
Custom	"Oracle9i Client Custom" on page 3-22.

Oracle9*i* Client Administrator and Runtime Installation

Follow these procedures to perform a Client Administrator or Runtime installation:

1. After selecting Administrator or Runtime Installation, click Next.

   The *Available Products Components* window appears.

2. Select the products you want to install or deselect products you do not want to install and 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.

   The *Install* window appears and displays a progress meter. The Installer goes through the install and relinking phases, so the meter adjusts for each phase completion.
5. Run the `root.sh` script when prompted.

   The Installer creates the `root.sh` script in the Oracle home directory and prompts you to run the script when it finishes installing Oracle products. The `root.sh` script sets the necessary file permissions for Oracle products and performs other `root`-related configuration activities. Log in as the `root` user and run the script. To run the `root.sh` script, use the following command:

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

   When the `root.sh` script runs successfully, return to the Oracle Universal Installer, and click OK in the *Alert* window.

   The *Configuration Tools* window may appear at the end of installation, depending on the selections you made previously.

   The configuration assistant helps you create and configure the database and network environment. Table 3–3 describes the Oracle Net Configuration Assistant.

Table 3–3 Configuration Assistant

The...	Starts...	And...
Oracle Net Configuration Assistant	In all cases	Guides you to configure your Oracle Net listener networking software. See "Oracle Net Configuration Assistant" on page 1-10 for a description of the configuration procedures.

The *End of Installation* window appears if the configuration assistants are successful.

If the configuration assistant fails, the *Configuration Tools* window displays the results of running this assistant. Correct the cause of the failure and click Retry to re-install, or click Next to continue.

The *End of Installation* window appears.

6. Click Exit to exit Oracle Universal Installer, or click Next Install to install additional products. Selecting Next Install returns you to the *File Locations* window.

> **See Also:** Oracle Universal Installer creates a log file to keep an inventory of products that it installs on your system. For more information on the log file, see "Reviewing a Log of an Installation Session" on page 3-37.

Oracle9*i* Client Custom

Follow these procedures to perform a Client Custom installation:

1. After selecting Client Custom installation, click Next.

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

2. Select products you want to install or deselect products you do not want to install, then click Next. A typical Custom Installation configuration is selected by default.

3. Provide responses to any prompts that appear.

   The *Summary* window appears.

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

   The *Install* window appears and displays a progress meter. The Installer goes through the install and relinking phases, so the meter adjusts for each phase completion.

5. Run the `root.sh` script when prompted.

   The Installer creates the `root.sh` script in the Oracle home directory and prompts you to run the script when it finishes installing Oracle products. The `root.sh` script sets the necessary file permissions for Oracle products and performs other `root`-related configuration activities. Log in as the `root` user and run the script. To run the `root.sh` script, use the following command:

   ```
   # cd $ORACLE_HOME
   ```

```
# ./root.sh
```

When the `root.sh` script runs successfully, return to the Oracle Universal Installer, and click OK in the *Alert* window.

The *Configuration Tools* window may appear at the end of installation, depending on your selections previously.

The configuration assistant help you create and configure the database and network environment. Table 3–4 describes the Oracle Net Configuration Assistant.

Table 3–4 Configuration Assistants

This Assistant...	Starts...	And does the following...
Oracle Net Configuration Assistant	If you selected any products that require network configuration	Guides you to configure your Oracle Net listener networking software. See "Oracle Net Configuration Assistant" on page 1-10 for a description of the configuration procedures.

The *End of Installation* window appears.

6. Click Exit to exit Oracle Universal Installer, or click Next Install to install additional products. Selecting Next Install returns you to the Oracle Universal Installer *File Locations* window.

See Also: Oracle Universal Installer creates a log file to keep an inventory of products that it installs on your system. For more information on the log file, see "Reviewing a Log of an Installation Session" on page 3-37.

Installing Oracle9*i* Management and Integration

When you select Management and Integration Installation, the *Installation Types* window appears.

1. Select Oracle Management Server, Oracle Internet Directory, Oracle Integration Server or Custom and click Next.
2. Go to one of the following sections based on the selection you made in step 1.

If you selected...	See...
Oracle Management Server	"Oracle Management Server Installation" on page 3-24
Oracle Internet Directory	"Oracle Internet Directory Installation" on page 3-27
Oracle Integration Server	"Oracle Integration Server Installation" on page 3-32
Custom	"Oracle9i Management and Integration Custom Installation" on page 3-35

Note: For a list of products installed with each installation type, see Appendix A, "Oracle9i Components".

Oracle Management Server Installation

After selecting Oracle Management Server in the *Installation Types* window, the *Oracle Management Server Repository* window appears. Follow these procedures to install Oracle Management Server:

1. Select the repository that you want to use with Oracle Management Server.

Select	If...
Existing repository	A Release 1 (9.0.1) repository has already been created and configured for the environment you want to manage and you want this management server to share the existing 9.0.1 repository, or you want to migrate an existing release 2.x repository to a release 9.0.1 repository.
New repository	A Release 1 (9.0.1) repository has not been created and configured for the environment you want to manage.

   The *Summary* window appears.

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

The *Install* window appears and displays a progress meter. The Installer goes through the install and relinking phases, so the meter adjusts for each phase completion.

4. Run the `root.sh` script when prompted.

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

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

   If you install Oracle9*i* Real Application Clusters, you must run the `root.sh` script on every node in the cluster.

   When the `root.sh` script runs successfully, return to the Oracle Universal Installer, and click OK in the *Alert* window.

5. Provide responses to Oracle Enterprise Manager Configuration Assistant (EMCA) based on your selections.

If you selected...	You must...
Existing repository	Login to the database that contains the existing repository and provide the following repository connection information: ■ a repository owner ■ a database user name and password for the existing repository ■ a database service containing the existing repository, specified with: *hostname*:*port_number*:*SID* Then verify the configuration parameters. **See Also:** For more information on repository migration and upgrade, refer to *Oracle Enterprise Manager Configuration Guide*.

If you selected...	You must...
New repository	Login to the database in which you want to create the repository and provide the following repository connection information: ■ a database user name and password ■ a database service containing the new repository, using the following format: *hostname*:*port_number*:*SID* ■ role you will use to connect (for example, SYSDBA) Once EMCA connects to the database, you must provide the following: ■ database username and password of the owner for the new repository. (A default name is chosen, but you can choose any name.) ■ a default tablespace for the repository ■ a temporary tablespace for the repository **See Also:** For more information on creating a new repository, refer to *Oracle Enterprise Manager Configuration Guide*.

Note: The default port number used by most databases is 1521. Additional windows appear to help you create a repository in the selected database.

See Also: For more information on Oracle Enterprise Manager Configuration Assistant, refer to *Oracle Enterprise Manager Configuration Guide*.

6. If you use Enterprise Manager Configuration Assistant, click Close to exit. Otherwise, go to step 7.
7. The *End of Installation* window appears. To exit the Oracle Universal Installer, click Exit. To install additional products, click Next Install. Selecting Next Install returns you to the *File Locations* window.

See Also: Oracle Universal Installer creates a log file to keep an inventory of products that it installs on your system. For more information on the log file, see "Reviewing a Log of an Installation Session" on page 3-37.

Oracle Internet Directory Installation

The following table summarizes the steps you need to perform to install Oracle Internet Directory. Proceed to one of the following selections:

If Oracle database...	Then the...	Go to...
Release 1 (9.0.1) is already installed on the computer, but Oracle Internet Directory release 3.0.1 is not installed	*Using an existing instance* window appears and you are prompted for the SID you want to use for Oracle Internet Directory	Step 1 of "Oracle Internet Directory Installation" on page 3-27
release 1 (9.0.1) and Oracle Internet Directory release 3.0.1 are *not* installed on the computer	*Database Identification* window appears and Oracle9*i* database is automatically installed in the same Oracle home directory with Oracle Internet Directory release 3.0.1	Step 3 of "Oracle Internet Directory Installation" on page 3-27
release 3 (8.1.7) and Oracle Internet Directory release 2.1.1 or 2.1.1.1 are already installed on the computer	*Upgrade OID* window appears and prompts you to upgrade to Oracle9*i* database and Oracle Internet Directory release 3.0.1	"Migrating Oracle Internet Directory" on page 3-31

After selecting Oracle Internet Directory in the *Installation Types* window, the *Using an existing instance* window appears. Follow these procedures to install Oracle Internet Directory:

1. Choose between one of the following options:
   - To use the installed database with Oracle Internet Directory, select Yes. Click Next.
   - To use a different database with Oracle Internet Directory, select No. Click Next. Go to step 3.
2. The *Database Identification* window appears. Enter the SID of the installed database and click Next. Go to step 4.
3. The *Database Identification* window appears. Enter values for the Global Database Name and SID in the appropriate fields. Click Next.

In this field...	Enter the...
Global Database Name	Full database name that uniquely distinguishes the database from any other database in your network domain. For example: `sales.us.acme.com` where `sales` is the name you want to call your database, and `us.acme.com` is the network domain in which the database is located.
SID	System identifier, the database instance name that uniquely distinguishes it from any other database on your system. The SID automatically 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.

The *OID Database File Location* window appears.

4. Enter a directory location in which to install the Oracle Internet Directory database files. These database files contain tables specific to Oracle Internet Directory that were created during configuration.

> **Note:** Oracle Corporation recommends installing database files and Oracle software on separate drives. For more information about creating reliable system architecture, see "Using Optimal Flexible Architecture" on page 2-7.

5. Click Next.

   The *Summary* window appears.

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

7. Click Install.

   The *Install* window appears and displays a progress meter. The Installer goes through the install and relinking phases, so the meter adjusts for each phase completion.

   The following values are automatically set during installation:

Setting	Value
Use of an Encrypted Password	Yes
Encryption Schema	MD4
Approximate number of directory entries to be stored in Oracle Internet Directory	Under 10,000 entries
Password of the Administrator Distinguished Name	welcome

8. Run the `root.sh` script when prompted.

The Installer creates the `root.sh` script in the Oracle home directory and prompts you to run the script when it finishes installing Oracle products. The `root.sh` script sets the necessary file permissions for Oracle products and performs other `root`-related configuration activities. Log in as the `root` user and run the script. To run the `root.sh` script enter the following commands:

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

If you install Oracle9*i* Real Application Clusters, you must run the `root.sh` script on every node in the cluster.

When the `root.sh` script runs successfully, return to the Oracle Universal Installer. Click OK in the *Alert* window.

The *Configuration Tools* window appears at the end of installation and automatically starts the following assistants to create and configure your network and Oracle Internet Directory environments. Table 3–5 describes the configuration assistants.

Table 3–5 Configuration Assistants

The...	Starts...	And...
OID Configuration Assistant	In all cases	Creates Oracle Internet Directory tablespaces and schema in the Oracle9*i* database and starts the Oracle Internet Directory directory server. **Note:** If a database must be installed, the OID Configuration Assistant automatically launches the Oracle Database Configuration Assistant to create a database with the UTF8 character set. If you are doing a Custom Installation of OID, do not change the Global Database Name and SID in the *Database Identification* window, or you will not successfully install OID. Oracle Database Configuration Assistant allows you to change default passwords after the database is created. Do *not* use the Password Management button to change the default passwords at this time. You should change the passwords for SYS and SYSTEM only after the OID installation is complete.
Oracle Net Configuration Assistant	In all cases	Guides you to configure your Oracle Net listener networking software. See "Oracle Net Configuration Assistant" on page 1-10 for a description of the configuration procedures.

The *End of Installation* window appears if the configuration assistants are successful.

If a configuration assistant fails, the *Configuration Tools* window displays the results of running these assistants. Correct the cause of the failure. To re-install, click Retry, or to continue, click Next.

The *End of Installation* window appears.

9. To exit the Oracle Universal Installer, click Exit. If you want to install additional products, click Next Install. Selecting Next Install returns you to the *File Locations* window.

Note: If you install Oracle Internet Directory server, then Oracle Directory Integration Platform server is automatically installed. If you install Oracle Internet Directory client, then Oracle Directory Integration Platform client is automatically installed.

See Also: Oracle Universal Installer creates a log file to keep an inventory of products that it installs on your system. For more information on the log file, see "Reviewing a Log of an Installation Session" on page 3-37.

Migrating Oracle Internet Directory

If you intend to migrate an existing Oracle Internet Directory installation and Oracle8*i* Server, and you installed Oracle Internet Directory separately, then you must migrate the OID database when you upgrade Oracle Internet Directory.

See Also: For more information on migrating an OID database, refer to *Oracle Internet Directory Administrator's Guide*.

Preparing to Migrate Oracle Internet Directory

Before migrating Oracle Internet Directory, stop the following processes:

- Oracle listener server
- Oracle database server
- Oracle Internet Directory server

Starting Oracle Internet Directory Migration

The *Upgrade OID* window appears if you have a previously installed version of Oracle Internet Directory on your system. Follow these procedures to migrate Oracle Internet Directory:

1. To upgrade an existing Oracle8*i* database already configured for use with Oracle Internet Directory, click Yes.
2. Click Next.

   The *Oracle SID* window appears.
3. Enter the SID of the Oracle8*i* database that must be migrated.
4. Click Next.

   The *OID Password* window appears.
5. Enter the password for the Oracle Directory Server user (ODS by default) and Oracle Internet Directory administrator (welcome by default).
6. Click Next.
7. The *Configuration Tools* window appears and automatically starts the following assistants to upgrade your Oracle9*i* database and Oracle Internet Directory environments:

Table 3–6 Configuration Assistants

The...	Migrates...
Oracle Data Migration Assistant	Oracle8*i* database to Oracle9*i*.
OID Upgrade Assistant	Oracle Internet Directory release 2.1.1 or 2.1.1.1 to release 3.0.1.

Oracle Integration Server Installation

1. If the `oracle` user is not a member of the OSDBA group created in "Create UNIX Groups for Database Administrators" on page 2-10, 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 UNIX group name that serves as the OSDBA group. If a separate UNIX group serves as the OSOPER group, specify it in this window as well.
2. Click Next.
3. If the Oracle Universal Installer detects an earlier version of an Oracle database on your system, you are prompted to migrate 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 Oracle9*i* database. If you choose to migrate your database, go to step 7. If you choose not to migrate your database, proceed to the next step.

4. Click Next.

   The *Database Identification* window appears if an Oracle9*i* database is not already installed in the specified Oracle home directory.

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

In this Field...	Enter the...
Global Database Name	Full database name that uniquely distinguishes it from any other database in your network domain. For example: `sales.us.acme.com` where `sales` is the name you want to call your database and `us.acme.com` is the network domain where the database is located.
SID	System Identifier, the database instance name that uniquely distinguishes it from any other database on your system. The SID automatically defaults to the database name portion of the global database name (`sales` in the example above) until you reach 8 characters or enter a period. You can accept or change the default value.

   The *Database File Location* window appears.

6. In the Directory for Database Files field, enter the directory location of the database file, then click Next. Alternatively, to navigate to the directory location of the database file, use the *Browse...* button. Click Next.

   Note: Oracle Corporation recommends that database files and Oracle software files be installed on separate disks.

   The *Summary* window appears.

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

The *Install* window appears and displays a progress meter. The Installer goes through the install and relinking phases, so the meter adjusts for each phase completion.

8. Run the `root.sh` script when prompted.

   The Installer creates the `root.sh` script in the Oracle home directory and prompts you to run the script when it finishes installing Oracle products. The `root.sh` script sets the necessary file permissions for Oracle products and performs other `root`-related configuration activities. Log in as the `root` user and run the script. To run the `root.sh` script use the following command:

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

   When the `root.sh` script runs successfully, return to the Oracle Universal Installer, and click OK in the *Alert* window.

9. The *Configuration Tools* window appears at the end of installation, depending on the selections you made previously.

   Table 3–7 describes the configuration assistants.

Table 3–7 Configuration Assistants

The...	Starts...	And...
Oracle Database Configuration Assistant	If you selected *not* to migrate an existing database	Automatically creates an Oracle9*i* database.
Oracle Data Migration Assistant	If you selected to migrate an existing database	Migrates the selected database to Oracle9*i*.
Oracle Net Configuration Assistant	In all cases	Guides you to configure your Oracle Net listener networking software. See "Oracle Net Configuration Assistant" on page 1-10 for a description of the configuration procedures.
Oracle Workflow Configuration Assistant	In all cases.	Installs and configures Oracle Workflow schema in the Oracle9*i* database.

> **See Also:** For more information on Oracle Workflow Configuration Assistant and post-installation procedures, refer to *Oracle Workflow Server Installation Notes*.

The *End of Installation* window appears if the configuration assistants are successful.

If a configuration assistant fails, the *Configuration Tools* window displays the results of running these assistants. Correct the cause of the failure and click Retry to re-install, or click Next to continue.

The *End of Installation* window appears.

10. Click Exit to exit the Oracle Universal Installer, or click Next Install to install additional products. Selecting Next Install returns you to the *File Locations* window.

> **See Also:** For more information on the log file, see "Reviewing a Log of an Installation Session" on page 3-37.

Oracle9*i* Management and Integration Custom Installation

When you select Custom Installation, the *Available Product Components* window appears. Follow these procedures to perform an Oracle9*i* Management and Integration Custom installation:

> **Note:** For a list of products installed with each installation type, see the appropriate product section in Appendix A, "Oracle9i Components".

---

1. Select products you want to install or deselect products you do not want to install, then click Next.
2. Provide responses to any window prompts that appear.

   The *Summary* window appears.
3. The Installer notifies you if you do not have enough disk space to install the products you have selected. If necessary, deselect products in order to select a configuration suitable for your system. If this is not necessary, click Install.

   The *Install* window appears and displays a progress meter. The Installer goes through the install and relinking phases, so the meter adjusts for each phase completion.

4. Run the `root.sh` script when prompted.

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

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

   When the `root.sh` script runs successfully, return to the Oracle Universal Installer, and click OK in the *Alert* window.

5. The *Configuration Tools* window may appear at the end of installation, depending on the selections you made previously. The configuration assistants help to create and configure your database and network environment.

   Table 3–8 describes the configuration assistants.

Table 3–8 Configuration Assistants

The...	Starts...	And...
Apache Web Server Configuration Assistant	If you selected the Oracle HTTP Server in the *Available Products* window	Starts the HTTP Listener in non-SSL mode on port 7777.
Oracle Database Configuration Assistant	If you selected: ■ Oracle9*i* Server in the product selection screen AND ■ you chose not to migrate AND ■ you selected Yes when prompted to install an Oracle9*i* database	Automatically creates an Oracle9*i* database. See "Oracle Database Configuration Assistant" on page 1-7.
Oracle Data Migration Assistant	If you selected to migrate a database	Migrates the selected database to Oracle9*i*.

Table 3–8 Configuration Assistants

The...	Starts...	And...
Oracle Enterprise Manager Configuration Assistant	If you selected to install Oracle Management Server in the product selection screen	Allows you to configure the local Oracle Management Server to use an existing release 9.0.0 repository or to create a new release 9.0.1 repository.
Oracle Net Configuration Assistant	If you selected any products that require network configuration	Automatically configures your Oracle Net listener networking software. See "Oracle Net Configuration Assistant" on page 1-10 for a description of the configuration procedures.

The *End of Installation* window appears if the configuration assistants are successful.

If a configuration assistant fails, the *Configuration Tools* window displays the results of running these assistants. Correct the cause of the failure. To re-install, click Retry or to continue, click Next.

The *End of Installation* window appears.

6. To exit the Oracle Universal Installer, click Exit. Or to install additional products, click Next Install. Selecting Next Install returns you to the *File Locations* window.

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 the `oraInventory` directory is defined in the `/etc/oraInst.loc` file for AIX, and the `/var/opt/oracle/oraInst.loc` file on HP, Linux, Solaris, and Tru64.

The log file of the most recent installation is *`oraInventory_location`*`/logs/installActions.log`. Previous installation log files use the log file name format:

`installActions`*`date_time`*`.log`

For example:

```
installActions2001-02-14_09-00-56-am.log
```

Note: 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 `make.log` file in `$ORACLE_HOME/install` directory contains a log of every make file action executed during the installation process. The `make.log` file also records any link errors during installation. Do not delete or alter the `make.log` file.

Completing Installation of Oracle9*i* Server Enterprise Edition

If no errors occurred during installation, your installation is complete. If the `olap.key` configuration file did not get created due to errors, you must perform the following steps. For information about installation errors, read the OLAP installation log in `$ORACLE_HOME/install/olap.log`.

1. Ensure that you have installed all required patches. For information on operating system patches, see Chapter 2, "Pre-Installation Requirements".
2. To configure `olap.key`, use the following command:

   ```
   $ $ORACLE_HOME/olap/admin/regctrl /infile olap.cfg
   ```

Non-Interactive Installation and Configuration

You can perform a non-interactive installation of Oracle9*i* products by supplying the Oracle Universal Installer with a response file. The Installer uses the variables and values contained in the response file to provide answers to some or all of the Installer prompts. If you include responses for all of the Installer's prompts in the response file, then you can run a non-interactive installation that displays no graphical output. You can also run Oracle Data Migration Assistant, Oracle Net Configuration Assistant, Oracle Database Configuration Assistant, and Oracle Enterprise Manager Configuration Assistant in non-interactive mode by using response files.

Preparing a Response File

Oracle Corporation provides response file templates for each installation category and type, and for configuration tools. They are located in the `response` directory on the Oracle9*i* CD-ROM. Table 3–9 lists the response files included on the Oracle9*i* CD-ROM.

Table 3–9 Response Files

File Name	Description
`enterprise.rsp`	Enterprise Edition Installation of Oracle9*i* Server
`standard.rsp`	Standard Edition Installation of Oracle9*i* Server
`custom.rsp`	Custom Edition Installation of Oracle9*i* Server
`oms.rsp`	Oracle Management Server installation of Oracle9*i* Management and Integration
`oid.rsp`	Oracle Internet Directory installation of Oracle9*i* Management and Integration
`infrastructure.rsp`	Custom installation of Oracle9*i* Management Infrastructure
`clientadmin.rsp`	Administrator installation of Oracle9*i* Client
`clientruntime.rsp`	Runtime installation of Oracle9*i* Client
`clientcustom.rsp`	Custom installation of Oracle9*i* Client
`dbca.rsp`	Oracle Database Configuration Assistant
`netca.rsp`	Oracle Net Configuration Assistant
`emca.rsp`	Oracle Enterprise Manager Configuration Assistant

To use a response file, copy the response file from the Oracle9*i* CD-ROM to a directory on your system. For example:

```
$ cd cdrom_mount_point_directory/response
$ cp enterprise.rsp local_directory
```

Edit the response file with any text editor. Each response file contains instructions for configuring it properly to serve your requirements. Custom response files require extensive editing before you can use them for a non-interactive session.

Installing with a Response File

To use a response file with the Oracle Universal Installer, follow the steps described in the section in this chapter called "Oracle Universal Installer" on page 3-11. Refer to the response file for required configuration information and parameters by specifying the response file location when you start the Installer. Use the following command format:

```
$ /<cdrom_mount_point_directory>/runInstaller [-silent] -responseFile filename
```

Select the `-silent` parameter to perform a completely non-interactive installation or configuration. In non-interactive mode, the DISPLAY environment variable must still be set as described in "DISPLAY" on page 2-18.

Configuring With a Response file

To use a configuration assistant in non-interactive mode, do one of the following:

- Configure an Oracle Universal Installer response file to spawn the non-interactive configuration assistant.
- Run the configuration assistant in stand-alone mode. Use the following command format:

  ```
  $ assistant_name [-silent] -responseFile filename
  ```

  In the preceding command, *`assistant_name`* is the configuration assistant that you want to run and *`filename`* is the response file for that assistant.

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

If you perform an Oracle9*i* Enterprise Edition installation in non-interactive mode, then Oracle Net Configuration Assistant will not configure your system at the end of the installation. After the installation, run the Oracle Net configuration with the Oracle Net Configuration Assistant by executing the `netca` command from the Oracle home directory.

Note: The Installer or configuration assistant fails if you attempt a non-interactive session without appropriately configuring a response file. See "Response File Error Handling" on page 3-46 for information on troubleshooting a failed non-interactive installation.

See Also: For more information on preparing and using non-interactive installation and configuration assistant response file scripts, refer to *Oracle Universal Installer Concepts Guide*. In addition, if you are an Oracle Support customer, you can find new bulletins and responses to questions about non-interactive installation and configuration at the Oracle MetaLink web site:

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

First Time Installation in Non-interactive Mode

During an interactive installation, the `orainstRoot.sh` script creates the `oraInst.loc` file. If you have not previously installed Oracle products on a system, you must manually create the `oraInst.loc` file before running the Installer in non-interactive mode. This file specifies the `oraInventory` directory where the Installer creates the inventory of Oracle products installed on the system. Read the `/tmp/silentInstall.log` file for information about running the `orainstRoot.sh` script.

Note: Before creating the `oraInst.loc` file, read and complete the tasks described in Chapter 1, "Oracle9i Installation Planning" and Chapter 2, "Pre-Installation Requirements".

To create the `oraInst.loc` file on AIX:

1. Log in as the `root` user by entering:

   ```
   $ su root
   ```

2. If the `/etc` directory does not already exist on your system, create it by entering the command:

   ```
   # mkdir /etc
   ```

3. Change directory to the `/etc` directory:

```
# cd /etc
```

4. Using a text editor, create a file called `oraInst.loc` that includes the following two lines:

   ```
   inventory_loc=inventory_directory
   inst_group=
   ```

   On the first line, set the `inventory_loc` parameter to the directory defined by the ORACLE_BASE variable and the file named `oraInventory`. For example, if the value of the ORACLE_BASE variable is `/uo1/app/oracle`, then set `inventory_directory` to `/uo1/app/oracle/oraInventory`.

   On the second line, include, but do not set, the `inst_group=` parameter.

   The `oraInst.loc` file should be owned by both the `oracle` user and the ORAINVENTORY group.

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

To create the `oraInst.loc` file on HP, Linux, Solaris, or Tru64:

1. Log in as the `root` user by entering:

   ```
   $ su root
   ```

2. If the `/var/opt/oracle` directory does not already exist on your system, create it by entering the command:

   ```
   # mkdir /var/opt/oracle
   ```

3. Change directory to the `/var/opt/oracle` directory:

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

4. Using a text editor, create a file called `oraInst.loc` that includes the following two lines:

   ```
   inventory_loc=inventory_directory
   inst_group=
   ```

   On the first line, set the `inventory_loc` parameter to the directory defined by the ORACLE_BASE variable and the file named `oraInventory`. For example, if the value of the ORACLE_BASE variable is `/uo1/app/oracle`, then set `inventory_directory` to `/uo1/app/oracle/oraInventory`.

   On the second line, include, but do not set, the `inst_group=` parameter.

The `oraInst.loc` file should be owned by both the `oracle` user and the ORAINVENTORY group.

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

At this point, you are ready to run the Installer in non-interactive mode.

Running EMCA in Non-interactive Mode

There are two methods to run Enterprise Manager Configuration Assistant (EMCA):

- As a stand-alone procedure
- As part of a non-interactive installation session

Using either method you can only create a new repository. You cannot delete, upgrade, or edit a repository using EMCA in non-interactive mode.

EMCA Non-interactive Mode Stand-alone Method

To run stand-alone EMCA in non-interactive mode:

1. Complete the pre-installation steps listed in "Setup Tasks to Perform as the oracle User" on page 2-17.
2. Verify that the Oracle Management Server is installed on the node where you intend to run EMCA.
3. Copy the `emca.rsp` response file to a local directory.
4. Use a text editor to edit the `emca.rsp` file according to the instructions in the response file.

> **Caution:** Ensure that the repository user's USERNAME variable that you specify in the `emca.rsp` file is unique across your network. If the USERNAME variable is not unique, agent queue files will go out of sync with Oracle Management Server repositories. Jobs and events registered against the agents will not work.

5. Change to the `$ORACLE_HOME/bin` directory.
6. Enter:

```
$ emca  -responseFile path/emca.rsp -silent
```

In the preceding command, *path* is the directory path to the response file.

EMCA Non-interactive Mode and Non-interactive Installation Session Method

To run EMCA in non-interactive mode as part of a non-interactive installation session:

1. Copy an installation response file from the Oracle9*i* CD-ROM to a local directory.

   Choose the installation response file that corresponds to the type of installation you are performing. For example, choose the `enterprise.rsp` file to perform an Enterprise Edition installation of Oracle9*i* Server.

2. Use a text editor to edit the response file according to the instructions in the response file.

   Ensure that Oracle Management Server will be installed as part of the non-interactive installation. The Oracle Management Server is only available for installation in the following installation response files:

   ```
   enterprise.rsp
   custom.rsp
   oms.rsp
   infrastructure.rsp
   ```

3. Edit the following parameters in the `oracle.sysman.oms_9.0.1.0.0` section of the installation response file to ensure that EMCA is properly launched in non-interactive mode:

   ```
   emca
   s_responseFileEMCA
   ```

   Refer to the installation response file for more detailed instructions on setting these variables.

   The following is an example of the `oracle.sysman.oms_9.0.1.0.0` section of the installation response file:

   ```
   #------------------------------------------------------------
   # Name                  : emca
   # Datatype              : StringList
   # Description           : List of Optional Config tools to launch.
   #                       : Following are possible values
   ```

```
# emca              :Enterprise Manager Configuration Assistant
# Example value     : {"emca"}
# Default value     : {"emca"}
#-------------------------------------------------------------

OPTIONAL_CONFIG_TOOLS={"emca"}

#-------------------------------------------------------------
# Name              : s_responseFileEMCA
# Datatype          : String
# Description       : Path to a customized copy of a response file for EMCA
#                   : based on the emca.rsp provided with the release
# Valid values      : Full path to any valid EMCA response file
# Example value     :"/TEMP/EMCA.RSP"
# Default value     : None
# Mandatory         : Yes
#-------------------------------------------------------------

s_responseFileEMCA="/TEMP/EMCA.RSP"
```

4. Copy the `emca.rsp` response file to a local directory.
5. Use a text editor to edit it according to the instructions in the response file.

> **Note:** Ensure that the repository user's USERNAME variable that you specify in the `emca.rsp` file is unique across your network.

6. Change directory to the directory where the Oracle Universal Installer is located. The installation response file automatically spawns the EMCA response file when the non-interactive installation is complete. Run the installation response file with the following command:

   ```
   $ runInstaller -responseFile path/installation _rersponse _file_name -silent
   ```

Configuration steps for OID in Non-interactive Mode

At the end of a non-interactive installation, the Oracle Internet Directory (OID) server is started on port 5000. Perform the following steps to bring up the server on port 389:

1. Shutdown the OIDLDAPD and OIDMON processes, and the database with the following commands:

   ```
   $ oidctl server=oidldapd instance=1 stop
   ```

```
$ oidmon stop
```

2. As `root` user, run the `$ORACLE_HOME/root.sh` script:

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

3. Restart the OIDLDAPD and OIDMON processes, and the database with the following commands:

```
$ oidmon start
$ oidctl server=oidldapd instance=1 start
```

Response File Error Handling

The success or failure of the installation is logged in the `silentInstall.log` file. If an `oraInventory` directory 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 saved in the *`oraInventory_location`*`/logs/silentInstall.log` file.

A non-interactive installation fails:

- if you do not specify a response file
- if you attempt a non-interactive installation with an incorrect or incomplete response file
- if you attempt a non-interactive installation and the Installer encounters an error, such as insufficient disk space

The Installer or configuration assistant validates the response file at runtime. If the validation fails, the non-interactive installation or configuration process ends. The Installer treats values for parameters that are of the wrong context, format, or type as if no value was specified in the file. Variables that are outside any section are ignored.

Information about a failure is recorded in the installation session's log file.

> **See Also:** For more information on the `oraInventory` directory and installation log files, see "Reviewing a Log of an Installation Session" on page 3-37.

Oracle Real Application Clusters

This section describes the following:

Oracle Real Application Clusters ORACLE_HOME

To ensure that the installation succeeds on the remote nodes you choose, select a path for ORACLE_HOME that exists on all chosen nodes and is writable. Otherwise, installation on the remote nodes will fail. No error message will indicate this failure.

Oracle Real Application Clusters Installation on Cluster Filesystem

Oracle Universal Installer supports Real Application Clusters installation on a Cluster Filesystem for Compaq Tru64 UNIX. The Installer detects the Cluster Filesystem and files are not copied to the remote nodes. Network Configuration Assistant and Oracle Database Configuration Assistant are also Cluster Filesystem-aware.

Oracle Real Application Clusters Installed Software Location

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

> **See Also:** For more information on installing Oracle Real Application Clusters, refer to *Oracle9i Real Application Clusters Installation and Configuration*.

4

Post-Installation

After completing the installation, you must perform certain post-installation steps and configure Oracle9*i*. This chapter describes the required steps as well as some optional ones.

> **Note:** This chapter describes basic configuration only. See the *Oracle9i Administrator's Reference Release 1 (9.0.1) for UNIX Systems* and the product administration and tuning guides for more sophisticated configuration and tuning information.

Configuration Tasks to Perform as the root User

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

- Creating Additional UNIX Accounts
- Verifying Database File Security
- Changing Group Membership of the Apache User
- Automating Database Startup and Shutdown for HP, Linux and Solaris (Optional)
- Automating Database Startup and Shutdown for AIX (Optional)
- Automating Database Startup and Shutdown for Tru64 (Optional)

Creating Additional UNIX Accounts

If necessary, create additional UNIX accounts. Each DBA user on the system must be a member of the OSDBA group.

Verifying Database File Security

If you configure Oracle9*i* in a way similar to the 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.

To prevent unauthorized access to secure data, you must protect your files. The file privileges and recommended ownership are as follows:

- The `oracle` account should have read, write, and execute privileges for all files and directories in the Oracle9*i* installation.
- The `ORAINVENTORY` group should have read, write, and execute privileges on the `oraInventory` directory, but should not have write permissions on anything else.
- No user other than the `oracle` user or the `ORAINVENTORY` group should have write access on any files or directories in the Oracle9*i* installation.

Table 4–1 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----`	The `oracle` user and `ORAINVENTORY` group are the only users that should have read privileges for all databases, redo logs, and control files to maintain discretionary access to data.
`$ORACLE_HOME/bin/`	751 `rwxr-x--x`	The `oracle` user should have read, write and execute privileges and all users should have execute privileges to this directory.
The `oracle` executable, and the following network executables: `$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 `OSDBA` group, regardless of who executes them.
All other executables	751 `rwxr-x--x`	The `oracle` user should have read, write and execute privileges and all users should have execute privileges to this directory.
`$ORACLE_HOME/lib/`	755 `rwxr-xr-x`	The `oracle` user should have read, write and execute privileges and all other users should have read and execute privileges to this directory.
All files under `$ORACLE_HOME/lib/`	755 `rwxr-xr-x`	The `oracle` user should have read, write and execute privileges and the other users should have read-only privileges to these files.
`$ORACLE_HOME/rdbms/log`	751 `rwxr-x--x`	The `oracle` user and `ORAINVENTORY` group have restricted access to files in the directory. The other users have execute privileges.
Product subdirectories such as `$ORACLE_HOME/sqlplus` or `$ORACLE_HOME/rdbms`	751 `rwxr-x--x`	The `oracle` user and `ORAINVENTORY` group have restricted access to log files.The other users have execute privileges.

Table 4–1 Access Permissions on Oracle Directories and Files

Directories/Files	Permissions	Comments
Files in `$ORACLE_HOME/sqlplus` or `$ORACLE_HOME/rdbms`	644 `rw-r--r--`	The `oracle` user should have read and write privileges and the other users should have read-only privileges to these files.

`$ORACLE_HOME/network \ /trace`	777
	`rwxrwxrwx`
	or
	730
	`rwx-wx---`
		The `oracle` user and members of the `ORAINVENTORY` group have access to trace files when 730 is used in the production environment.777 allows broad access to view and create trace files during development.

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.

Changing Group Membership of the Apache User

After installing Oracle9*i*, the APACHE account access to the `oraInventory` directory needs to be removed in order to ensure database security. Perform the following tasks:

1. Create a new group to which no other group or user has access.
2. Assign ownership of this group to Apache.
3. Change the APACHE account primary group identifier (GID) from the one that has ownership of the `oraInventory` directory (typically `ORAINVENTORY`) to the new group name.

Automating Database Startup and Shutdown for HP, Linux and Solaris (Optional)

Oracle Corporation recommends that you configure your system to automatically start Oracle databases when your system starts up, and to shut down Oracle databases when your system shuts down. Automatic database startup and shutdown protects against improper shutdown of the database.

The `dbstart` and `dbshut` 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 the dbstart script automatically start up databases sid1, sid2, and sid3, and the dbshut script shut down only databases sid1 and sid2. You can, however, specify that the dbshut script shut down a set of databases while the dbstart script is not used at all. To do this, include a dbshut entry in the shutdown file but omit the dbstart entry from the system startup files.

> **See Also:** For more information on system startup and shutdown procedures, refer to the init command in your UNIX system documentation.

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

1. Edit the /var/opt/oracle/oratab file for Solaris and Linux and /etc/oratab file for AIX, HP and Tru64.

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

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

   In the preceding command, Y or N specifies whether you want the dbstart and dbshut scripts to start up and shut down the database. For each database that you want to start up, find the *ORACLE_SID* entry identified by the *sid* in the first field. Change the last field for each to Y.

2. In the /etc/init.d directory, create a dbora script similar to the following, if it does not already exist. Be sure to give the full path of the dbstart utility.

```
#!/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/9.0.1
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
```

3. Create symbolic links to the `dbora` script in the appropriate run-level script directories, as follows:

```
# ln -s /etc/init.d/dbora /etc/rc0.d/K10dbora
# ln -s /etc/init.d/dbora /etc/rc3.d/S99dbora
```

Automating Database Startup and Shutdown for AIX (Optional)

Oracle Corporation recommends that you configure your system to automatically start Oracle databases when your system starts up, and to shut down Oracle databases when your system shuts down. Automatic database startup and shutdown protects against improper shutdown of the database.

Automating Database Startup

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

1. Edit the `/etc/oratab` file.

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

ORACLE_SID:ORACLE_HOME: {Y|N}

In the preceding command, Y or N specifies whether you want the dbstart and dbshut scripts to start up and shut down the database.

2. For each database that you want to start up, find the *ORACLE_SID* entry identified by the *sid* in the first field. Change the last field for each to Y.

3. Add the dbstart script to the /etc/inittab file:

```
# mkitab "oradb:2:wait:/bin/su oradb -c|/$ORACLE_HOMES/bin/dbstart"
```

In the preceding command, *oradb* is the identifier of the oracle user for which you want to start the database.

Automating Database Shutdown

Automate database and system shutdown by creating a script, shut, to start dbshut and the system executable /etc/shutdown. Complete the following steps to create the script:

1. If you have not already done so, edit the database entries of your /etc/oratab file to enable dbstart and dbshut, as described in step 1 of the dbstart instructions.

2. As root, create the shut shell script:

```
# cd /etc
cat > shut << EOF
? su oracle_owner -c /usr/oracle/bin/dbshut
? /etc/shutdown $* \
? [Ctrl-D]
# chmod u+x shut
```

3. Execute the following command to run the shut script and shut down the database:

```
# /etc/shut -h now
```

This closes Oracle databases and shuts down the system with the specified options.

Automating Database Startup and Shutdown for Tru64 (Optional)

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

1. Log in as `root` user.
2. Edit the `/etc/oratab` file.

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

   `ORACLE_SID:ORACLE_HOME: {Y|N}`

   In the preceding command, Y or N specifies whether you want the `dbstart` and `dbshut` scripts to start up and shut down the database.
3. For each database that you want to start up, find the *`ORACLE_SID`* entry identified by the *`sid`* in the first field. Change the last field for each to Y.
4. Change directories to `/sbin/init.d`.
5. Create a file named `oracle`, and use `chmod` to set the privileges to 750.

   Note: This script assumes that a password is not set for the listener. If a password is set, the listener will not be stopped.

   The ORACLE_HOME and ORACLE variables are for example only. Use information as appropriate for your installation.

   Add the following contents to the `/sbin/init.d/oracle` file:

```
#!/bin/sh
#
# change the value of ORACLE_HOME to be correct for your
# installation

ORACLE_HOME=/opt/oracle/product/9.0.1
PATH=${PATH}:$ORACLE_HOME/bin
HOST=‘hostname‘
#
# change the value of ORACLE to the login name of the
# oracle owner at your site
#
ORACLE=oracle
export ORACLE_HOME PATH
#
if [ ! "$2" = "ORA_DB" ] ; then
    rsh $HOST -l $ORACLE /sbin/init.d/oracle $1 ORA_DB
    exit
fi
#
```

```
LOG=$ORACLE_HOME/startup.log
touch $LOG
chmod a+r $LOG
#

case $1 in
'start')
        echo "$0: starting up" >> $LOG
        date >> $LOG
        # Start Oracle Net
        if [ -f $ORACLE_HOME/bin/tnslsnr ] ;
        then
                echo "starting Oracle Net listener"
                $ORACLE_HOME/bin/lsnrctl start >> $LOG 2>&1 &
        fi
        echo "starting Oracle databases"
        $ORACLE_HOME/bin/dbstart >> $LOG 2>&1
        ;;
'stop')
        echo "$0: shutting down" >> $LOG
        date >> $LOG
        # Stop Oracle Net
        if [ -f $ORACLE_HOME/bin/tnslsnr ] ;
        then
                echo "stopping Oracle Net listener"
                $ORACLE_HOME/bin/lsnrctl stop >> $LOG 2>&1
        fi
        echo "stopping Oracle databases"
        $ORACLE_HOME/bin/dbshut >> $LOG 2>&1
        ;;
*)
        echo "usage: $0 {start|stop}"
        exit
        ;;
esac
#
exit
```

6. Change the `.rhosts` file in the `oracle` user login home directory to allow `root` login access to the account.

   your_host_name `root`

7. Link files into the startup and shutdown directories by using the `'ln -s'` command.

```
# ln -s /sbin/init.d/oracle /sbin/rc3.d/S99oracle
# ln -s /sbin/init.d/oracle /sbin/rc0.d/K01oracle
```

This file automatically starts and stops Oracle9*i* when the system is started or stopped.

Configuration Tasks to Perform as the oracle User

Perform the following tasks as the `oracle` user.

- Updating UNIX Account Startup Files
- Setting Environment Variables
- Initializing the oraenv Script
- Applying Any Required Oracle Patches
- Backing Up the root.sh Script
- Setting Initialization Parameters

Updating UNIX Account Startup Files

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

Setting Environment Variables

Set the following environment variables in the `.profile` or `.login` file of the `oracle` user before using Oracle9*i* products. The settings that you use here should correspond to the settings used during installation as described in "Set Environment Variables" on page 2-17. 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
```

Table 4–2 describes the Environment Variable Settings.

Caution: Do not define environment variables with names that are identical to those used for Oracle processes such as CKPT, PMON, and DBWR.

Table 4–2 Environment Variable Settings

Environment Variable	Recommended Setting
CLASSPATH	Set the CLASSPATH variable to ensure for Java functionality. The CLASSPATH variable is different for various products. CLASSPATH must include the following: *JRE_Location/lib:* $ORACLE_HOME/JRE/lib/rt.jar:$ORACLE_HOME/jlib/<product jar file>:$ORACLE_HOME/*product*/jlib/*product jar* \ *file* **Note:** The *JRE_Location* variable is defined as $ORACLE_HOME/JRE For more information on setting the CLASSPATH variable, refer to the Oracle9*i* Java documentation.
LD_LIBRARY_PATH	Set the LD_LIBRARY_PATH variable to include $ORACLE_HOME/lib.
ORACLE_HOME	Set the ORACLE_HOME variable to specify the directory containing the Oracle software for a particular release. The OFA recommended value is: $ORACLE_BASE/product/*release* For example, if the ORACLE_BASE variable is /u01/app/oracle, then the ORACLE_HOME variable would be: /u01/app/oracle/product/9.0.1
ORACLE_SID	Set the ORACLE_SID variable to specify the name of the Oracle Server instance name. Oracle Corporation recommends restricting it to no more than four characters to avoid filename problems on different operating systems because the *sid* is incorporated in many files. 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 installActions.log file located in the *oraInventory_location*/logs directory. The *oraInventory_location* directory is defined in the /var/opt/oracle/oraInst.loc file in HP, Linux, Solaris and Tru64 and /etc/oraInst.loc file in AIX.

Table 4–2 Environment Variable Settings

Environment Variable	Recommended Setting
PATH	Make sure the new `$ORACLE_HOME/bin` directory is included in the PATH setting. AIX Path is: `$ORACLE_HOME/bin`, `/usr/bin`, `/etc`, `/usr/lbin`, `/usr/bin/X11` and `/usr/local/bin`, if it exists HP Path is: `$ORACLE_HOME/bin`, `/usr/ccs/bin`, `/usr/bin`, `/etc`, `/usr/bin/X11` and `/usr/local/bin`, if it exists Linux Path is: `$ORACLE_HOME/bin`, `/usr/bin`, `/bin`, `/usr/bin/X11` and `/usr/local/bin`, if it exists Solaris Path is: `$ORACLE_HOME/bin`, `/usr/ccs/bin`, `/usr/bin`, `/etc`, `/usr/openwin/bin` and `/usr/local/bin`, if it exists Tru64 Path is: `$ORACLE_HOME/bin`, `/usr/bin`, `/etc`, `/usr/bin/X11` and `/usr/local/bin`, if it exists See Chapter 2, "Pre-Installation Requirements" for other PATH requirements.
TNS_ADMIN	Set the TNS_ADMIN variable to the location of the Oracle Net configuration files. This variable only needs to be set if Oracle Net configuration files are not located in the default `/var/opt/oracle` or `$ORACLE_HOME/network/admin` directory for Solaris and `/etc` directory for AIX, HP, Linux and Tru64. For example, if `tnsnames.ora` is located in the `/tns` directory, set TNS_ADMIN variable to `/tns`. Oracle products look for the `tnsnames.ora` file in the following order: 1. `tnsnames.ora` file in the current user's home directory. 2. `TNS_ADMIN/tnsnames.ora` 3. `/var/opt/oracle/` for Solaris and `/etc` for AIX, HP, Linux and Tru64. 4. `$ORACLE_HOME/network/admin/` Check that the `tnsnames.ora` file exists in one of these locations; otherwise, you might not be able to connect to a database through Oracle Net using local naming.

Table 4–2 Environment Variable Settings

Environment Variable	Recommended Setting
TWO_TASK	Set the TWO_TASK variable to the Oracle Net connect string alias defined in the `tnsnames.ora` file that client software will use by default to connect to a server. For more information on net service names, refer to the *Oracle9i Net Services Administrator's Reference* and the *Oracle9i Administrator's Reference Release 1 (9.0.1) for UNIX Systems*.

Initializing the oraenv Script

You can use the `oraenv` script to set a common environment for Oracle software users.

Single-Instance Machine

On a single-instance machine, set the ORACLE_SID environment variable in the `.profile` or `.login` file of the `oracle` user account. Enter the following commands to initialize the `oraenv` 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
```

Note: The C shell uses the `coraenv` command instead of the `oraenv` command.

Multiple-Instance Machine

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

Table 4–3 describes the Bourne or Korn shells for UNIX platforms.

Table 4–3 Bourne or Korn shell for UNIX platforms

Platforms	Bourne or Korn Shell

Solaris	`#!/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`

AIX, HP, Linux and Tru64	`#!/usr/bin/sh`
	`echo "The SIDs on this machine are:"`
	`cat /etc/oratab | awk -F: '{print $1}' | grep -v "#"`
	`ORAENV_ASK="YES"`
	`. /usr/local/bin/oraenv`

Table 4–4 describes the C shells for UNIX platforms.

Table 4–4 C shell for UNIX platforms

Platforms	C shell

Solaris	`#!/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`

AIX, HP, Linux and Tru64	`#!/usr/bin/csh`
	`echo "The SIDs on this machine are:"`
	`cat /etc/oratab | awk -F: '{print $1}' | grep -v "#"`
	`set ORAENV_ASK="YES"`
	`source /usr/local/bin/coraenv`

Other Oracle User Startup Files

To create the same environment for all Oracle software user accounts, modify each `oracle` user startup file to include the following addition at the end of the file:

- For `.profile` files used by the Bourne or Korn shells, add:

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

- For `.login` files used by the C shell, add:

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

- The ORACLE_HOME and PATH environment variables are described in "Setting Environment Variables" on page 4-10.

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 `oratab` file. The `oratab` file is located in the `/var/opt/oracle` directory on Solaris and in the `/etc` directory on AIX, HP, Linux and Tru64.

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

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

In the preceding command, 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.

Applying Any Required Oracle Patches

The Oracle9*i* release 1 (9.0.1) software includes patches that must be applied to Oracle9*i* or other products. Patches are available on the Oracle9*i* CD-ROM in the *cd_rom_mount_point*`/patch` directory. Review the `README` file included with each patch for installation instructions.

Backing Up the root.sh Script

Oracle Corporation recommends that you back up the `root.sh` script after a successful product installation. If you install another product category later into the same Oracle home directory, then the Oracle Universal Installer replaces the contents of the existing `root.sh` script during the installation. If after a later installation you require information from the original `root.sh` script, then you can recover it from the backed up `root.sh` file.

For example, if you install Oracle9*i* Management Infrastructure into the same Oracle home directory as a successful Oracle9*i* Server installation, then the Oracle Universal Installer replaces the contents of the existing `root.sh` script during the installation. Backing up the `root.sh` file after each product installation insures that you have all `root.sh` files available for reference if necessary.

Setting Initialization Parameters

When you create a typical startup database using Oracle Database Configuration Assistant, the `init`*`sid`*`.ora` parameters are automatically set. Change initialization parameters to configure and tune the system for optimal performance. The default `init`*`sid`*`.ora` file shipped with the distribution is located in the `$ORACLE_BASE/admin/`*`sid`*`/pfile` directory. A template `init.ora` file is also in the `$ORACLE_HOME/dbs` directory. The file contains settings for small, medium, and large databases, with the settings for medium and large databases commented out in the file. The size settings are relative to each other, but do not represent an empirical size of the database.

Manually modify the initialization parameters in the `init`*`sid`*`.ora` file with a UNIX text editor. To activate the modified `init`*`sid`*`.ora` file, shut down and restart the database.

Oracle Corporation recommends that you not use symbolic character representations such as question marks (?) for the ORACLE_HOME environment variable in parameter files, as they might lead to startup errors.

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

For example, change:

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

to:

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

> **See Also:** For more information on the `init`*`sid`*`.ora` parameters and other tuning and configuring initialization parameters, refer to the *Oracle9i Administrator's Reference Release 1 (9.0.1) for UNIX Systems*.

Post-Installation for Installed Oracle Products

Perform the following required post-installation steps as necessary for your installation. Not all products require post-installation steps.

- Configuring Shared Server Parameters
- Configuring Oracle Internet Directory
- Configuring Oracle Net

Configuring Shared Server Parameters

Oracle servers configured with Shared Server require a higher setting for the SHARED_POOL_SIZE initialization parameter, or a custom configuration that uses the LARGE_POOL_SIZE initialization parameter. If you installed your server with Oracle Universal Installer, then the value of the SHARED_POOL_SIZE parameter is set automatically by Oracle Database Configuration Assistant. However, if you created a database manually, increase the SHARED_POOL_SIZE parameter in the `init`*`sid`*`.ora` file. Typically, you should add 1 KB for each concurrent user.

Configuring Oracle Internet Directory

If you upgrade an existing version of Oracle Internet directory, then you must perform the following post-upgrade task.

Enter the following command:

```
ldapmodify -a -c -D superDN -w superPwd -h host -p port -v -f \
$ORACLE_HOME/ldap/admin/odi.ldif
```

In the preceding command, *`superDN`* is the OID superuser distinguished name *`superPwd`* is the password of the OID superuser, *`host`* is the host name of the OID server, and *`port`* is the port number on which the OID server is running.

Configuring Oracle Net

Basic configuration of Oracle Net is done by Oracle Net Configuration Assistant when it is started by Oracle Universal Installer during installation.

Verify and complete your initial configuration with the following steps:

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

   ```
   listener_name 1521/tcp            #Oracle Net listener
   ```

   In the preceding command, 1521 is the default port number. If you chose a different port when you configured the Oracle Net listener, specify that port in the `/etc/services` file.

2. Check the status of the listener following installation using 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 the listener is not running, start it by using 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.

> **See Also:** For more information on configuring a complete Oracle network, refer to the *Oracle9i Net Services Administrator's Reference*.
>
> For more information on how Oracle Net Configuration Assistant configures your installation or how to run it as a stand-alone tool, refer to "Oracle Net Configuration Assistant" on page 1-10.

Additional Oracle Product Installation and Configuration

This section provides further information on installing additional Oracle products to your initial installation and on using Oracle Configuration Assistants.

Running Oracle Configuration Assistants

Configuration Assistants are usually run during an installation session, but can also be run in stand-alone mode. As with Oracle Universal Installer, each of these

assistants can also be run non-interactively using a response file. The following Oracle configuration assistants are described in this section:

- Using Oracle Net Configuration Assistant
- Using Oracle Data Migration Assistant
- Using Oracle Database Configuration Assistant
- Configuring New or Upgraded Databases
- Using Oracle Enterprise Manager Configuration Assistant As a Stand-Alone Tool

> **See Also:** For more information on using response files with the product assistants, refer to "Non-Interactive Installation and Configuration" on page 3-38.

Using Oracle Net Configuration Assistant

When Oracle Net Server or Oracle Net Client is installed, Oracle Universal Installer automatically launches Oracle Net Configuration Assistant.

If you create a database using the Oracle Database Configuration Assistant during or after installation, then it will automatically update the Oracle Net configuration with any configuration information necessary for the new database. Oracle Database Configuration Assistant does one of the following:

- It registers the database in a supported directory service so that clients can use the directory to connect to the database.

or

- It creates an entry in the local naming file, `tnsnames.ora` that can be distributed to client computers to connect to the database.

If you choose to do a separate Oracle9*i* Client installation, then Oracle Net Configuration Assistant will automatically create a profile that is consistent with selections made during the installation. The Installer will automatically run the Oracle Net Configuration Assistant to set up a net service name in the local naming file found in the `$ORACLE_HOME/network/admin` directory of the client installation.

After installation is complete, a more detailed configuration can be accomplished using the Oracle Net Configuration Assistant by using the following command:

```
$ netca
```

> **See Also:** For more information on how Oracle Net Configuration Assistant configures your installation, refer to "Oracle Net Configuration Assistant" on page 1-10.
>
> For more information on the use and configuration of Oracle Net, refer to the *Oracle9i Net Services Administrator's Reference*.

Using Oracle Data Migration Assistant

If you installed Oracle9*i* software to use an existing database from a prior software version and chose not to migrate the database during the installation, then you must migrate the database before mounting it.

> **See Also:** For more information on migration, refer to *Oracle9i Database Migration*.

Using Oracle Database Configuration Assistant

Oracle Database Configuration Assistant can create a default or customized database, configure an existing database to use Oracle products, or present a set of shell and SQL scripts that you can inspect, modify, and run at a later time.

> **See Also:** For more information on the types of databases that you can install with Oracle Database Configuration Assistant, refer to "Oracle Database Configuration Assistant" on page 1-7.

Start Oracle Database Configuration Assistant by using the `dbca` command located in the `$ORACLE_HOME/bin` directory:

```
$ dbca
```

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

```
$ dbca -help
```

Configuring New or Upgraded Databases

Oracle Corporation recommends running the `utlrp.sql` script after creating, upgrading, or migrating a database. This script recompiles all PL/SQL modules that may be in an `INVALID` state, including packages, procedures, and types. This step is optional, but recommended so that the cost of recompilation is incurred during the installation rather than at a later time.

1. Start SQL*Plus by using the following command:

```
$ SQLPLUS /NOLOG
```

2. Connect to the database with the SYS account by using the following command:

   ```
   SQL> CONNECT SYS/PASSWORD AS SYSDBA
   ```

   In the preceding command, the initial default for *PASSWORD* is CHANGE_ON_INSTALL. This password must be changed before using the database.

3. Start the database (if necessary) by using the following command:

   ```
   SQL> STARTUP
   ```

4. Run the `utlrp.sql` script by using the following command:

   ```
   SQL> @$ORACLE_HOME/rdbms/admin/utlrp.sql
   ```

Using Oracle Enterprise Manager Configuration Assistant As a Stand-Alone Tool

Oracle Enterprise Manager Configuration Assistant enables you to create, use, upgrade or delete the Oracle Enterprise Manager repository.

If you installed Oracle Enterprise Manager Server using the Oracle9*i* Management Infrastructure, Custom installation, or Custom Management Infrastructure types, Oracle Enterprise Manager Configuration Assistant automatically starts at the end of the installation to guide you through configuration. If you installed Oracle Enterprise Manager through any other installation types, Oracle Enterprise Manager Configuration Assistant must be started manually at the end of the installation.

Start Oracle Enterprise Manager Configuration Assistant after installation to configure a Management Server to create a new repository, and to use, upgrade and delete an existing repository.

> **See Also:** For more information on post-installation steps for Oracle Enterprise Manager, refer to *Oracle Enterprise Manager Configuration Guide.*

Configuring the Database for Additional Oracle Products

If you install additional Oracle products after the initial installation, use the Oracle Database Configuration Assistant to configure your database for the new products. The database must be running.

1. Start up the Oracle Database Configuration Assistant by using the `dbca` command located in the `$ORACLE_HOME/bin/` directory:

```
$ dbca
```

2. Select Modify Database.
3. Select the appropriate database SID from the list of those detected by the Oracle Database Configuration Assistant.
4. Choose the products you wish to enable from the list and click Finish.

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

Adding Oracle Text to Your Installation

If you intend to install *Oracle Text* after your initial installation, ensure that you have at least 10 MB of disk space for the data dictionary and include the `$ORACLE_HOME/ctx/lib` directory in the LD_LIBRARY_PATH environment variable.

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

> **See Also:** For more information on migrating text, refer to *Oracle9i ConText to Oracle Text Migration*.
>
> For more information on creating tablespaces, refer to *Oracle9i SQL Reference*.

Configuring Oracle Real Application Clusters

The following sections contain post-installation instructions for Oracle Real Application Clusters:

- Managing Oracle Real Application Clusters
- Re-installing Oracle Real Application Clusters
- Inspecting Oracle Real Application Clusters Configuration for Linux

Managing Oracle Real Application Clusters

To start the Oracle Real Application Clusters communication daemon automatically when the computer is restarted, log in as the `root` user and add a line similar to the following in the `/etc/init.d/dbora` system startup file:

```
su - oracle -c "gsd"
```

> **See Also:** For more information on Oracle Real Application Clusters, refer to *Oracle9i Real Application Clusters Installation and Configuration Guide.*

Re-installing Oracle Real Application Clusters

If the installation fails before completion and you have to reinstall, click Yes on all *Installer* windows that ask "Do you want to reinstall *name of a product*?" The remote copy operation to the other nodes ignores the products for which you declined the reinstall.

Inspecting Oracle Real Application Clusters Configuration for Linux

This section describes how to inspect the kernel configuration for Oracle Real Application Clusters. Configurations do not work if you fail to configure the Watchdog Timer device and the raw device.

Inspecting the Watchdog Timer Device

For the Watchdog Timer device, the typical causes of failures are:

- The Watchdog Timer device driver is not configured.
- The Watchdog Timer device driver is not loaded to the kernel.
- The margin time is incorrect.
- The `CONFIG_WATCHDOG_NOWAYOUT` parameter is not set.

1. If you configured the Watchdog Timer device as a module, load the Watchdog Timer device driver to the kernel. This is required after every boot. For example, enter:

   ```
   # /sbin/insmod softdog soft_margin=60
   ```

2. Add the `imsmod` command lines in the Linux startup script (for example, `/etc/rc.d/rc.local`) to prevent losing the module after restarting the system.

3. Run the `wdttest1` command to check the first three possible configuration failures. If the configuration is correct, it reboots the system after the margin time has passed. For example, enter:

   ```
   # wdttest1
   passed: 1 sec
   ```

```
passed: 2 sec
.
.
.
passed: 60 sec
.
.
.
Reboot occured
```

4. Run the `wdttest2` command to check the `CONFIG_WATCHDOG_NOWAYOUT` parameter. If the configuration is correct, it reboots the system after the margin time has passed. For example:

```
# wdttest2
passed: 1 sec
passed: 2 sec
.
.
.
passed: 60 sec
.
.
.
Reboot occured
```

Inspecting RSH/RCP Equivalence

Configure the Linux system so that the users can issue the `rsh` and `rcp` commands from one node to another node in the cluster. For example, for node1 and node2, enter:

```
$ hostname
node1
$ rsh node2 hostname
node2
$ rcp node2:/tmp/sample /tmp
```

An example of unsuccessfully issuing the `rsh` and `rcp` commands from node1 and node2 is:

```
$ hostname
node1
$ rsh node2 hostname
Permission denied.
$ rcp node2:/tmp/sample /tmp
```

```
Permission denied.
```

Configuring the Linux system for issuing `rsh` and `rcp` commands varies depending on your system configuration. See the documentation for your Linux distribution for more information. In a typical case, you list the host names from which the host accepts `rsh` and `rcp` commands in the `/etc/hosts.equiv` file.Oracle Corporation refers to this configuration as RSH / RCP equivalence.

Perform the following steps to inspect the raw device:

1. Establish RSH / RCP equivalence among the nodes for the test command `rdevtest`. Create the `rdevtest` configuration file. The configuration file contains entries for each node. The format of the entry is `hostname:`*`device_file_name`*. For example:

   ```
   node1:/dev/raw/raw1
   node2:/dev/raw/raw1
   node3:/dev/raw/raw1
   node4:/dev/raw/raw1
   ```

2. Run the `rdevtest` command. For example:

   ```
   # vi rdevtest.conf
   .
   .
   .
   # cat rdevtest.conf
   node1:/dev/raw/raw1
   node2:/dev/raw/raw1
   node3:/dev/raw/raw1
   node4:/dev/raw/raw1
   # rdevtest rdevtest.conf
OK
   ```

Configuring Oracle Label Security

If Oracle9*i* software is already installed and a database is created, then verify that the COMPATIBLE initialization parameter is set to 9.0.1 or higher.

Configuring Oracle Precompilers

All precompiler configuration files are located in the `$ORACLE_HOME/precomp/admin` directory. Table 4–5 describes the Oracle Precompilers.

Note: You cannot use Oracle Precompilers independently of Oracle9*i* to convert embedded PL/SQL.

Table 4–5 Oracle Precompilers

Precompilers	Configuration Files	See Also
Pro*C/C++	`pcscfg.cfg` This file installs without content and can be configured with any text editor according to the site-specific requirements.	For more information on configuring the `pcscfg.cfg` file, refer to the *Programmer's Guide to the Pro*C/C++ Precompiler.*
Pro*COBOL	`pcbcfg.cfg` This file installs without content and can be configured with any text editor according to the site-specific requirements.	For more information on configuring the `pcbcfg.cfg` file, refer to the *Pro*COBOL Programmer's Guide.*
Pro*FORTRAN	`pccfor.cfg` This file installs without content and can be configured with any text editor according to the site-specific requirements.	For more information on configuring the `pccfor.cfg` file, refer to the FORTRAN77 documentation.
SQL*Modula Ada	`pmscfg.cfg` This file installs without content and can be configured with any text editor according to the site-specific requirements.	For more information on configuring the `pmscfg.cfg` file, refer to the *SQL*Module for Ada Programmer's Guide.*

Configuring Oracle Workflow

You must perform a number of configuration procedures for Oracle Workflow. These include the following:

- Edit the `init.ora` parameter file
- Install and configure a web server
- Verify your base URL

- Set up the Oracle Workflow Monitor and HTML help

> **See Also:** For more information on these procedures, refer to the *Oracle Workflow Server Installation Notes*, *Oracle Workflow Client Installation Notes*, and *Oracle Workflow Guide*.

Creating a Recovery Catalog for Recovery Manager

Recovery Manager is an automated recovery utility that is installed as part of Oracle9*i*. It stores information in a recovery catalog in a separate Oracle9*i* database. This second Oracle9*i* database should be installed on a separate computer to provide maximum fault resistance.

> **Note:** If the installation and maintenance of a second Oracle9*i* database is impractical, then you can use Recovery Manager in a restricted mode without a recovery catalog.

To create a recovery catalog, perform the following steps:

1. Install Oracle9*i* on a separate computer from any other Oracle9*i* system and create a database for the recovery catalog.

   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 user, run the `createCatalog` command at the Oracle Recovery Manager prompt.

   > **See Also:** For more information on Recovery Manager, refer to *Oracle9i Database Backup and Recovery Guide.*

Configuring Secure Sockets Layer

After Secure Sockets Layer is installed, run Oracle Net Configuration Assistant to configure it properly for your system.

See Also: For more information on Secure Sockets Layer, refer to *Oracle Advanced Security Administrator's Guide*.

Starter Database Contents

The following sections provides database administrative information on the default starter database, as well as basic information on Oracle database usernames, passwords and file locations.

Unlocking and Resetting User Passwords

Passwords for all Oracle system administration roles and privileges except SYS, SYSTEM and SCOTT are expired upon installation. You are required to unlock user names and reset passwords for all other administrative user names before using them. You can do this through Database Configuration Assistant.

Unlocking and Resetting Passwords Automatically

During installation, click the Password Management button from the *Database Configuration Assistant* window to change passwords immediately after installation.

There is another alternative method to reset your passwords. If you unlock the password but do not specify a new password, then the database user's account will be unlocked and the password will remain expired until the next time when you login as that user. SQL*Plus will then prompt you for a new password.

Unlocking and Resetting Passwords Manually

To change a password and unlock an account manually, review the list of default administrative user names, passwords and functions in Table 4–6, "Administrative User Names and Passwords". Select a user, and unlock and reset the password by using the following commands:

1. Start SQL*Plus and log in as SYSDBA by using the following commands:

```
$ sqlplus /nolog
SQL> connect / as sysdba
```

2. Change the password by using the following command:

```
SQL> ALTER USER USERNAME IDENTIFIED BY PASSWORD ACCOUNT UNLOCK
```

The alter statement will both reset the password and unlock the account.

> **See Also:** For more information on unlocking passwords after installation and for information on Oracle security procedures and best security practices, refer to *Oracle9i Database Administrators' Guide*.
>
> For more information on using Oracle Security Manager or Oracle DBA Studio to change passwords, refer to *Oracle Enterprise Manager Administrator's Guide.*

Reviewing User Names and Passwords

All databases created by Oracle Database Configuration Assistant include the SYS, SYSTEM, and DBSNMP user names and passwords. In addition, Oracle Corporation provides several other administrative users. Unlock users and reset passwords before using these administrative accounts.

> **Note:** To unlock administrative user passwords after installation, click the Password Management button in the *Database Assistant* window.

Table 4–6 describes the administrative user names and passwords.

Table 4–6 Administrative User Names and Passwords

User Name	Password	Description	See Also
CTXSYS	CTXSYS	CTXSYS is the Oracle *Text* user name with CONNECT, DBA, and RESOURCE database roles.	*Oracle9i Oracle Text Reference*
DBSNMP	DBSNMP	DBSNMP includes the CONNECT, RESOURCE, and SNMPAGENT database roles. Run `catnsnmp.sql` if you want to delete this role and user.	*Oracle Intelligent Agent User's Guide*
LBACSYS	LBACSYS	LBACSYS is the Oracle Label Security administrator user name.	*Oracle Label Security Administrator's Guide*
MDSYS	MDSYS	MDSYS is the Oracle Spatial and Oracle Locator administrator user name.	*Oracle Spatial User's Guide and Reference*
MTSSYS	MTSSYS	MTSSYS is the Oracle Service for Microsoft Transaction Server (MTS) user name.	*Using Microsoft Transaction Server With Oracle9i*
OLAPDBA	OLAPDBA	OLAPDBA is the identity that OLAP Services uses to authenticate user credentials. When you change the password for OLAPDBA in the database, you must make the same change to the User Password configuration setting for OLAP Services. OLAPDBA includes the OLAP_DBA database role.	*Oracle9i OLAP Services Concepts and Administration Guide* *OLAP Services Instance Manager Help*
OLAPSVR	INSTANCE	OLAPSVR is the proxy identification used by all OLAP Services connections. When you change the password for OLAPSVR in the database, you must make the same change to the OlapProxyPwd configuration setting for OLAP Services. OLAPSVR includes the OLAP_DBA, CONNECT, RESOURCE, and SELECT_CATALOG_ROLE database roles.	*Oracle9i OLAP Services Concepts and Administration Guide* *OLAP Services Instance Manager Help*
OLAPSYS	MANAGER	OLAPSYS is the identity used to create OLAP metadata structures. OLAPSYS includes the OLAP_DBA, RESOURCE, and CONNECT database roles	*Oracle9i OLAP Services Concepts and Administration Guide*
ORDPLUGINS	ORDPLUGINS	ORDPLUGINS is the Oracle *inter*Media Audio and Video user name with the CONNECT and RESOURCE roles. ORDPLUGINS allows non-native plug-in formats.	*Oracle9i interMedia User's Guide and Reference*

Table 4–6 Administrative User Names and Passwords

User Name	Password	Description	See Also
ORDSYS	ORDSYS	ORDSYS is the Oracle *inter*Media Audio, Video, and Image user name administrator user name with CONNECT, JAVAUSERPRIV, and RESOURCE database roles.	*Oracle9i interMedia User's Guide and Reference*
OUTLN	OUTLN	OUTLN includes the CONNECT and RESOURCE database roles, and supports plan stability. Plan stability allows you to maintain the same execution plans for the same SQL statements. OUTLN acts as a role to centrally manage metadata associated with stored outlines.	*Oracle9i Database Concepts* *Oracle9i Database Performance Guide and Reference*
SYS	CHANGE_ ON_INSTALL	SYS is used for performing database administration tasks. SYS includes the following database roles: AQ_ADMINISTRATOR_ROLE AQ_USER_ROLE CONNECT CTXAPP DBA DELETE_CATALOG_ROLE EXECUTE_CATALOG_ROLE EXP_FULL_DATABASE HS_ADMIN_ROLE IMP_FULL_DATABASE JAVA_ADMIN JAVADEBUGPRIV JAVAIDPRIV JAVAUSERPRIV OEM_MONITOR RECOVERY_CATALOG_OWNER RESOURCE SELECT_CATALOG_ROLE SNMPAGENT TIMESERIES_DBA TIMESERIES_DEVELOPER	*Oracle9i Database Administrator's Guide*
SYSTEM	MANAGER	You can use SYSTEM to perform database administration tasks. SYSTEM includes the AQ_ ADMINISTRATOR_ROLE and DBA database roles.	*Oracle9i Database Administrator's Guide*
SCOTT	TIGER	SCOTT includes the CONNECT and RESOURCE database roles.	*Oracle9i Database Administrator's Guide*

Note: Any database user can be granted limited SYS role database privileges to use the Oracle Enterprise Manager Diagnostics Pack. Grant users access to these necessary SYS privileges by granting them the OEM_MONITOR role. This role is created when the database is installed and is defined in the following SQL script: `/$ORACLE_HOME/rdbms/admin/catsnmp.sql`

In addition to being granted the OEM_MONITOR role, users must have sufficient default tablespace quota within the monitored database for OEM to run and evaluate some advanced events. Failure to allocate sufficient tablespace to users that are granted the OEM_MONITOR role will result in an insufficient privilege message.

The passwords are necessary only when the user resets and unlocks the passwords manually and are not required when it is done automatically.

Identifying Databases

The Oracle9*i* software identifies a database by its global database name. A global database name consists of the database name and network domain. The global database name uniquely distinguishes a database from any other database in the same network domain. Create a global database name when prompted in the *Database Identification* window during Oracle9*i* database installation.

Example 4–1 Example of a Global Database Name

```
sales.us.acme.com
```

In the preceding example, `sales` is the name of the database. The database name portion is a string of no more than 8 characters that can contain alpha, numeric, and additional characters. The database name is also assigned to the DB_NAME parameter in the `init.ora` file.

`us.acme.com` is the network domain in which the database is located. Together, the database name and the network domain make the global database name unique. The domain portion is a string of no more than 128 characters that can contain alpha, numeric, period (.), and additional characters. The domain name is also assigned to the DB_DOMAIN parameter in the `init.ora` file.

The DB_NAME parameter and the DB_DOMAIN name parameter combine to create the global database name value assigned to the SERVICE_NAMES parameter in the `init.ora` file.

The System Identifier (SID) identifies a specific Oracle9*i* instance reference to the database. The SID uniquely distinguishes a database from any other database on the same computer. Multiple Oracle home directories enable you to have multiple, active Oracle databases on a single computer. Each database requires a unique SID and database name.

The SID name comes from the value entered for the database name in the *Database Identification* window. The SID can be up to 64 alpha and numeric characters in length.

For example, if the SID and database name for an Oracle database are ORCL, each database file is in the `$ORACLE_BASE/oradata/ORCL` directory and the initialization parameter file is in the `$ORACLE_BASE/admin/ORCL/pfile` directory. The `ORCL` directory is named after the DB_NAME parameter value.

Tablespaces and Data Files

An Oracle9*i* database is divided into smaller logical areas of space known as tablespaces. Each tablespace corresponds to one or more physical data files. Data files contain the contents of logical database structures such as tables and indexes. You can associate each data file with only one tablespace and database.

> **Note:** Unless you specify different names with Oracle Database Configuration Assistant, the tablespaces and data files described in the following table are automatically included in the Custom database.

Table 4–7 describes the tablespaces in the Oracle9*i* database located in the `$ORACLE_BASE/oradata/`*`db_name`* directory.

Table 4–7 Tablespaces and Data Files

Tablespace	Data File	Contains...
CWMLITE	`cwmlite.dbf`	OLAP tablespace
DEMO	`demo01.dbf`	Demo Schema
DRSYS	`dr01.dbf`	Oracle *Text*-related schema objects

Table 4–7 Tablespaces and Data Files

Tablespace	Data File	Contains...
INDX	`indx01.dbf`	Indexes associated with the data in the USERS tablespace
RBS	`rbs01.dbf`	Rolled back transactions that failed to complete normally **Note:** You might need to expand this tablespace if you have long-running or high-data-volume transactions.
SYSTEM	`system01.dbf`	The data dictionary. This includes definitions of tables, views, and stored procedures needed by the Oracle database. **Note:** The database maintains information in this area automatically. The SYSTEM tablespace is present in all Oracle databases.
TEMP	`temp01.dbf`	Temporary tables and/or indexes created during the processing of your SQL statement **Note:** You might need to expand this tablespace if you are executing a SQL statement that involves a lot of sorting, such as ANALYZE COMPUTE STATISTICS on a very large table, or the constructs GROUP BY, ORDER BY, or DISTINCT.
TOOLS	`tools01.dbf`	The Installer creates this data file when the user wants to install any third-party or Oracle tools/products.
USERS	`users01.dbf`	As you generate and enter data into tables, you fill this space with your data.

Note: If you choose to create a new repository and accept the default settings when running Oracle Enterprise Manager Configuration Assistant, you create a tablespace named OEM_REPOSITORY and a data file named `oem_repository.ora` will be created.

See Also: For more information on tablespaces and data files, refer to *Oracle9i Database Concepts* and *Oracle9i Database Administrator's Guide*.

Locating the Initialization Parameter File

The starter database contains the `init.ora` database initialization parameter file. It is a text file that contains a list of preconfigured instance configuration parameters. The file is located in the `ORACLE_BASE/admin/`*`db_name`*`/pfile` directory, and must exist for an instance to start. No edits are required to this file in order to use the starter database.

See Also: For more information on database-specific initialization parameters and their default values, refer to *Oracle9i Database Administrator's Guide* and *Oracle9i Database Reference*.

Locating Redo Log Files

The starter database and the custom database each contain three redo log files located in the `$ORACLE_BASE/oradata/`*`db_name`* directory. Table 4–8 describes the redo log files.

Table 4–8 Redo Log files

Database Files	Disk Size	Description
`redo01.log`	1 MB	Redo log files hold a record of all changes made to data in the database buffer cache. If an instance failure occurs, then Oracle9*i* uses the redo log files to recover the modified data in memory. Oracle9*i* uses redo log files in a cyclical fashion. For example, if three files constitute the online redo log, Oracle9*i* fills the first file, then the second file, and then the third file. In the next cycle, it reuses and fills the first file, the second file, and so on.
`redo02.log`	1 MB	
`redo03.log`	1 MB	

See Also: For more information on redo log files, refer to *Oracle9i Database Backup and Recovery Guide*.

Locating Control Files

The starter database contains three control files located in the `$ORACLE_BASE/oradata/`*`db_name`* directory. The files `control01.ctl`, `control02.ctl`, and `control03.ctl` are automatically included in the Custom database. Oracle Corporation recommends that you keep at least three control files (on separate physical drives) for each database and set the CONTROL_FILES initialization parameter to list each control file. Table 4–9 describes the Database Control files.

Table 4–9 Database Control Files

Control Files	Description
`control01.ctl`	A control file is an administrative file. Oracle9*i* requires a control file to start and run the database. The control file records the physical structure of the database. For example, a control file contains the database name, and the names and locations of the database data files and redo log files.
`control02.ctl`	
`control03.ctl`	

See Also: For more information on setting this initialization parameter value, refer to the *Oracle9i Database Administrator's Guide*.

Using Rollback Segments

Rollback segments record the old values of data changed by each transaction whether or not the transaction has been committed. Every database contains one or more rollback segments. Use rollback segments to provide read consistency, roll back transactions, and recover the database. Table 4–10 describes the rollback segments of the starter database.

Table 4–10 Rollback Segments

Rollback Segment	Contained in this Tablespace...	Used by
SYSTEM	SYSTEM	SYS
RB_TEMP	SYSTEM (private)	SYS
RB1 through RB16 are a pool of rollback segments that any instance, requiring a rollback segment, can use.	RBS	PUBLIC

Using the Data Dictionary

The data dictionary is a protected collection of tables and views containing reference information on the database, its structure, and its users. The data stored in the dictionary includes the following:

- Names of the Oracle database users
- Privileges and roles granted to each user
- Names and definitions of schema objects including tables, views, snapshots, indexes, clusters, synonyms, sequences, procedures, functions, and packages
- Integrity constraints
- Space allocation for database objects
- Auditing information, such as who accessed or updated various objects

See Also: For more information on data dictionary, refer to *Oracle9i Database Concepts* and *Oracle9i Database Reference*.

Oracle Software Removal

A complete removal of Oracle software requires you to remove any installed databases with the Oracle Database Configuration Assistant and deconfigure Oracle Net with the Oracle Net Configuration Assistant. Removal requires that you:

- Run Oracle Database Configuration Assistant and Oracle Net Configuration Assistant before you use the Installer to remove the Oracle software
- Stop Oracle Internet Directory Control Utility and Oracle Internet Directory Monitor
- Change APACHE account primary GID to the group that owns the `oraInventory` directory

A partial removal of Oracle software does not necessarily require you to run either Oracle Database Configuration Assistant or Oracle Net Configuration Assistant.

Note: You cannot remove Oracle9*i* JVM separately from other products installed with Oracle9*i*. Removing Oracle9*i* JVM causes Oracle Universal Installer to remove Oracle9*i* and other products dependent on Oracle9*i* JVM from your system.

Removing an Oracle Database with Oracle Database Configuration Assistant

1. Start the Oracle Database Configuration Assistant by using the `dbca` command located in the `$ORACLE_HOME/bin/` directory:

   ```
   $ dbca
   ```

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 window that appears.

Because you can only delete one database at a time, you must repeat these steps for each database that you want to delete.

After you have run the Oracle Database Configuration Assistant, run the Oracle Net Configuration Assistant in remove mode by starting the assistant from the command line with the `/deinst` parameter:

```
$ netca /deinst
```

Removing Oracle Internet Directory

To remove Oracle Internet Directory Services:

1. Stop the Oracle Internet Directory Server by using the following command:

   ```
   $ oidctl connect=net_service_name server=oidldapd \
   instance=server_instance_number stop
   ```

   In the preceding command, *`net_service_name`* parameter is the network connection to the Oracle Internet Directory Server and *`server_instance_number`* is the instance number which appears in the Server List tab of Oracle Directory Manager.

2. Stop the Oracle Internet Directory Monitor by using the following command:

   ```
   $ oidmon connect=net_service_name stop
   ```

   Follow the procedures in "Removing an Oracle Database with Oracle Database Configuration Assistant" to remove the Oracle9*i* database configured with Oracle Internet Directory.

   > **See Also:** For more information on removing Oracle Internet Directory, refer to the *Oracle Internet Directory Administrator's Reference*.

Changing the APACHE Account GID for Removal

1. Log in as `root` user.
2. Change the APACHE account primary GID group to the group that has ownership of the `oraInventory` directory. Typically, this is the `ORAINVENTORY` group.
3. Log out as `root` user.

Removing of Oracle Label Security

Perform the following steps to remove Oracle Label Security. Do not perform a DROP USER CASCADE on the LBACSYS account to remove Oracle Label Security.

1. Connect as SYSDBA.
2. Execute the `$ORACLE_HOME/lbac/admin/droplbasys.sql` script to delete the LBACSYS account.
3. Use the Oracle Universal Installer to remove Oracle Label Security.

Removing Oracle Software with Oracle Universal Installer

1. Start the Installer as described in "Oracle Universal Installer" on page 3-11.
2. Click on the Deinstall Products button on the *Welcome* window or the Installed Products... button available on any *Installer* window. The *Inventory* window appears, listing the installed products.
3. In the *Inventory* window, select any product(s) to remove.
4. Click on the Remove button.

Cleaning Up After a Failed Installation

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

1. Start the Installer as described in "Oracle Universal Installer" on page 3-11.
2. Click on the Deinstall Products button on the *Welcome* window or the Installed Products... button available on any Installer window. The *Inventory* window appears, listing installed products.
3. In the *Inventory* window, select any product(s) to remove.
4. Click on the Remove button.

To complete the cleanup, you must manually remove the Oracle home directory. This is necessary because the Oracle Universal Installer might copy files to your system but fail to register them during the unsuccessful installation. This step is not necessary if removal deletes all files from the Oracle home directory.

A

Oracle9*i* Components

This appendix describes the products included with Oracle9*i*:

- Oracle9i Database Components
- Oracle9i Client Components
- Oracle9i Management and Integration Components
- Product Descriptions

> **Note:** The Custom installation type is not listed for any of the three top-level components since it allows you to install all components in the current top-level component category. Some components can *only* be installed through a Custom installation. Such components have an availability of "No" listed for other installation types in the tables in this appendix.

Oracle9*i* Database Components

The following table, Table A–1, alphabetically lists the components available with each installation type of the Oracle9*i* Server top-level component. Refer to the release notes for your platform for updates on component availability.

Table A–1 Database Components for Oracle9i

Component	Oracle9*i* Database	
	Enterprise Edition	Standard Edition
Advanced Queuing	Yes	Yes
Advanced Replication	Yes	Yes
Character Set Scanner	Yes	Yes
Common Schema Demos	Yes	Yes
Generic Connectivity	Yes	Yes
Object Type Translator, which includes the following:	Yes	Yes
Oracle INTYPE File Assistant	Yes	Yes
Oracle Advanced Security, which includes the following:	Yes	No
Encryption and Integrity Support, including:	Yes	No
DES40 Encryption	Yes	No
DES56 Encryption	Yes	No
3DES_112 Encryption (2-key option)	Yes	No
3DES_168 Integrity (3-key option)	Yes	No
MD5 Integrity	Yes	No
RC4_40 Encryption	Yes	No
RC4_56 Encryption	Yes	No
RC4_128 Encryption	Yes	No
RC4_256 Integrity	Yes	No
SHA-1 Integrity	Yes	No
Thin JDBC Java-based Encryption Support, including:	Yes	No
DES40 Encryption	Yes	No

Table A–1 Database Components for Oracle9i

Component	Oracle9*i* Database	
	Enterprise Edition	Standard Edition
DES56 Encryption	Yes	No
MD5 Integrity	Yes	No
RC4_40 Encryption	Yes	No
RC4_56 Encryption	Yes	No
RC4_128 Encryption	Yes	No
RC4_256 Integrity	Yes	No
SHA-1 Integrity	Yes	No
Authentication Support, including:	Yes	No
Kerberos (with SSO support)	Yes	No
RADIUS (for Smart Cards, Token Cards and SecurID)	Yes	No
SSL (with X.509 version 3) (with SSO support)	Yes	No
Note: Kerberos and Radius are installable through the Custom installation *Authentication Methods* window.		
Enterprise User Security, including:	Yes	Yes
Oracle Enterprise Login Assistant	Yes	Yes
Oracle Wallet Manager	Yes	Yes
Note: Oracle Enterprise Login Assistant and Oracle Wallet Manager are features of Oracle Advanced Security. You can only use them if you purchase an Oracle Advanced Security license.		
Oracle Call Interface	Yes	Yes
Oracle Connection Manager	Yes	Yes
Oracle Data Migration Assistant	Yes	Yes
Oracle Database Configuration Assistant	Yes	Yes
Oracle Dynamic Services	Yes	Yes
Oracle Enterprise Java Beans and CORBA Tools	Yes	Yes
Oracle Enterprise Manager, which includes the following:	Yes	Yes

Table A–1 Database Components for Oracle9i

Component	Oracle9*i* Database	
	Enterprise Edition	**Standard Edition**
Oracle Enterprise Manager Client, including:	Yes	Yes
Oracle Enterprise Manager Console, with the following:	Yes	Yes
Integrated Applications, with:	Yes	Yes
Oracle Directory Manager	Yes	Yes
Oracle Net Manager	Yes	Yes
Oracle Policy Manager	Yes	Yes
Spatial Index Advisor	Yes	Yes
SQL*Plus Worksheet	Yes	Yes
Text Manager	Yes	Yes
Oracle OLAP Services Instance Manager	Yes	Yes
Oracle Enterprise Manager Management Packs, which include the following:		
Oracle Change Management Pack	Yes	No
Oracle Diagnostics Pack	Yes	No
Oracle Standard Management Pack	No	Yes
Oracle Tuning Pack	Yes	No
Oracle Management Pack for Oracle Applications	Yes	No
Oracle Enterprise Manager Quick Tours	Yes	Yes
Oracle Enterprise Manager Web Site	Yes	Yes
Oracle Intelligent Agent (includes data collection services)	Yes	Yes
Oracle Management Server, including:	Yes	Yes
Oracle Enterprise Manager Configuration Assistant	Yes	Yes
Oracle HTTP Server Powered by Apache, which includes the following:	Yes	Yes
Apache Configuration for Oracle Java Server Pages	Yes	Yes
Apache Configuration for XML Developer's Kit	Yes	Yes

Table A–1 Database Components for Oracle9i

Component	Oracle9*i* Database	
	Enterprise Edition	Standard Edition
Apache JServ	Yes	Yes
Apache WebServer Files	Yes	Yes
Business Components for Java	Yes	Yes
`mod_ose`	Yes	Yes
`mod_perl`	Yes	Yes
`mod_plsql`	Yes	Yes
Perl Interpreter	Yes	Yes
Oracle *inter*Media, which includes the following:	Yes	Yes
Oracle *inter*Media Annotator	Yes	Yes
Oracle *inter*Media Audio	Yes	Yes
Oracle *inter*Media Client Option	Yes	Yes
Oracle *inter*Media Image	Yes	Yes
Oracle *inter*Media Video	Yes	Yes
Oracle Internet Directory, which includes the following:	Yes	Yes
Oracle Directory Manager (integrated with Oracle Enterprise Manager)	Yes	Yes
Oracle JavaServer Pages (JSP)	Yes	Yes
Oracle JDBC Drivers, which include the following:	Yes	Yes
Oracle JDBC Thin Driver for JDK 1.1	Yes	Yes
Oracle JDBC Thin Driver for JDK 1.2	Yes	Yes
Oracle JDBC / OCI Driver for JDK 1.1	Yes	Yes
Oracle JDBC / OCI Driver for JDK 1.2	Yes	Yes
Oracle Label Security	Yes	No
Oracle Locale Builder	Yes	Yes
Oracle Locator	Yes	Yes
Oracle Net, which includes the following:	Yes	Yes

Table A–1 Database Components for Oracle9i

Component	Oracle9*i* Database	
	Enterprise Edition	Standard Edition
Oracle Net Manager (integrated with Oracle Enterprise Manager)	Yes	Yes
Oracle Net Configuration Assistant	Yes	Yes
Oracle Net Listener	Yes	Yes
Oracle Names	Yes	Yes
Oracle Protocol Support	Yes	Yes
Note: When Oracle Net Client installs through the Enterprise Edition or Standard Edition installation type, the installer installs Oracle Protocol Support for the networking protocols that it detects.		
Oracle OLAP Services	Yes	No
Oracle Partitioning	Yes	No
Oracle Personalization	Yes	Yes
Oracle Policy Manager (integrated with Oracle Enterprise Manager)	Yes	Yes
Oracle Real Application Clusters, which includes the following:	Yes	No
Oracle Real Application Clusters Management Pack (integrated with Oracle Enterprise Manager)	Yes	No
Oracle Real Application Clusters Guard	Yes	No
Oracle SNMP Agent	Yes	Yes
Oracle Spatial	Yes	No
Oracle SQLJ, which includes the following:	Yes	Yes
SQLJ Runtime	Yes	Yes
SQLJ Translator	Yes	Yes
Oracle Syndication Server	Yes	Yes
Oracle Text	Yes	Yes
Oracle Trace	Yes	Yes
Oracle Universal Installer, which includes the following:	Yes	Yes
Oracle's Java Runtime Environment version	Yes	Yes
Oracle Utilities, which includes the following:	Yes	Yes

Table A–1 Database Components for Oracle9i

Component	Oracle9*i* Database	
	Enterprise Edition	Standard Edition
Database Verify Utility	Yes	Yes
Export	Yes	Yes
Import	Yes	Yes
Migration Utility	Yes	Yes
Recovery Manager	Yes	Yes
SQL*Loader	Yes	Yes
Oracle Ultra Search	Yes	Yes
Oracle Workspace Manager	Yes	Yes
Oracle XML Developer's Kit	Yes	Yes
Oracle XML SQL Utility	Yes	Yes
Oracle9*i* Advanced Analytic Services — Data Mining	Yes	No
Oracle9*i* JVM, which includes the following:	Yes	Yes
Java Virtual Machine	Yes	Yes
Oracle9*i* JVM Accelerator	Yes	Yes
Oracle Servlet Engine	Yes	Yes
Oracle9*i* Server (the Oracle9*i* database), which includes the following:	Yes	Yes
Oracle Database Demos	Yes	Yes
PL/SQL	Yes	Yes
PL/SQL Gateway	Yes	Yes
SQL*Plus	Yes	Yes

Oracle9*i* Client Components

The following table, Table A–2, alphabetically lists the components available with each installation type of the Oracle9*i* Client top-level component. Refer to the release notes for your platform for updates on component availability.

Table A–2 Oracle9i Client Components

Component	Oracle9*i* Client	
	Administrator	Runtime
Advanced Queuing	Yes	Yes
Documentation for your UNIX platform (online)	Yes	Yes
Object Type Translator	Yes	No
Oracle OLAP Services	Yes	No
Oracle Advanced Security, which includes the following:	Yes	Yes
Encryption and Integrity Support, including:	Yes	Yes
DES40 Encryption	Yes	Yes
DES56 Encryption	Yes	Yes
3DES_112 Encryption (2-key option)	Yes	Yes
3DES_168 Integrity (3-key option)	Yes	Yes
MD5 Integrity	Yes	Yes
RC4_40 Encryption	Yes	Yes
RC4_56 Encryption	Yes	Yes
RC4_128 Encryption	Yes	Yes
RC4_256 Integrity	Yes	Yes
SHA-1 Integrity	Yes	Yes
Thin JDBC Java-based Encryption Support, including:	Yes	Yes
DES40 Encryption	Yes	Yes
DES56 Encryption	Yes	Yes
MD5 Integrity	Yes	Yes
RC4_40 Encryption	Yes	Yes
RC4_56 Encryption	Yes	Yes

Table A–2 Oracle9i Client Components

Component	Oracle9*i* Client Administrator	Oracle9*i* Client Runtime
RC4_128 Encryption	Yes	Yes
RC4_256 Integrity	Yes	Yes
SHA-1 Integrity	Yes	Yes
Authentication Support, including:	Yes	Yes
Kerberos (with SSO support)	Yes	Yes
RADIUS (for Smart Cards, Token Cards and SecurID)	Yes	Yes
SSL (with X.509 version 3) (with SSO support)	Yes	Yes
Note: Kerberos and Radius are installable through the Custom installation *Authentication Methods* window.		
Enterprise User Security, including:		
Oracle Enterprise Login Assistant	Yes	No
Oracle Wallet Manager	Yes	Yes
Note: Oracle Enterprise Login Assistant and Oracle Wallet Manager are features of Oracle Advanced Security. You can only use them if you purchase an Oracle Advanced Security license.		
Oracle Call Interface	Yes	No
Oracle Dynamic Services Server	Yes	Yes
Oracle Enterprise Manager, which includes the following:	Yes	No
Oracle Enterprise Manager Client, including:	Yes	No
Oracle Enterprise Manager Console, with the following:	Yes	No
Integrated Applications, with:	Yes	No
Oracle Directory Manager	Yes	No
Oracle Net Manager	Yes	No
Oracle Policy Manager	Yes	No
Spatial Index Advisor	Yes	No
SQL*Plus Worksheet	Yes	No
Text Manager	Yes	No

Table A–2 Oracle9i Client Components

Component	Oracle9*i* Client Administrator	Oracle9*i* Client Runtime
Oracle OLAP Services Instance Manager	Yes	No
Oracle Enterprise Manager Management Packs, including:		
Oracle Change Management Pack	Yes	No
Oracle Diagnostics Pack	Yes	No
Oracle Standard Management Pack	Yes	No
Oracle Tuning Pack	Yes	No
Oracle Management Pack for Oracle Applications	Yes	No
Oracle Enterprise Manager Quick Tours	Yes	No
Oracle *inter*Media Annotator	Yes	Yes
Oracle *inter*Media Client Option	Yes	Yes
Oracle Internet Directory	Yes	Yes
Oracle Java Tools and CORBA Tools, which include the following:	Yes	Yes
Enterprise Java Beans	Yes	Yes
Oracle JDBC Drivers, which include the following:	Yes	Yes
Oracle JDBC Thin Driver for JDK 1.1	Yes	Yes
Oracle JDBC Thin Driver for JDK 1.2	Yes	Yes
Oracle JDBC / OCI Driver for JDK 1.1	Yes	Yes
Oracle JDBC / OCI Driver for JDK 1.2	Yes	Yes
Oracle Net, which includes the following:	Yes	Yes
Oracle Net Manager	Yes	Yes
Oracle Net Configuration Assistant	Yes	Yes
Oracle Protocol Support	No	No
Note: When Oracle Net Client installs through the Enterprise Edition or Standard Edition installation type, the installer installs Oracle Protocol Support for the networking protocols that it detects.		
Oracle OLAP Services	Yes	No
Oracle SQLJ, which includes the following:	Yes	Yes

Table A–2 Oracle9i Client Components

Component	Oracle9*i* Client	
	Administrator	Runtime
SQLJ Runtime	Yes	Yes
SQLJ Translator	Yes	Yes
Oracle Syndication Server	Yes	Yes
Oracle Universal Installer, which includes the following:	Yes	Yes
Oracle's Java Runtime Environment version	Yes	Yes
Oracle Utilities, which includes the following:	Yes	Yes
Export	Yes	Yes
Import	Yes	Yes
Recovery Manager	Yes	Yes
SQL*Loader	Yes	Yes
Oracle Workflow Builder	No	No
Oracle Workflow Mailer	No	No
Oracle XML Developer's Kit	Yes	No
Oracle XML SQL Utility	Yes	No
PL/SQL	Yes	Yes
Pro*C/C++	Yes	No
Pro*COBOL 1.8.75	Yes	No
Pro*COBOL 9.0.1	Yes	No
Pro*FORTRAN 1.8.75	Yes	No
SQL*Module Ada	No	No
SQL*Plus	Yes	No

Oracle9*i* Management and Integration Components

The following table, Table A–3, alphabetically lists the components available with each installation type of the Oracle9*i* Management and Integration top-level component and all the components that install with the Oracle Internet Directory installation type when an Oracle9*i* database is not currently installed. Refer to the release notes for your platform for updates on component availability.

Table A–3 Oracle9i Management and Integration Components

Component	Oracle9*i* Management and Integration		
	Oracle Management Server	Oracle Internet Directory	Oracle Integration Server
Advanced Queuing	Yes	Yes	Yes
Advanced Replication	No	Yes	Yes
Generic Connectivity	No	Yes	Yes
Object Type Translator, which includes the following:	No	Yes	Yes
Oracle INTYPE File Assistant	No	Yes	Yes
Oracle Advanced Security, which includes the following:	Yes	No	Yes
Authentication Support, including:	Yes	No	Yes
SSL (with X.509 version 3) (with SSO support)	Yes	Yes	Yes
Oracle Wallet Manager	Yes	Yes	Yes
Oracle Enterprise Login Assistant	Yes	No	No
Note: Oracle Enterprise Login Assistant and Oracle Wallet Manager are features of Oracle Advanced Security. You can only use them if you purchase an Oracle Advanced Security license.			
Oracle Call Interface	No	Yes	Yes
Oracle Connection Manager	No	No	No
Oracle Data Migration Assistant	No	Yes	Yes
Oracle Database Configuration Assistant	No	Yes	Yes
Oracle Enterprise Java Beans and CORBA Tools	No	Yes	Yes
Oracle Enterprise Manager, which includes the following:	Yes	No	No

Table A–3 Oracle9i Management and Integration Components

Component	Oracle9*i* Management and Integration		
	Oracle Management Server	**Oracle Internet Directory**	**Oracle Integration Server**
Oracle Enterprise Manager Client, including:	Yes	No	No
Oracle Enterprise Manager Console, with the following:	Yes	No	No
Integrated Applications, with:	Yes	No	No
Oracle Directory Manager	Yes	No	No
Oracle Net Manager	Yes	No	No
Oracle Policy Manager	Yes	No	No
Spatial Index Advisor	Yes	No	No
SQL*Plus Worksheet	Yes	No	No
Text Manager	Yes	No	No
Oracle Enterprise Manager Management Packs, including:			
Oracle Change Management Pack	Yes	No	No
Oracle Diagnostics Pack	Yes	No	No
Oracle Standard Management Pack	Yes	No	No
Oracle Tuning Pack	Yes	No	No
Oracle Management Pack for Oracle Applications	Yes	No	No
Oracle Enterprise Manager Quick Tours	Yes	No	No
Oracle Enterprise Manager Web Site	Yes	No	No
Oracle Management Server, including:	Yes	No	No
Oracle Enterprise Manager Configuration Assistant	Yes	No	No
Oracle *inter*Media, which includes the following:	Yes	No	No
*inter*Media Audio	No	No	No
*inter*Media Common Files	No	No	No
*inter*Media Image	No	No	No

Table A–3 Oracle9i Management and Integration Components

Component	Oracle9*i* Management and Integration		
	Oracle Management Server	Oracle Internet Directory	Oracle Integration Server
*inter*Media Video	No	No	No
Oracle Internet Directory, which includes the following:	No	Yes	Yes
Oracle Internet Directory Client Toolset	No	Yes	Yes
Oracle Internet Directory Configuration Assistant	No	Yes	No
Oracle Internet Directory Server	No	Yes	No
Oracle JDBC Drivers, which include the following:	Yes	Yes	Yes
Oracle JDBC / OCI Driver for JDK 1.1	Yes	Yes	Yes
Oracle JDBC / OCI Driver for JDK 1.2	Yes	Yes	Yes
Oracle JDBC Thin Driver for JDK 1.1	Yes	Yes	Yes
Oracle JDBC Thin Driver for JDK 1.2	Yes	Yes	Yes
Oracle Net, which includes the following:	Yes	Yes	Yes
Oracle Net Manager	Yes	Yes	Yes
Oracle Net Configuration Assistant	Yes	Yes	Yes
Oracle Listener	Yes	Yes	Yes
Oracle Names	No	No	No
Oracle Partitioning	No	No	Yes
Oracle Text	No	No	No
Oracle Trace	No	Yes	Yes
Oracle Universal Installer, which includes the following:	Yes	Yes	Yes
Oracle's Java Runtime Environment version	Yes	Yes	Yes
Oracle Utilities, which includes the following:	Yes	Yes	Yes
Database Verify Utility	No	Yes	Yes
Export	Yes	Yes	Yes
Import	Yes	Yes	Yes

Table A–3 Oracle9i Management and Integration Components

Component	Oracle9*i* Management and Integration		
	Oracle Management Server	**Oracle Internet Directory**	**Oracle Integration Server**
Migration Utility	No	Yes	Yes
Recovery Manager	Yes	Yes	Yes
SQL*Loader	Yes	Yes	Yes
Oracle Workflow	No	No	Yes
Oracle XML Developer's Kit	Yes	Yes	Yes
Oracle XML SQL Utility	Yes	Yes	Yes
Oracle9*i* JVM (either Oracle9*i* JVM Enterprise Edition or Oracle9*i* JVM), which includes the following:	No	Yes	Yes
Enterprise Java Beans and CORBA Tools	No	Yes	Yes
Java Virtual Machine	No	Yes	Yes
Oracle9*i* JVM Accelerator	No	Yes	Yes
Oracle Java Tools	No	Yes	Yes
Oracle Servlet Engine	No	Yes	Yes
Oracle9*i* Server (the Oracle9*i* database), which includes the following:	No	Yes	Yes
Oracle Database Demos	No	Yes	Yes
PL/SQL	No	Yes	Yes
PL/SQL Gateway	No	Yes	Yes
SQLJ, which includes the following:	Yes	No	No
SQLJ Runtime	Yes	No	No
SQLJ Translator	No	No	No
SQL*Plus	Yes	Yes	Yes

Product Descriptions

The following table, Table A–4, provides descriptions and release numbers for products available for installation. Some products described are automatically installed with other products. Refer to the release notes for your platform for updates on component availability.

Table A–4 Product Descriptions

Product	Release	Description	For more information, see...
Advanced Queuing	9.0.1	Advanced Queuing provides secure, scalable asynchronous communication between applications and databases. This enables you to create highly distributed, heterogeneous and autonomous applications.	*Oracle9i Application Developer's Guide - Advanced Queuing*
Advanced Replication	9.0.1	Advanced Replication copies and maintains database objects, such as tables, in multiple databases that make up a distributed database system. The three types of advanced replication are Asynchronous, Synchronous, and Updateable Snapshots. In Asynchronous Replication and Updateable Snapshots, changes applied at one site are captured and stored locally before being forwarded and applied at each of the remote locations. Synchronous Replication applies data changes to all replication sites in real-time. Oracle Replication is a fully integrated feature of the Oracle Enterprise Edition Server; it is not a separate server.	*Oracle9i Replication* *Oracle9i Replication Management API Reference*
Assistant Common Files (Installed with Oracle configuration assistants, such as Oracle Database Configuration Assistant and Oracle Net Assistant.)	9.0.1	Assistant Common Files are a collection of automatically installed files that are required by Oracle configuration assistants. These files include: ■ BaliShare 1.1.8 (compressed) ■ DBUI 2.1.1 ■ EWT 3.3.18 ■ ICE Browser 5.06.2 (compressed) ■ Java Swing Components 1.1.1 (compressed) ■ Kodiak 1.2.0 ■ Oracle Help for Java 3.2.9 (compressed)	Not applicable

Table A–4 Product Descriptions

Product	Release	Description	For more information, see...
Character Set Scanner	9.0.1	Character Set Scanner is a National Language Support utility for checking data before migrating character sets.	*Oracle Globalization Support Guide*
Enterprise JavaBeans	9.0.1	Enterprise JavaBeans provide an architecture for developing transactional applications as distributed components in Java.	*Oracle9i Enterprise JavaBeans and CORBA Developer's Guide*
Generic Connectivity	9.0.1	Generic Connectivity creates a framework for accessing non-Oracle systems by extending the Oracle SQL engine to optimize and rewrite SQL for non-Oracle data stores. This framework integrates the core of Oracle gateway technology directly into the Oracle9*i* database server.	*Heterogeneous Connectivity Administrator's Reference*
Java Runtime Environment (Oracle's required version)	1.1.8	Java Runtime Environment is required for running Java applications, such as Oracle Universal Installer. JRE version 1.1.8 is the minimum standard Java platform for running Java programs.	Not applicable
Legato Storage Manager (LSM)	5.5	If you use Recovery Manager (RMAN) for Oracle database backups, then you need a media management product such as LSM for backing up and restoring from tape storage. Install LSM from the Oracle9*i* CD-ROM or use a third-party media management product that also complies with the Oracle Backup Solutions Program. LSM is a scaled-down version of Legato NetWorker. The Oracle Universal Installer prompts you to confirm whether or not you want to install LSM. When you confirm installation, Oracle Universal Installer installs LSM. To install LSM manually without using the installer, see Appendix B, "Legato Storage Manager". For more information on this product, call toll free (1) 888-8-LEGATO.	*Legato Storage Manager Administrator's Guide*
Object Type Translator	9.0.1	Object Type Translator enables you to create C-struct representations of Abstract Data Types (ADTs) in an Oracle database. To take advantage of objects, run Object Type Translator against the database, which generates a header file that includes the C-structs.	*Oracle Call Interface Programmer's Guide*

Table A–4 Product Descriptions

Product	Release	Description	For more information, see...
Oracle Advanced Security	9.0.1	Oracle Advanced Security provides the following comprehensive suite of security services for Oracle9*i*: **Note:** This product requires a separate license.	*Oracle Advanced Security Administrator's Guide*
1. Authentication Support	9.0.1	Oracle Advanced Security provides strong authentication support through several authentication modules.	*Oracle Advanced Security Administrator's Guide*
2. Authorization Support	9.0.1	The enterprise role management functionality in Oracle Advanced Security includes authorization support.	*Oracle Advanced Security Administrator's Guide*
3. Encryption and Integrity Support	9.0.1	Oracle Advanced Security ensures data confidentiality during transmissions that use the encryption and data integrity types in the installable products tables above. It enables the following public-key solutions: native encryption, Secure Sockets Layer (SSL), X.509 certificates, passwords, and smartcards. **Note:** Changes in the United States Export Administration Regulations (EAR) make it possible for Oracle Corporation to ship this edition of Oracle Advanced Security worldwide. Oracle Advanced Security functionality includes strong encryption for protocols into the Oracle database that were previously available only to the U.S. and Canadian markets.	*Oracle Advanced Security Administrator's Guide*
4. Enterprise User Security Support	9.0.1	Oracle Advanced Security integrates with Lightweight Directory Access Protocol (LDAP) v3-compliant directory services, such as Oracle Internet Directory, for centralized enterprise user management, enterprise role management, and single sign-on.	*Oracle Advanced Security Administrator's Guide*
5. Single Sign On Support	9.0.1	Oracle Advanced Security provides single sign-on to multiple accounts and applications with a single password. Strong authentication occurs transparently in subsequent connections. Oracle supports Kerberos, DCE and Secure Sockets Layers (SSL)-based single sign-on.	*Oracle Advanced Security Administrator's Guide*
Oracle Call Interface	9.0.1	Oracle Call Interface is an application programming interface (API) for accessing an Oracle database from a C or C++ program.	*Oracle Call Interface Programmer's Guide*

Table A–4 Product Descriptions

Product	Release	Description	For more information, see...
Oracle Connection Manager	9.0.1	Oracle Connection Manager acts like a router through which client connection requests can route to the next hop or directly to a server. The Connection Manager contains configurations for connection concentration, Oracle Net access control and multi-protocol support features.	*Oracle Net Administrator's Guide*
Oracle Data Migration Assistant	9.0.1	Oracle Data Migration Assistant migrates existing Oracle7 database release 7.3.4 to an Oracle9*i* database and upgrades Oracle8 release 8.0.6, and Oracle8*i* release 8.1.5, 8.1.6 and 8.1.7 to Oracle9*i*.	*Oracle9i Migration*
Oracle Database Configuration Assistant	9.0.1	Oracle Database Configuration Assistant automates the process of creating, modifying and deleting an Oracle database.	*Oracle9i Database Administrator's Guide*
Oracle Documentation	9.0.1	Oracle Documentation is the online version of Oracle9*i* documentation. It is available in HTML and PDF format.	"Accessing Installed Documentation" on page -xiii
Oracle Dynamic Services	9.0.1	Oracle Dynamic Services is a Java-based programmatic framework for incorporating, managing and deploying Internet services.	*Oracle Dynamic Services User's and Administrative Guide*
Oracle Enterprise Login Assistant	9.0.1	Oracle Enterprise Login Assistant enables single sign on and implements a subset of the Wallet Manager functionality for opening a user wallet and enabling applications to use it.	*Oracle Enterprise Manager Administrator's Guide*
Oracle Enterprise Manager	9.0.1	Oracle Enterprise Manager 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 and comprehensive systems management platform for managing Oracle products.	*Oracle Enterprise Manager Concepts Guide*
Oracle Enterprise Manager Configuration Assistant (Installed with Oracle Management Server)	9.0.1	Oracle Enterprise Manager Configuration Assistant assists administrators with Oracle Enterprise Manager in configuring the Oracle Management Server to create a new database repository or to use, upgrade, or delete an existing database repository.	*Oracle Enterprise Manager Configuration Guide*

Table A–4 Product Descriptions

Product	Release	Description	For more information, see...
Oracle Enterprise Manager Console	9.0.1	Oracle Enterprise Manager Console is a client interface for the first tier of Oracle Enterprise Manager. It performs the following functions: ■ Centrally administers, diagnoses and tunes multiple databases ■ Manages other Oracle products and targets ■ 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 targets for events ■ Customizes your display by organizing databases and other targets into logical administrative groups	*Oracle Enterprise Manager Administrator's Guide*
Oracle Enterprise Manager Integrated Applications	9.0.1	These are applications that Oracle9*i* integrates and installs with Oracle Enterprise Manager. These applications enable you to manage your Oracle environment. You can access the applications from the Oracle Enterprise Manager Tools main menu, the Console application drawers, or from your operating system.	*Oracle Enterprise Manager Concepts Guide*
Oracle Enterprise Manager Management Packs	9.0.1	Oracle Enterprise Manager Management Packs provide the following comprehensive suite of management services for Oracle9*i:*	
1. Oracle Change Management Pack	9.0.1	The Oracle Change Management Pack, a component of Oracle Enterprise Manager, is a group of integrated applications used to track and make changes to database object definitions. Use the Pack to eliminate errors and loss of data when upgrading databases to support new applications, analyze the impact and complex dependencies associated with metadata change and automatically perform upgrades using easy-to-learn wizards that teach systematic upgrade steps.	*Getting Started with Oracle Change Management Pack.*

Table A–4 Product Descriptions

Product	Release	Description	For more information, see...
2. **Oracle Diagnostics Pack**	9.0.1	The Oracle Diagnostics Pack extends Oracle Enterprise Manager to enable the monitoring, diagnosing and capacity planning of the multi-tiered Oracle server environment. The Diagnostics Pack provides discovery and graphical representation of targets, such as databases or nodes, automated collection of performance and resource usage data and central monitoring and administration of remote systems using intelligent agents.	*Getting Started with the Oracle Diagnostics Pack*
3. **Oracle Standard Management Pack**	9.0.1	The Oracle Standard Management Pack combines the diagnostic, tuning and change management functions of the Oracle Enterprise Manager Management Packs into one pack for smaller business enterprises that use the standard edition of the database, such as Oracle8*i* or Oracle9*i*. This pack monitors and diagnoses problems, tunes high impact indexes and tracks and compares changes in the Oracle environment. The Oracle Standard Management Pack includes the following applications: Oracle Performance Manager, Oracle Index Tuning Wizard, Oracle Create Baseline, Oracle Compare Database Objects and Oracle Advanced Database and Node Events.	Getting Started with the Oracle Standard Management Pack
4. **Oracle Management Pack for Oracle Applications**	9.0.1	The Oracle Management Pack for Oracle Applications extends Oracle Enterprise Manager to enable administrators to correlate all tiers of their Oracle Applications deployment. This deployment extends from Oracle Applications-specific Concurrent Processing down through the middle-tier to the database and node.	*Getting Started with the Oracle Management Pack for Oracle Applications.*
5. **Oracle Tuning Pack**	9.0.1	The Oracle Tuning Pack provides advanced tools that focus on tuning the highest impact database performance areas, such as application SQL, indexing strategies, instance parameters controlling I/O, SGA performance and object sizing, placement and reorganization. The applications included in the Oracle Tuning Pack are Oracle SQL Analyze, Oracle Expert, Outline Editor, Outline Management, Oracle Index, Tuning Wizard, Reorg Wizard and the Tablespace Map.	*Database Tuning with the Oracle Tuning Pack.*

Table A–4 Product Descriptions

Product	Release	Description	For more information, see...
Oracle Enterprise Manager Quick Tours	9.0.1	These quick tours are HTML-based training tools for learning Oracle Enterprise Manager products.	*Oracle Enterprise Manager Administrator's Guide*
Oracle Enterprise Manager Web Site	9.0.1	The Oracle Enterprise Manager Web Site enables administrators to access the Oracle Enterprise Manager Console from a Web browser. The Oracle Enterprise Manager web site uses the Oracle HTTP Server as a web listener.	*Oracle Enterprise Manager Configuration Guide*
Oracle HTTP Server Powered By Apache	1.3.12.0.3a	Oracle HTTP Server Powered by Apache provides a preconfigured, ready-to-use listener to enable use of a browser-based Oracle Enterprise Manager Console with Oracle Enterprise Manager Web Site. It includes the following components: ■ Apache Configuration for Oracle Java Server Pages (JSPs) ■ Apache Web Server Files (Apache 1.3.12) ■ Oracle9*i* JVM **Note:** Oracle HTTP Server replaces Oracle Application Server Listener.	Apache documentation
Oracle Integration Server	9.0.1	Oracle Integration Server is a suite of installable components that Oracle designed to transform traditional businesses into e-businesses. It integrates and facilitates communication among the various applications (including CRM, ERP, business-to-business internet marketplaces and auction sites) that comprise an e-business. Oracle Integration Server consists of the following components: ■ Advanced Replication ■ Oracle Advanced Security ■ Oracle Internet Directory ■ Oracle Workflow ■ Oracle9*i* database (with Advanced Queuing, Oracle9*i* JVM and Oracle Enterprise JavaBeans and CORBA Tools) ■ Partitioning	For information on Oracle Applications InterConnect (OAI), refer to the OAI Installation Guide, located on the installation media at: `/doc/oai/oaiig313.pdf`

Table A–4 Product Descriptions

Product	Release	Description	For more information, see...
Oracle Intelligent Agent	9.0.1	Oracle Intelligent Agent monitors targets on a managed node for registered events and scheduled jobs sent by the Console. Oracle Intelligent Agent also collects statistical data for Capacity Planner and Performance Manager, which are data-collecting applications in the Oracle Diagnostics Pack.	*Oracle Intelligent Agent User's Guide*
Oracle *inter*Media	9.0.1	Oracle *inter*Media consists of services that manage rich content, such as audio, video and images and associated metadata in an integrated fashion with other enterprise information. **Note:** This multi-component product requires a separate license.	*Oracle interMedia User's Guide*
Oracle *inter*Media Annotator	9.0.1	Oracle *inter*Media Annotator is an XML-based engine that interprets various media formats, parses out application metadata from these formats, and uploads this data along with the media into *inter*Media objects.	*Oracle interMedia Annotator User's Guide*
Oracle *inter*Media Audio (Installed with Oracle *inter*Media)	9.0.1	Oracle *inter*Media Audio provides for the storage, retrieval, and management of digitized audio data within an Oracle database.	*Oracle9i interMedia Audio, Image, and Video User's Guide and Reference*
Oracle *inter*Media Client (part of Oracle *inter*Media)	9.0.1	Oracle *inter*Media Client provides an Oracle9*i* *inter*Media audio, image and video Java interface that makes it easy for you to use client-side applications to manipulate or modify multimedia data stored in a network-accessible database on the server.	*Oracle interMedia Java Classes User's Guide and Reference*
Oracle *inter*Media Common Files (Installed with Oracle interMedia)	9.0.1	Oracle *inter*Media Common Files includes the common files used by Oracle *inter*Media components.	Not applicable
Oracle *inter*Media Image (Installed with Oracle *inter*Media, formerly Oracle Image Cartridge)	9.0.1	Oracle *inter*Media Image 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.	*Oracle9i interMedia Audio, Image, and Video User's Guide and Reference*

Table A–4 Product Descriptions

Product	Release	Description	For more information, see...
Oracle *inter*Media Video (Installed with Oracle *inter*Media)	9.0.1	Oracle *inter*Media Video provides for the storage, retrieval and management of digitized video data within an Oracle database.	*Oracle9i interMedia Audio, Image, and Video User's Guide and Reference*
Oracle Internet Directory	3.0.1	Oracle Internet Directory is an LDAP v3-compliant directory service implemented as an Oracle9*i* database application. It provides an optional single repository for the storage and management of Oracle user and application metadata, such as Oracle Net network connector and database listener parameters. Oracle Internet Directory's availability, scalability and integration capabilities make it suitable for general deployment in enterprise and internet applications. If you have deployed an Oracle Internet Directory instance, installing the Oracle9*i* database with the Custom installation options enables you to specify the LDAP directory server for storing the entry attributes. In a typical installation scenario, you install the Oracle Internet Directory on a dedicated server.	*Oracle Internet Directory Administrator's Guide*
Oracle Internet Directory Configuration Assistant	3.0.1	Oracle Internet Directory Configuration Assistant is a tool for creating the Oracle Internet Directory tablespaces and schema in the Oracle9*i* database when you install Oracle Internet Directory.	*Oracle Internet Directory Administrator's Guide*
Oracle Internet Directory Client Toolset	3.0.1	Oracle Internet Directory Client Toolset is available on Windows platforms to access Oracle Internet Directory server components.	*Oracle Internet Directory Administrator's Guide*
Oracle Internet Directory Manager (Oracle Directory Manager) (integrated with Oracle Enterprise Manager)	3.0.1	This is a Java-based tool for administering Oracle Internet Directory and related processes.	*Oracle Internet Directory Administrator's Guide*

Table A–4 Product Descriptions

Product	Release	Description	For more information, see...
Oracle Internet File System		The Oracle Internet File System makes the Oracle9*i* database look and act like a file system that you can access through Windows, the web, ftp, and email clients. Oracle Internet File system is also a development platform for many content management applications. Use Java and XML with Oracle Internet File System to customize your system. **Note:** This product is on a separate CD-ROM.	*Oracle Internet File System Setup and Administration Guide*
Oracle Java Database Connectivity (JDBC) Drivers	9.0.1	Oracle JDBC Drivers are a standard set of Java classes, specified by JavaSoft, that provide vendor-independent access to relational data.	*Oracle9i JDBC Developer's Guide and Reference*
Oracle Java Tools	9.0.1	Oracle Java Tolls provide tools to build and deploy Java stored procedures, CORBA objects and Enterprise JavaBeans with Oracle's Java Virtual Machine.	*Oracle9i SQLJ Developer's Guide and Reference*
Oracle JavaServer Pages (JSP)	1.1.2.3.0	Oracle JavaServer Pages generates dynamic content in web pages that are output by applications running on web servers. This technology enables you to include Java code snippets and calls to external Java components in the markup code of your web pages.	Oracle JavaServer Pages Developer's Guide and Reference
Oracle Label Security	9.0.1	Oracle Label Security enables you to add label-based access control to your Oracle9*i* applications. It mediates access to rows in database tables based on a label contained in the row, and the label and privileges associated with each user session. Oracle Label Security is built on the virtual private database technology of Oracle9*i* Enterprise Edition. It includes the Oracle Policy Manager, a graphical user interface for ease of administration. **Note:** Oracle Label Security requires a separate license.	*Oracle Label Security Administrator's Guide*
Oracle Locale Builder	9.0.1	Oracle Locale Builder simplifies manipulation of National Language Support locale data definitions. It provides a graphical user interface for viewing, modifying and defining locale-specific data.	Oracle Globalization Support Guide

Table A–4 Product Descriptions

Product	Release	Description	For more information, see...
Oracle Locator (Installed with Oracle *inter*Media)	9.0.1	Oracle Locator enables Oracle9*i* to support online internet-based geocoding facilities for locator applications and proximity queries.	*Oracle9i Spatial User's Guide and Reference*
Oracle Management Server	9.0.1	Oracle Management Server is the middle tier of Oracle Enterprise Manager. It provides centralized intelligence and distribution control between clients and managed nodes. The Oracle Management Server relies on a database repository that maintains system data, application data and the state of the managed targets distributed throughout the environment.	*Oracle Enterprise Manager Administrator's Guide*
Oracle Names	9.0.1	Oracle Names is a distributed naming service developed for Oracle environments to help simplify the setup and administration of global, client/server computing networks. It establishes and maintains 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.	*Oracle Net Administrator's Guide*
Oracle Net	9.0.1	Oracle Net provides products that enable client connections to databases across a network. A client-side application sends a request to Oracle Net to be transported across the network to the server. Oracle Net (not Oracle Universal Installer) installs TCP/IP and Named Pipes.	*Oracle Net Administrator's Guide*
Oracle Net Configuration Assistant (Installed with Oracle Net)	9.0.1	The installer starts the Oracle Net Configuration Assistant during installation to configure directory service access and Oracle Net and server components. Oracle Net Configuration Assistant can run in stand-alone mode to configure Oracle Net.	*Oracle Net Administrator's Guide*

Table A–4 Product Descriptions

Product	Release	Description	For more information, see...
Oracle Net Listener	9.0.1	Oracle Net Listener accepts connections, through a protocol, from client applications on the network. **Note:** Oracle Net Listener is not installable through any Oracle9*i* Client installation types. Oracle Net clients communicate with Oracle servers through net service names. Oracle Net resolves net service names using the following naming methods: ■ Directory Names ■ Host Names ■ Local Names ■ Oracle Names	*Oracle Net Administrator's Guide*
Oracle Net Manager (Installed with Oracle Net; integrated with Oracle Enterprise Manager)	9.0.1	Network administrators and DBAs use Oracle Net Manager to configure Oracle Net.	*Oracle9i Net Services Administrator's Reference*
Oracle OLAP Services	9.0.1	Oracle OLAP Services provides a Java OLAP API and an analytical engine. Using OLAP Services, you can build analytical applications that support complex statistical, mathematical and financial calculations along with predictive analytical functions. These functions include forecasting, modeling, consolidations, allocations and scenario management. Because the OLAP API is all Java, OLAP Services supports deployment of analytical applications to large, geographically distributed user communities on the Internet.	*Oracle9i OLAP Services Concepts and Administration Guide* *Oracle9i OLAP Services Developer's Guide to the Oracle OLAP API* *Oracle9i OLAP Services OLAP API Reference* *Oracle9i Data Warehousing Guide*
Oracle OLAP Services Instance Manager (integrated with Oracle Enterprise Manager)	9.0.1	Oracle OLAP Services Instance Manager manages instances of Oracle OLAP Services and client sessions.	*Oracle9i OLAP Services Concepts and Administration Guide*

Table A–4 Product Descriptions

Product	Release	Description	For more information, see...
Oracle Partitioning	9.0.1	Oracle Partitioning provides more control in managing tables and indexes by directing all maintenance operations to individual partitions rather than to tables and index names. **Note:** This product requires a separate license.	*Oracle9i Concepts* *Oracle9i Data Warehousing Guide*
Oracle Personalization	9.0.1	Oracle Personalization provides real-time personalization for applications using a recommendation engine that is embedded in an Oracle9*i* database. Oracle Personalization uses the Recommendation Engine API, a Java API, to collect data and return recommendations to a web site, call center, or other customer-facing application. Users can also generate recommendations in bulk. Recommendations (such as products, page content, banner ads, and navigational links) are based on both explicit (transactions, purchases, ratings, demographics) and implicit (clicks, pages and banners viewed) information. **Note:** This product is on a separate CD-ROM.	*Oracle Personalization Administrator's Guide* *Getting Started with Oracle Personalization* *Recommendation Engine API Programmer's Guide* *Recommendation Engine Batch API Programmer's Guide*
Oracle PL/SQL Gateway	9.0.1	The PL/SQL Gateway provides support for building and deploying PL/SQL-based applications on the web. PL/SQL stored procedures retrieve data from database tables and generate HTTP responses. You can deploy it in one of the following ways: ■ `mod_plsql`: This configuration supports running in a stateless mode in which each HTTP request maps to a new database session. This is the recommended configuration if you want to develop stateless PL/SQL-based web applications. ■ `mod_ose`: This configuration supports running in stateless and stateful modes. This is the recommended configuration if you want to develop stateful PL/SQL- and Java-based web applications.	*Oracle Internet Application Server Release: Using* `mod_plsql` *Oracle9i Administrator's Reference Release 1 (9.0.1) for UNIX Systems* *Oracle Servlet Engine User's Guide*
Oracle Policy Manager (integrated with Oracle Enterprise Manager)	9.0.1	Oracle Policy Manager is a graphical user interface for administering Oracle Label Security, Virtual Private Database and application context.	*Oracle Label Security Administrator's Guide*

Table A–4 Product Descriptions

Product	Release	Description	For more information, see...
Oracle Real Application Clusters	9.0.1	Oracle Real Application Clusters is an option that enables the database to run in clustered systems. Oracle instances in the nodes of the cluster provide shared access to the single database. A clustered database enhances scalability and high availability for all types of applications. **Note:** This product requires a separate license.	*Oracle9i Real Application Clusters Installation and Configuration*
Oracle Real Application Clusters Guard	9.0.1	Oracle Real Application Clusters Guard is an optional feature that provides enhanced high availability for clusters. Oracle Real Applications Clusters Guard supports a primary or secondary configuration with rapid failover and minimal overhead.	*Oracle Real Application Clusters Guard Administration and Reference Guide*
Oracle Servlet Engine (OSE)	9.0.1	The Oracle Servlet Engine (OSE) is a servlet container that runs in the Oracle9*i* database server. OSE supports the complete Servlet 2.2 specification. OSE interacts with other Java-based objects stored in the database, such as Java Stored Procedures, EJBs and CORBA objects. OSE servlets can be invoked through the Oracle HTTP Server (powered by Apache), using the supplied Apache module `mod_ose`.	*Oracle9i Servlet Engine Developer's Guide*
Oracle Spatial	9.0.1	Oracle Spatial provides data management for location data, including information regarding addresses, road networks and sales territories. Oracle Spatial provides powerful spatial type management, indexing methods and spatial operators for the deployment of location-based services and extends the capabilities of existing Oracle-based applications. **Note:** This product requires a separate license.	*Oracle9i Spatial User's Guide and Reference*
Oracle Spatial Index Advisor (installed with Oracle Enterprise Manager Integrated Applications)	9.0.1	This component helps analyze and tune spatial indexes on data. Use it to see if indexes are properly defined for optimum query performance. You can also use it to visually inspect the distribution of the data.	*Oracle Enterprise Manager Concepts Guide*
Oracle SQLJ	9.0.1	Oracle SQLJ is a standard way to embed SQL statements in Java programs. Oracle SQLJ consists of the following components:	*Oracle9i SQLJ Developer's Guide and Reference*

Table A–4 Product Descriptions

Product	Release	Description	For more information, see...
1. **Oracle SQLJ Runtime** (Installed with SQLJ)	9.0.1	Oracle SQLJ Runtime is a thin layer of pure Java code that runs above the JDBC driver. When Oracle SQLJ translates your SQLJ source code using standard SQLJ code generation, embedded SQL commands in your Java application are replaced by calls to the SQLJ runtime. When you run the application, the SQLJ runtime acts as an intermediary, reading information about your SQL operations from your profile and passing instructions along to the JDBC driver.	*Oracle9i SQLJ Developer's Guide and Reference*
2. **Oracle SQLJ Translator** (Installed with SQLJ)	9.0.1	Oracle SQLJ Translator is a preprocessor for Java programs that contain embedded SQL statements. It converts the SQL statements to JDBC calls.	*Oracle9i SQLJ Developer's Guide and Reference*
Oracle Syndication Server	9.0.1	Oracle Syndication Server securely syndicates Internet content to internet subscribers. Syndication Server supports all available communication mechanisms while allowing the subscriber access via multiple channels to internet resources, enterprise portals, corporate databases and conventional file systems.	*Oracle Syndication Server User's and Administrator's Guide*
Oracle Text (formerly Oracle *inter*Media Text)	9.0.1	Oracle Text uses standard SQL to index, search and analyze text and documents stored in the Oracle database, in files and on the Web. Oracle Text analyzes document themes and gists and searches text using various search strategies. It also renders search results in several formats and analyzes and indexes most document formats with over 150 document filters. Oracle Text supports approximately 39 languages and bulk loads documents in the database with SQL*Loader.	*Oracle9i Text Reference* *Oracle Text Application Developer's Guide*
Oracle Text Manager (Installed with Oracle Enterprise Manager Integrated Applications)	9.0.1	OracleText Manager is an application for managing Oracle Text functionality.	*Oracle Enterprise Manager Concepts Guide*

Table A–4 Product Descriptions

Product	Release	Description	For more information, see...
Oracle Ultra Search	1.0.3	Oracle Ultra Search, a search engine that is built on top of Oracle Text, searches, organizes and categorizes content from multiple repositories, including databases, Web pages, files and mail servers.	*Oracle Ultra Search*
Oracle Universal Installer (OUI)	2.0.1.4.0	Oracle Universal Installer is a Java-based application that lets you quickly install (interactively or through a silent installation method), update and remove Oracle products.	*Oracle9i Installation Guide* *Oracle Universal Installer Concepts Guide*
Oracle Utilities	9.0.1	Oracle Utilities consists of the following products for database administration: ■ DBVERIFY ■ Export Utility ■ Import Utility ■ Migration Utility ■ OCOPY ■ ORADIM ■ Password Utility Recovery Manager ■ SQL*Loader	*Oracle9i Utilities*
Oracle Wallet Manager	9.0.1	Oracle Wallet Manager stores and manages public-key security credentials for clients and servers. It generates a public-private key pair and creates a certificate request for submission to a certificate authority.	*Oracle Advanced Security Administrator's Guide*
Oracle Workflow	2.6	Oracle Workflow is a workflow management system that supports business process definition and automation. The technology enables automation and continuous improvement of business processes, routing information of any type according to user-defined business rules.	*Oracle Workflow Client Installation Notes* *Oracle Workflow Guide* *Oracle Workflow Server Installation Notes*

Table A–4 Product Descriptions

Product	Release	Description	For more information, see...
Oracle Workflow Builder	2.6	Oracle Workflow Builder is a graphical user interface tool for creating, viewing, and modifying workflow process definitions.	*Oracle Workflow Client Installation Notes* *Oracle Workflow Guide*
Oracle Workflow Mailer	2.6	Oracle Workflow Mailer performs email send and response processing for the Oracle Workflow Notification System.	*Oracle Workflow Client Installation Notes* *Oracle Workflow Guide*
Oracle Workspace Manager	9.0.1	Oracle Workspace Manager enables long-duration transactions to be managed with concurrency, security and referential integrity. Transactions lasting days or months are visible in a workspace until explicitly merged with production data. Transactions can also be rolled back to any point in time without any changes to the application SQL.	Oracle9i Application Developer's Guide-Workspace Manager
Oracle XML Developer's Kit	9.0.1	This kit consists of a set of APIs for parsing and generating XML data. These interfaces have been written for Java, C, C++ and PL/SQL. This kit consists of the following components: ■ XML Parser for Java ■ XML Parser for C ■ XML Parser for C++ ■ XML Parser for PL/SQL ■ XML Class Generator for Java ■ XML Class Generator for C++ ■ XML Transviewer Beans ■ XSQL Servlet	*Oracle9i Application Developer's Guide - XML* *Oracle9i XML Reference*
Oracle XML SQL Utility	9.0.1	The Oracle XML SQL Utility is a set of Java classes and PL/SQL wrappers that permit queries to return result sets or objects wrapped in XML.	*Oracle9i Application Developer's Guide - XML* *Oracle9i XML Reference*

Table A–4 Product Descriptions

Product	Release	Description	For more information, see...
Oracle9*i* Advanced Analytic Services — Data Mining	9.0.1	Oracle9*i* Advanced Analytic Services — Data Mining, which is embedded in the Oracle9*i* database, enables you to build integrated business intelligence applications with complete programmatic control of data mining functions that deliver powerful, scalable modeling and real-time scoring. All model-building and scoring functions are accessible through a Java-based API. Data Mining enables e-businesses to incorporate predictions and classifications throughout all customer interactions and business processes.	*Oracle9i Advanced Analytic Services — Data Mining Administrator's Guide* *Oracle9i Advanced Analytic Services — Data Mining Concepts*
Oracle9*i* JVM Accelerator	9.0.1	The Oracle9*i* JVM Accelerator eliminates interpreter overhead by translating standard Java class files into specialized C source files. A platform-dependent C compiler then processes the C source files into native libraries, which can load dynamically. The Oracle9*i* JVM Accelerator is portable to all operating system and hardware platforms.	*Oracle9i Java Stored Procedures Development Guide; Oracle9i Java Developer's Guide*
Oracle9*i* JVM Enterprise Edition	9.0.1	The Oracle9*i* JVM includes Oracle's Java Virtual Machine, CORBA 2.0 Object Request Broker, embedded JDBC drivers, SQLJ translator and Enterprise JavaBeans transaction server.	*Oracle9i Java Developer's Guide*
Oracle9*i* JVM Servlet Container (JSC)	9.0.1	The Oracle9*i* JVM Servlet Container is a built-in web server running inside the database. It is a servlet runner that works with the Apache server and with Oracle9*i* JVM to enable distribution of Java Server Pages (JSPs) and to enable servlets to run directly on the database.	*Oracle9i JVM Servlet Container User's Guide; Oracle9i Java Developer's Guide*
Oracle9*i* Server	9.0.1	Oracle9*i* Server is the database component of Oracle9*i*.	*Getting to Know Oracle9i*
Pro*C/C++	9.0.1	Pro*C / C++ takes SQL statements embedded in C and C++ programs 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. **Note:** This product requires a separate license as a part of Oracle Programmer.	*Pro*C/C++ Precompiler Programmer's Guide*

Table A–4 Product Descriptions

Product	Release	Description	For more information, see...
Pro*COBOL	1.8.76 9.0.1	Pro*COBOL takes SQL statements embedded in a COBOL program and converts them to standard COBOL code. When you precompile this code, the result is a COBOL program you can compile and use to build applications that access an Oracle database. **Note:** This product requires a separate license as a part of Oracle Programmer.	*Pro*COBOL Precompiler Programmer's Guide*
Pro*FORTRAN	1.8.76 9.0.1	Pro*FORTRAN takes SQL statements embedded in a FORTRAN program and converts them to standard FORTRAN code. When you precompile this code, the result is a FORTRAN program you can compile and use to build applications that access an Oracle database. **Note:** This product requires a separate license as a part of Oracle Programmer.	*Pro*Fortran Supplement to the Oracle Precompilers Guide*
SQL*Module Ada	9.0.1	SQL*Module Ada takes SQL statements embedded in an Ada program and converts them to standard Ada code. When you precompile this code, the result is a Ada program you can compile and use to build applications that access an Oracle database. **Note:** This product requires a separate license as a part of Oracle Programmer.	*SQL*Module for Ada Programmer's Guide*
SQL*Plus	9.0.1	SQL*Plus is a command line interface that enables you to use SQL and PL/SQL database languages with an Oracle database.	*SQL*Plus User's Guide and Reference*

Table A–4 Product Descriptions

Product	Release	Description	For more information, see...
SQL*Plus Worksheet (Installed with Oracle Enterprise Manager)	9.0.1	SQL*Plus Worksheet is a graphical user interface for manually entering SQL, PL/SQL and DBA commands or running stored scripts.	*Oracle Enterprise Manager Administrator's Guide*
TCP/IP Protocol Support	9.0.1	TCP/IP Protocol Support enables client/server conversation over a network using TCP/IP and Oracle Net. 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 (MTS) Support is available in TCP/IP networks. Connection Pooling is available only with MTS on TCP/IP networks.	*Oracle Net Administrator's Guide*
XML Development Kit (an Oracle version)	9.0.1	Required for integrating and running XML applications with the database.	Not applicable

B

Legato Storage Manager

This appendix describes how to install, update, and remove Legato Storage Manager.

Legato Storage Manager Requirements

Legato Storage Manager is a restricted-functionality version of Legato NetWorker, a backup product. The following sections describe requirements and pre-installation, post-installation and removal steps for Legato Storage Manager.

Note: If you have Legato NetWorker already installed on your system, you will not have the option of installing Legato Storage Manager. To install Legato Storage Manager 5.5, which is included with this release of Oracle9*i*, you must first de-install any present version of Legato NetWorker. See How to Remove a Pre-5.5 Version of Legato Storage Manager on page B-12.

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

Table B–1 Legato Storage Manager Version 5.5 Software Requirements

Components	Platform	Default Location	Space Requirement
GUI, daemon, and utility files	AIX	`/bin`	49 MB
	HP	`/opt/networker/bin`	60 MB
	Solaris	`/usr/bin` for GUI	17 MB for GUI
		`/usr/sbin` for other files	26 MB for other files
	Tru64	`/usr/opt/networker/bin`	33 MB
Library files	AIX	`/usr/lib`	10 MB
	HP	Not Applicable	Not Applicable
	Solaris	`/usr/lib`	10 MB
	Tru64	Not Applicable	Not Applicable
Online client file and server indexes; media database	All platforms	`/nsr`	100 MB
Online man pages	AIX	`/usr/man`	1 MB
	HP	`/opt/networker/man`	1 MB
	Solaris	`/usr/share/man`	1 MB

Table B–1 Legato Storage Manager Version 5.5 Software Requirements

Components	Platform	Default Location	Space Requirement
	Tru64	/usr/opt/networker/man	1 MB
Device drivers	AIX	/etc/LGTOuscsi	9 MB
	HP	Not Applicable	Not Applicable
	Solaris	/usr/kernel	0.1 MB
		/etc/LGTOuscsi	15 MB
	Tru64	Not Applicable	Not Applicable

Legato Storage Manager Pre-Installation Steps

The Legato Storage Manager installation script modifies system files during installation. See Table B–2 for system files that correspond to your platform.

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

Table B–2 System Files Modified during Legato Storage Manager Installation

Platform	System Files
AIX	/etc/rpc
	/etc/syslog.conf
	/etc/rc.nsr
	/etc/inittab
All other platforms	/etc/rpc
	/etc/syslog.conf

Legato Storage Manager Manual Installation

Legato Storage Manager is typically installed by starting Oracle Universal Installer, selecting Custom installation of Oracle9*i* Enterprise Edition, and selecting Legato Storage Manager.

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 How to Remove a Pre-5.5 Version of Legato Storage Manager on page B-12. Do not remove any existing Legato Storage Manager files in the `/nsr` directory. For more information on updating, refer to the section Legato Storage Manager Update Steps on page B-11.

Be sure no Legato Storage Manager or NetWorker software is installed on your system. If Legato software exists but is not detected by the following installation steps, both the existing Legato software and Legato Storage Manager might not function properly.

In some cases, the Legato Storage Manager software might not be located in the stage/Components/lsm directory mentioned in step 1 in the procedures for your platform listed in Legato Storage Manager Manual Installation on page B-3. If the Legato Storage Manager software is not located in this directory on the Oracle9*i* CD-ROM, you can find the directory containing the software. To find this directory, entering the following command from the CD-ROM mount point:

```
$ find . -name lsm -print
```

If you do not install Legato Storage Manager using Oracle Universal Installer, then you can install it manually. Complete the manual installation procedure for your platform:

- Manually Installing Legato Storage Manager for AIX
- Manually Installing Legato Storage Manager for HP
- Manually Installing Legato Storage Manager for Solaris
- Manually Installing Legato Storage Manager for Tru64

Manually Installing Legato Storage Manager for AIX

Complete the following steps to install Legato Storage Manager manually:

1. From the Oracle9*i* Release 1 (9.0.1) CD-ROM mount point, go to the `stage/Components/lsm` directory.

2. As `root` user, install the Legato Storage Manager software using the following command:

   ```
   # ./lsminst .
   ```

3. For each prompt asking if you want to continue the installation, enter `yes`.

4. 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, refer to Table B–1, "Legato Storage Manager Version 5.5 Software Requirements" on page B-2.

   When prompted for a device name, press Enter, or type in a proper no-rewind, BSD-semantics tape device name. Legato Storage Manager uses the tape device for backups after it has been properly configured in the Legato Storage Manager Administrator graphical user interface (GUI).

   > **See Also:** For more information on device configuration, refer to Chapter 3 in the *Legato Storage Manager's Administrator's Guide*.

   To enable backups of the Legato Storage Manager server, enter the value `all` at the following prompt:

   ```
   Enter the first NetWorker server's name [no more]:
   ```

   For all other prompts displayed by `lsminst`, press Enter.

5. Update the MANPATH and PATH environment variables. MANPATH must include the pathname of the directory where the Legato Storage Manager man pages are installed. Enter the following pathname:

   ```
   /usr/man
   ```

   PATH must also include `/bin`, which is the pathname for the directory where the Legato Storage Manager binaries are installed.

6. 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.a` from the Oracle9*i* CD-ROM to the file `$ORACLE_HOME/lib/liblsm.a` using the following command.

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

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

d. Remove the symbolic link `$ORACLE_HOME/lib/libobk.a` if it exists, and create a symbolic link from `$ORACLE_HOME/lib/libobk.a` to `$ORACLE_HOME/lib/liblsm.a` using the following commands.

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

e. Restart all Oracle instances that use this ORACLE_HOME.

Manually Installing Legato Storage Manager for HP

Complete the following steps to install Legato Storage Manager manually:

1. From the Oracle9*i* Release 1 (9.0.1) CD-ROM mount point, go to the `stage/Components/lsm` directory.
2. As `root` user, install the Legato Storage Manager software using the following command:

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

3. When the *Software Selection* window appears, highlight Legato Storage Manager.
4. Select Install (analysis) from the Actions menu.
5. When the Status field in the *Install Analysis* window changes to Ready, select Logfile to check the log file. Correct any listed problems before proceeding.

   If you see an error in the log file stating that one or more filesystems in the filesystem table cannot be mounted, verify with your site administrator that the filesystems listed in `/etc/fstab` do not need to be mounted. Then perform the following steps:

   a. As `root` user, restart the Legato Storage Manager installation using the `lsminst` command listed in the preceding step 2.

b. In the Options menu of the *Software Selection* window, select Change Options.

c. In the *Options* window, deselect the following option: Mount filesystems in `/etc/fstab` or `/etc/checklist`.

d. Click OK.

e. Return to step 3 in this installation procedure and perform steps 3 to 12 to complete the Legato Storage Manager manual installation for HP.

6. Select OK in the *Install Analysis* window.

7. Select Yes in the Confirmation dialog box.

8. When the Status field in the *Install* window changes to Completed, select Logfile to check the log file. Correct any listed problems, and then rerun the `lsminst` command.

9. Select Done to exit the *Install* window.

10. Select Exit from the File menu to exit the *Software Selection* window.

11. Update the MANPATH and PATH environment variables. MANPATH must include the pathname of the directory where the Legato Storage Manager man pages are installed. Enter the following pathname:

```
/opt/networker/man
```

PATH must also include `/opt/networker/bin`, which is the pathname for the directory where the Legato Storage Manager binaries are installed.

12. 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.sl` from the Oracle9*i* CD-ROM to the file `$ORACLE_HOME/lib/liblsm.sl` using the following command.

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

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

d. Remove the symbolic link `$ORACLE_HOME/lib/libobk.sl` if it exists, and create a symbolic link from `$ORACLE_HOME/lib/libobk.sl` to `$ORACLE_HOME/lib/liblsm.sl` using the following commands.

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

e. Restart all Oracle instances that use this `ORACLE_HOME`.

Manually Installing Legato Storage Manager for Solaris

Complete the following steps to install Legato Storage Manager manually:

1. From the Oracle9*i* Release 1 (9.0.1) CD-ROM mount point, go to the `stage/Components/lsm` directory.
2. As `root` user, install the Legato Storage Manager software using the following command:

   ```
   # ./lsminst .
   ```

3. For each prompt asking if you want to continue the installation, enter `yes`.
4. 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, refer to Table B–1, "Legato Storage Manager Version 5.5 Software Requirements" on page B-2.

   When prompted for a device name, press Enter, or type in a proper no-rewind, BSD-semantics tape device name. Legato Storage Manager uses the tape device for backups after it has been properly configured in the Legato Storage Manager Administrator graphical user interface (GUI).

   For all other prompts displayed by `lsminst`, press Enter.

   See Also: For more information on device configuration, refer to Chapter 3 in the *Legato Storage Manager's Administrator's Guide*.

5. Update the MANPATH and PATH environment variables. MANPATH must include the pathname of the directory where the Legato Storage Manager man pages are installed. Enter the following pathname:

   ```
   /usr/share/man
   ```

PATH must also include /usr/bin and /usr/sbin, which are pathnames for the directories where the Legato Storage Manager binaries are installed.

6. 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 Oracle9*i* CD-ROM to the file $ORACLE_HOME/lib/liblsm.so using the following command.

   ```
   $ 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 if it exists, and create a symbolic link from $ORACLE_HOME/lib/libobk.so to $ORACLE_HOME/lib/liblsm.so using the following commands.

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

   e. Restart all Oracle instances that use this ORACLE_HOME.

Manually Installing Legato Storage Manager for Tru64

Complete the following steps to install Legato Storage Manager manually:

1. From the Oracle9*i* Release 1 (9.0.1) CD-ROM mount point, go to the stage/Components/lsm directory.

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

   ```
   # ./lsminst .
   ```

3. When prompted for a choice from the list of Legato Storage Manager subsets, enter 5. Enter yes when asked if this choice is correct.

When prompted whether to create the /nsr/res/servers file, enter yes. When prompted whether the system is a member of a NetWorker cluster server, enter yes or no, as appropriate.

For all other prompts displayed by lsminst, press Enter.

4. Update the MANPATH and PATH environment variables. MANPATH must include the pathname of the directory where the Legato Storage Manager man pages are installed. Enter the following pathname:

```
/usr/opt/networker/man
```

PATH must also include /usr/opt/networker/bin, which is the pathname for the directory 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 Oracle9*i* CD-ROM to the file $ORACLE_HOME/lib/liblsm.so using the following command.

```
$ 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 if it exists, and create a symbolic link from $ORACLE_HOME/lib/libobk.so to $ORACLE_HOME/lib/liblsm.so using the following commands.

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

   e. Restart all Oracle instances that use this ORACLE_HOME.

Legato Storage Manager Update Steps

To update to the latest version of Legato Storage Manager, follow these steps:

1. Perform a partial removal of Legato Storage Manager using the procedure in the section How to Remove a Pre-5.5 Version of Legato Storage Manager.

   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 described in Legato Storage Manager Manual Installation on page B-3.

Legato Storage Manager Post-Installation Steps

Perform the following post-installation steps:

1. After the Legato Storage Manager installation has completed, verify that all the required packages were installed. Use the commands described in Table B–3 to do this.

Table B–3 Required Packages for Legato Storage Manager Installation

Platform	Command and Output
AIX	`# lslpp -l | grep -i legato`
	`lus 5.5.0.4 COMMITTED Legato SCSI User Interface Tape`
HP	`# /usr/sbin/swlist | grep -i lsm`
	`LSM 5.5.lsm.Build.55 LSM for HP-UX 10.xx and 11.xx`
Solaris	`# 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`
Tru64	`# setld -i | grep -i ORCL`
	`ORCLCLNT550 installed Legato Storage Manager Basic Client`
	`ORCLMAN550 installed Legato Storage Manager Man Pages`
	`ORCLNODE550 installed Legato Storage Manager Driver and Storage Node`
	`ORCLSERV550 installed Legato Storage Manager Server`

2. Configure the storage devices to provide support for Legato Storage Manager to back up data to the SCSI storage devices attached to the system.

   See Also: For more information on device configuration, refer to Chapter 3 in the *Legato Storage Manager Administrator's Guide*.

How to Remove a Pre-5.5 Version of Legato Storage Manager

This section describes the steps you need to perform to remove a previous version of Legato Storage Manager. See the relevant section for software removal procedures for your platform.

- Removing Pre-5.5 Versions of Legato Storage Manager for AIX
- Removing Pre-5.5 Versions of Legato Storage Manager for HP
- Removing Pre-5.5 Versions of Legato Storage Manager for Solaris
- Removing Pre-5.5 Versions of Legato Storage Manager for Tru64

Removing Pre-5.5 Versions of Legato Storage Manager for AIX

If you want to install Legato Storage Manager from the Oracle9*i* distribution but you have a pre-5.5 version already installed on your system, then you must first remove the installed version. Do this with the following procedure:

1. Log in as the `root` user and shut down the Legato Storage Manager daemons:

   ```
   # nsr_shutdown
   ```

2. In the installation directory, `/usr/bin`, enter the following command to remove the Legato executables, indexes, manual pages, and configuration files:

   ```
   # nsr_ize -r -s
   ```

   The following is an example of a script used to remove Legato executables:

   ```
                  NetWorker(TM)  - Release 4.1
   Copyright (c) 1990-1994 Legato Systems, Inc.  All rights
   reserved. This product includes software developed by
   the University of California, Berkeley and its
   contributors.

   nsr_ize is about to remove NetWorker from the machine 'meteor'

   Are there any NetWorker man pages installed [yes]? [Return]
   Manual page path [/usr/man]? [Return]
   ```

```
       * * * Removing NetWorker man pages from /usr/man
/usr/man/man3 is empty, remove it [yes]? [Return]
/usr/man/man5 is empty, remove it [yes]? [Return]
/usr/man/man8 is empty, remove it [yes]? [Return]
Remove the ibmrs6000 NetWorker programs [yes]? [Return]
Directory from which the ibmrs6000 NetWorker programs
should be removed [/usr/bin]?
      * * * Removing ibmrs6000 NetWorker client programs
            from /usr/bin
Do you want to remove NetWorker configuration and
database files [n]? n
        * * * de nsr-izing system files
        Removing /etc/rc.nsr
        Modifying /etc/inittab
        * * * Restarting syslog daemon
        NetWorker successfully removed from 'meteor'.
```

Removing Pre-5.5 Versions of Legato Storage Manager for HP

If you want to install Legato Storage Manager from the Oracle9*i* distribution but you have a pre-5.5 version already installed on your system, then you must first remove the installed version. Do this with the following procedure:

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

   ```
   # nsr_shutdown
   ```

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

   Warning: Some Legato Storage Manager software packages depend on each other. Remove packages only in the following order: `ORCLman`, `ORCLserv`, `ORCLnode`, `ORCLclnt`, `ORCLdrvr`. Do not remove any existing Legato Storage Manager index files in the `/nsr` directory.

   Enter the following command:

   ```
   # swremove package_name
   ```

   where *package_name* is one of the packages listed in Table B–4:

Table B–4 Package Names and Descriptions for Pre-5.5 LSM on HP

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

Removing Pre-5.5 Versions of Legato Storage Manager for Solaris

If you want to install Legato Storage Manager from the Oracle9*i* distribution, but you have a pre-5.5 version already installed on your system, then you must first remove the installed version. Do this with the following procedure:

1. As `root` user, stop the Legato Storage Manager daemons by entering the following command:

   ```
   # 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.

   Warning: Some Legato Storage Manager software packages depend on each other. Remove packages only in the following order: `ORCLman`, `ORCLserv`, `ORCLnode`, `ORCLclnt`, `ORCLdrvr`. Do not remove any existing Legato Storage Manager index files in the `/nsr` directory.

   Enter the following command:

   ```
   # pkgrm package_name
   ```

   where *package_name* is one of the following:

Table B–5 Package Names and Descriptions for Pre-5.5 LSM on Solaris

Package Name	Description
ORCLman	NetWorker Man Pages
ORCLserv	NetWorker Server

Table B–5 Package Names and Descriptions for Pre-5.5 LSM on Solaris

ORCLnode	NetWorker Storage Node
ORCLclnt	NetWorker Client
ORCLdrvr	NetWorker Device Drivers

Removing Pre-5.5 Versions of Legato Storage Manager for Tru64

If you want to install Legato Storage Manager from the Oracle9*i* distribution but you have a pre-5.5 version already installed on your system, then you must first remove the installed version. Do this with the following procedure:

1. Log in as the `root` user and shut down the Legato Storage Manager daemons using the following command:

   ```
   # nsr_shutdown
   ```

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

   Caution: Some Legato Storage Manager software subsets depend on each other. Remove subsets only in the following order: `ORCLMAN`, `ORCLSERV`, `ORCLNODE`, `ORCLCLNT`. Do not remove any existing Legato Storage Manager index files in the `/nsr` directory.

   Enter the following command:

   ```
   # setld -d ORCLMAN ORCLSERV ORCLNODE ORCLCLNT
   ```

   The subsets in the preceding command are listed in the following table:

Table B–6 Subset Names and Descriptions for Pre-5.5 LSM on Tru64

Subset Name	Description
ORCLMAN	Legato Storage Manager Man Pages
ORCLSERV	Legato Storage Manager Server
ORCLNODE	Legato Storage Manager Driver and Storage Node
ORCLCLNT	Legato Storage Manager Basic Client

How to Remove Legato Storage Manager Version 5.5

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

Removing Legato Storage Manager Version 5.5 for AIX

If you want to install Legato Storage Manager from the Oracle9*i* distribution but Legato Storage Manager version 5.5 is already installed on your system, then you must first remove the installed version. Do this with the following procedure:

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 all Oracle instances that use this ORACLE_HOME.
   b. Remove `$ORACLE_HOME/lib/liblsm.a` using the following commands

      ```
      $ cd $ORACLE_HOME/lib
      $ rm liblsm.a
      $ rm libobk.a
      ```

   c. Restart all Oracle instances that use this ORACLE_HOME.
2. As `root` user, remove the Legato Storage Manager software using this `nsr_ize` command:

   ```
   # nsr_ize -r -s
   ```

   To remove Legato Storage Manager without removing the client and media index files and resource configuration files, press Enter for each prompt displayed by `nsr_ize`.

   To remove the `/nsr` directory containing the index and configuration files, enter `yes` at the prompt asking if you want to remove NetWorker configuration and database files.

Caution: 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 the Legato Storage Manager or install another Legato product, you will need to rebuild the configuration.

Removing Legato Storage Manager Version 5.5 for HP

If you want to install Legato Storage Manager from the Oracle9*i* distribution but Legato Storage Manager version 5.5 is already installed on your system, then you must first remove the installed version. Do this with the following procedure:

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 all Oracle instances that use this ORACLE_HOME.
   b. Remove `$ORACLE_HOME/lib/liblsm.sl` using the following commands:

      ```
      $ cd $ORACLE_HOME/lib
      $ rm liblsm.sl
      $ rm libobk.sl
      ```

   c. Restart all Oracle instances that use this ORACLE_HOME.
2. As `root` user, stop the Legato Storage Manager daemons using the `nsr_shutdown` command:

   ```
   # nsr_shutdown
   ```

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

   ```
   # swremove
   ```

   When the *Software Selection* window appears, perform the following steps:
   a. Highlight Legato Storage Manager in the *Software Selection* window.
   b. Select Remove (analysis) from the Actions menu.
   c. When the Status field in the *Remove Analysis* window is Ready, click Logfile to check the log file. Correct any listed problems before proceeding.
   d. Click OK in the *Remove Analysis* window.

e. Click Yes in the *Confirmation* dialog box.

f. When the Status field in the *Remove* window changes to Completed, click Logfile to check the log file. Correct any listed problems, then restart the removal from step 2 of this procedure.

g. Click Done to exit the *Remove* window.

h. Select Exit from the File menu to exit the *Software Selection* window.

i. Verify that the `/opt/networker` directory has been removed. If required, remove the `/opt/networker` directory manually.

Note: The `swremove` command does not remove the `/nsr` directory containing 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
```

Caution: 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 re-install Legato Storage Manager or install another Legato product later, you will need to rebuild the configuration.

Removing Legato Storage Manager Version 5.5 for Solaris

If you want to install Legato Storage Manager from the Oracle9*i* distribution but Legato Storage Manager version 5.5 is already installed on your system, then you must first remove the installed version. Do this with the following procedure:

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 all Oracle instances that use this ORACLE_HOME.

   b. Remove `$ORACLE_HOME/lib/liblsm.so` using the following commands:

```
$ cd $ORACLE_HOME/lib
$ rm liblsm.so
```

```
$ rm libobk.so
```

c. Restart all Oracle instances that use this ORACLE_HOME.

2. As `root` user, stop the Legato Storage Manager daemons by entering:

```
# nsr_shutdown
```

3. As `root` user, remove the Legato Storage Manager software by entering:

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

> **Note:** Remove the software packages in the exact order shown in step 3. The `pkgrm` command does not remove the `/nsr` directory containing the Legato Storage Manager client and media index, and resource configuration files.

4. For each prompt displayed by the `pkgrm` command, enter `yes`.

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

```
# rm -rf /nsr/* /nsr
```

> **Caution:** 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.

Removing Legato Storage Manager Version 5.5 for Tru64

If you want to install Legato Storage Manager from the Oracle9*i* distribution but Legato Storage Manager version 5.5 is already installed on your system, then you must first remove the installed version. Do this with the following procedure:

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 all Oracle instances that use this ORACLE_HOME.

   b. Remove `$ORACLE_HOME/lib/liblsm.so` using the following commands:

```
$ cd $ORACLE_HOME/lib
$ rm liblsm.so
$ rm libobk.so
```

c. Restart all Oracle instances that use this ORACLE_HOME.

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

```
# nsr_shutdown
```

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

```
# setld -d ORCLSERV550 ORCLNODE550 ORCLCLNT550 ORCLMAN550
```

4. Enter `yes` at each prompt asking if you wish to continue. Also, enter `yes` at the prompt asking whether to deinstall `/usr/lib/X11/app-defaults/Networker`.

   To remove Legato Storage Manager without removing the client and media index files and resource configuration files, enter `no` at each prompt related to deleting the contents of the `/nsr` directory.

   To remove the /nsr directory containing the index and configuration files, enter `yes` at each prompt related to deleting the contents of `/nsr`.

   Caution: 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 reinstall the Legato Storage Manager or install another Legato product, you will need to rebuild the configuration.

How to Integrate Legato Storage Manager with SAP R/3

To perform archive, backup, and recover operations, Legato Storage Manager provides a means to integrate SAP R/3 and Oracle9*i* backup and recovery. Initiate backup and recovery from SAPDBA. Also use SAPDBA to initiate the SAP `brbackup`, `brarchive`, and `brrestore` tools.

Table B–7 describes the SAP R/3 files in the SAP subdirectory of the directory containing the Legato Storage Manager software on Oracle9*i* software CD-ROM.

Table B–7 SAP R/3 Files for Legato Storage Manager Installation

Filename	Description
`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 steps:

1. With SAP R/3 already installed, install Legato Storage Manager on your system. Follow the installation instructions in the Legato Storage Manager Manual Installation section.
2. Include the path name of the directory containing the Legato Storage Manager executables (`/bin` for AIX, `/opt/networker/bin` for HP, `/usr/sbin` for Solaris, or `/usr/opt/networker/bin` for Tru64) in the PATH environment variable for the `oracle` user.
3. Configure a client resource for the Oracle9*i* server in Legato Storage Manager, according to the instructions in the *Legato Storage Manager Administrator's Guide*, which is included on the Oracle Online Generic Documentation CD-ROM.
4. From the SAP subdirectory in the Legato Storage Manager directory on the Oracle9*i* CD-ROM, copy the `backint` program file into the directory where the SAP `brbackup`, `brarchive`, and `brrestore` tools reside.
5. From the SAP subdirectory in the Legato Storage Manager directory on the Oracle9*i* CD-ROM, copy the `init.utl` file into the directory where you installed Legato Storage Manager (`/bin` for AIX, `/opt/networker/bin` for HP, `/usr/sbin` for Solaris, or `/usr/opt/networker/bin` for Tru64).
6. Direct the SAP Database Administration program to use the `backint` program file. In the SAP `init`*`sid`*`.sap` initialization file, enter:

   ```
   backup_dev_type = util_file
   ```

7. Direct the SAP Database Administration program to use the `init`*`sid`*`.utl` file for `backint` parameters. In the SAP `init`*`sid`*`.sap` initialization file, enter:

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

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

C

Oracle Transparent Gateway

This chapter describes how to install the gateway software from the distribution CD-ROM. This chapter includes the following sections:

System Requirements for Oracle Transparent Gateway

Review your system's hardware and software to ensure that it meets requirements, and determine gateway configuration before you install the gateway. Gateway components can be located on one platform or distributed over several platforms.

Oracle Corporation supports the software configurations described in this section as long as the underlying system software products are supported by their respective vendors. Verify the latest support status with your system software vendors.

Use the installation worksheet provided for your configuration to ensure that you have all required information before beginning installation.

The following sections describe system requirements for gateway configuration, and provide worksheets to use during the installation:

Informix Gateway Requirements

Table C–1 describes the hardware and software requirements for an Informix gateway. Use it to ensure that your system meets requirements to create a gateway for the Oracle Transparent Gateway for Informix.

Table C–1 Informix Gateway Requirements

Hardware/ Software	Platform	Requirements
Processor	HP	An HP workstation running the required version of HP-UX.
	Solaris	A Sun SPARC workstation running the required version of Solaris.

Table C–1 Informix Gateway Requirements

Hardware/ Software	Platform	Requirements
Memory	HP	26 MB of real memory is recommended to support the gateway. The total real memory requirement for the concurrent use of the gateway depends on these factors: ■ The SQL statement issued by the user. ■ The number of cursors currently opened against Informix. ■ The number of columns in the table being accessed.
	Solaris	26 MB of real memory is recommended to support the gateway. The total real memory requirement for the concurrent use of the gateway depends on these factors: ■ The SQL statement issued by the user. ■ The number of cursors currently opened against Informix. The number of columns in the table being accessed.
CD-ROM Drive	HP	An internal or external CD-ROM drive.
	Solaris	An internal or external CD-ROM drive.
Disk Space	HP	200 MB.
	Solaris	200 MB.
Operating System	HP	HP version 11.
	Solaris	Solaris version 2.6 (5.6), 7 (5.7) or 8 (5.8).
Oracle Database Server	HP	Oracle9*i* Enterprise Edition Server release 1 (9.0.1). Oracle database server can reside on any supported platform.
	Solaris	Oracle9*i* Enterprise Edition Server release 1 (9.0.1). Oracle database server can reside on any supported platform.

Table C–1 Informix Gateway Requirements

Hardware/ Software	Platform	Requirements
Oracle Networking	HP	On gateway machine: ■ Oracle Net Server release 9.0.1. ■ Oracle Adapter for Named Pipes or TCP/IP. The following are required on the Oracle database server machine: ■ Oracle Net Client release 9.0.1. ■ Oracle Adapter for Named Pipes or TCP/IP. Oracle Net products are included on the distribution CD-ROM. Oracle Net or Oracle Net Client and the Oracle Adapter must be installed on the machine where the Oracle database server is installed. Oracle Net Server and the Oracle Adapter must be installed on the machine where the gateway is installed.
	Solaris	On gateway machine: ■ Oracle Net Server release 9.0.1 ■ Oracle Adapter for Named Pipes or TCP/IP. The following are required on the Oracle database server machine: ■ Oracle Net Client release 9.0.1. ■ Oracle Adapter for Named Pipes or TCP/IP. Oracle Net products are included on the distribution CD-ROM. Oracle Net or Oracle Net Client and the Oracle Adapter must be installed on the machine where the Oracle database server is installed. Oracle Net Server and the Oracle Adapter must be installed on the machine where the gateway is installed.
Informix	HP	INFORMIX-OnLine, version 7.2, 7.3 or 7.4 and INFORMIX-ESQL/C are required. This version of the gateway does not support INFORMIX-SE.
	Solaris	INFORMIX-OnLine, version 7.2, 7.3 or 7.4 and INFORMIX-ESQL/C are required. This version of the gateway does not support INFORMIX-SE.

Ingres Gateway Requirements

Table C–2 describes the hardware and software requirements for an Ingres gateway. Use it to ensure that your system meets requirements to create a gateway for the Oracle Transparent Gateway for Ingres.

Table C–2 Ingres Gateway Requirements

Hardware/ Software	Platform	Requirements
Processor	HP	A HP workstation running the required version of HP-UX.
	Solaris	A Sun SPARC workstation running the required version of Solaris.
Memory	HP	26 MB of real memory is recommended to support the gateway. The total real memory requirement for the concurrent use of the gateway depends on these factors: ■ The SQL statement issued by the user. ■ The number of cursors currently opened against Ingres. ■ The number of columns in the table being accessed.
	Solaris	26 MB of real memory is recommended to support the gateway. The total real memory requirement for the concurrent use of the gateway depends on these factors: ■ The SQL statement issued by the user. ■ The number of cursors currently opened against Ingres. The number of columns in the table being accessed.
CD-ROM Drive	HP	An internal or external CD-ROM drive.
	Solaris	An internal or external CD-ROM drive.
Disk Space	HP	200 MB.
	Solaris	200 MB.
Operating System	HP	HP version 11
	Solaris	Solaris
Oracle Database Server	HP	Oracle9*i* Enterprise Edition Server release 1 (9.0.1). Oracle database server can reside on any supported platform.
	Solaris	Oracle9*i* Enterprise Edition Server release 1 (9.0.1). Oracle database server can reside on any supported platform.

Table C–2 Ingres Gateway Requirements

Hardware/ Software	Platform	Requirements
Oracle Networking	HP	On gateway machine: ■ Oracle Net Server release 9.0.1. ■ Oracle Adapter for Named Pipes or TCP/IP. The following are required on the Oracle database server machine: ■ Oracle Net Client release 9.0.1. ■ Oracle Adapter for Named Pipes or TCP/IP. Oracle Net products are included on the distribution CD-ROM. Oracle Net or Oracle Net Client and the Oracle Adapter must be installed on the machine where the Oracle database server is installed. Oracle Net Server and the Oracle Adapter must be installed on the machine where the gateway is installed.
	Solaris	On gateway machine: ■ Oracle Net Server release 9.0.1. ■ Oracle Adapter for Named Pipes or TCP/IP. The following are required on the Oracle database server machine: ■ Oracle Net Client release 9.0.1. ■ Oracle Adapter for Named Pipes or TCP/IP. Oracle Net products are included on the distribution CD-ROM. Oracle Net or Oracle Net Client and the Oracle Adapter must be installed on the machine where the Oracle database server is installed. Oracle Net Server and the Oracle Adapter must be installed on the machine where the gateway is installed.
Ingres	HP	Ingres II version 2.0.
	Solaris	Ingres II version 2.0.

Sybase Gateway Requirements

Table C–3 describes the hardware and software requirements for a Sybase gateway. Use it to ensure that your system meets requirements to create a gateway for the Oracle Transparent Gateway for Sybase.

Table C–3 Sybase Gateway Requirements

Hardware/ Software	Platform	Requirements
Processor	AIX	An IBM workstation running the required version of AIX.
	HP	An HP workstation running the required version of HP-UX.
	Solaris	A Sun SPARC workstation running the required version of Solaris.
	Tru64	A Compaq Alpha workstation running the required version of Tru64 UNIX.
Memory	AIX	26 MB of real memory is recommended to support the gateway. The total memory requirement for the concurrent use of the gateway depends on these factors: ■ The SQL statement issued by the user. ■ The number of cursors currently opened against Sybase. ■ The number of columns in the table being accessed.
	HP	26 MB of real memory is recommended to support the gateway. The total memory requirement for the concurrent use of the gateway depends on these factors: ■ The SQL statement issued by the user. ■ The number of cursors currently opened against Sybase. ■ The number of columns in the table being accessed.
	Solaris	26 MB of real memory is recommended to support the gateway. The total memory requirement for the concurrent use of the gateway depends on these factors: ■ The SQL statement issued by the user. ■ The number of cursors currently opened against Sybase. ■ The number of columns in the table being accessed.
	Tru64	26 MB of real memory is recommended to support the gateway. The total memory requirement for the concurrent use of the gateway depends on these factors: ■ The SQL statement issued by the user. ■ The number of cursors currently opened against Sybase. ■ The number of columns in the table being accessed.
CD-ROM Drive	AIX	An internal or external CD-ROM drive.
	HP	An internal or external CD-ROM drive.

Table C–3 Sybase Gateway Requirements

Hardware/ Software	Platform	Requirements
	Solaris	An internal or external CD-ROM drive.
	Tru64	An internal or external CD-ROM drive.
Disk Space	AIX	200 MB.
	HP	200 MB.
	Solaris	200 MB.
	Tru64	200 MB.
Operating System	AIX	AIX version 4.3.3
	HP	HP version 11
	Solaris	Solaris
	Tru64	Tru64 version 5.0a or above.
Oracle database server	AIX	Oracle9*i* Enterprise Edition Server release 1 (9.0.1). Oracle database server can reside on any supported platform.
	HP	Oracle9*i* Enterprise Edition Server release 1 (9.0.1). Oracle database server can reside on any supported platform.
	Solaris	Oracle9*i* Enterprise Edition Server release 1 (9.0.1). Oracle database server can reside on any supported platform.
	Tru64	Oracle9*i* Enterprise Edition Server release 1 (9.0.1). Oracle database server can reside on any supported platform.

Table C–3 Sybase Gateway Requirements

Hardware/ Software	Platform	Requirements
Oracle Networking	AIX	The following are required on the gateway machine: ■ Oracle Net Server release 9.0.1 ■ Oracle Adapter for Named Pipes or TCP / IP. Oracle Net Server and the Oracle Adapter must be installed on the machine where the gateway is installed. The following are required on the Oracle database server machine: ■ Oracle Net Client release 9.0.1. ■ Oracle Adapter for Named Pipes or TCP / IP. Oracle Net or Oracle Net Client and the Oracle Adapter must be installed on the machine where the Oracle database server is installed. The Oracle Net products are included on the Oracle9*i* distribution CD-ROM.
	HP	The following are required on the gateway machine: ■ Oracle Net Server release 9.0.1 ■ Oracle Adapter for Named Pipes or TCP / IP. Oracle Net Server and the Oracle Adapter must be installed on the machine where the gateway is installed. The following are required on the Oracle database server machine: ■ Oracle Net Client release 9.0.1. ■ Oracle Adapter for Named Pipes or TCP / IP. Oracle Net or Oracle Net Client and the Oracle Adapter must be installed on the machine where the Oracle database server is installed. The Oracle Net products are included on the Oracle9*i* distribution CD-ROM.

Table C–3 Sybase Gateway Requirements

Hardware/ Software	Platform	Requirements
	Solaris	The following are required on the gateway machine: ■ Oracle Net Server release 9.0.1 ■ Oracle Adapter for Named Pipes or TCP/IP. Oracle Net Server and the Oracle Adapter must be installed on the machine where the gateway is installed. The following are required on the Oracle database server machine: ■ Oracle Net Client release 9.0.1. ■ Oracle Adapter for Named Pipes or TCP/IP. Oracle Net or Oracle Net Client and the Oracle Adapter must be installed on the machine where the Oracle database server is installed. The Oracle Net products are included on the Oracle9*i* distribution CD-ROM.
	Tru64	The following are required on the gateway machine: ■ Oracle Net Server release 9.0.1 ■ Oracle Adapter for Named Pipes or TCP/IP. Oracle Net Server and the Oracle Adapter must be installed on the machine where the gateway is installed. The following are required on the Oracle database server machine: ■ Oracle Net Client release 9.0.1. ■ Oracle Adapter for Named Pipes or TCP/IP. Oracle Net or Oracle Net Client and the Oracle Adapter must be installed on the machine where the Oracle database server is installed. The Oracle Net products are included on the Oracle9*i* distribution CD-ROM.
	AIX	Sybase Server or Client, version 11.9.2 or 12.0 is required. If Sybase Server is not on the same machine as the gateway, then the version of Sybase Open Library certified for your Sybase Server is required.

Table C–3 Sybase Gateway Requirements

Hardware/ Software	Platform	Requirements
	HP	Sybase Server or Client, version 11.9.2 or 12.0. If Sybase Server is not on the same machine as the gateway, then the version of Sybase Open Library certified for your Sybase Server is required.
	Solaris	Sybase Server or Client, version 11.9.2 or 12.0. If Sybase Server is not on the same machine as the gateway, then the version of Sybase Open Library certified for your Sybase Server is required.
	Tru64	Sybase Server or Client, version 11.9.2 or 12.0. If Sybase Server is not on the same machine as the gateway, then the version of Sybase Open Library certified for your Sybase Server is required.

Teradata Gateway Requirements

Table C–4 describes the hardware and software requirements for a Teradata gateway. Use it to ensure that your system meets requirements to create a gateway for the Oracle Transparent Gateway for Teradata.

Table C–4 Teradata Gateway Hardware Requirements

Hardware	Platform	Requirements
Processor	HP	An HP workstation running the required version of HP-UX.
	Solaris	A Sun SPARC workstation running the required version of Solaris.
Memory	HP	26 MB of real memory is recommended to support the gateway. The total memory requirement for the concurrent use of the gateway depends on these factors: ■ The SQL statement issued by the user. ■ The number of cursors currently opened against Teradata. The number of columns in the table being accessed.

Table C–4 Teradata Gateway Hardware Requirements

Hardware	Platform	Requirements
	Solaris	26 MB of real memory is recommended to support the gateway. The total memory requirement for the concurrent use of the gateway depends on these factors: ■ The SQL statement issued by the user. ■ The number of cursors currently opened against Teradata. The number of columns in the table being accessed.
CD-ROM Drive	HP	An internal or external CD-ROM drive.
	Solaris	An internal or external CD-ROM drive.
Disk Space	HP	200 MB.
	Solaris	200 MB.
Operating System	HP	HP version 11.
	Solaris	Solaris version 2.6 (5.6), 7 (5.7) or 8 (5.8).
Oracle database server	HP	Oracle9*i* Enterprise Edition Server release 1 (9.0.1). Oracle database server can reside on any supported platform.
	Solaris	Oracle9*i* Enterprise Edition Server release 1 (9.0.1). Oracle database server can reside on any supported platform.
Oracle Networking	HP	The following are required on the gateway machine: ■ Oracle Net Server release 9.0.1. ■ Oracle Adapter for Named Pipes or TCP/IP. Oracle Net Server and the Oracle Adapter must be installed on the machine where the gateway is installed. The following are required on the Oracle database server machine: ■ Oracle Net Client release 9.0.1. ■ Oracle Adapter for Named Pipes or TCP/IP. Oracle Net or Oracle Net Client and the Oracle Adapter must be installed on the machine where the Oracle database server is installed. The Oracle Net products are included on the Oracle9*i* distribution CD-ROM.

Table C–4 Teradata Gateway Hardware Requirements

Hardware	Platform	Requirements
	Solaris	The following are required on the gateway machine: ■ Oracle Net Server release 9.0.1. ■ Oracle Adapter for Named Pipes or TCP/IP. Oracle Net Server and the Oracle Adapter must be installed on the machine where the gateway is installed. The following are required on the Oracle database server machine: ■ Oracle Net Client release 9.0.1. ■ Oracle Adapter for Named Pipes or TCP/IP. Oracle Net or Oracle Net Client and the Oracle Adapter must be installed on the machine where the Oracle database server is installed. The Oracle Net products are included on the Oracle9*i* distribution CD-ROM.
Teradata	HP	Teradata V2R.03.00.02 or V2R.04.00.0115.
	Solaris	Teradata V2R.03.00.02 or V2R.04.00.0115.
NCR's Teradata ODBC Driver	HP	version 02.04.00.00.
	Solaris	version 02.04.00.00.

Tested Gateway Configurations

The following tables provide gateway configurations tested by Oracle Corporation at the time of this document release. Oracle continues to provide support for the most recent releases of Oracle and non-Oracle systems in a timely manner.

Table C–5 Tested Gateway Configurations

Database	Gateway and Operating System
Informix version 7.2	tg4ifmx version 9.0.1 running on Sun SPARC Solaris version 2.6 (5.6), 7 (5.7) or 8 (5.8). tg4ifmx version 9.0.1 running on HP-UX 11.0
Informix version 7.3	tg4ifmx version 9.0.1 running on Solaris version 2.6 (5.6), 7 (5.7) or 8 (5.8). tg4ifmx version 9.0.1 running on HP version 11.0

Table C–5 Tested Gateway Configurations

Database	Gateway and Operating System
Informix version 7.4	tg4ifmx version 9.0.1 running on Solaris version 2.6 (5.6), 7 (5.7) or 8 (5.8).
	tg4ifmx version 9.0.1 running on HP version 11.0
Ingres II version 2.0	tg4ingr version 9.0.1 running on Solaris version 2.6 (5.6), 7 (5.7) or 8 (5.8).
	tg4ingr version 9.0.1 running on HP version 11.0
Sybase version 11.9.2	tg4sybs version 9.0.1 running on AIX version 4.3.3
	tg4sybs version 9.0.1 running on HP version 11.0
	tg4sybs version 9.0.1 running on Solaris version 2.6 (5.6), 7 (5.7) or 8 (5.8).
	tg4sybs version 9.0.1 running on Tru64 version 5.1
Sybase version 12.0	g4sybs version 9.0.1 running on AIX version 4.3.3
	tg4sybs version 9.0.1 running on HP version 11.0
	tg4sybs version 9.0.1 running on Solaris version 2.6 (5.6), 7 (5.7) or 8 (5.8).
	tg4sybs version 9.0.1 running on Tru64 version 5.1
Teradata V2R3.03.00.02	tg4tera version 9.0.1 running on Solaris version 2.6 (5.6), 7 (5.7) or 8 (5.8) through NCR's ODBC Driver for Teradata V02.04.00.00
	tg4tera version 9.0.1 running on HP version 11.0 through NCR's ODBC Driver for Teradata V02.04.00.00
Teradata V2R04.03.00.15	tg4tera version 9.0.1 running on Solaris version 2.6 (5.6), 7 (5.7) or 8 (5.8) through NCR's ODBC Driver for Teradata V02.04.00.00
	tg4tera version 9.0.1 running on HP version 11.0 through NCR's ODBC Driver for Teradata V02.04.00.00

See Also: Oracle Corporation continually updates supported gateway configurations. For the latest supported configuration information, either contact Oracle Support Services or visit the following web site:

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

Gateway Installation Worksheets

Select the worksheet appropriate for your system in one of the following tables, and use the values you enter as a reference during the configuration process:

- Informix Worksheet
- Ingres Worksheet
- Sybase Worksheet
- Teradata Worksheet

Informix Worksheet

Enter your system values in the following Table C–6 to prepare for an Informix gateway configuration.

Table C–6 Informix Installation Worksheet

Description	Value
Oracle database server machine name	
Oracle database server platform (OS and its version number)	
`$ORACLE_HOME` of Oracle database server (full path name)	
Gateway machine name	
Gateway machine platform (OS and its version number)	
`$ORACLE_HOME` of the gateway (full path name)	
Informix client library location (full path name)	
Name of the Informix server to which the gateway will connect	
Name of the Informix database to which the gateway will connect	

Ingres Worksheet

Enter your system values in the following Table C–7 to prepare for an Ingres gateway configuration.

Table C–7 Ingres Installation Worksheet

Description	Value
Oracle database server machine name	
Oracle database server platform (OS and its version number)	
`$ORACLE_HOME` of Oracle database server (full path name)	
Gateway machine name	
Gateway machine platform (OS and its version number)	
`$ORACLE_HOME` of the gateway (full path name)	
Ingres net/server installed location (full path name)	
Name of the Ingres virtual node that will be used to access a remote, networked Ingres server	
Name of the Ingres database to which the gateway will connect	

Sybase Worksheet

Enter your system values in the following Table C–8 to prepare for a Sybase gateway configuration.

Table C–8 Sybase Installation Worksheet

Description	Value
Oracle database server machine name	
Oracle database server platform (OS and its version number)	
`$ORACLE_HOME` of Oracle database server (full path name)	
Gateway machine name	
Gateway machine platform (OS and its version number)	
`$ORACLE_HOME` of the gateway (full path name)	
Name of the Sybase Adaptive Server to which the gateway will connect	

Teradata Worksheet

Enter your system values in the following Table C–9 to prepare for a Teradata gateway configuration.

Table C–9 Teradata Installation Worksheet

Description	Value
Oracle database server machine name	
Oracle database server platform (OS and its version number)	
`$ORACLE_HOME` of Oracle database server (full path name)	
Gateway machine name	
Gateway machine platform (OS and its version number)	
`$ORACLE_HOME` of the gateway (full path name)	
Version of the Teradata Server to which the gateway will connect .	
ODBC Data Source Name (DSN) to be used by the gateway.	
Directory where the NCR ODBC Driver for Teradata is installed.	

Installing Oracle Transparent Gateway

Use the following procedures and tables to install Oracle Transparent Gateway.

Mounting Transparent Gateway from the CD-ROM

Install the gateway software from the CD-ROM as follows:

1. Start the Oracle Universal Installer.

   Note: Complete instructions for mounting and running the Oracle Universal Installer are not presented here. Review Chapter 3, "Installation" to find complete mounting and starting instructions for your platform. As a gateway is installed using Custom Installation, note in particular "Oracle9i Database Custom Installation" on page 3-18.

2. Install the gateway by responding to installation prompts as indicated for your platform in "Installation Prompts for Transparent Gateway".

Installation Prompts for Transparent Gateway

The Oracle Universal Installer screens and the sequence in which they appear depend on your platform. Select the installation prompt section that corresponds to the e gateway will connect.

- Installation Prompts for Informix Gateway
- Installation Prompts for Ingres Gateway
- Installation Prompts for Sybase Gateway
- Installation Prompts for Teradata Gateway

Installation Prompts for Informix Gateway

Use Table C–10, "Installation Prompts and Responses for Informix" as a guide during your gateway installation. Follow the instructions in the Response column for each entry in the Screen column. When you have completed the responses, follow the instructions in the "Completing Informix Gateway Installation" section.

Table C–10 Installation Prompts and Responses for Informix

Screen	Response
Informix Client Library Path: The complete path where the Informix client library is installed.	In the Informix Client Library Path text box, enter the location of your Informix client library files. Specify full paths with directory names not exceeding 32 alphanumeric characters. When you have entered these names, click the Next button.

Completing Informix Gateway Installation

When the *Summary* screen appears, click Install.

Verify that the installation was successful after the Oracle Universal Installer confirms that the installation has been completed. Check the contents of the `installActions.log` file located in the `orainventory_location/logs/` directory.

Installation Prompts for Ingres Gateway

Use Table C–11, "Installation Prompts and Responses for Ingres" as a guide during the installation. Follow the instructions in the Response column for each entry in the Screen column. When you have completed the responses, follow the instructions in the "Completing Ingres Gateway Installation" section.

Table C–11 Installation Prompts and Responses for Ingres

Screen	Response
Ingres II installation: ANSI/ISO entry SQL-92 database standard.	Indicate if your Ingres database is compliant with the ANSI/ISO-92 Entry SQL database standard. Click the Yes radio button if your Ingres database complies with this standard. Click the No radio button if your Ingres database does not comply with this standard. When you have selected the option that describes your Ingres installation, click the Next button

Completing Ingres Gateway Installation

When the *Summary* screen appears, click Install.

Verify that the installation was successful after the Oracle Universal Installer confirms that the installation has been completed. Check the contents of the `installActions.log` file located in the `orainventory_location/logs/` directory.

Installation Prompts for Sybase Gateway

Use Table C–12, " Installation Prompts and Responses for Sybase" as a guide during the installation. Follow the instructions in the Response column for each entry in the Screen column. When you have completed the responses, follow the instructions in the "Completing Sybase Gateway Installation" section.

Table C–12 Installation Prompts and Responses for Sybase

Screen	Response
Sybase Path: The complete path where Sybase is installed.	In the Sybase path text box, type the complete directory path where the Sybase software is installed. The gateway will connect to this database. When you have entered this path, click the Next button.
Sybase Server and Database Names: Names of the SYBASE server and the SYBASE database.	In the Sybase Server text box, type the name of the Sybase server. The gateway will connect to this server. In the Sybase Database text box, type the name of the Sybase database. The gateway will connect to this database. When you have entered these names, click the Next button.

Completing Sybase Gateway Installation

When the *Summary* screen appears, click Install.

Verify that the installation was successful after the Oracle Universal Installer confirms that the installation has been completed. Check the contents of the `installActions.log` file located in the `orainventory_location/logs/` directory.

Installation Prompts for Teradata Gateway

Use Table C–13, " Installation Prompts and Responses for Teradata" as a guide during the installation. Follow the instructions in the Response column for each entry in the Screen column. When you have completed the responses, follow the instructions in the "Completing Teradata Gateway Installation" section.

Table C–13 Installation Prompts and Responses for Teradata

Screen	Response
ODBC Data Source name that will be used by the gateway	Enter the Open Database Connectivity (ODBC) data source name (DSN) for the Teradata database to which the gateway will connect. The DSN is defined in the `odbc.ini` file.

Completing Teradata Gateway Installation

When the *Summary* screen appears, click Install.

Verify that the installation was successful after the Oracle Universal Installer confirms that the installation has been completed. Check the contents of the `installActions.log` file located in the `orainventory_location/logs/` directory.

Removing Oracle Transparent Gateway

Remove the gateway as follows:

1. Start the Oracle Universal Installer.
2. Click the De-install Products button on the *Welcome* window or the Installed Products ... button available on any Oracle Universal Installer window. The *Inventory* window appears and displays a list of installed products.
3. Click to select the gateway product in the *Inventory* window and click Remove.

Only the files that were copied into the Oracle home directory during the gateway installation are automatically removed. You must manually remove all other related files.

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