Oracle® Database

Companion CD Installation Guide

10*g* Release 2 (10.2) for hp-ux Itanium

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Oracle Database Companion CD Installation Guide, 10*g* Release 2 (10.2) for hp-ux Itanium

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Preface

This guide describes how to install and configure the products available on the Oracle Database 10*g* Companion CD installation media.

Audience

This guide is intended for anyone responsible for installing the products available on the Oracle Database 10*g* Companion CD installation media.

Documentation Accessibility

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

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

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TTY Access to Oracle Support Services

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

Related Documentation

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

- Oracle Database

    - *Oracle Database Release Notes for hp-ux Itanium*

    - *Oracle Database Installation Guide for hp-ux Itanium*

    - *Oracle Database Quick Installation Guide for hp-ux Itanium*

    - *Oracle Database Oracle Clusterware and Oracle Real Application Clusters Installation Guide for hp-ux*

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

- Oracle Database Client

    - *Oracle Database Client Installation Guide for hp-ux Itanium*

    - *Oracle Database Client Quick Installation Guide for hp-ux Itanium*

- Oracle Database Companion CD

    - *Oracle Database Companion CD Installation Guide for hp-ux Itanium*

    - *Oracle Database Companion CD Quick Installation Guide for hp-ux Itanium*

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

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

Conventions

The following text conventions are used in this document:

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

Command Syntax

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

Convention	Description
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 it on a single line without a backslash: `dd if=/dev/rdsk/c0t1d0s6 of=/dev/rst0 bs=10b \` `count=10000`
braces { }	Braces indicate required items: `.DEFINE {macro1}`
brackets [ ]	Brackets indicate optional items: `cvtcrt` *termname* `[`*outfile*`]`
ellipses ...	Ellipses indicate an arbitrary number of similar items: `CHKVAL fieldname` *value1 value2 ... valueN*
italics	Italic type indicates a variable. Substitute a value for the variable: *library_name*
vertical line |	A vertical line indicates a choice within braces or brackets: *SIZE filesize* `[K`|`M]`

Terminology

In this guide, the term `Companion CD products` has been used to refer to the products available on the Oracle Database Companion CD installation media. In contrast, the term `Oracle Database 10g Companion Products` has been used to refer to the products available in the Oracle Database 10*g* Companion Products installation type.

The formal name of the operating system, hp-ux Itanium, has been shortened to HP in this guide.

Accessing Documentation

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

Platform-Specific Documentation

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

1. Use a Web browser to open the `welcome.htm` file in the top-level directory of the disc.

2. Select the appropriate product link.

3. Select the **Documentation** tab.

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

Product Documentation

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

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

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1

Oracle Database Companion CD Installation Overview

This chapter provides an overview of the products available on the Oracle Database Companion CD installation media and describes issues that you must consider before installing them. It includes the following sections:

- Overview of Oracle Database Companion CD Installation
- Products Available in the Oracle HTML DB Installation Type
- Products Available in the Oracle Database 10g Products Installation Type
- Products Available in the Oracle Database 10g Companion Products Installation Type

Overview of Oracle Database Companion CD Installation

The installation process consists of the following steps:

1. **Read the release notes**: Read *Oracle Database Installation Guide for hp-ux Itanium* before you begin the installation. The release notes are available with the platform-specific documentation. The latest version of the release notes is available on Oracle Technology Network at

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

2. **Plan the installation:** This chapter describes the products that you can install and provides information that you must know before installing the software.

    > **See Also:** The "Frequently Asked Questions About Installation" appendix of *Oracle Database Installation Guide for hp-ux Itanium* for information about the best way to install Oracle products depending on the requirements of your site

3. **Verify system requirements:** Chapter 2 describes the minimum system requirements for installing Companion CD products.

4. **Installing the software:** The following chapter and appendixes provide information about installing Companion CD products:

    - Chapter 3, "Installing the Oracle Database Companion CD Software"
    - Appendix A, "Troubleshooting the Oracle Database Companion CD Installation"
    - Appendix B, "Installing Oracle Database Companion CD Products in Noninteractive Mode"

5. **Completing postinstallation tasks:** Chapter 4 describes required and recommended postinstallation tasks. If you need to check or modify port numbers, refer to Appendix D for information.

6. **Getting started on using the Companion CD products:** Chapter 5 provides information about using the Companion CD products.

Products Available in the Oracle HTML DB Installation Type

The following sections describe the products available in the Oracle HTML DB installation type:

- Oracle HTML DB

- Oracle HTTP Server

> **Note:** The Summary screen of Oracle Universal Installer provides a detailed list of the products available in the Oracle HTML DB installation type.

Oracle HTML DB

Oracle HTML DB is a tool for rapid development and deployment of Web applications on an Oracle Database installation. It provides the productivity benefits of a desktop database, and the security, reliability, and performance of Oracle Database. With little programming or scripting and only a Web browser, you can build reporting and data entry applications on existing tables, views, or data imported from spreadsheets.

Where to Install Oracle HTML DB

You can install Oracle HTML DB with Oracle HTTP Server in a new Oracle home. Alternatively, you can install this product in an existing Oracle home that contains Oracle HTTP Server, which you installed from the installation media. If you have an existing Oracle HTML DB installation, then this installation is upgraded to the current release of Oracle HTML DB. Do not install Oracle HTML DB in any other Oracle HTTP Server Oracle home.

> **Note:** Installations of Oracle HTML DB in other Oracle homes that may include Oracle HTTP Server are not supported.

Oracle HTTP Server

Oracle HTTP Server is a Web server that is based on Apache Standalone 10.1.2.0.0. You can use the Oracle HTML DB installation type to install Oracle HTTP Server in a new Oracle home.

> **Note:** If you are installing Oracle Workflow middle-tier components, then Oracle HTTP Server is available in the Oracle Database 10*g* Companion Products installation type.

This standalone release of Oracle HTTP Server provides the following features:

- A robust and reliable Web server that you can use to serve Web pages

- Support for Perl and Fast CGI scripts using `mod_perl` and `mod_fastcgi`

- Support for PL/SQL applications using `mod_plsql`

- High availability, through the use of Oracle Process Manager and Notification server (OPMN)

  OPMN monitors Oracle HTTP Server processes and restarts them if they fail.

- Support for secure transactions using Secure Sockets Layer (SSL)

- Single sign-on capabilities using `mod_osso`

  To enable single sign-on, you must use Oracle HTTP Server in conjunction with Oracle Internet Directory and Single Sign-On Server, both of which are available with Oracle Application Server 10*g*.

- Many standard Apache modules, in addition to modules provided by Oracle

  See Also: *Oracle Application Server Installation Guide* for more information about Oracle Internet Directory and Single Sign-On Server

Differences Between This Release and Other Oracle HTTP Server Releases

The following are the differences between the standalone version of Oracle HTTP Server and the version shipped with other releases of Oracle software:

- Oracle9*i* release 2 or earlier, and Oracle9*i*AS release 1

  - Apache JServ is not shipped with this release of Oracle HTTP Server, nor does this release support Apache JServ. Because Apache JServ is not supported, the `mod_oprocmgr` module is not loaded in the default configuration.

  - In this release, `mod_ossl`, which Oracle developed, replaces `mod_ssl`.

  - The `apachectl` utility is no longer supported for starting, stopping, or restarting Oracle HTTP Server. You must use OPMN to start, stop, or restart Oracle HTTP Server.

    See Also:

    - "Step 9: Migrating Your Server Certificate and Private Key" on page 4-6 for more information about migrating SSL certificates to the format required by `mod_ossl`

    - "Enabling the High Availability Features of Oracle HTTP Server" on page 4-10 for more information about using OPMN

- Oracle9*i*AS release 2 or later

  - You cannot configure the standalone release of Oracle HTTP Server in an Oracle9*i*AS or Oracle Application Server 10*g* cluster.

    For this reason, you cannot use the `dcmctl` utility to start, stop, or restart processes associated with this release of Oracle HTTP Server.

  - You cannot use the Oracle Enterprise Manager Application Server Control to administer this release of Oracle HTTP Server.

Where to Install Oracle HTTP Server

You must install Oracle HTTP Server in a new Oracle home. Do not install it in an existing Oracle home. You can install Oracle HTTP Server more than once on the same system, as long as each installation uses a separate Oracle home.

Products Available in the Oracle Database 10*g* Products Installation Type

The following sections describe the products that are installed by the Oracle Database 10*g* Products installation type. You must install these products in an existing Oracle Database 10*g* release 2 (10.2) Oracle home:

- Oracle JDBC Development Drivers
- Oracle SQLJ
- Oracle Database Examples
- Oracle Text Supplied Knowledge Bases
- Oracle Workflow Server
- Oracle Ultra Search
- Natively Compiled Java Libraries
- JPublisher

> **Note:**
>
> - The Summary screen of Oracle Universal Installer provides a detailed list of the products available in the Oracle Database 10*g* Products installation type.
>
> - Legato Single Server Version (LSSV) is no longer supported on Oracle Database. Oracle Database Recovery Manager (RMAN), which is a backup and recovery tool, is integrated into Oracle Database.
>
>   Refer to *Oracle Database Backup and Recovery Basics* for more information about RMAN.

Oracle JDBC Development Drivers

Oracle provides a set of JDBC drivers that you can use for debugging your code and other deployment scenarios. These drivers can access Oracle Database release 8.1.7 or later.

Oracle SQLJ

Oracle SQLJ enables application programmers to embed SQL operations in Java code in a way that is compatible with the Java design philosophy. A SQLJ program is a Java program containing embedded SQL statements. Oracle SQLJ offers extensions to support dynamic SQL operations, which are operations that can change in real time. It is also possible to use dynamic SQL operations through JDBC code or PL/SQL code within a SQLJ application. Typical applications contain much more static SQL than dynamic SQL. SQLJ consists of both a translator and a run-time component and is smoothly integrated into your development environment.

Oracle Database Examples

Oracle Database Examples include a variety of examples and product demonstrations that you can use to learn about the products, options, and features of Oracle Database. Many of these examples are designed to work with the Sample Schemas, which you can install in any Oracle Database. Many of the documents in the Oracle

Documentation Library use the example programs and scripts provided with the Oracle Database Examples.

Required Products

Before you can use the Oracle Database Examples, you must install the Sample Schemas in an Oracle Database. When you install Oracle Database, or use Database Configuration Assistant (DBCA) to create a new database, you can choose to include the Sample Schemas when you create the database. You can also manually install the Sample Schemas in an existing database.

> **See Also:** *Oracle Database Sample Schemas* for information about manually installing the Sample Schemas in an existing database

Oracle Text Supplied Knowledge Bases

The Oracle Database 10*g* Products installation type installs two Oracle Text knowledge bases, English and French. You can extend the supplied knowledge bases depending on your requirements. Alternatively, you can create your own knowledge bases, in languages other than English and French.

> **See Also:** *Oracle Text Reference* for more information about creating and extending knowledge bases

Oracle Workflow Server

Oracle Workflow provides a complete workflow management system that supports business process-based integration. It also enables modeling, automation, and continuous improvement of business processes, routing information of any type according to user-defined business rules. The Oracle Workflow installation includes Oracle Workflow Server and Oracle Workflow Manager in the Oracle Database 10*g* Products installation type and the Oracle Workflow middle-tier components on the Companion Products installation type.

In this release, starting the Oracle Application Server Containers for J2EE (OC4J) instances for Oracle Workflow Manager has been simplified to running two scripts.

> **Note:** Do not install Oracle Workflow Server in an Oracle E-Business Suite database. If you want to use the version of Oracle Workflow available with Oracle Database 10*g*, or any Oracle Database components that depend on this version of Oracle Workflow, then you must install the Oracle Workflow Server in a database that is not used for an Oracle E-Business Suite instance.
>
> For an Oracle E-Business Suite database, you can continue to use the version of the Oracle Workflow Server embedded in Oracle E-Business Suite.

> **See Also:** The Oracle Workflow Client installation software is available on the Oracle Technology Network Web site at
>
> http://www.oracle.com/technology/products/ias/workflow/index.html

Other Installation Types That Install Oracle Workflow

Oracle Workflow is also installed by some installation types of the following products:

- Oracle Application Server 10*g*

- Oracle Content Management SDK 10*g*

If you installed either of these products, then you may have already installed Oracle Workflow. In this case, you do not need to install Oracle Workflow again.

Oracle Ultra Search

Oracle Ultra Search lets you index and search Web sites, database tables, files, mailing lists, Oracle Application Server Portals, and user-defined data sources. You can use Oracle Ultra Search to build different kinds of search applications.

Natively Compiled Java Libraries

The Oracle Database 10*g* Products installation type installs JAccelerator and Oracle *inter*Media Image Accelerator, which contains the natively compiled Java libraries (NCOMPs) for Oracle JVM and Oracle *inter*Media. These libraries are required to improve the performance of these products on your platform.

JPublisher

JPublisher is a Java utility that generates Java classes to represent the following user-defined database entities in a Java program:

- SQL object types

- Object reference types (REF types)

- SQL collection types (VARRAY types or nested table types)

- PL/SQL packages

- Server-side Java classes

- SQL queries and DML statements

You can use JPublisher to specify and customize the mapping of SQL object types, object reference types, and collection types (VARRAYs or nested tables) to Java classes in a strongly typed paradigm.

JPublisher can also generate classes for PL/SQL packages. These classes have wrapper methods to invoke the stored procedures in the PL/SQL packages.

In addition, JPublisher simplifies access to PL/SQL-only types from Java. You can employ predefined or user-defined mappings between PL/SQL and SQL types. You can also use PL/SQL conversion functions between such types. With such type correspondences in place, JPublisher can automatically generate the required Java and PL/SQL code.

Just like SQL and PL/SQL entities publish to Java, you can also publish server-side Java classes to client-side Java classes. Doing this enables applications to make direct calls to Java classes in the database.

JPublisher lets you expose generated Java classes as Web services, for example. You can publish either SQL or PL/SQL entities, or server-side Java entities.

JPublisher uses SQLJ code in most Java classes that it generates, so it includes Oracle SQLJ Translator and Oracle SQLJ Runtime. Oracle SQLJ is a standard way to embed SQL statements in Java programs.

Oracle SQLJ Translator

Because JPublisher uses SQLJ code in its generated classes, it automatically calls the Oracle SQLJ translator during the code generation process, as required. The translator converts embedded SQL statements into JDBC calls.

Oracle SQLJ Runtime

Oracle SQLJ Runtime is used during program run time to run most classes that were generated by JPublisher. SQLJ Runtime is a thin layer of pure Java code that runs above the JDBC driver. It acts as an intermediary that reads information about SQL operations and passes instructions to the JDBC driver.

> **See Also:** *Oracle Database JPublisher User's Guide*

Products Available in the Oracle Database 10*g* Companion Products Installation Type

The following sections describe the products that you can install with the Oracle Database 10*g* Companion Products installation type:

- Oracle Workflow Middle-Tier Components
- Oracle HTTP Server

Oracle Workflow Middle-Tier Components

Oracle Workflow middle-tier components enable the Oracle Workflow user interface Web pages, including the database access descriptor (DAD) and virtual directory mappings for Oracle Workflow. Before you can use Oracle Workflow Server, you must install Oracle Workflow middle-tier components.

You can use the Oracle Database 10*g* Companion Products installation type to install the Oracle Workflow middle-tier components after you install Oracle Workflow Server.

Oracle HTTP Server

Refer to "Oracle HTTP Server" on page 1-2 for information about Oracle HTTP Server.

2

Oracle Database Companion CD Requirements

This chapter describes the requirements for installing the products from the Oracle Database 10*g* Companion CD installation media. It contains the following sections:

- Hardware and Software Certification
- General Requirements for Installing Oracle Software
- Requirements for Installing Oracle HTML DB Products
- Requirements for Installing Oracle Database 10g Products
- Requirements for Installing Oracle Database 10g Companion Products
- Network Setup

Hardware and Software Certification

The platform-specific hardware and software requirements included in this installation guide were current at the time this guide was published. However, because new platforms and operating system software versions may be certified after this guide is published, you must review the certification information on the Oracle*MetaLink* Web site. This Web site provides the most up-to-date list of certified hardware platforms and operating system versions. You can visit the Oracle*MetaLink* Web site at

https://metalink.oracle.com

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

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

General Requirements for Installing Oracle Software

The following sections describe the general requirements for installing Oracle software:

- Logging In to the System as root
- Required Symbolic Links
- Required Operating System Group and User
- Required Software Directories
- Configuring the oracle User's Environment

Logging In to the System as root

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

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

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

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

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

     ```
     $ xhost fully_qualified_remote_host_name
     ```

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

     ```
     $ telnet remote_host
     ```

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

     ```
     $ su - root
     ```

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

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

  1. Start the X server software.

  2. Configure the security settings of the X server software to permit remote hosts to display X applications on the local system.

  3. Connect to the remote system on which you want to install the software and start a terminal session on that system, for example, an X terminal (`xterm`).

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

     ```
     $ su - root
     ```

Required Symbolic Links

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

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

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

Required Operating System Group and User

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

- Oracle Inventory group (typically, `oinstall`)

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

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

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

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

  > **Note:** In Oracle documentation, the Oracle software owner user is referred to as the `oracle` user.

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

> **Note:** As an alternative to creating local users and groups, you can create the appropriate users and groups in a directory service. For example, Network Information Services (NIS). Contact your system administrator or refer to your operating system documentation for information about using directory services.

The following sections describe how to create the Oracle Inventory group and the Oracle software owner user:

- Oracle Inventory Group
- Oracle Software Owner User

Oracle Inventory Group

If Oracle software is already installed on the system, then the existing Oracle Inventory group must be the primary group of the operating system user that you use to install new Oracle software. The following sections describe how to identify an existing Oracle Inventory group and, if required, to create it.

Determining If the Oracle Inventory Group Exists

When you install Oracle software on the system for the first time, Oracle Universal Installer creates the `oraInst.loc` file. This file identifies the name of the Oracle Inventory group and the path of the Oracle Inventory directory. To determine if the Oracle Inventory group exists, enter the following command:

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

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

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

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

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

Creating the Oracle Inventory Group

> **Note:** Oracle recommends that you use the group name `oinstall` for the Oracle Inventory group.

If the `oraInst.loc` file does not exist, then enter the following command to create the oinstall group:

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

Oracle Software Owner User

You must create an Oracle software owner user if any of the following conditions is true:

- An Oracle software owner user does not exist; for example, if this is the first installation of Oracle software on the system.

- An Oracle software owner user exists, but you want to use a different operating system user.

> **Note:** In this document, the Oracle software owner user is referred to as `oracle`.

Determining If an Oracle Software Owner User Exists

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

```
# id oracle
```

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

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

If the user exists, then determine whether you want to use the existing user or create a user. If you want to use the existing user, then ensure that the user's primary group is the Oracle Inventory group.

Refer to one of the following sections for more information:

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

- If you want to use the existing Oracle software owner user, and the user's primary group is the Oracle Inventory group, then refer to the "Required Software Directories" section on page 2-6.

- To modify an existing user, refer to the "Modifying an Existing Oracle Software Owner User" section on page 2-6.

- To create a user, refer to the following section.

Creating an Oracle Software Owner User

If the Oracle software owner user does not exist or if you require a new Oracle software owner user, then create it as follows:

> **Note:** In the following procedure, use the user name `oracle` unless a user with that name already exists.

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

   ```
   # /usr/sbin/useradd -g oinstall[ -G dba] oracle
   ```

   In this command:

   - The `-g` option specifies the primary group, which must be the Oracle Inventory group, for example `oinstall`.

   - The `-G` option specifies optional secondary groups.

2. Set the password of the `oracle` user as follows:

```
# passwd oracle
```

To continue, refer to the

Modifying an Existing Oracle Software Owner User

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

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

Required Software Directories

This section describes the following directories, which you must identify or create for the Oracle software:

- Oracle Base Directory
- Oracle Inventory Directory
- Oracle Home Directory

Oracle Base Directory

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

/mount_point/app/*oracle_sw_owner*

In this example:

- *mount_point* is the mount point directory for the file system that will contain the Oracle software.

  The examples in this guide use `/u01` for the mount point directory. However, you can choose another mount point directory. For example, `/oracle` or `/opt/oracle`.

- *oracle_sw_owner* is the operating system user name of the Oracle software owner, for example `oracle`.

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

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

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

> **Note:** You can create an Oracle base directory even if other Oracle base directories exist on the system.

Identifying an Existing Oracle Base Directory

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

- Identify an existing Oracle Inventory directory

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

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

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

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

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

- Identifying existing Oracle home directories

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

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

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

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

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

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

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

To continue:

- If an Oracle base directory exists and you want to use it, then refer to the "Configuring the oracle User's Environment" section on page 2-9.

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

■ If an Oracle base directory does not exist on the system or if you want to create an Oracle base directory, then refer to the following section.

Creating an Oracle Base Directory

To identify an appropriate file system:

1. Use the `bdf` command to determine the free disk space on each mounted file system.

2. From the display, identify a file system that has sufficient free space.

3. Note the name of the mount point directory for the file system that you identified.

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

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

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

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

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

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

Oracle Inventory Directory

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

oracle_base/oraInventory

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

> **Caution:** All Oracle software installations rely on this directory. Ensure that you back it up regularly.
>
> Do not delete this directory unless you have completely removed all Oracle software from the system.

Oracle Home Directory

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

of the Oracle base directory. Oracle recommends that you specify a path similar to the following for the Oracle home directory:

```
oracle_base/product/10.2.0/companion_1
```

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

Configuring the oracle User's Environment

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

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

- Set the `DISPLAY` environment variable.

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

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

2. Enter the following command to ensure that X Window applications running on the remote host can display on this system:

   ```
   $ xhost fully_qualified_remote_host_name
   ```

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

4. If you are not logged in as the `oracle` user, then switch user to `oracle`:

   ```
   $ su - oracle
   ```

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

   ```
   $ echo $SHELL
   ```

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

   - Bash (`bash`) shell:

     ```
     $ vi .bash_profile
     ```

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

     ```
     $ vi .profile
     ```

   - C shell (`csh` or `tcsh`):

     ```
     % vi .login
     ```

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

   ```
   umask 022
   ```

8. If the `ORACLE_SID`, `ORACLE_HOME`, or `ORACLE_BASE` environment variable are set in the file, then remove the appropriate lines from the file.

9. Save the file, and exit from the editor.

10. To run the shell startup script, enter one of the following commands:

    - Bourne or Korn shell:

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

- C shell:

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

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

- Bourne, Bash, or Korn shell:

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

- C shell:

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

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

12. If you determined that the `/tmp` directory has less than the required free disk space, then identify a file system with the required amount of free space and set the `TMP` and `TMPDIR` environment variables to specify a temporary directory on this file system. To do this:

   a. Use the `bdf` command to identify a suitable file system with sufficient free space.

   b. If necessary, enter commands similar to the following to create a temporary directory on the file system that you identified and to set the appropriate permissions on the directory:

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

   c. Enter commands similar to the following to set the `TMP` and `TMPDIR` environment variables:

   * Bourne, Bash, or Korn shell:

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

   * C shell:

```
% setenv TMP /mount_point/tmp
% setenv TMPDIR /mount_point/tmp
```

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

- Bourne, Bash, or Korn shell:

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

- C shell:

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

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

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

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

Requirements for Installing Oracle HTML DB Products

When you install the Oracle HTML DB installation type, you can install Oracle HTML DB, Oracle HTTP Server, or Oracle HTML DB with Oracle HTTP Server.

> **Note:** You must install the Oracle HTML DB Products in an Oracle home that is different from the Oracle home used for Oracle Database.

The requirements for the Oracle HTML DB Products installation type can be categorized as follows:

- Oracle HTTP Server Requirements
- Oracle HTML DB Requirements

Oracle HTTP Server Requirements

You must install Oracle HTTP Server in a new Oracle home. You can install Oracle HTTP Server more than once on the same system, as long as each installation uses a separate Oracle home directory.

Before you install Oracle HTTP Server in a new Oracle home, ensure that your system meets the following requirements:

- Oracle Database Requirement
- Hardware Requirements
- Software Requirements

Oracle Database Requirement

Oracle HTTP Server must have access to an instance of Oracle9*i* Database release 9.2.0.3 or later in order to run. Oracle Database can be on a separate system from Oracle HTTP Server, as long as it is accessible by using Oracle*Net. However, Oracle HTTP Server must be in its own home.

For example, suppose Oracle Database is installed in `OraDB10g_Home1`. When you run Oracle Universal Installer to install Oracle HTML DB, you can specify the Oracle Database installed in `OraDB10g_Home1`. However, you need to install Oracle HTML DB in a different Oracle home that contains Oracle HTTP Server, for example, `OraDB10g_Home2`.

Hardware Requirements

The system must meet the following minimum hardware requirements:

- 256 MB of physical RAM
- 512 MB of swap space

- 125 MB of free disk space in the /tmp directory

- 530 MB of free disk space for the software files

To ensure that the system meets these requirements:

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

   ```
   # /usr/contrib/bin/machinfo  | grep -i Memory
   ```

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

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

   ```
   # /usr/sbin/swapinfo -a
   ```

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

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

   ```
   # bdf /tmp
   ```

   If there is less than 125 MB of free disk space in the /tmp directory, then complete one of the following steps:

   - Delete unnecessary files from the /tmp directory.

   - Set the TMP and TMPDIR environment variables when setting the oracle user's environment.

   - Extend the file system that contains the /tmp directory. If necessary, contact your system administrator for information about extending file systems.

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

   ```
   # bdf
   ```

5. To determine if the system architecture can run the software, enter the following command:

   ```
   # /bin/getconf KERNEL_BITS
   ```

   The expected output of this command is the processor type. Verify that the processor architecture matches the requirement for the current release.

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

Software Requirements

Verify that the following software is installed on the system. The procedure following the table describes how to check these requirements.

Item	Requirement
Operating system	Operating system version:
	HP-UX 11i v2 (11.23)

Item	Requirement
PL/SQL native compilation	One of the following: ■ HP C/ANSI C Compiler (A.06.00) ■ GCC compiler gcc 3.4.2 **Note**: The gcc compiler is supported only for PL/SQL native compilation.
Pro*C/C++, Oracle Call Interface, Oracle C++ Call Interface, Oracle XML Developer's Kit (XDK)	HP C/ANSI C Compiler (A.06.00) HP aC++ Compiler (A.06.00)
Oracle JDBC/OCI Drivers	You can use the following optional Java SDK versions with the Oracle JDBC/OCI drivers, however they are not required for the installation: ■ HP JDK 1.5.0 (5.0) ■ HP JDK 1.4.2.07 ■ HP JDK 1.3.1.16 **Note:** Java SDK 1.4.2_07 is installed with this release.

To ensure that the system meets these requirements:

1. To determine the version of the operating system, enter the following command:

   ```
   # uname -a
   ```

   The following is sample output of this command:

   ```
   HP-UX hostname B.11.23 ia64 109444686 unlimited-user license
   ```

   In this sample output, the version shown is HP-UX 11i v2 (11.23). If necessary, refer to your operating system documentation for information about upgrading the operating system.

Checking for Required Patches

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

The following patches, or their later versions, are required:

Installation Type or Product	Requirement
All installations	The following operating system patches: ■ BUNDLE11i B.11.23.0409.3: Patch Bundle for HP-UX 11i V2 **Note:** You must have the August 2004 version of BUNDLE11i B.11.23.0408.1 for HP-UX 11i v2 on your system prior to updating to the HP-UX 11i v2 September 2004 or later release. ■ PHCO 32426: Reboot(1M) cumulative patch ■ PHKL 32646: wsio.h header file patch ■ PHKL 32632: Message Signaled Interrupts (MSI and MSI-X) ■ PHKL 32645: SIO (IO) subsystem MSI/MSI-X/WC Patch ■ PHKL 33552: VM Copy on write data corruption fix ■ PHSS_31850: 11.23 assembler patch ■ PHSS_31851: 11.23 Integrity Unwind Library ■ PHSS_31854: 11.23 milli cumulative patch ■ PHSS_31855: 11.23 aC++ Runtime (IA: A.05.60, PA A.03.60) ■ PHSS_33275: 11.23 linker + fdp cumulative patch ■ PHSS_33276: 11.23 Math Library Cumulative Patch
All installations	The following JDK patches: ■ PHCO_31553: s700_800 11.23 pthread library cumulative patch ■ PHKL_31500: s700_800 11.23 sept04 base patch ■ PHSS_32213: s700_800 11.23 aries cumulative patch **Note:** Refer to the following Web site for information about additional patches that may be required by JDK 1.4.2: `http://www.hp.com/products1/unix/java/patches/index.html`
PL/SQL native compilation, Pro*C/C++, Oracle Call Interface, Oracle C++ Call Interface, Oracle XML Developer's Kit (XDK)	The following C and C++ patches: ■ PHSS_33278: aC++ Compiler ■ PHSS_33279: aC++ Compiler ■ PHSS_33277: HP C Compiler ■ PHSS_33279: HP C Compiler

To determine if a patch is installed, enter a command similar to the following:

```
# /usr/sbin/swlist -l patch | grep PHSS_33279
```

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

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

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

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

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

Oracle HTML DB Requirements

The requirements for Oracle HTML DB are as follows:

- Oracle Database Requirement
- Disk Space Requirements
- Oracle HTTP Server Requirement
- Oracle XML DB Requirement
- Oracle Text Requirement
- Browser Requirements

Oracle Database Requirement

Oracle HTML DB requires an installation of release 9.2.0.3 or later of Oracle Database. You must install Oracle HTML DB in an Oracle home that contains Oracle HTTP Server. This Oracle home, with both Oracle HTML DB and Oracle HTTP Server, is referred to as the Companion CD Oracle home. The Companion CD Oracle home can be on a different physical server from the Oracle Database home, as long as Oracle HTML DB can access this database by using Oracle*Net.

For example, suppose Oracle Database is installed in `OraDB10g_Home1`. When you run Oracle Universal Installer to install Oracle HTML DB, you can specify the Oracle Database installed in `OraDB10g_Home1`. However, you need to install Oracle HTML DB in a different Oracle home that contains Oracle HTTP Server, for example, `OraDB10g_Home2`.

During the installation, you must specify the following information about the database:

- The host name of the database system
- The port number of the Oracle Net listener
- The service name of the database
- The password of the `SYS` user

Ensure that you have this information before starting the installation.

Disk Space Requirements

Verify that the file system in which the Oracle home is located contains at least 355 MB of free disk space.

To check that the Oracle home directory has enough space, enter the following command:

```
# bdf /httpserver_oracle_home_path
```

Oracle HTTP Server Requirement

Oracle HTML DB must have access to Oracle HTTP Server and `mod_plsql` in order to run. The following products include the versions of HTTP Server and `mod_plsql` that meet this requirement:

- Oracle9*i* Database release 2 (9.2) or later
- Oracle9*i* Application Server release 1 (1.0.2.2) or later

If the system does not meet these requirements, then you must install Oracle HTTP Server 10*g* when you install the Oracle Database 10*g* Companion Products.

Oracle XML DB Requirement

Oracle XML DB must be installed in the database that you want to use. If you are using a preconfigured database created either during an installation or by running Oracle Database Configuration Assistant, then Oracle XML DB is already installed and configured.

> **See Also:** *Oracle XML DB Developer's Guide* for information about manually adding Oracle XML DB to an existing database

Oracle Text Requirement

Oracle Text must be installed so that you can use the searchable online Help in Oracle HTML DB. By default, Oracle Text is installed as part of Oracle Database.

In addition, ensure that the default language preferences for Oracle Text have been installed. To install the Oracle Text default language, run the appropriate drdef*lang*.sql script (for example, drdefus.sql for US English) from the following directory:

```
$ORACLE_HOME/ctx/admin/defaults
```

> **See Also :** *Oracle Text Application Developer's Guide* for more information about Oracle Text

Browser Requirements

To view or develop Oracle HTML DB applications, the Web browser you use must support JavaScript and the HTML 4.0 and CSS 1.0 standards. The following browsers meet this requirement:

- Netscape Communicator 7.0 or later

- Microsoft Internet Explorer 5.5 or later

- Mozilla 1.2 or later

- Mozilla Firefox 1.0 or later

Requirements for Installing Oracle Database 10*g* Products

The requirements for the Oracle Database 10*g* Products installation type are as follows:

- Oracle Database Requirement

- Disk Space Requirements

- Oracle Workflow Server Requirements

> **See Also:** "Products Available in the Oracle Database 10g Companion Products Installation Type" on page 1-7

Oracle Database Requirement

Before you install products from the Oracle Database 10*g* Products installation type, you must ensure that your system has access to an Oracle Database 10*g* release 2 (10.2) Oracle home. If required, you must first install or upgrade to this release of Oracle Database.

> **See Also:** *Oracle Database Installation Guide* for information about installing Oracle Database

Identify the Oracle home directory used by the Oracle Database installation. To do this, you can check the contents of the `oratab` file by using the following command:

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

Disk Space Requirements

Verify that the file system that contains the Oracle home directory has at least 1194 MB of free disk space.

To check that the Oracle home directory has enough space, enter the following command:

```
# bdf oracle_home_path
```

Oracle Workflow Server Requirements

Requirements for Oracle Workflow Server are as follows:

- A Web browser that supports frames, JavaScript, Java Development Kit (JDK) version 1.3.1, and AWT, such as Netscape Communicator version 4.76 or a later 4.7x version, or Microsoft Internet Explorer version 5.0x or 5.5x

- An unzip utility to extract the Workflow HTML Help from the `wfdoc.zip` file.

- Java Development Kit (JDK) version 1.4, to run the Oracle Workflow Java Function Activity Agent and the Workflow XML Loader.

- An outbound SMTP mail server and an inbound IMAP mail server, if you want to send and receive e-mail notifications using an Oracle Workflow notification mailer.

During the installation, you must specify the following information about the Oracle Database installation:

- Host name

- Port

- Service name

- User name and password of the Oracle Workflow Server (typically, `owf_mgr`)

Requirements for Installing Oracle Database 10*g* Companion Products

The Oracle Database 10*g* Companion Products installation type lets you install Oracle HTTP Server, Oracle Workflow middle-tier components, or both Oracle HTTP Server and Oracle Workflow middle-tier components. You must install these products in a separate Oracle home from Oracle Database.

The requirements for Oracle Workflow middle-tier components are as follows.

- Oracle Workflow Server Requirements

- Oracle HTTP Server Requirements

- Disk Space Requirements

Oracle Workflow Server Requirements

Before you install Oracle Workflow middle-tier components, you must verify that Oracle Workflow Server is installed in an Oracle Database 10*g* Oracle home. You can use Oracle Universal Installer to check the contents of an Oracle home. Alternatively,

open the /etc/oratab file to see details of the Oracle homes created for the Oracle Database installation on the system.

If Oracle Workflow Server is not installed, then follow the instructions in this guide for installing Oracle Database 10*g* Products. After you install Oracle Workflow, you need to configure it by using Oracle Workflow Configuration Assistant.

> **See Also:** "Installing Oracle Database 10g Products" on page 3-6

Oracle HTTP Server Requirements

Oracle Workflow middle-tier components need access to Oracle HTTP Server in order to run. You can install Oracle Workflow middle-tier components with Oracle HTTP Server in a new Oracle home directory. Alternatively, you can install this product in an existing Oracle HTTP Server Oracle home that contains Oracle HTTP Server with mod_plsql. Oracle home directories for the following products meet this requirement:

- Oracle HTTP Server 10*g*

- Oracle Identity Management 10*g* (part of Oracle Application Server 10*g*)

> **See Also:** "Oracle HTTP Server Requirements" on page 2-15 if you plan to use the Oracle HTTP Server available with this release of Oracle Database Companion CD

Disk Space Requirements

The disk space requirements for the Oracle Database 10*g* Companion Products are shown in the following table.

Products for Installation	Disk Space Required (MB)
Oracle HTTP Server	2100
Oracle HTTP Server and Oracle Workflow	2400

Network Setup

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

This section describes how to install Oracle Database on computers that do not meet the typical scenario. It covers the following cases:

- Installing on DHCP Computers

- Installing on Multihomed Computers

- Installing on Computers with Multiple Aliases

Installing on DHCP Computers

Dynamic Host Configuration Protocol (DHCP) assigns dynamic IP addresses on a network. Dynamic addressing enables a computer to have a different IP address each time it connects to the network. In some cases, the IP address can change while the computer is still connected. You can have a combination of static and dynamic IP addressing in a DHCP system.

In a DHCP setup, the software tracks IP addresses, which simplifies network administration. This lets you add a new computer to the network without having to manually assign that computer a unique IP address.

Installing on Multihomed Computers

You can install Companion CD products on a multihomed computer. A multihomed computer is associated with multiple IP addresses. This is typically achieved by having multiple network cards on the computer. Each IP address is associated with a host name. In addition, you can set up aliases for the host name. By default, Oracle Universal Installer uses the ORACLE_HOSTNAME environment variable setting to find the host name. If ORACLE_HOSTNAME is not set and you are installing on a computer that has multiple network cards, then Oracle Universal Installer determines the host name by using the first entry in the /etc/hosts file.

Clients must be able to access the computer either by using this host name or by using aliases for this host name. To verify this, ping the host name from the client computers using the short name (host name only) and the full name (host name and domain name). Both tests must be successful.

Setting the ORACLE_HOSTNAME Environment Variable

Use the following procedure to set the ORACLE_HOSTNAME environment variable.

If, for example, the fully qualified host name is somehost.us.acme.com, then enter one of the following commands:

Bourne, Bash, or Korn shell:

```
$ ORACLE_HOSTNAME=somehost.us.acme.com
$ export ORACLE_HOSTNAME
```

C shell:

```
% setenv ORACLE_HOSTNAME somehost.us.acme.com
```

Installing on Computers with Multiple Aliases

A computer with multiple aliases is registered with the naming service under a single IP but with multiple aliases. The naming service resolves any of those aliases to the same computer. Before installing Oracle Database on such a computer, set the ORACLE_HOSTNAME environment variable to the computer whose host name you want to use.

3

Installing the Oracle Database Companion CD Software

This chapter describes how to start Oracle Universal Installer and install the products available on the Oracle Database Companion CD installation media. It contains the following sections:

- General Steps for Installing Companion CD Products

- Accessing the Installation Software

- Mounting Discs

- Installing Oracle HTML DB

- Installing Oracle Database 10g Products

- Installing Oracle Database 10g Companion Products

General Steps for Installing Companion CD Products

After completing the tasks in Chapter 1 and Chapter 2, follow these general steps to install the Companion CD products:

1. Consider the following issues:

    - **Installing in interactive or noninteractive mode:** The instructions in this chapter are written for interactive installations. If you prefer to perform the installation in noninteractive mode (for example, if your site requires multiple installations) refer to "Installing Oracle Components in Noninteractive Mode" on page B-1 for more information.

    - **Installing in a Different Language:** Refer to "Installing and Using Oracle Components in Different Languages" on page C-1 for language considerations.

2. Follow the procedures described in "Accessing the Installation Software" on page 3-2 if you want to install the software from a hard drive or install remotely. If you are copying or directly installing from the installation media, then refer to the instructions in the "Mounting Discs" section on page 3-2.

3. Depending on the products that you want to install, follow the procedures described in the following sections to complete the installation:

    - Installing Oracle HTML DB

        You must install Oracle HTML DB in an Oracle HTTP Server home. If there is no existing Oracle HTTP Server installation, then you can install Oracle HTML DB with Oracle HTTP Server.

- [Installing Oracle Database 10g Products](#)

  If you plan to use Oracle Workflow Server, which is one of the Oracle Database 10*g* Products, then you must complete the steps in ["Preparing Oracle Workflow Server for the Oracle Workflow Middle Tier Installation"](#) on page 3-7 before installing the Oracle Workflow middle-tier components. The Oracle Workflow middle-tier components are available with the Oracle Database 10*g* Companion Products.

- [Installing Oracle Database 10g Companion Products](#)

  This section explains how to install Oracle Workflow middle-tier components.

Accessing the Installation Software

The Oracle Database Companion CD software is available on the installation media, or you can download it from the Oracle Technology Network Web site.

When you are ready to install the software, you can access it by any one of the following methods:

- Download the software to the hard disk

- Copy the software from the installation media to the hard disk

- Access the software by using a remote drive

- Install on a remote computer by using remote access software

Mounting Discs

On most UNIX-based systems, the disc mounts automatically when you insert it into the disc drive. If the disc does not mount automatically, then perform the procedure described in this section.

To mount a disc:

1. Switch user to `root`:

   ```
   $ su - root
   ```

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

   ```
   # /usr/sbin/umount /SD_DVD
   ```

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

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

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

   In this example, `/dev/dsk/cxtydz` is the device name of the disc drive and `/SD_DVD` is the mount point directory.

4. If Oracle Universal Installer displays the Disk Location screen, then enter the disc mount point directory path.

To continue, refer to one of the following sections:

- [Installing Oracle HTML DB](#)

- [Installing Oracle Database 10g Products](#)

■ Installing Oracle Database 10g Companion Products

Installing Oracle HTML DB

This section explains how to install Oracle HTML DB by using one of the following options:

■ **Installing Oracle HTML DB with Oracle HTTP Server**: If you select this option, then Oracle HTML DB is installed with Oracle HTTP Server in a new Oracle home.

■ **Installing or upgrading Oracle HTML DB in an existing Oracle HTTP Server home**: If you select this option, then depending on the preinstallation conditions, either Oracle HTML DB is installed or the existing Oracle HTML DB installation is upgraded.

To install Oracle HTML DB:

1. If you are installing from the installation media, then mount the disc if it is not already mounted.

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

3. Verify that the Oracle Database that you plan to use for Oracle HTML DB is accessible and running.

4. To start Oracle Universal Installer, enter the following commands:

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

   In the preceding command, `directory_path` is the path of the `companion` directory on the installation media or the hard drive.

5. On the Welcome screen, click **Next**.

6. If this is the first installation of Oracle products on this system, then Oracle Universal Installer displays the Specify Inventory Directory and Credentials screen. Specify the following information, and then click **Next**:

   ■ **Enter the full path of the inventory directory:**

   Verify that the path is similar to the following, where `oracle_base` is the value you specified for the `ORACLE_BASE` environment variable:

   `oracle_base/oraInventory`

   ■ **Specify operating system group name:**

   Verify that the group specified is the Oracle Inventory group, `oinstall`.

7. On the Select a Product to Install screen, select **Oracle HTML DB** and then click **Next**.

8. On the Select Installation Type screen, select one of the following and then click **Next**.

   ■ **Oracle HTML DB and Oracle HTTP Server**: Select this option to install Oracle HTML DB with Oracle HTTP Server in a new Oracle home.

   ■ **Oracle HTML DB only**: Select this option to install a new Oracle HTML DB in an existing Oracle HTTP Server home, or to upgrade an existing Oracle HTML DB installation.

9. On the Specify Home Details screen, enter the following:

■ **Name:** If you select **Oracle HTML DB and Oracle HTTP Server** in the previous step, then specify the name for a new Oracle home. If you select **Oracle HTML DB only**, then select the name of the existing Oracle HTTP Server home. If you select **Oracle HTML DB** only and if there is an existing Oracle HTML DB installation, then specify the name of the Oracle home of this existing installation.

■ **Path:** Enter the directory location for the Oracle home that you specified under **Name**. If the directory does not exist, then Oracle Universal Installer creates it for you.

> **See Also:** "Oracle Database Requirement" on page 2-16 for information about finding the Oracle home. Select each home and search for Apache Standalone. Oracle HTTP Server is listed as Apache Standalone on the Specify Home Details screen

10. Click **Next**.

11. On the Product-specific Prerequisite Checks screen, check for and correct any errors that may have occurred while Oracle Universal Installer was checking your system. Then, click **Next**.

When you click **Next**, a warning message may be displayed. If there is an existing Oracle HTML DB installation, then this message informs you that the database access descriptors (DADs) associated with this installation have insufficient or incorrect values for some of the required directives. This makes them unsuitable for upgrade. If you want to upgrade Oracle HTML DB under these conditions, then you must first fix the problem. If you want to install Oracle HTML DB, then continue with this installation session.

Click **OK** to continue.

12. The screen displayed for this installation step depends on whether Oracle HTML DB is to be installed or the existing Oracle HTML DB installation is to be upgraded:

■ **Installing Oracle HTML DB**

On the Specify HTML DB Database Details screen, enter the information required to configure Oracle HTML DB.

Host Name

Specify the host name of the system where the database is installed. If the host name is the local host, then enter the name of the computer, not `localhost`.

Port

Specify the TCP/IP port number for the Oracle Net listener on the database system. The default port number is 1521. To find the default port number for your Oracle Database installation, check its `tnsnames.ora` file, which by default is located in the `$ORACLE_HOME/network/admin` directory.

Database Service Name

Specify the database service name for the database in which you want to install the Oracle HTML DB database objects, for example, `sales`. Alternatively, you can enter the domain name, which is usually the same as the global database name, for example, `sales.us.mycompany.com`.

To configure Oracle HTML DB, you must install the Oracle HTML DB database objects in a release 9.2.0.3 or later Oracle Database. If you plan to use

the 10*g* release of Oracle HTTP Server, then based on the information that you specify during installation, Oracle Universal Installer automatically creates a database access descriptor (DAD) in the `mod_plsql` configuration file and directory aliases in `httpd.conf`, the Oracle HTTP Server configuration file. However, if you plan to use an Oracle9*i* HTTP Server release 2 installation, then you must create these settings manually by using the postinstallation steps described in Chapter 4.

Tablespace Name

Enter the name of the tablespace where you want to load the Oracle HTML DB database objects, or accept the default (`SYSAUX`).

SYS Password

Specify the password for the `SYS` user in the database.

HTML DB Password

Specify the password that you want to use for the Oracle HTML DB schemas (`users`), which are created in the database during the installation.

After the installation, you can use this password to connect to Oracle HTML DB as the administrative user. The password that you specify is also used for the `HTMLDB_PUBLIC_USER` schema, which is used by `mod_plsql` to connect to the database, and for the `FLOWS_010600` and `FLOWS_FILES` schemas.

Confirm HTML DB Password

Enter the password again to verify that you have specified it correctly.

- **Upgrading an existing Oracle HTML DB installation**

  On the Specify HTML DB Upgrade Information screen, select the Oracle HTML DB installation that you want to upgrade from the list of available DADs.

  When you specify the Oracle HTML DB installation that you want to upgrade, the host name, port, and database service name values are automatically displayed in their respective fields. You cannot change these values. The remaining fields are the same as those displayed on the Specify HTML DB Database Details screen.

13. Click **Next**.

14. On the Summary screen, check the list of products that will be installed, and then click **Install**.

15. If prompted, run the following scripts in a separate terminal window as the `root` user:

```
oracle_base/oraInventory/orainstRoot.sh
oracle_home/root.sh
```

Then, click **OK**.

16. When the installation completes, click **Exit** and then click **Yes** to exit from Oracle Universal Installer.

> **See Also:**
>
> - Chapter 4 for information about tasks that you must complete after you have installed the software
>
> - "Installing and Configuring Oracle HTML DB on a Remote Oracle Database" on page 4-16 if you want to install additional Oracle HTML DB instances in a remote Oracle Database

17. Follow the instructions in "Starting, Stopping, and Restarting Oracle HTTP Server" on page 5-1 to start Oracle HTTP Server.

> **See Also:** Chapter 4, "Oracle Database Companion CD Postinstallation Tasks"

Installing Oracle Database 10*g* Products

You must install Oracle Database 10*g* Products in an existing Oracle Database 10*g* release 2 (10.2) Oracle home.

> **See Also:** "Products Available in the Oracle Database 10g Products Installation Type" on page 1-4 for information about the products that can be installed from this installation type

To install Oracle Database 10*g* Products, you first run Oracle Universal Installer. You then configure Oracle Workflow Server before you install the Oracle Workflow middle-tier components.

To install Oracle Database 10*g* Products:

1. If you are installing from the installation media, then mount the disc if it is not already mounted.

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

3. Verify that the Oracle Database that you plan to use for Oracle HTML DB is accessible and running.

4. To start Oracle Universal Installer, enter the following commands:

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

In the preceding command, `directory_path` is the path of the `companion` directory on the installation media or the hard drive.

5. On the Welcome screen, click **Next**.

6. If this is the first installation of Oracle products on this system, then Oracle Universal Installer displays the Specify Inventory Directory and Credentials screen. Specify the following information, and then click **Next**:

- **Enter the full path of the inventory directory:**

  Verify that the path is similar to the following, where `oracle_base` is the value you specified for the `ORACLE_BASE` environment variable:

  `oracle_base/oraInventory`

- **Specify operating system group name:**

Verify that the group specified is the Oracle Inventory group, `oinstall`.

7. On the Select a Product to Install screen, select **Oracle Database 10g Products** and then click **Next**.

8. On the Specify Home Details screen, enter the following:

   - **Name:** In this field, the default Oracle home is displayed. Verify that the Oracle home specified is the Oracle Database Oracle home.

   - **Path:** In this field, the directory of the default Oracle home is displayed. Enter the directory location of the Oracle Database Oracle home in which you want to install the Oracle home files.

     See Also: "Oracle Database Requirement" on page 2-16 for information about finding the Oracle home

   If Oracle Real Application Clusters (RAC) is installed in the Oracle home that you select, then Oracle Universal Installer displays the Selected Nodes screen. Click **Next** to continue.

   > **Note:** On a RAC installation, the software is installed on all the cluster nodes.

9. On the Product-specific Prerequisite Checks screen, check for and correct any errors that may have occurred while Oracle Universal Installer was checking your system.

10. When the installation completes, click **Exit**, and then click **Yes** to exit from Oracle Universal Installer.

11. Follow the instructions in "Starting, Stopping, and Restarting Oracle HTTP Server" on page 5-1 to start Oracle HTTP Server.

    See Also: Chapter 4, "Oracle Database Companion CD Postinstallation Tasks"

Preparing Oracle Workflow Server for the Oracle Workflow Middle Tier Installation

After you install Oracle Workflow Server, you must configure it before you install the Oracle Workflow middle-tier components. You can use Oracle Workflow Configuration Assistant to configure Oracle Workflow. The following steps explain how to run Oracle Workflow Configuration Assistant by using its graphical user interface (GUI):

> **See Also:** The "Running Oracle Workflow Configuration Assistant in Noninteractive Mode" section on page B-5 for information about running Oracle Workflow Configuration Assistant in noninteractive mode

1. Ensure that the Oracle Database that you plan to use for Oracle Workflow is accessible and running.

2. To start Oracle Workflow Configuration Assistant, enter the following command:

   ```
   $ORACLE_HOME/wf/install/wfinstall.csh
   ```

3. On the Welcome to Oracle Workflow Configuration Assistant screen, specify the following:

- **Install Option**: Select the **Server Only** or **Add Language** installation option.

  If you select the **Server Only** option, then Oracle Workflow Configuration Assistant installs Oracle Workflow into the Oracle Database.

  > **Note:** To upgrade to Oracle Workflow release 2.6.4, ensure that the existing Oracle Workflow Server is release 2.6.2 or later.

  If you chose the **Add Language** installation option, then select the language abbreviation for the language that you want to add. You must install Oracle Workflow before you can add a language.

  > **See Also:** *Oracle Database Globalization Support Guide* for a list of language abbreviations used by Oracle Database

- **Workflow Account**: Enter the name that you want to use for the Oracle Workflow database account or accept the default name, which is typically `owf_mgr`.

  The default tablespace for this account is `USERS` and the temporary tablespace is `TEMP`. You can change the tablespace if required.

  > **Note:** If you are upgrading an existing installation of Oracle Workflow, then enter the name and password for the existing Oracle Workflow database account.

- **Workflow Password**: Enter a password for the Oracle Workflow account.

- **SYS Password**: Enter the password for the `SYS` account of the Oracle Database installation on the system.

- **TNS Connect Descriptor**: Specify the database connection string, in TNS format:

  ```
  (DESCRIPTION =(ADDRESS_LIST = (ADDRESS = (PROTOCOL = TCP)(HOST =
  host_name)(PORT = port_number))) (CONNECT_DATA = (SERVICE_NAME =
  database_service_name)))
  ```

  The connection string is stored in the `tnsnames.ora` file, which by default is located in the `$ORACLE_HOME/network/admin` directory.

4. If you want to integrate Oracle Internet Directory as the directory repository for Oracle Workflow, then select **Enter LDAP Parameters** and select **Get LDAP Values**.

   > **Note:** If you are upgrading an existing Oracle Workflow installation in which you have already implemented Oracle Internet Directory integration, then you must reenter the Lightweight Directory Access Protocol (LDAP) values here to preserve the Oracle Internet Directory integration during the upgrade.

Enter the following LDAP server information for the LDAP directory to which you want to connect, and then click **OK**. After the installation, you can update these values, if required, on the Global Workflow preferences Web page.

> **See Also:** The "Setting Up Oracle Workflow" section in *Oracle Workflow Administrator's Guide* for more information

- **LDAP Host Name**: Enter the name of the host on which the LDAP directory is installed.

- **LDAP Non-SSL Port**: Enter the port number that the host uses. This port must not be a Secure Sockets Layer (SSL) port.

- **LDAP Admin Username**: Enter the user name used to connect to the LDAP server. This user name must have write privileges and is required to bind to the LDAP directory. For example:

  ```
  cn=orcladmin
  ```

- **LDAP Admin Password**: Enter the Oracle Internet Directory password for the LDAP user account. LDAP password values are masked as asterisks (*) in the display and are stored in encrypted form.

- **Changelog DN**: Enter the LDAP node where change log files are located. For example:

  ```
  cn=changelog
  ```

- **User Base**: Enter the LDAP node under which user records can be found. For example:

  ```
  cn=Base, cn=OracleSchemaVersion
  ```

> **Note:** After setting up integration with Oracle Internet Directory during installation, you must use the WF_LDAP APIs to synchronize the Oracle Workflow directory service with Oracle Internet Directory. For instructions, refer to *Oracle Workflow Administrator's Guide*.

5. To enter configuration parameters for the seeded Java-based notification mailer service component Workflow Notification Mailer, select **Enter Mailer Parameters** and select **Get Mailer Values**.

   Enter values for the following parameters, and then click **OK**.

   - **Inbound Email Account: Server Name**: Enter the name of the inbound IMAP mail server.

   - **Inbound Email Account: Username**: Enter the user name of the mail account where the notification mailer receives e-mail messages.

   - **Inbound Email Account: Password**: Enter the password of the mail account specified in the **Username** field.

   - **Outbound Email Account: Server Name**: Enter the name of the outbound SMTP mail server.

   - **Email Processing: Processed Folder**: Enter the name of the mail folder in the inbound e-mail account where the notification mailer places successfully processed notification messages.

- **Email Processing: Discard Folder**: Enter the name of the mail folder in the inbound e-mail account where the notification mailer places incoming messages that are not recognized as notification messages.

- **Message Generation: HTML Agent**: Enter the base URL that identifies the Web agent defined for Oracle Workflow in Oracle HTTP Server. The notification mailer uses this URL to support e-mail notifications with HTML attachments. By default, this parameter is set to the following placeholder value:

  ```
  http://localhost.com/pls/wf
  ```

  If you have already installed Oracle HTTP Server, then replace `localhost.com` with the server and TCP/IP port number on which the Web listener accepts requests. Otherwise, leave this parameter set to the placeholder value. In this case, you must set this parameter in the notification mailer configuration wizard in Oracle Workflow Manager after you install Oracle HTTP Server and Oracle Workflow.

  > **See Also:** Chapter 2, "Setting Up Oracle Workflow" in *Oracle Workflow Administrator's Guide*

- **Message Generation: Reply-To Address**: Enter the address of the e-mail account that receives incoming messages, to which notification responses should be sent.

  After the initial installation, you can, if required, update the notification mailer configuration values in the Oracle Workflow Manager. You can also update the HTML agent value for Oracle Workflow on the Global Workflow preferences Web page.

  > **See Also:** The "Setting Up Oracle Workflow" section in *Oracle Workflow Administrator's Guide* and Oracle Workflow Manager online Help for more information

6. To change the tablespace assigned to the Oracle Workflow database account, first select **Change Tablespace** and then select an existing tablespace from the list of values.

7. Select **Submit** to begin the configuration.

8. When the configuration is complete, a confirmation window appears. Click **OK**.

   You can check the status of the configuration by reviewing the `$ORACLE_HOME/wf/install/workflow.log` file.

> **Note:** After running Oracle Workflow Configuration Assistant with the Server Only install option, you can only rerun it with the Add Language install option. You must not rerun the configuration assistant with the Server Only install option because you can only install one Oracle Workflow schema in any given Oracle home. If you do not follow this guideline, then you may encounter errors in the Oracle Workflow middle-tier services.
>
> If you want to re-create the Oracle Workflow schema, then you must first drop the existing schema and remove Oracle Workflow. Then, follow the instructions in this chapter to reinstall Oracle Workflow and create a new Oracle Workflow schema by using Oracle Workflow Configuration Assistant.

Installing Oracle Database 10*g* Companion Products

The Oracle Database 10*g* Companion Products are:

- Oracle HTTP Server
- Oracle Workflow middle-tier components

> **Note:** You can install the Oracle Workflow middle-tier components into either a new Oracle home or an existing Oracle HTTP Server home. Ensure that you have first installed Oracle Workflow Server from the Oracle Database 10g Products installation type and run Workflow Configuration Assistant to configure Oracle Workflow.

To install Oracle Database 10*g* Companion Products in a new Oracle home:

1. If you are installing from the installation media, then mount the disc if it is not already mounted.

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

3. To start Oracle Universal Installer, enter the following commands:

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

In the preceding command, `directory_path` is the path of the `companion` directory on the installation media or the hard drive.

4. On the Welcome screen, click **Next**.

5. If this is the first installation of Oracle products on this system, then Oracle Universal Installer displays the Specify Inventory Directory and Credentials screen. Specify the following information, and then click **Next**:

   - **Enter the full path of the inventory directory:**

     Verify that the path is similar to the following, where `oracle_base` is the value you specified for the `ORACLE_BASE` environment variable:

     `oracle_base/oraInventory`

   - **Specify operating system group name:**

Verify that the group specified is the Oracle Inventory group, `oinstall`.

6. On the Select a Product to Install screen, select **Oracle Database 10*g* Companion Products** and then click **Next**.

7. On the Specify Home Details screen, enter the following:

   - **Name:** Enter a name for the Oracle home. You can install the Oracle Database 10*g* Companion Products in a new Oracle home. Alternatively, you can install Oracle Workflow middle tier only in an existing Oracle HTTP Server Oracle home. You cannot install the Oracle Database 10*g* Companion Products in an existing Oracle Database home.

   - **Path:** Enter the directory location for the Oracle home. If the directory does not exist, then Oracle Universal Installer creates it for you.

8. On the Available Product Components screen, select one of the following products:

   - **Apache Standalone**

   - **Oracle Workflow Middle Tier**

   > **Note:** The Apache Standalone option installs Oracle HTTP Server. If you are installing Oracle Workflow middle tier in a new Oracle home, then you must select the Apache Standalone option.

9. On the Product-Specific Prerequisite Checks screen, check for and correct any errors that may have occurred while Oracle Universal Installer was checking your system.

   If you are installing Oracle Workflow middle tier only in an existing Oracle HTTP Server Oracle home, then you may need to manually verify that the selected Oracle home exists. Then, click **Next**.

10. On the Oracle Workflow Middle Tier Configuration screen, specify the configuration settings needed for the Oracle Workflow middle tier.

    To configure the Oracle Workflow middle tier, you must create a database access descriptor (DAD) in the `mod_plsql` configuration files and directory aliases in the Oracle HTTP Server configuration file. Oracle Universal Installer completes these tasks for you using the information that you specify.

    Enter the following information:

    - **Workflow Schema**

      Specify the user (schema) name that you used when installing the Oracle Workflow Server database objects in the database. The default user name is `owf_mgr`.

    - **DB Hostname**

      Specify the host name of the system on which the database is installed. If the host name is the local host, then enter the name of the computer, not `localhost`.

    - **Port Number**

      Specify the TCP/IP port number for the Oracle Net listener on the database system. The default port number is 1521.

    - **Oracle SID**

Specify the database instance identifier (SID) for the database on which you installed the Oracle Workflow Server database objects.

11. On the Oracle Workflow Middle Tier Configuration screen, enter a password for the Oracle Workflow schema that you created in the previous step. Then, click **Next**.

12. On the Oracle Apache Installation screen, enter the following information and then click **Next**.

    - **Enter Password**

      Specify the password for the Workflow user (typically, `owf_mgr`) that you specified on the previous screen. This password is used for the `mod_plsql` DAD.

    - **Confirm Password**

      Enter the password again to verify that you have specified it correctly.

13. On the Summary screen, check the list of products that will be installed, and then click **Install**.

14. If prompted, run the following scripts in a new terminal window as the `root` user:

    ```
    oracle_base/oraInventory/orainstRoot.sh
    oracle_home/root.sh
    ```

    Then, click **OK**.

15. On the End of Installation screen, make a note of the URLs used by Oracle HTTP Server.

    > **Note:** These URLs are also listed in the following file:
    >
    > ```
    > $ORACLE_HOME/Apache/Apache/setupinfo.txt
    > ```

16. Click **Exit**, and then click **Yes** to exit from Oracle Universal Installer.

17. Follow the instructions in "Starting, Stopping, and Restarting Oracle HTTP Server" on page 5-1 to start Oracle HTTP Server.

    > **See Also:** Chapter 4, "Oracle Database Companion CD Postinstallation Tasks"

4

Oracle Database Companion CD Postinstallation Tasks

This chapter describes the tasks that you may need to perform after you install the software. It includes information about the following:

- Patch Set Information
- Postinstallation Tasks for Oracle HTTP Server
- Postinstallation Tasks for Oracle HTML DB
- Postinstallation Tasks for Oracle Workflow Server

Patch Set Information

Oracle recommends installing the latest patch set release after you have successfully installed the Oracle Companion CD components. Doing so ensures that you have the latest update of Oracle Database Companion CD.

You must register online before using Oracle*MetaLink*. After logging in to Oracle*MetaLink*, select Patches from the left-hand column.

To find and download patches:

1. Log in to Oracle*MetaLink* at

    https://metalink.oracle.com

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

2. On the main Oracle*MetaLink* page, click **Patches**.

3. Select **Simple Search**.

4. Specify the following information, and then click **Go**:

    - In the **Search By** field, select **Product** or **Family**, and then specify the Companion CD product, such as HTML DB, Oracle HTTP Server (enter `Oracle HTTP Server(OHS) and mods`), or Oracle Workflow.

    - In the **Release** field, specify the current release number.

    - In the **Patch Type** field, specify `Patchset/Minipack`.

    - In the **Platform or Language** field, select your platform.

5. Under **Results for Platform**, search for the latest patch set for Oracle Database using Oracle*MetaLink*.

6. From the list of available patches, click the number of the patch that you want to download.

7. Click **View Readme** to review the README before proceeding with the download.

> **Note:** Each patch has a README file with installation requirements and instructions. Some patches install with Oracle Universal Installer; others require special procedures. Oracle recommends that you always read the README file before proceeding.

---

8. Return to the Patch Set page, and then click **Download** to download and save the file on your system.

9. Use an unzip utility to uncompress the patch ZIP file.

Postinstallation Tasks for Oracle HTTP Server

If you install Oracle HTTP Server, then complete the tasks described in the following sections:

- Backing Up Files
- Migrating From an Earlier Release of Oracle HTTP Server
- Enabling the High Availability Features of Oracle HTTP Server

Backing Up Files

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

It is also recommended that you back up the entire Oracle home before applying a patch.

Migrating From an Earlier Release of Oracle HTTP Server

If you are using Oracle HTTP Server installed with a previous release of Oracle Database on this system, then you can migrate the configuration of that HTTP server to the current release.

> **Note:** This section does not describe how to migrate from an Oracle HTTP Server release installed as part of Oracle Application Server. Oracle does not support that type of migration.

There are two parts to the migration, as described in the following sections:

- Migrating the httpd.conf File
- Migrating DADs Used by mod_plsql

Migrating the httpd.conf File

To migrate the configuration of an earlier release of Oracle HTTP Server to the current release, you must copy and modify the `httpd.conf` file used by that release.

The following sections describe how to complete this task:

- Step 1: Copying and Opening the httpd.conf File
- Step 2: Making Global Changes
- Step 3: Modifying the List of LoadModule Directives
- Step 4: Removing Directives and Sections for Unsupported Features
- Step 5: Modifying Port Numbers
- Step 6: Verifying the Values of the User and Group Directives
- Step 7: Modifying Existing Sections and Directives
- Step 8: Adding New Sections and Directives
- Step 9: Migrating Your Server Certificate and Private Key
- Step 10: Modifying the SSL Sections and Directives
- Step 11: Copying or Moving the Required Files to New Directories

Step 1: Copying and Opening the httpd.conf File

Copy the `httpd.conf` file used by the previous release to the current release configuration file directory as follows:

1. Switch user to the Oracle software owner user (typically, `oracle`):

   ```
   $ su - oracle
   ```

2. Set the `ORACLE_HOME` environment variable to specify the path to the Oracle home for the current release:

   - Bourne, Bash, or Korn shell:

     ```
     $ ORACLE_HOME=new_oracle_home_path
     $ export ORACLE_HOME
     ```

   - C shell:

     ```
     % setenv ORACLE_HOME new_oracle_home_path
     ```

3. Back up the configuration file directory for the current release of Oracle HTTP Server as follows:

   ```
   $ cp $ORACLE_HOME/Apache/Apache/conf $ORACLE_HOME/Apache/Apache/conf.orig
   ```

4. Change directory to the configuration file directory:

   ```
   $ cd $ORACLE_HOME/Apache/Apache/conf
   ```

5. Copy the `httpd.conf` file used by the previous release to the current directory. For example:

   ```
   $ cp /old_oracle_home/Apache/Apache/conf/httpd.conf .
   ```

6. Open the `httpd.conf` file in any text editor.

Step 2: Making Global Changes

Make the following global changes in the `httpd.conf` file:

1. Search for all occurrences of the old Oracle home directory path, and replace them with the current Oracle home directory path.

2. Change all occurrences of `mod_ssl.c` to `mod_ossl.c`.

> **Note:** Oracle recommends that you change the SSL-related directives in the `httpd.conf` file, even if you do not currently use SSL.

Step 3: Modifying the List of LoadModule Directives

Modify the list of `LoadModule` directives as follows:

1. Remove the following directives:

```
LoadModule oprocmgr_module     libexec/liboprocmgr.so
LoadModule rewrite_module      libexec/mod_rewrite.so
```

> **Note:** You must add a `LoadModule` directive for the `mod_rewrite` module later in the file.

2. Add the following directive, which loads the `onsint` module, immediately before the `<IfDefine SSL>` section:

```
LoadModule onsint_module     libexec/mod_onsint.so
```

3. In the `LoadModule` directive in the `<IfDefine SSL>` section, change `ssl_module` to `ossl_module` and change `mod_ssl.so` to `mod_ossl.so`, as follows:

```
LoadModule ossl_module     libexec/mod_ossl.so
```

Step 4: Removing Directives and Sections for Unsupported Features

You must remove all directives and sections for unsupported features as follows:

1. Remove the following directives from the `<IfModule mod_alias.c>` section:

```
Alias /jservdocs/ "oracle_home/Apache/Jserv/docs/"
Alias /soapdocs/ "/oracle_home/soap/"
```

2. Remove the following `include` directive:

```
include "/oracle_home/Apache/Jserv/etc/jserv.conf"
```

3. Remove the `<IfModule mod_oprocmgr.c>` section.

Step 5: Modifying Port Numbers

The `httpd.conf` file is used by previous releases of Oracle HTTP Server that were installed with Oracle HTTP Server or Oracle Database. This file specifies different ports for non-SSL (HTTP) requests depending on whether you started an SSL-enabled server. These ports are shown as `port1` and `port2` in the following example:

```
Port port1
Listen port1
```

```
<IfModule mod_ossl.c>
  Port port2
  Listen port2
  Listen SSL_port
</IfModule>
```

Oracle recommends that you change these directives as follows:

1. If you did not use SSL, then remove the following directives:

   ```
   Port port2
   Listen port2
   ```

   Oracle HTTP Server will listen for HTTP requests on port *port1*.

2. If you used only the ports defined for SSL, then change the directives as shown in the following example:

   ```
   Port port2
   Listen port2

   <IfModule mod_ossl.c>
     Listen SSL_port
   </IfModule>
   ```

   Oracle HTTP Server will listen for HTTP requests on port *port2* and for HTTPS requests on port *SSL_port*.

3. If you intend to continue to use the previous version of Oracle HTTP server concurrently with this release, then change the ports specified by the `Port` and `Listen` directives to unused ports.

4. If you changed *SSL_port* in the previous step, then complete the following steps:

   a. Locate the `<VirtualHost _default_:SSL_port>` directive and ensure that the value of *SSL_port* matches the value specified by the `Listen` directive in the `<IfModule mod_ossl.c>` section.

   b. In the `<VirtualHost _default_:SSL_port>` section, ensure that the port number specified by the `Port` directive is the same as *SSL_port*.

Step 6: Verifying the Values of the User and Group Directives

If necessary, change the values specified by the `User` and `Group` directives as follows:

- The `User` directive should specify the user name of the Oracle software owner user that you used to install Oracle HTTP Server. The default value is `oracle`.

- The `Group` directive should specify the name of the Oracle Inventory group on this system. The default value is `oinstall`.

Step 7: Modifying Existing Sections and Directives

You must modify the existing sections and directives as follows:

1. In the default directory section, `<Directory />`, add the MultiViews option to the `Options` directive. For example:

   ```
   <Directory />
       Options FollowSymLinks MultiViews
       AllowOverride None
   </Directory>
   ```

2. In the `<IfModule mod_alias.c>` section, create a `<IfModule mod_perl.c>` section and move the `Alias` directive that defines the `/perl/` alias into this section. For example:

```
<IfModule mod_alias.c>
...
    <IfModule mod_perl.c>
        Alias /perl/ "/oracle_home/Apache/Apache/cgi-bin/"
    </IfModule>
...
</IfModule>
```

3. Modify the `<IfModule mod_dms.c>` section as shown in the following example, substituting the appropriate values for the *hostname* and *domain* variables:

```
<IfModule mod_dms.c>
  <Location /dms0>
    SetHandler dms-handler
    Order deny,allow
    Deny from all
    Allow from localhost hostname.domain hostname
  </Location>
</IfModule>
```

4. In the directive that sets the `PERL5LIB` environment variable, edit the Perl directory location and version, as shown in the following example:

```
SetEnv PERL5LIB
"/oracle_home/perl/lib/5.6.1:/oracle_home/perl/lib/site_perl/5.6.1"
```

Step 8: Adding New Sections and Directives

You must add new sections and directives to the file as follows:

1. Add the following section to protect the `WEB-INF` directories:

```
#Protect WEB-INF directory

<DirectoryMatch /WEB-INF/>
 Order deny,allow
 Deny from all
</DirectoryMatch>
```

2. Include the following lines before the line that includes the `oracle_apache.conf` file:

```
# Include the configuration files needed for mod_oc4j
include "/oracle_home/Apache/Apache/conf/mod_oc4j.conf"

# Loading mod_rewrite module here as it has to load before mod_oc4j
LoadModule rewrite_module    libexec/mod_rewrite.so
```

Step 9: Migrating Your Server Certificate and Private Key

If you use SSL and have an existing server certificate and private key, then you must migrate them to the format required by `mod_ossl` before using them with this release of Oracle HTTP Server.

To migrate an existing server certificate and private key:

1. Enter a command similar to the following in a separate terminal window:

```
$ /new_oracle_home/Apache/Apache/bin/ssl2ossl -cert cert_file \
                                      -key key_file \
```

```
{[ -chain chain_file] |
 [ -cafile CA_file] |
 [ -capath CA_path] }\
   -wallet wallet_path \
 [ -certpass key_file_pwd] \
 [ -wltpass wallet_pwd] \
 [ -ssowallet yes] \
 [ -validate yes]
```

The following table lists the recommended value for each option available with this command:

> **Note:** You must specify at least one of the following options: `-chain`, `-cafile`, or `-capath`.

Option	Recommended Value
-cert	Use the value specified by the SSLCertificateFile directive in the httpd.conf file for the previous release.
-key	Use the value specified by the SSLCertificateKeyFile directive in the httpd.conf file for the previous release.
-chain	Use the value specified by the SSLCertificateChainFile directive in the httpd.conf file for the previous release, if this directive is not preceded by the comment character (#). **Note:** If the SSLCertificateChainFile directive is not specified or is preceded by a comment character, then do not specify the -chain option.
-cafile	Use the value specified by the SSLCACertificateFile directive in the httpd.conf file for the previous release, if this directive is not preceded by the comment character (#). **Note:** If the SSLCACertificateFile directive is not specified or is preceded by a comment character, then do not specify the -cafile option.
-capath	Use the value specified by the SSLCACertificatePath directive in the httpd.conf file for the previous release, if this directive is not preceded by the comment character (#). **Note:** If the SSLCACertificatePath directive is not specified or is preceded by a comment character, then do not specify the -capath option.
-wallet	Specify the path to the directory in which you want to create the wallet. The default value is: /new_oracle_home/Apache/Apache/conf/ssl.wlt/default
-certpass	Specify the password for your private key file, if it is encrypted.
-wltpass	Specify a password for your new wallet. If you do not specify this option, then the ssl2ossl utility prompts you to enter and verify the wallet password.
-ssowallet	Specify the value yes to create a wallet that is compatible with Oracle Single Sign-On.
-validate	Specify the value yes to verify that the wallet will be converted successfully. If you specify this option with the value yes, then the wallet is not created.

2. If required, enter a command similar to the following to generate an encrypted version of the wallet password you specified in the `ssl2ossl` command:

> **Note:** If you specify the `-ssowallet` option in the `ssl2ossl` command, then you do not need to complete this step. Otherwise, because the password must be specified in the `httpd.conf` file, Oracle recommends that you encrypt it.

```
$ $ORACLE_HOME/Apache/Apache/bin/iasobf -p wallet_pwd
```

The output from this command is the encrypted version of the password specified by the `-p` option. In the following section, you must specify this value for the `SSLWalletPassword` directive.

Step 10: Modifying the SSL Sections and Directives

> **Note:** Oracle recommends that you change the SSL-related sections and directives in the `httpd.conf` file, even if you do not currently use SSL.

Make the following changes to the directives contained in the `<IfModule mod_ossl.c>` sections:

1. Change the setting for the `SSLSessionCache` directive as follows:

```
SSLSessionCache shmcb:/oracle_home/Apache/Apache/logs/ssl_scache(512000)
```

2. Change the setting for the `SSLCipherSuite` directive as follows:

```
SSLCipherSuite SSL_RSA_WITH_RC4_128_MD5:SSL_RSA_WITH_RC4_128_SHA:
SSL_RSA_WITH_3DES_EDE_CBC_SHA:SSL_RSA_WITH_DES_CBC_SHA:
SSL_RSA_EXPORT_WITH_RC4_40_MD5:SSL_RSA_EXPORT_WITH_DES40_CBC_SHA
```

3. Remove the following directives and their associated comments:

```
SSLRandomSeed
SSLCertificateFile
SSLCertificateKeyFile
SSLCertificateChainFile
SSLCACertificateFile
SSLCACertificatePath
SSLVerifyDepth
```

4. In the `<VirtualHost _default_:SSL_port>` section, add the following lines:

```
#    Server Wallet:
#    The server wallet contains the server's certificate, private key
#    and trusted certificates. Set SSLWallet at the wallet directory
#    using the syntax:  file:path_to_wallet_directory
SSLWallet file:/oracle_home/Apache/Apache/conf/ssl.wlt/default

#    Server Wallet Password:
#    Both clear text wallet password and obfuscated password are allowed
#    here. An obfuscated one is recommended.
#    Examples:
#    SSLWalletPassword clear_pass
#    SSLWalletPassword obfuscated_pass
```

```
#SSLWalletPassword ...
```

5. If you migrated a server certificate and private key, then perform the following steps:

   a. Change the value specified by the `SSLWallet` directive to specify the wallet path, if it is different from the default value.

   b. If you did not create a wallet that is compatible with Oracle Single Sign-On (using the `-ssowallet yes` option in the previous section), then remove the comment from the `SSLWalletPassword` directive and specify the clear-text or encrypted wallet password as its value.

Step 11: Copying or Moving the Required Files to New Directories

Copy or move any scripts for files from the document root and script directories to the equivalent directories for the new release. Copy the following files, as appropriate:

> **Note:** You need to copy only files that are located in subdirectories of the previous release Oracle home directory. Alias directories in other locations continue to be accessible as long as the permissions on these directories and their contents allow the server to read them. If you changed the `User` or `Group` directive, then you may need to change these permissions.

- Files and subdirectories in directories specified by a `DocumentRoot` or `Alias` directive
- CGI, Perl, and FastCGI programs and scripts and their associated files in directories specified by a `ScriptAlias` directive

Migrating DADs Used by mod_plsql

If you used `mod_plsql` to access a database with the previous release of Oracle HTTP Server, then you must migrate the database access descriptors (DADs) to the format required by `mod_plsql` in the current release. You can use the `dadTool.pl` Perl script to complete this migration. To run this script, follow these steps:

1. If necessary, switch user to the Oracle software owner user (typically, `oracle`):

   ```
   $ su - oracle
   ```

2. Set the `ORACLE_HOME` environment variable to specify the path to the Oracle home for the current release, and set the `PATH` environment variable to include the directory containing the `perl` executable:

   - Bourne, Bash, or Korn shell:

     ```
     $ ORACLE_HOME=new_oracle_home_path
     $ PATH=${ORACLE_HOME}/perl/bin:${PATH}
     $ PATH=${ORACLE_HOME}/Apache/modplsql/conf:${PATH}
     $ export ORACLE_HOME PATH
     ```

   - C shell:

     ```
     % setenv ORACLE_HOME new_oracle_home_path
     % setenv PATH ${ORACLE_HOME}/perl/bin:${PATH}
     % setenv PATH ${ORACLE_HOME}/Apache/modplsql/conf:${PATH}
     ```

3. Set the LD_LIBRARY_PATH shared library path environment variable for your platform to include the $ORACLE_HOME/lib directory.

For example, to set the LIB_PATH environment variable in the Bourne shell, enter the following command:

```
$ LD_LIBRARY_PATH=$ORACLE_HOME/lib:${LD_LIBRARY_PATH}; export LD_LIBRARY_PATH
```

4. Change directory to the mod_plsql configuration directory for the current release of Oracle HTTP Server as follows:

```
$ cd $ORACLE_HOME/Apache/modplsql/conf
```

5. Copy the DAD configuration file (wdbsvr.app) used by the previous release to this directory as follows:

```
$ cp /old_oracle_home/Apache/modplsql/cfg/wdbsvr.app .
```

6. Enter the following command to run the script:

```
$ perl dadTool.pl -m
```

The script reads the DAD information from the wdbsvr.app file and creates equivalent DADs in the dads.conf file.

Enabling the High Availability Features of Oracle HTTP Server

If you want to enable the high-availability features of Oracle HTTP Server, you must use Oracle Process Manager and Notification server (OPMN) with Oracle HTTP Server. To use OPMN, you must first start the OPMN service. To start the OPMN service and the Oracle HTTP Server processes together, enter the following command:

```
$ORACLE_HOME/opmn/bin/opmnctl startall
```

> **Note:** In this release, the apachectl utility is not supported for starting and stopping Oracle HTTP Server.

When the OPMN service is running, you can start, stop, or restart Oracle HTTP Server.

To stop the OPMN service and the Oracle HTTP Server processes, enter the following command:

```
$ORACLE_HOME/opmn/bin/opmnctl stopall
```

> **See Also:** "Starting, Stopping, and Restarting Oracle HTTP Server" on page 5-1

Postinstallation Tasks for Oracle HTML DB

If you installed Oracle HTML DB, then complete the following tasks:

- Restarting Processes

- Configuring a DAD for Oracle HTML DB

- Configuring Oracle HTTP Server for a New Oracle HTML DB Installation

- Configuring Oracle HTTP Server for an Oracle HTML DB Upgrade

- Obfuscating the PlsqlDatabasePassword Parameter

- Installing and Configuring Oracle HTML DB on a Remote Oracle Database

Restarting Processes

You must restart the processes, such as listener processes, that you stopped before you began the installation. If you installed Oracle HTML DB in an existing Oracle home, then you must restart Oracle HTTP Server. To restart Oracle HTTP Server, enter the following command:

```
$ORACLE_HOME/opmn/bin/opmnctl restartproc ias-component=HTTP_Server
```

Configuring a DAD for Oracle HTML DB

To enable Oracle HTML DB to access the database, you must configure a Database Access Descriptor (DAD) as follows:

1. Using any text editor, edit the `Apache/modplsql/conf/marvel.conf` file, deleting all of the lines in the file except the first line.

2. In a Web browser, access the Oracle HTTP Server home page:

    ```
    http://hostname:port/
    ```

3. Select **Mod_plsql Configuration Menu**.

4. Select **Gateway Database Access Descriptor Settings**.

5. Select **Add Default (blank configuration)**.

6. On the Database Access Descriptor page, enter the values for the fields listed in the following table:

    > **Note:** Only enter values for the fields listed in the table.

Field	Value
Database Access Descriptor Name	htmldb
Oracle User Name	HTMLDB_PUBLIC_USER
Oracle Password	Password specified for HTML DB during the installation
Oracle Connect String	The connect string for the database where the HTML DB objects are installed, in the following format: *host*:*port*:*service_name*
Enable Connection Pooling?	No
Default (Home) Page	htmldb
Document Table	WWW_FLOW_FILE_OBJECTS$
Document Access Path	docs
Document Access Procedure	WWW_FLOW_FILE_MANAGER.PROCESS_DOWNLOAD

Configuring Oracle HTTP Server for a New Oracle HTML DB Installation

Oracle HTML DB must have access to Oracle HTTP Server with `mod_plsql`. The instructions that follow explain how to configure three different versions of Oracle HTTP Server with `mod_plsql`.

This section contains the following topics:

■ Oracle HTTP Server Release 9.0.3

■ Oracle HTTP Server 10g Release 1 or Oracle Application Server 10g

Oracle HTTP Server Release 9.0.3

The `wdbsvr.app` file contains information about DADs. A DAD is a set of values that specify how the Oracle HTTP Server component `mod_plsql` connects to the database server to fulfill an HTTP request. You create a DAD to specify how to connect to an Oracle HTML DB instance.

Modifying the Oracle9*i* wdbsvr.app File

To create the DAD, you modify the `wdbsvr.app` file and add an entry for Oracle HTML DB.

To modify the `wdbsvr.app` file:

1. Use a text editor to open the `wdbsvr.app` file, which is located in the following directory:

    ```
    $ORACLE_HOME/Apache/modplsql/cfg
    ```

2. Add an entry for Oracle HTML DB using the following syntax. You must change the settings indicated in italic font.

    ```
    [DAD_htmldb]
     connect_string = localhost:1521:orcl
     password = htmldb
     username = htmldb_public_user
     default_page = htmldb
     document_table = wwv_flow_file_objects$
     document_path = docs
     document_proc = wwv_flow_file_mgr.process_download
     reuse = Yes
     enablesso = No
     stateful = STATELESS_RESET
     nls_lang = American_America.AL32UTF8
    ```

    In this syntax:

    ■ `connect_string` refers to the host ID, port number, and Oracle9*i* Database on which Oracle HTML DB was installed. Use the format `host:port:sid`.

    If the 9*i* version of Oracle HTTP Server that you want to use is installed in the same Oracle home as the database you specified for use with Oracle HTML DB, then leave this parameter blank.

    ■ `password` is the HTML DB password specified during installation.

    ■ `nls_lang` refers to the language setting. It must match the Globalization Support settings of the database. For example:

    ```
    American_America.AL32UTF8
    ```

    If either the territory portion or the language portion of the Globalization Support settings contain a space, then you must enclose the value in double quotation marks, as shown in the following example:

    ```
    nls_lang = "ENGLISH_UNITED KINGDOM.AL32UTF8"
    ```

    You can find information about the Globalization Support settings for your database by querying the view `NLS_DATABASE_PARAMETERS` as shown in the following example:

```
SELECT parameter,value
FROM nls_database_parameters
WHERE PARAMETER IN ('NLS_CHARACTERSET','NLS_LANGUAGE','NLS_TERRITORY');
```

3. Leave the remaining settings, including the user name setting, as they appear in the previous example.

4. Save and exit the wdbsvr.app file.

Modifying the Oracle9*i* httpd.conf File

You need to modify the httpd.conf file to include an alias that points to the file system path where you copied the images directory.

> **See Also:** *Oracle HTTP Server Administrator's Guide*

1. Use a text editor to open the httpd.conf file, which is located in the following directory:

   $ORACLE_HOME/Apache/Apache/conf

2. Add an entry for the file system path where you copied the images directory, using /i/ as the images directory alias. For example:

   Alias /i/ "$ORACLE_HOME/Apache/Apache/images/"

   Include the forward slash (/) at the end of the path.

3. Save and exit the httpd.conf file.

4. Stop and restart Oracle HTTP Server:

   ■ To stop Oracle HTTP Server, enter the following command:

   $ORACLE_HOME/opmn/bin/opmnctl stopproc ias-component=HTTP_Server

   ■ To restart Oracle HTTP Server, enter the following command:

   $ORACLE_HOME/opmn/bin/opmnctl restartproc ias-component=HTTP_Server

Oracle HTTP Server 10*g* Release 1 or Oracle Application Server 10*g*

You need to modify the dads.conf file to include an alias that points to the file system path where you copied the images directory.

To modify the dads.conf file to include an alias that points to the location of the images directory:

1. Use a text editor to open the dads.conf file, which by default is located in the following directory:

   $ORACLE_HOME/Apache/modplsql/conf/

2. Add an entry for the file system path where you copied the images directory, using /i/ as the images directory alias. For example:

   Alias /i/ "$ORACLE_HOME/Apache/Apache/images/"

   Include the forward slash (/) at the end of the path.

3. Add a DAD entry for Oracle HTML DB using the following syntax. Replace the values PlsqlDatabasePassword, PlsqlDatabaseConnectString, and PlsqlNLSLanguage with appropriate values for your environment.

   <Location /pls/htmldb>

```
            SetHandler pls_handler
            Order deny,allow
            Allow from all
            AllowOverride None
            PlsqlDatabaseUsername     HTMLDB_PUBLIC_USER
            PlsqlDatabasePassword     htmldb
            PlsqlDatabaseConnectString localhost:1521:htmldbdv ServiceNameFormat
            PlsqlDefaultPage          htmldb
            PlsqlDocumentTablename     wwv_flow_file_objects$
            PlsqlDocumentPath         docs
            PlsqlDocumentProcedure    wwv_flow_file_mgr.process_download
            PlsqlAuthenticationMode   Basic
            PlsqlNLSLanguage          AMERICAN_AMERICA.AL32UTF8
</Location>
```

If either the territory portion or the language portion of the Globalization Support settings contains a space, then you must wrap the value in double quotation marks, as shown in the following example:

```
PlsqlNLSLanguage      "ENGLISH_UNITED KINGDOM.AL32UTF8"
```

4. Save and exit the `dads.conf` file.

5. **Oracle Application Server only:** Enter the following command:

    ```
    $ORACLE_HOME/dcm/bin/dcmctl updateConfig -ct ohs
    ```

6. Stop and restart Oracle HTTP Server:

    ```
    $ORACLE_HOME/opmn/bin/opmnctl stopproc ias-component=HTTP_Server
    $ORACLE_HOME/opmn/bin/opmnctl restartproc ias-component=HTTP_Server
    ```

> **See Also:** "Obfuscating the PlsqlDatabasePassword Parameter" on page 4-15 and *Oracle HTTP Server Administrator's Guide*

Configuring Oracle HTTP Server for an Oracle HTML DB Upgrade

If you are upgrading Oracle HTML DB from release 1 (10.1) and the password you provided during your initial installation differs from the one you specified during this installation, then you need to modify the file that contains the DADs. The following sections describe the parameter you need to modify depending upon the type of Oracle HTTP Server in your environment.

This section covers the following topics:

- Oracle HTTP Server Release 9.0.3

- Oracle HTTP Server 10g Release 1 or Oracle Application Server 10g

> **Note:** Perform the tasks that follow only if the password you provided during your initial installation differs from the one you specified during this installation.

Oracle HTTP Server Release 9.0.3

If you are upgrading Oracle HTML DB and are running the version of Oracle HTTP Server included with Oracle Database release 9.2.0.*x*, then you must modify the `password` parameter in the `wdbsvr.app` file.

To modify the `password` parameter in the `wdbsvr.app` file:

1. Use a text editor to open the `wdbsvr.app` file, which is located in the following directory:

   `$ORACLE_HOME/Apache/modplsql/cfg`

2. Find the DAD settings for Oracle HTML DB by searching for the following:

   `DAD_htmldb`

3. Edit the value next to the `password` parameter to match the password you provided during the installation.

4. Save your changes.

5. Stop and restart Oracle HTTP Server:

   ```
   $ORACLE_HOME/opmn/bin/opmnctl stopproc ias-component=HTTP_Server
   $ORACLE_HOME/opmn/bin/opmnctl restartproc ias-component=HTTP_Server
   ```

   See Also: *Oracle HTTP Server Administrator's Guide*

Oracle HTTP Server 10*g* Release 1 or Oracle Application Server 10*g*

If you are upgrading Oracle HTML DB and are running Oracle HTTP Server 10*g* Release 1 or Oracle Application Server 10*g*, then you must modify the `PlsqlDatabasePassword` parameter in the `marvel.conf` file.

To modify the `PlsqlDatabasePassword` parameter in the `marvel.conf` file:

1. Use a text editor to open the `marvel.conf` file, which is located in the following directory:

   `$ORACLE_HOME/Apache/modplsql/conf`

2. Find the DAD settings for Oracle HTML DB by searching for the following:

   `/pls/htmldb`

3. Modify the value of the parameter `PlsqlDatabasePassword` to match the password you provided during installation.

4. Save your changes.

5. For Oracle Application Server 10*g*, enter the following command:

   `$ORACLE_HOME/dcm/bin/dcmctl updateConfig -ct ohs`

6. Stop and restart Oracle HTTP Server:

   ```
   $ORACLE_HOME/opmn/bin/opmnctl stopproc ias-component=HTTP_Server
   $ORACLE_HOME/opmn/bin/opmnctl restartproc ias-component=HTTP_Server
   ```

   See Also: "Obfuscating the PlsqlDatabasePassword Parameter" on page 4-15 and *Oracle HTTP Server Administrator's Guide*

Obfuscating the PlsqlDatabasePassword Parameter

The `PlsqlDatabasePassword` parameter specifies the password for logging in to the database. You can use the `dadTool.pl` utility to obfuscate passwords in the `dads.conf` file.

The `dadTool.pl` utility is in the following directory:

```
$ORACLE_HOME/Apache/modplsql/conf
```

Obfuscating Passwords in a New Oracle HTML DB Installation

In a new Oracle HTML DB installation, the `PlsqlDatabasePassword` parameter is in the `dads.conf` file. To obfuscate passwords in a new installation, run the `dadTool.pl` utility by following the instructions in the `dadTool.README` file.

Obfuscating Passwords if Upgrading Oracle HTML DB

If you have upgraded from a previous release of Oracle HTML DB, then the DAD information is in the `marvel.conf` file. Before you can run the `dadTool.pl` utility, you must copy the DAD entry from the `marvel.conf` file to the `dads.conf` file.

To obfuscate passwords when upgrading:

1. Use a text editor to copy the entry for `/pls/htmldb` from the `marvel.conf` file into the `dads.conf` file, which is located in the following directory:

   ```
   $ORACLE_HOME/Apache/modplsql/conf
   ```

2. Run `dadTool.pl` by following the instructions in the `dadTool.README` file.

3. Copy the entry for `/pls/htmldb` from the `dads.conf` file back into `marvel.conf`.

4. Remove the entry for `/pls/htmldb` from the `dads.conf` file.

Installing and Configuring Oracle HTML DB on a Remote Oracle Database

You can use the `htmldbca` command-line tool to perform the following procedures:

- Install and configure Oracle HTML DB in a remote Oracle Database
- Upgrade an existing Oracle HTML DB in a remote Oracle Database
- Add languages to an existing Oracle HTML DB in a remote Oracle Database

This section contains the following topics:

- Requirements for Running htmldbca
- Syntax for htmldbca
- Running htmldbca

Requirements for Running htmldbca

To use `htmldbca`, the system must have the following:

- **A local Oracle Database Companion CD installation that has HTML DB installed**

  Oracle Universal Installer places the `htmldbca` executable in the `bin` directory in the same Oracle home as Oracle HTML DB.

- **A remote database**

  This database can be on the same computer as the Oracle HTML DB home or on an Oracle Database installation on a remote computer. You must have a valid connection to this remote Oracle Database installation.

- **Connection privileges to the remote database**

  You need to be able to connect as `SYS` by using the `SYSDBA` role. `htmldbca` will prompt you for the password for `SYS` user.

> **See Also:** *Oracle Database Net Services Administrator's Guide* for information about connecting to another Oracle Database instance

Syntax for htmldbca

The syntax for `htmldbca` is as follows:

```
htmldbca [options]
```

In this syntax, the *options* are:

- `-oracle_home` *string*: Location of the Oracle home in which Oracle HTML DB is installed

  If you do not specify this Oracle home, then `htmldbca` tries to use the `ORACLE_HOME` environment variable setting. If `ORACLE_HOME` is not set or is unusable, and if you do not specify the `oracle_home` option, then `htmldbca` prompts for the Oracle home.

  This option is required.

  The following is an example:

  ```
  htmldbca -oracle_home /u01/app/oracle/product/10.2.0/db_2
  ```

- `-db_host` *string*: Host name of the remote Oracle Database

  This option is required, but if you do not specify it, then `htmldbca` prompts for it.

  The following is an example:

  ```
  htmldbca -db_host shobeen
  ```

- `-db_servicename` *string*: Oracle Database service name

  This option is required, but if you do not specify it, then `htmldbca` prompts for it.

  The following is an example:

  ```
  htmldbca -db_servicename welcome
  ```

- `sys_password` | `-sys_obfuscatedPassword` *string*: Remote password or obfuscated password for `SYS`

  This option is required, but if you do not specify either of these parameters, then `htmldbca` prompts for the `sys_password`. In that case, `sys_obfuscatedPassword` becomes optional.

  The following is an example:

  ```
  htmldbca -sys_password welcome
  ```

- `-htmldb_password` | `-htmldb_obfuscatedPassword` *string*: Password or obfuscated password for Oracle HTML DB

  This option is required, but if you do not specify either of these passwords, `htmldbca` prompts for the `htmldb_password`. If you are upgrading from an earlier version of Oracle HTML DB, then enter the password that you had created for that version of the `HTMLDB_PUBLIC_USER` schema.

  The following is an example:

  ```
  htmldbca -htmldb_password htmldb_welcome
  ```

  After the installation, you can use this password to connect to Oracle HTML DB as the administrative user. The password that you specify is also used for the

HTMLDB_PUBLIC_USER schema, which is used by mod_plsql to connect to the database, and for the FLOWS_010600 and FLOWS_FILES schemas.

> **See Also:** "Obfuscating Passwords in a New Oracle HTML DB Installation" on page 4-16 for information about obfuscating the password after installation

- -ts_htmldb *string*: Specifies the name of the HTML DB tablespace to be created for the remote HTML DB

  This option is required, but if you do not specify it, then htmldbca prompts for it.

  The following is an example:

  ```
  htmldbca -ts_htmldb sysaux
  ```

- -ts_files *string*: HTML DB Files tablespace. By default, htmldbca uses the ts_htmldb value.

  This option is not mandatory, but if you enter an invalid value, then htmldbca prompts for a valid one.

  The following is an example:

  ```
  htmldbca -ts_files sysaux
  ```

- -ts_temp *string*: Oracle HTML DB Temporary tablespace. The default value is set to use temp tablespace.

  This option is not mandatory, but if you enter an invalid value, then htmldbca prompts for a valid one.

  The following is an example:

  ```
  htmldbca -ts_temp sysaux
  ```

- -load_lang *string*[,*string*[,*string*[...]]]: Specifies one or more additional languages to install.

  This option is not mandatory, but if you enter an invalid value, then htmldbca prompts for a valid response. In this case, you can only enter one language. If you do not enter a value, then English is selected.

  The following is an example:

  ```
  htmldbca -load_lang de, fr, it
  ```

  The following are the language choices:

  - de: German
  - en: English, which is the default. If the English version of Oracle HTML DB is already installed in the remote Oracle Database, then htmldbca displays a notification message and exits.
  - es: Spanish
  - fr: French
  - it: Italian
  - ja: Japanese
  - ko: Korean
  - pt-br: Brazilian Portuguese

- zh-cn: PRC Chinese

- zh-tw: Taiwan Chinese

> **See Also:** *Oracle Database Globalization Support Guide* for information about language support for Oracle Database

- -DAD_name *string*: Creates a new DAD name for Oracle HTML DB. The default value is `htmldb`. `htmldbca` will update the `$ORACLE_HOME/Apache/modplsql/conf/marvel.conf` file with the new DAD value.

  This option is not mandatory, but if you enter a duplicate value, then `htmldbca` prompts for a valid one. For the changes to take effect, you must restart Oracle HTTP Server, in which case you can use the `-restart` parameter, described in the next section.

  The following is an example:

  ```
  htmldbca -DAD_name my_htmldb -restart
  ```

  Alternatively, after you run `htmldbca`, you can enter the following command to restart Oracle HTTP Server:

  ```
  $ORACLE_HOME/opmn/bin/opmnctl restartproc ias-component=HTTP_Server
  ```

  After this is done, users can access this instance by entering a URL that has the following format:

  ```
  http://host:port/pls/DAD_name
  ```

  For example:

  ```
  http://mycompany:7778/pls/my_html
  ```

- -restart: Restarts Oracle HTTP Server after the configuration completes. It is optional, and you will not be prompted to specify it. The following is an example:

  ```
  htmldbca -restart
  ```

- -interactive on|off: Turns interactive mode on or off. When interactive mode is on, `htmldbca` prompts for missing or incorrect parameter values. When interactive mode is off, no prompts appear. Therefore, you must specify all the required prompt values at the command line when you run `htmldbca`. By default, `htmldbca` runs in interactive mode.

  This option is not mandatory. The following is an example:

  ```
  htmldbca -interactive off
  ```

- -help: Displays brief usage description for `htmldbca`.

  This option is not mandatory. The following is an example:

  ```
  htmldbca -help
  ```

Running htmldbca

To run `htmldbca`, run the `htmldbca` command, either by itself or with a combination of the options described in the previous section.

Unless the `-interactive` mode is set to off, `htmldbca` will prompt you for any required information that you do not specify at the command line.

Postinstallation Tasks for Oracle Workflow Server

This section contains the following topics:

- Checking Initialization Parameter Values
- Compiling Invalid Objects
- Configuring Oracle Workflow HTML Help
- Completing Other Setup Tasks

Checking Initialization Parameter Values

Verify that the initialization parameters listed in the following table are set to the values shown or higher, and if necessary, change the values.

> **Note:** If a current value is higher than the required value, then do not change the current value.

Parameter	Required Value
AQ_TM_PROCESSES	Greater than 1
JOB_QUEUE_PROCESSES	10 or greater

To check the values of these initialization parameters and change them if necessary, follow these steps:

1. Log in to the database as the SYS user:

   ```
   SQL> CONNECT SYS/SYS_password
   ```

2. To determine the current value of the initialization parameters, use the following command for each initialization parameter:

   ```
   SQL> SHOW PARAMETER parameter_name
   ```

3. To alter the value of an initialization parameter, enter a command similar to the following:

   ```
   SQL> ALTER SYSTEM SET parameter_name=value
   ```

4. If the database is not using a server parameter file, then edit the value specified for the parameter in the initialization parameter file, init*sid*.ora.

Compiling Invalid Objects

To compile any invalid objects in the SYS schema, first log in to Oracle Database. Then, run the utlrp.sql script as follows:

```
@$ORACLE_HOME/rdbms/admin/utlrp.sql
```

> **See Also:**
>
> - The "Configuring New or Upgraded Databases" section of *Oracle Database Installation Guide*
> - *Oracle Database Reference*

Configuring Oracle Workflow HTML Help

Oracle Workflow provides access to context-sensitive HTML Help from the Help button on each of its Web pages. Before you can view the Oracle Workflow HTML Help, you must extract the doc directory tree from the $ORACLE_HOME/wf/wfdoc.zip file to your file system.

1. Use an unzip utility to extract the doc directory tree from the ZIP file in the Workflow directory in your middle-tier Oracle home.

   This extraction requires at least 5 MB of free disk space. After extracting the doc directory tree, you can, if required, remove the wfdoc.zip file.

2. Click the **Help** button on any Oracle Workflow Web page to access the HTML Help.

   You can also access any HTML Help file directly by appending its virtual path to your Web listener base URL. The URL for the contents page of the Oracle Workflow Help is similar to the following:

   ```
   http://hostname:portID/OA_DOC/lang/wf/toc.htm
   ```

3. If you want to add custom Help, then replace the following placeholder file with your own Help material:

   ```
   $ORACLE_HOME/wf/doc/lang/wfcust/wfcust.htm
   ```

   The HTM file that is the main entry point for your custom Help must be named wfcust.htm and must contain an anchor named contents. Your custom Help will be accessible through the Custom Help link on the contents page of the Oracle Workflow Help. Alternatively, you can access your custom Help directly by using the following URL:

   ```
   http://hostname:portID/OA_DOC/lang/wfcust/wfcust.htm
   ```

Completing Other Setup Tasks

After you complete the Oracle Workflow Server and middle tier installation process, you must perform some additional steps to set up Oracle Workflow for your site.

Refer to the "Setting Up Oracle Workflow" section in *Oracle Workflow Administrator's Guide* for instructions on performing these steps.

5

Getting Started with the Oracle Database Companion CD Products

This chapter describes how to check the installation contents and launch Oracle HTTP Server and Oracle HTML DB after you have installed the software and completed the postinstallation tasks.

This chapter contains the following sections:

- Checking the Installation Contents
- Getting Started with Oracle HTTP Server
- Getting Started with Oracle HTML DB
- Getting Started with Oracle Workflow

Checking the Installation Contents

You can check the installation contents of your Oracle software by using Oracle Universal Installer:

1. Start Oracle Universal Installer.

2. When the Welcome screen appears, click **Installed Products**.

   The Inventory screen appears, listing all of the Oracle homes on the system and the products installed in each Oracle home. To check the paths of the products, click the **Environment** tab.

Getting Started with Oracle HTTP Server

This section covers the following topics:

- Starting, Stopping, and Restarting Oracle HTTP Server
- Logging In to Oracle HTTP Server

Starting, Stopping, and Restarting Oracle HTTP Server

If you have just installed Oracle Workflow or Oracle Workflow middle-tier components, then you need to restart Oracle HTTP Server before you can use these components.

Use the following apachectl script to start, stop, and restart Oracle HTTP Server:

```
$ $ORACLE_HOME/Apache/Apache/bin/apachectl { start | startssl | stop | restart |
restartssl }
```

Alternatively, you can use the following commands to start, stop, and restart Oracle
HTTP Server:

- To start Oracle HTTP Server:

  ```
  $ORACLE_HOME/opmn/bin/opmnctl startproc ias-component=HTTP_Server
  ```

- To restart Oracle HTTP Server:

  ```
  $ORACLE_HOME/opmn/bin/opmnctl restartproc ias-component=HTTP_Server
  ```

- To stop Oracle HTTP Server:

  ```
  $ORACLE_HOME/opmn/bin/opmnctl stopproc ias-component=HTTP_Server
  ```

Logging In to Oracle HTTP Server

To log in to Oracle HTTP Server, in a browser, enter a URL similar to the following:

```
http://server:port/
```

In this URL format:

- *server* is the computer on which you have installed Oracle HTTP Server, for
  example, `mycomputer.us.mycompany.com`.
- *port* is the port number assigned to Oracle HTTP Server. In a default installation,
  this number is `7777`. You can find information about the port number of your
  Oracle HTTP Server installation from either of the following files:

  - `$ORACLE_HOME/install/portlist.ini`

  - `$ORACLE_HOME/Apache/Apache/conf/httpd.conf`

After you have logged in, you can find Oracle HTTP Server product demonstrations
and a listing of new features for this release. This link also provides access to the
Oracle Technology Network.

Getting Started with Oracle HTML DB

This section covers the following topics:

- Logging In to Oracle HTML DB
- Setup Tasks for Oracle HTML DB Administrators

Logging In to Oracle HTML DB

To view or develop Oracle HTML DB applications, the Web browser must support
JavaScript and the HTML 4.0 and CSS 1.0 standards.

> **See Also:** "Browser Requirements" on page 2-16 for a list of
> supported Web browsers

To log in to Oracle HTML DB:

> **Note:** Before you can log in to Oracle HTML DB, an administrator
> must grant you access to a workspace.

1. Open the following page in a Web browser:

```
http://hostname:port/pls/database_access_descriptor/htmldb_admin
```

In this URL format:

- *hostname* is the name of the system on which Oracle HTTP Server is installed.

- *port* is the port number assigned to Oracle HTTP Server. In a default installation, this number is 7777. You can find information about the port number of your Oracle HTTP Server installation from either of the following files:

  - `$ORACLE_HOME/install/portlist.ini`

  - `$ORACLE_HOME/Apache/Apache/conf/httpd.conf`

- *database_access_descriptor* describes how Oracle HTTP Server connects to the database so that it can fulfill an HTTP request. The default value is `htmldb`.

  See Also:
  `$ORACLE_HOME/Apache/modplsql/conf/dads.readme` for more information about how DADs work

  The Oracle HTML DB Login page is displayed.

2. In the **Username** field, enter `admin`.

3. In the **Password** field, enter the Oracle HTML DB administrator account password that you specified when you installed Oracle HTML DB.

4. Click **Login**. The Oracle HTML DB Administration Service page is displayed.

Setup Tasks for Oracle HTML DB Administrators

If you are an Oracle HTML DB administrator, then you need to:

- **Log in to Oracle HTML DB Administration Services:** Oracle HTML DB Administration Services is a separate application for managing an entire Oracle HTML DB instance.

- **Specify a provisioning mode:** In Oracle HTML DB Administration Services, you need to determine how the process of creating (or provisioning) a workspace will work in your development environment.

- **Create a Workspace:** A workspace is a shared work area within the Oracle HTML DB development environment that has a unique ID and name. An Oracle HTML DB administrator can create a workspace manually or have users submit requests.

- **Log in to a Workspace:** After you create a workspace in Oracle HTML DB Administration Services, return to the Oracle HTML DB Login page and log in to that workspace.

  See Also: *Oracle HTML DB User's Guide* for more information about using, developing applications with, and administering Oracle HTML DB

Getting Started with Oracle Workflow

This section covers the following topics:

- Logging In to the Oracle Workflow Home Page

- Logging In to Oracle Workflow Manager

- Setup Tasks for Oracle Workflow Administrators

Logging In to the Oracle Workflow Home Page

To access the Oracle Workflow home page in a Web browser, you must be a valid user in the Workflow directory service. Depending on the settings you selected during the installation and configuration, the directory service is based on either Oracle Internet Directory or the native database users.

To access the Oracle Workflow home page, connect as a valid Oracle Workflow user to a URL similar to the following:

```
http://hostname:port/pls/wf/wfa_html.home
```

> **See Also:** `$ORACLE_HOME/oc4j/j2ee/deploy_db_wf.ini` if you are not sure about which server and port number to use

Logging In to Oracle Workflow Manager

The Oracle Workflow Server installation includes the Oracle Workflow Manager component of Oracle Enterprise Manager. This component provides administrative and management tools for Oracle Workflow. When you install Oracle Workflow in your Oracle Database home, Oracle Workflow Configuration Assistant configures Oracle Workflow Manager. It creates two Oracle Application Server Containers for Java 2 Enterprise Edition (OC4J) instances:

- **OC4J_Workflow_Component_Container**: Oracle Workflow Configuration Assistant deploys two applications within this instance. One application runs the agent listener service components and the other runs notification mailer service components.

- **OC4J_Workflow_Management_Container**: Oracle Workflow Configuration Assistant deploys one application within this instance to implement the Oracle Workflow Manager user interface.

Starting, Stopping, or Restarting the OC4J Instances

To start the OC4J instances, run the following scripts:

```
$ORACLE_HOME/wf/admin/wfmgrstart.csh
$ORACLE_HOME/wf/admin/wfsvcstart.csh
```

You can stop and restart the OC4J instances in which Oracle Workflow Manager is deployed. To stop the instances, run the following scripts:

```
$ORACLE_HOME/wf/admin/wfmgrstop.csh
$ORACLE_HOME/wf/admin/wfsvcstop.csh
```

Accessing the Oracle Workflow Manager User Instance

To access the Oracle Workflow Manager user interface:

1. Log in to Oracle Enterprise Manager Database Control by using a URL such as the following:

   ```
   http://server:port/em
   ```

   For example:

   ```
   http://myserver.mycompany:5500/em
   ```

2. On the Home page, navigate to the **Related Links** section.

3. In the Related Links section, select **Workflow Manager**.

4. Log in using your Oracle Workflow database user name (typically, `owf_mgr`) and password.

> **See Also:**
>
> ■ *Oracle Workflow Administrator's Guide*
>
> ■ *Oracle Workflow Developer's Guide*
>
> ■ *Oracle Workflow User's Guide*
>
> ■ *Oracle Workflow API Reference*

Setup Tasks for Oracle Workflow Administrators

If you are an Oracle Workflow administrator, then complete the tasks described in the "Setting Up Oracle Workflow" chapter of *Oracle Workflow Administrator's Guide*.

6

Removing Oracle Database Companion CD Products

This chapter describes how to remove Oracle software from the system. It includes information about the following tasks:

- Removing Oracle HTML DB Database Objects
- Removing Oracle Workflow
- Removing Oracle Software Files

Removing Oracle HTML DB Database Objects

When you install Oracle HTML DB, a configuration assistant creates database objects in the database that you specify during the installation. To completely remove Oracle HTML DB, you must remove the database objects from that database after you remove the software. To remove the Oracle HTML DB database objects from a database, follow these steps:

1. Using SQL*Plus, connect to the database as the `SYS` or `SYSTEM` user:

   ```
   $ sqlplus "SYS/SYS_password AS SYSDBA"
   ```

2. Enter the following commands to remove the database objects:

   ```
   SQL> ALTER SESSION SET CURRENT_SCHEMA = flows_010600;
   SQL> EXEC wwv_flow_upgrade.drop_public_synonyms;
   SQL> ALTER SESSION SET CURRENT_SCHEMA = SYSTEM;
   SQL> DROP USER flows_010600 CASCADE;
   SQL> DROP USER flows_files CASCADE;
   SQL> DROP USER htmldb_public_user CASCADE;
   ```

Removing Oracle Workflow

To remove Oracle Workflow:

1. Use Oracle Universal Installer to remove Oracle Workflow Server or the Oracle Workflow middle-tier components.

2. Drop the Oracle Workflow schema from the database.

   Log in to the database as the `SYS` user, and enter a command such as the following:

   ```
   drop user Workflow_schema_name cascade
   ```

   For example:

```
drop user owf_mgr cascade
```

Removing Oracle Software Files

To remove Oracle software by using Oracle Universal Installer:

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

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

    ```
    $ su - oracle
    ```

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

    - Bourne, Bash, or Korn shell:

      ```
      $ ORACLE_HOME=oracle_home_path
      $ export ORACLE_HOME
      ```

    - C shell:

      ```
      $ setenv ORACLE_HOME oracle_home_path
      ```

3. Start Oracle Universal Installer by entering the following command:

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

4. On the Welcome screen, click **Deinstall Products**.

    The Inventory screen lists all the Oracle homes on the system and the products installed in each Oracle home.

5. On the Inventory screen, select the Oracle home containing the products that you want to remove.

6. If you want to delete specific products, then select them in the tree window.

7. Click **Remove**.

    Oracle Universal Installer displays a confirmation screen prompting you to confirm that you want to remove the selected products and their dependent components.

8. Click **Yes**.

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

A

Troubleshooting the Oracle Database Companion CD Installation

This appendix contains information about troubleshooting. It contains the following sections:

-

Verifying Requirements

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

X Window Display Errors

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

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

If you see one of these error messages, then perform the following steps:

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

1. In a local terminal window, log in as the user that started the X Window session.

2. Enter the following command to enable the remote host to display X applications on the local X server:

   ```
   $ xhost fully_qualified_remote_host_name
   ```

   For example:

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

3. Enter the following commands, where *workstation_name* is the host name or IP address of your workstation:

   - Bourne, Bash, or Korn shell:

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

   - C shell:

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

4. To determine if X Window applications display correctly on the local system, enter the following command:

   ```
   $ xclock
   ```

   The X clock should appear on your monitor.

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

What to Do If an Installation Error Occurs

If you encounter an error during installation, then:

- Do not exit Oracle Universal Installer.

- If you clicked **Next** after you entered incorrect information on one of the installation screens, then click **Back** to return to the screen and correct the information.

- If you encounter an error while Oracle Universal Installer is copying or linking files, then refer to the "Reviewing the Log of an Installation Session" section on page A-3.

- If you encounter an error while a configuration assistant is running, then refer to the "Troubleshooting Configuration Assistants" section on page A-3.

- If you cannot resolve the problem, then remove the failed installation by following the steps listed in the "Cleaning Up After a Failed Installation" section on page A-4.

Reviewing the Log of an Installation Session

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

To view the contents of the log file, follow these steps:

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

    ```
    $ cat /var/opt/oracle/oraInst.loc
    ```

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

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

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

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

    ```
    $ ls -ltr
    ```

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

    ```
    installActionsdate_time.log
    ```

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

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

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

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

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

Troubleshooting Configuration Assistants

To troubleshoot an installation error that occurred when a configuration assistant was running:

-   Review the installation log files listed in the "Reviewing the Log of an Installation Session" section on page A-3.

-   Review the specific configuration assistant log file located in the `$ORACLE_HOME/cfgtoollogs` directory. Try to fix the issue that caused the error.

-   If you see the `Fatal Error. Reinstall` message, then look for the cause of the problem by reviewing the log files. Refer to the "Fatal Errors" section for more information.

Configuration Assistant Failure

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

oraInventory_location/logs/installActions*date_time*.log

Fatal Errors

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

1. Remove the failed installation as described in the "Cleaning Up After a Failed Installation" section on page A-4.

2. Correct the cause of the fatal error.

3. Reinstall the Oracle software.

Cleaning Up After a Failed Installation

If an installation fails, then you must remove files that Oracle Universal Installer created during the attempted installation and remove the Oracle home directory. To do this:

1. Start Oracle Universal Installer as described in the "Installing Oracle Database 10g Products" section on page 3-6.

2. Click **Deinstall Products** on the Welcome screen, or click **Installed Products** on any Oracle Universal Installer screen.

   The Inventory screen appears, listing installed products.

3. Select the products that you want to remove, and then click **Remove**.

4. Manually remove the Oracle home directory created during the failed installation.

5. Reinstall the Oracle software.

Silent-Mode Response File Error Handling

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

/oraInventory_location/logs/silentInstall*date_time*.log

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

A silent installation fails if:

- You do not specify a response file

- You specify an incorrect or incomplete response file

  For example, a common problem is that while all the product-specific data is filled out correctly, the staging area location may be incorrect. If this is the case, check the FROM_LOCATION variable and make sure that it points to the products.xml file in the installation media. In the installation media, this products.xml is in response/stage.

- Oracle Universal Installer encounters an error, such as insufficient disk space

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

Images Displayed Incorrectly in Oracle HTML DB

In the "Configuring Oracle HTTP Server for a New Oracle HTML DB Installation" section on page 4-11, you added an alias entry that points to the file system path where you copied the images directory. If images in Oracle HTML DB do not display correctly, then you may have more than one definition of the /i/ alias. To address this problem:

- If possible, rename the first instance of /i/ to a different alias name.
- Copy the images from the $ORACLE_HOME/htmldb/images directory to the directory defined by the first /i/ alias.

Oracle HTML DB Online Help Not Working

If users are accessing Oracle HTML DB through a virtual host, then the online Help will not work. Consider the following example:

The host name of the Oracle HTTP Server on which the Oracle HTML DB DAD resides is internal.server.com and the port is 7777. Users access Oracle HTML DB through a virtual host. In their Web browsers, users see external.server.com and the port 80.

In this example, Oracle HTML DB online Help will not work if the users cannot access internal.server.com. To resolve this issue, add the following lines to the Oracle HTML DB DAD to override the CGI environment variables SERVER_NAME and SERVER_PORT:

```
PlsqlCGIEnvironmentList SERVER_NAME=external.server.com
PlsqlCGIEnvironmentList SERVER_PORT=80
```

> **See Also:** *Oracle Application Server mod_plsql User's Guide* for information about overriding the CGI environment variables

B

Installing Oracle Database Companion CD Products in Noninteractive Mode

This appendix describes the following advanced installation topics:

- Installing Oracle Components in Noninteractive Mode
- Running Oracle Workflow Configuration Assistant in Noninteractive Mode

Installing Oracle Components in Noninteractive Mode

Typically, Oracle Universal Installer runs in interactive mode, which means that it prompts you to provide information on graphical user interface (GUI) screens. Alternatively, you can run Oracle Universal Installer in noninteractive mode. This mode is also referred to as silent mode, or silent installation.

You may want to use noninteractive mode to install the Oracle Database Companion CD products in the following scenarios:

- You need to perform an unattended deployment of Companion CD products to multiple nodes. You can schedule the noninteractive installation mode from the operating system scheduler or other job subsystem that your site normally uses. This method is particularly useful for large sites that require many Oracle Database installations in which you need to quickly perform multiple installations using similar settings for each computer.
- No interaction with the user is intended.
- A graphical facility to run Oracle Universal Installer in interactive mode is not available.

This section covers the following topics on how you can use response files to run Oracle Universal Installer in noninteractive mode:

- Using Response Files to Install Oracle Components in Noninteractive Mode
- Editing a Response File Template
- Recording a Response File
- Running Oracle Universal Installer in Silent or Suppressed Mode

Using Response Files to Install Oracle Components in Noninteractive Mode

To use the noninteractive mode, you run Oracle Universal Installer with a response file. A response file is a text file that contains variables and values that Oracle Universal Installer uses during the installation process. Oracle provides a set of sample

response files that you can customize, or you can create your own response file by recording your installation selections.

> **See Also:** *Oracle Universal Installer and OPatch User's Guide* for more information about response file formats

Editing a Response File Template

Table B–1 lists the sample response files provided on the installation media.

Table B–1   Response Files

Response File	Description
htmldb.HTMLDBONLY.rsp	Oracle HTML DB only installation
htmldb.HTMLDBwithOHS.rsp	Oracle HTML DB with Oracle HTTP Server installation
companionCD.db.rsp	Oracle Database 10*g* Products installation type
companionCD.midtier.rsp	Oracle Database Companion CD installation type

To modify a response file template:

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

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

   In this example, *directory_path* is the path of the companion directory on the installation media or the hard drive. If you have copied the software to a hard drive, then you can also edit the file in the response directory.

2. Open the response file in a text editor:

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

   In addition to editing settings specific to the Oracle Database installation, check that the FROM_LOCATION path is correct and points to the products.xml file in the stage directory in the installation media. You may want to set this variable to point to an absolute path, for example:

   ```
   FROM_LOCATION="/directory_path/response/stage/products.xml"
   ```

   Remember that you can specify sensitive information, such as passwords, at the command line rather than within the response file.

   > **See Also:** *Oracle Universal Installer and OPatch User's Guide* for detailed information on creating response files.

3. To edit the file, follow the instructions in the file.

   > **Note:** Oracle Universal Installer or the configuration assistant fails if you do not correctly configure the response file.

4. Change the permissions on the file to 700:

   ```
   $ chmod 700 /local_dir/response_file.rsp
   ```

> **Caution:** A fully specified response file for an Oracle Database installation contains the passwords for database administrative accounts and for a user that is a member of the OSDBA group (required for automated backups). Ensure that only the Oracle software owner user can view or modify response files or consider deleting them after the installation succeeds.

Recording a Response File

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

If you want to use Record mode during a noninteractive installation, then Oracle Universal Installer copies the variable values that were specified in the original source response file into the new response file.

To record a new response file:

1. Ensure that the computer on which you are creating the response file meets the requirements specified in Chapter 2.

   When you run Oracle Universal Installer to record a response file, it checks the system to verify that it meets the requirements to install the software.

2. Enter a command similar to the following to start Oracle Universal Installer:

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

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

   In this command:

   - *directory_path* is the path of the `companion` directory on the installation media or the hard drive
   - `-record` specifies that you want to record the responses that you enter in a response file
   - *filename* is the full path and file name of the response file that you want to record

3. On each Oracle Universal Installer screen, specify the required information.

4. When Oracle Universal Installer displays the Summary screen, perform one of the following steps:

   - Click **Install** to create the response file, and then continue with the installation.
   - Click **Cancel**, and then click **Yes** to create the response file but exit from Oracle Universal Installer without installing the software.

   The response file is saved in the location that you specified using the `-destinationFile` option.

5. If you do not complete the installation, then delete the Oracle home directory that Oracle Universal Installer created using the path you specified on the Specify File Locations screen.

6. Before using the recorded response file on another system, use a text editor to edit the file and make any required changes.

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

7. Run the response file by following the instructions in the "Running Oracle Universal Installer in Silent or Suppressed Mode" section on page B-4.

Running Oracle Universal Installer in Silent or Suppressed Mode

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

1. Complete the preinstallation tasks listed in Chapter 2.

2. Log in as the Oracle software owner user (typically, `oracle`).

3. If you are completing a suppressed-mode installation, set the `DISPLAY` environment variable.

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

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

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

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

   In this example:

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

     > **See Also:** For more information about other options for the `runInstaller` command, enter the following command:
     >
     > ```
     > $ /directory_path/runInstaller -help
     > ```

5. After the installation is completed, log in as the `root` user and run the `root.sh` script:

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

See Also:

- The "Installing Oracle Products" section in *Oracle Universal Installer and OPatch User's Guide* for more information about installing on using response files

- The "Deinstalling Products" section in *Oracle Universal Installer and OPatch User's Guide* for more information about removing software by using response files

Running Oracle Workflow Configuration Assistant in Noninteractive Mode

You can run Oracle Workflow Configuration Assistant in noninteractive mode by entering your configuration parameter settings directly in the Oracle Workflow Configuration Assistant `wfinstall.csh` script. You must specify all required and conditionally required parameters for the features that you want to use.

To run Oracle Workflow Configuration Assistant in noninteractive mode:

1. Go to the `$ORACLE_HOME/wf/install` directory, which is the default location of the `wfinstall.csh` script.

2. Open the `wfinstall.csh` script in a text editor, and locate the line that is similar to the following:

   ```
   . . . repository.jar" WorkflowCA /wfdir workflow_directory /orahome
   oracle_home
   ```

   For example:

   ```
   . . . repository.jar" WorkflowCA /wfdir /d1/iasinstall/m21pw1/wf
   /orahome /d1/iasinstall/m21pw1
   ```

3. Edit the script to append your additional parameters after the `/wfdir`, `/orahome`, and `/ospath` parameters. Enter all the parameters on the same line. Otherwise, the script will not run correctly.

   ```
   . . . repository.jar" WorkflowCA /wfdir workflow_directory /orahome
   oracle_home /wfacct workflow_schema
   /instype installation_type /tnsconndesc connection_string
   ```

   In the preceding script line:

   - `/wfdir`: The Oracle Workflow directory within your Oracle home directory. The default directory is `$ORACLE_HOME/wf`.

   - `/orahome`: Your Oracle home directory location. For example, `/u01/app/oracle/product/10.2/db_2`.

   - `/wfacct`: Workflow Account.

   - `/instype`: Specify one of the following installation options:

     - `server`: Configures Workflow Server only; available in both GUI mode and command-line mode

     - `add_language`: Sets the language or languages used; available in both GUI mode and command-line mode

   - `/tnsconndesc`: Connection string to the Oracle Database.

> **Note:** If a parameter can be entered in both user interface mode and noninteractive mode, then this section lists the name of the corresponding field on the Oracle Workflow Configuration Assistant screen alongside the noninteractive mode parameter name.

4. If you specified `add_language` for the `/instype` parameter, then enter the `/nlsopt` parameter with the languages you want to add.

   Enclose the languages in double quotation marks. For example, to specify Arabic, German, and Danish, enter the following value:

   `"ar d dk"`

   To use all available languages, set `nlsop` to `all`. Oracle Workflow Server supports all the languages that Oracle Database supports.

   > **See Also:** The "Locale Data" section in *Oracle Database Globalization Support Guide* for a list of standard language abbreviations

5. If you specified `server` for the `/instype` parameter, then enter the following parameters if you want to integrate Oracle Internet Directory as your Oracle Workflow directory service:

   - `/ldaphost`: LDAP host name
   - `/ldapport`: LDAP non-SSL port
   - `/ldapuser`: LDAP admin user name
   - `/ldaplogbase`: Changelog DN
   - `/ldapuserbase`: User base (for example, `/ldapuserbase cn=Users,dc=us,dc=oracle,dc=com`)

   If you are upgrading an existing installation of Oracle Workflow that is already integrated with Oracle Internet Directory, then you can omit the LDAP parameters for Oracle Internet Directory integration if they are already defined in your database.

   In this case, Oracle Workflow Configuration Assistant configures your Oracle Internet Directory integration by using the existing LDAP parameters defined in your database. However, if you specify new LDAP parameters here, then Oracle Workflow Configuration Assistant will update your settings.

6. If you specified `server` or `all` for the `/instype` parameter, then enter the following parameters if you want to use Oracle Workflow Notification Mailer:

   - `/mailserver`: Inbound e-mail account: server name
   - `/mailuser`: Inbound e-mail account: user name
   - `/mailhost`: Outbound e-mail account: server name
   - `/htmlagent`: Message generation: HTML agent
   - `/mailreply`: Message generation: reply-to address
   - `/processfolder`: E-mail processing: name of processed folder
   - `/discardfolder`: E-mail processing: name of discard folder

7. If you specified `server` for the `/instype` parameter and if you want to change the tablespace assigned to the Oracle Workflow database account, then set the `/tablespace` parameter to a valid existing tablespace name.

8. To control how Oracle Workflow Configuration Assistant writes log information, set the following parameters:

- `/debug`: Specify `true` if you want Oracle Workflow Configuration Assistant to write debug information to the `workflow.log` file. By default, Oracle Workflow does not log this information.

- `/logdir`: Specify the path to the directory in which you want Oracle Workflow Configuration Assistant to write the `workflow.log` file, or specify `nolog` if you do not want to create a log file. By default, the log file is written to the `$ORACLE_HOME/wf/install` directory.

9. Save your changes, and close the `wfinstall.csh` file.

10. To run the `wfinstall.csh` script, enter the following command:

```
$ORACLE_HOME/wf/install/wfinstall.csh
```

If the `wfinstall.csh` script includes the minimum parameters, all entered as a single line of text in the file, then it performs the configuration in noninteractive mode, without displaying the Oracle Workflow Assistant screen. However, as a security precaution, the script may prompt you to enter the following passwords at run time, depending on the installation options that your site uses:

- The password for your Oracle Workflow database account

- Your `SYS` password

- The password for the LDAP user account, if you enter LDAP parameters

- The password for the notification mailer e-mail account, if you enter mailer parameters

C

Configuring Oracle Database Companion CD Globalization Support

This appendix describes the following Globalization Support topics:

- Installing and Using Oracle Components in Different Languages
- Configuring Locale and Character Sets by Using the NLS_LANG Environment Variable

Installing and Using Oracle Components in Different Languages

This section describes the following procedures:

- Installing Oracle HTML DB in Different Languages
- Installing Oracle Workflow in Different Languages
- Running Oracle Universal Installer in Different Languages
- Using Oracle Components in Different Languages

Installing Oracle HTML DB in Different Languages

The Oracle HTML DB interface is translated into German, Spanish, French, Italian, Japanese, Korean, Brazilian Portuguese, Simplified Chinese, and Traditional Chinese. A single instance of Oracle HTML DB can be installed with one or more of these translated versions. At run time, each user's Web browser language settings determine the specific language version.

The translated version of Oracle HTML DB should be installed in a database that has a character set that can support the specific language.

> **Caution:**   If you attempt to install a translated version of Oracle HTML DB in a database that does *not* support the character encoding of the language, then the installation may fail or the translated Oracle HTML DB instance may appear corrupted when run.

The database character set `AL32UTF8` supports all the translated versions of Oracle HTML DB.

You can manually install translated versions of Oracle HTML DB by using SQL*Plus. The installation files are encoded in `UTF8`.

> **Caution:** AL32UTF8 is the Oracle Database character set that is appropriate for XMLType data. It is equivalent to the IANA registered standard UTF-8 encoding, which supports all valid XML characters.
>
> Do not confuse the Oracle Database database character set UTF8 (no hyphen) with the database character set AL32UTF8 or with character encoding UTF-8. Database character set UTF8 has been superseded by AL32UTF8. Do not use UTF8 for XML data. UTF8 supports only Unicode version 3.1 and earlier; it does not support all valid XML characters. AL32UTF8 has no such limitation.
>
> Using database character set UTF8 for XML data could potentially cause a fatal error or affect security negatively. If a character that is not supported by the database character set appears in an input-document element name, a replacement character (usually, the question mark (?)) is substituted for it. This will terminate parsing and raise an exception.

> **Note:** Regardless of the target database character set, to install a translated version of Oracle HTML DB, you must set the character set value of the `NLS_LANG` environment variable to `AL32UTF8` before starting SQL*Plus.

The following examples illustrates valid `NLS_LANG` settings for loading Oracle HTML DB translations:

```
American_America.AL32UTF8
Japanese_Japan.AL32UTF8
```

To install a translated version of Oracle HTML DB:

1. Set the `NLS_LANG` environment variable. The character set must be `AL32UTF8`. For example:

   ```
   set NLS_LANG=American_America.AL32UTF8
   ```

2. Start SQL*Plus, and connect to the target database as `SYS`.

3. Run the following statement:

   ```
   ALTER SESSION SET CURRENT_SCHEMA = FLOWS_010600;
   ```

4. Run the appropriate language-specific script. For example:

   ```
   @load_de.sql
   ```

   The installation scripts are located in subdirectories identified by a language code in the unzipped distribution `/htmldb/builder`. For example, the German version is located in `/htmldb/builder/de` and the Japanese version is located in `/htmldb/builder/ja`. In each of these directories, there is a language loading script identified by the language code. For example, `load_de.sql` or `load_ja.sql`.

Installing Oracle Workflow in Different Languages

Use the **Add Language** option in Oracle Workflow Configuration Assistant to install Oracle Workflow in a different language.

> **See Also:** "Preparing Oracle Workflow Server for the Oracle Workflow Middle Tier Installation" on page 3-7 for instructions on starting Oracle Workflow Configuration Assistant

Running Oracle Universal Installer in Different Languages

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

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

To run Oracle Universal Installer in a different language, change the language in which your operating system is running before you run Oracle Universal Installer.

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

Using Oracle Components in Different Languages

You can specify the language in which you want to use Oracle components (such as Oracle Net Configuration Assistant and Oracle Database Configuration Assistant). Note that this does *not* change the language in which Oracle Universal Installer is run. For the Oracle component to run in the selected language, it must be the same as the language set for your operating system. You can change your operating system language in the Regional Settings window from the Control Panel.

To use components in different languages:

1. Start Oracle Universal Installer.

2. On the Select Installation Type screen, click **Product Languages**.

3. On the Language Selection screen, select the language in which you want to use Oracle components from the Available Languages field.

4. Use the > arrow to move the selected language to the Selected Languages field, and then click **OK**.

5. Select the products you want, and then click **Next**.

   After installation is complete, the dialog box text, messages, and online Help for the installed components are displayed in the language you select.

Configuring Locale and Character Sets by Using the NLS_LANG Environment Variable

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

The NLS_LANG environment variable uses the following format:

```
NLS_LANG=language_territory.characterset
```

In this format:

- *language_territory* specifies the language used for displaying Oracle messages, sorting, day names, and month names

- *territory* specifies the conventions for default date, monetary and numeric formats

- *characterset* specifies the encoding used by the client application

  In most cases, this is the Oracle character set that corresponds to the character set of the user terminal or the operating system.

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

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

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

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

Operating System Locale	NLS_LANG Values
French (France)	FRENCH_FRANCE.WE8ISO8859P15 FRENCH_FRANCE.WE8ISO8859P1 FRENCH_FRANCE.WE8MSWIN1252 FRENCH_FRANCE.AL32UTF8
Japanese (Japan)	JAPANESE_JAPAN.JA16EUC JAPANESE_JAPAN.JA16SJIS JAPANESE_JAPAN.AL32UTF8

D

Managing Oracle Database Companion CD Port Numbers

During installation, Oracle Universal Installer assigns port numbers to components from a set of default port numbers. This appendix lists the default port numbers and describes how to change the assigned port after installation. It includes information about the following sections:

- About Managing Ports
- Viewing Port Numbers and Access URLs
- Port Numbers and Protocols of Oracle Components
- Changing the Oracle HTTP Server Port
- Changing the Oracle Workflow Container Ports
- Changing the Oracle Ultra Search Ports

About Managing Ports

Many Oracle Database components and services use ports. As an administrator, it is important to know the port numbers used by these services, and to ensure that a port number is not used by more than one service on your host.

Most port numbers are assigned during installation. Every component and service has an allotted port range, which is the set of port numbers Oracle Database attempts to use when assigning a port. Oracle Database starts with the lowest number in the range and performs the following checks:

- Is the port used by another Oracle Database installation on the host?

  Oracle Database can detect if the port is in use, regardless of whether or not the other installation is running.

- Is the port used by a process that is currently running?

  This could be any process on the host, even a non-Oracle Database process.

- Is the port listed in the `/etc/services` files?

If the answer to any of the preceding questions is yes, then Oracle Database moves to the next highest port in the allotted port range and continues checking until it finds a free port.

Viewing Port Numbers and Access URLs

In most cases, the port number of the Oracle Database component is listed in the tool used to configure the port. In addition, ports for some Oracle Database applications are listed in the `portlist.ini` file. This file is located in the `$ORACLE_HOME/install` directory.

When you change a port number, it is not updated automatically in the `portlist.ini` file. Therefore, you can rely on the information in this file for only as long as the port numbers are not changed. To change a port number, use the methods described in this appendix.

Port Numbers and Protocols of Oracle Components

The following table lists the port numbers and protocols used by components that are configured during the installation. By default, the first port in the range is assigned to the component, if it is available.

Table D–1   Ports Used in Oracle Components

Component and Description	Port Number	Port Range	Protocol
Oracle HTTP Server Enables Oracle applications, such as Oracle HTML DB, to communicate with the Web server through this port. It is configured during installation. "Changing the Oracle HTTP Server Port" on page D-3 explains how to modify this port.	7777	7777–7877	HTTP
Oracle Workflow Component Container HTTP port for Oracle Workflow. It is configured automatically during installation. "Changing the Oracle Workflow Container Ports" on page D-3 explains how to change its ports.	6010	6010–6020	TCP/HTTP
Oracle Workflow Component Container JMS port for Oracle Workflow. It is configured automatically during installation. "Changing the Oracle Workflow Container Ports" on page D-3 explains how to change its ports	6030	6030–6040	TCP
Oracle Workflow Component Container RMI port for Oracle Workflow. It is configured automatically during installation. "Changing the Oracle Workflow Container Ports" on page D-3 explains how to change its ports	6110	6050–6060	TCP
Oracle Workflow Management Container HTTP port for Oracle Workflow Management. It is configured automatically during installation. "Changing the Oracle Workflow Container Ports" on page D-3 explains how to change its ports	6070	6070-6080	TCP/HTTP
Oracle Workflow Management Container JMS port for Oracle Workflow Management. It is configured automatically during installation. "Changing the Oracle Workflow Container Ports" on page D-3 explains how to change its ports	6090	6090–6100	TCP

Table D–1 (Cont.) Ports Used in Oracle Components

Component and Description	Port Number	Port Range	Protocol
Oracle Workflow Management Container RMI port for Oracle Workflow Management. It is configured automatically during installation. "Changing the Oracle Workflow Container Ports" on page D-3 explains how to change its ports	6110	6110–6120	TCP
Oracle Ultra Search HTTP port for Oracle Ultra Search. Its port number is assigned automatically when you install Oracle Ultra Search, by using the Custom installation type. "Changing the Oracle Ultra Search Ports" on page D-4 explains how to change its port number.	5620	5620–5639	TCP/HTTP
Oracle Ultra Search RMI port for Oracle Ultra Search. Its port number is assigned automatically when you install Oracle Ultra Search, by using the Custom installation type. "Changing the Oracle Ultra Search Ports" on page D-4 explains how to change its port number.	5640	5640–5659	TCP
Oracle Ultra Search JMS port for Oracle Ultra Search. Its port number is assigned automatically when you install Oracle Ultra Search, by using the Custom installation type. "Changing the Oracle Ultra Search Ports" on page D-4 explains how to change its port number.	5660	5660–5679	TCP

Changing the Oracle HTTP Server Port

To change the Oracle HTTP Server port:

1. In the Oracle HTTP Server home, modify the following settings in the `$ORACLE_HOME/Apache/Apache/conf/httpd.conf` file:

   ```
   Port port
   Listen listener
   ```

2. Restart Oracle HTTP Server:

   ```
   $ORACLE_HOME/opmn/bin/opmnctl restartproc ias-component=HTTP_Server
   ```

Changing the Oracle Workflow Container Ports

The following sections explain how to change the HTTP, RMI, and JMS ports for the Oracle Workflow Component Containers and Management Containers.

Changing the HTTP Port

To change the HTTP port, edit the following files:

- Oracle Workflow Component Container:
  `$ORACLE_HOME/oc4j/j2ee/OC4J_Workflow_Component_Container/config/http-web-site.xml`

  Modify the port attribute of the `web-site` element:

  ```
  <web-site port="6001" ...>
  ```

- Oracle Workflow Management Container:
  `$ORACLE_HOME/oc4j/j2ee/OC4J_Workflow_Management_Container/con`
  `fig/http-web-site.xml`

  Modify the port attribute of the `web-site` element:

  ```
  <web-site port="6061" ...>
  ```

Changing the RMI Port

To change the RMI port for Oracle Workflow Component Container, modify the port attribute of the `rmi-server` element in the `$ORACLE_HOME/oc4j/j2ee/OC4J_Workflow_Component_Container/config/rmi.xml` file:

```
<rmi-server port="6041">
```

For Oracle Workflow Management Container, modify the port attribute of the `rmi-server` element in the `$ORACLE_HOME/oc4j/j2ee/OC4J_Workflow_Management_Container/config/rmi.xml` file:

```
<rmi-server port="6101">
```

Changing the JMS Port

To change the JMS port for Oracle Workflow Component Container, modify the port attribute of the `jms-server` element in the `$ORACLE_HOME/oc4j/j2ee/OC4J_Workflow_Management_Container/config/jms.xml` file:

```
<jms-server port="6021">
```

For Oracle Workflow Management Container, modify the port attribute of the `jms-server` element in the `$ORACLE_HOME/oc4j/j2ee/OC4J_Workflow_Management_Container/config/jms.xml` file:

```
<jms-server port="6080">
```

Changing the Oracle Ultra Search Ports

The following sections describe how to change the Oracle Ultra Search ports.

Changing the HTTP Port

To change the HTTP port, modify the `port` attribute of the `web-site` element in the `$ORACLE_HOME/oc4j/j2ee/OC4J_SEARCH/config/http-web-site.xml` file:

```
<web-site port="5620"...>
```

Changing the RMI Port

To change the RMI port, modify the `port` attribute of the `rmi-server` element in the `$ORACLE_HOME/oc4j/j2ee/OC4J_SEARCH/config/rmi.xml` file:

```
<rmi-server port="5640"...>
```

Changing the JMS Port

To change the JMS port, modify the `port` attribute of the `jms-server` element in the `$ORACLE_HOME/oc4j/j2ee/OC4J_SEARCH/config/jms.xml` file:

```
<jms-server port="5660"...>
```

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