Oracle® Warehouse Builder

Installation and Configuration Guide 10*g* Release 1 (10.1) **Part No. B12150-02**

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Oracle Warehouse Builder Installation and Configuration Guide, 10g Release 1 (10.1)

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Preface

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Purpose

Oracle Warehouse Builder is a comprehensive toolset for practitioners who move and transform data, develop and implement business intelligence systems, perform metadata management, or create and manage Oracle databases and metadata. This manual provides instructions for installing Oracle Warehouse Builder and a core set of related products. Use this manual to install the Warehouse Builder client, server, and repositories on your Windows or UNIX machines.

You can modify this installation procedure to accommodate variations in hardware and software configurations, or in the products you install with Warehouse Builder. Refer to the *Oracle Warehouse Builder Release Notes* for further details.

Audience

This manual is written for those responsible for installing Warehouse Builder, including:

- Business Intelligence application developers
- Warehouse administrators
- System administrators
- Other MIS professionals

To install Oracle Warehouse Builder, you must be familiar with installing Oracle Database.

How This Guide Is Organized

This manual is organized as follows:

- Chapter 1, "Warehouse Builder Installation Requirements", discusses the Warehouse Builder installation requirements. Verify your system requirements to install the Warehouse Builder client, server, and repositories.
- Chapter 2, "Installing Warehouse Builder", provides step-by-step instructions for a typical installation of the Warehouse Builder client, server, browser, and the design and runtime repositories.
- Chapter 3, "Upgrading to 10g Release 1 (10.1) and Migrating Data", provides step-by-step instructions for upgrading metadata from a previous version of Warehouse Builder to Oracle Warehouse Builder.
- Chapter 4, "Deinstalling Warehouse Builder Components", explains how to deinstall the Warehouse Builder components.
- Appendix A, "Preparing an Oracle Database", lists modifications you need to make to the init.ora file to prepare your database for the Warehouse Builder installation.
- Appendix C, "Installing Oracle Enterprise Manager and Oracle Workflow", provides guidelines for installing and configuring Oracle Enterprise Manager and Oracle Workflow with Warehouse Builder to schedule jobs and manage job dependencies.
- Appendix D, "Upgrading Metadata with the MDL File Upgrade Utility", provides information on using the MDL File Upgrade Utility if you want to upgrade metadata separately, instead of upgrading it as an automatic part of the MDL import.
- Appendix E, "Diagnostics and Debugging", provides troubleshooting guidelines for your installation.
- Appendix F, "Warehouse Builder Supported Languages", provides a list of the languages supported in Warehouse Builder and their international standard IDs.

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New in 10g Release 1 (10.1)

Warehouse Builder 10g Release 1 (10.1) has the same functionality as Warehouse Builder 9.2, with the following exceptions:

- Warehouse Builder 10g Release 1 (10.1) provides support for Oracle Database 10g sources and targets.
- Warehouse Builder 10g Release 1 (10.1) enables remote execution through the owb/rtp/sql/set_oem_home.sql script. For more information, consult the Oracle Warehouse Builder Release Notes.
- Support for the Express Bridge has been removed.

Differences in Installation for Warehouse Builder 10g Release 1 (10.1)

The following changes were made to the installation and upgrade processes:

- There is no longer a distinction between the Server Side and Design Time installations. Warehouse Builder 10g Release 1 (10.1) has only one type of installation on the database server, which you must install on a computer hosting an instance of Oracle Database. In addition, for all computers designated as design clients, you can install Warehouse Builder 10g Release 1 (10.1) without an instance of Oracle Database.
- Warehouse Builder 10g Release 1 (10.1) is available on all the same platforms as the Oracle Database 10g with the exception of HP OpenVMS and IBM zOS (OS/390). In accordance with the Oracle Database 10g, Warehouse Builder is available on Solaris 64 bit platform and not available on Solaris 32 bit platform.

Functionality Added in Warehouse Builder 9.2

The following functionality was added in the previous release of Warehouse Builder.

Enhancements to the Mapping Editor: Mapping Debugger

Warehouse Builder now provides you with extensive debugging capabilities for your mappings from within the Mapping Editor. Use the Mapping Debugger to locate logical design errors in your mappings. The new features allow you to step through the data flow of a mapping using comprehensive debugging functions such as setting breakpoints and watches and interactively changing test data.

Enhanced Support of Multiple Targets: Correlated Commit

This release introduces a new commit strategy for mappings with multiple targets. In previous releases, Warehouse Builder performed independent commits. That is, Warehouse Builder committed and rolled back each target separately and independently of other targets. In addition to this option, Warehouse Builder now also performs correlated commits. Warehouse Builder considers all targets collectively and commits or rolls back data uniformly across all targets. Use the correlated commit when it is important to ensure that every row in the source impacts all affected targets uniformly.

Direct Partition Exchange Loading

In previous releases, Warehouse Builder by default created a temporary table for mappings that required additional processing of source data before exchanging partitions. This occurred when the mapping contained remote sources or multiple sources joined together. Beginning in this release, you can now by-pass the creation of a temporary table and directly swap a source into a target. Use Direct PEL in a mapping to instantaneously publish fact tables that you loaded in a previously executed mapping.

Data Quality Features

- Multiple Name and Address Software Providers: Beginning in this release, Warehouse Builder is compatible with multiple certified Name and Address software providers. Third-party vendors can license Name and Address software directly to you for use with Warehouse Builder. This enables you to choose a name and address provider whose offering is the most appropriate for your project.
- Name-Address Operator Wizard: In previous releases, you defined the Name-Address operator using the mapping canvas and the operator Configuration Properties sheet. For improved usability, Warehouse Builder now enables you to use a wizard and Operator editor to create and edit the Name-Address operator.
- Match-Merge Operator: Warehouse Builder incorporates the data quality functionality formerly available in Oracle Pure Integrate. You can use the Match-Merge operator available in the Mapping Editor to define business rules for matching and merging records. The Match-Merge operator together with the Name-Address operator support householding, the process of identifying unique households in name and address data.

Metadata Change Management

In a previous release, you could perform metadata change management using the OMB Plus scripting utility. Beginning in this release, you can also access these functions from the Warehouse Builder client user interface. Metadata change management enables you to take snapshots of metadata objects and use them for backup and history management. Snapshots are supported for any object on the navigation tree and can store information about an object alone (such as a table or module), or the objects within it as well (such as the tables within a module).

Extending Warehouse Builder Functionality

 Security: Warehouse Builder now provides advanced repository security and auditing options that you can implement according to your security requirements. The advanced security options include the following:

Proactive Security: Warehouse Builder enables you to plug in a customized security PL/SQL implementation package in the Warehouse Builder repository to provide tailored access control to users according to the security rules defined by your organization.

Reactive Security: Warehouse Builder enables you to track audit information based on the metadata history and to determine security policies from such audit information.

Data Stewardship: Warehouse Builder enables an individual or a group of individuals to "own" portions of the metadata rather than the technical administrators. Metadata ownership thus becomes an important component of metadata security management.

RAC Support: With the 9.2 release, Warehouse Builder provides increased support for RAC features. Warehouse Builder now supports the use of net service names in the runtime. This enables you to plan maintenance of nodes in a cluster without having to reconfigure the runtime environment. Warehouse Builder also provides an increased availability in the runtime service. For example, if either the service instance or its associated node fails or is taken out of service, then the runtime service instance on a different node can take over. While the Warehouse Builder design repository can also be used in a RAC cluster, it will not take advantage of any failover features of RAC for this release.

Enhancements to Flat File Support

- **ZONED Data Type Support:** Warehouse Builder now enables you to load fixed format data files containing ZONED decimal data. In the Flat File Sample Wizard, specify the ZONED data type for a flat file you import. The format for ZONED data is a string of decimal digits, one for each byte, with the sign included in the last byte. (In COBOL, this is a SIGN TRAILING field.) The length of this field is equal to the precision (number of digits) that you specify. You may also specify a scale, which is the number of digits to the right of the decimal point.
- DECIMAL Data Type Support: DECIMAL data is in packed decimal format; two digits for each byte, except for the last byte, which contains a digit and sign. The DECIMAL data type includes precision and scale and therefore can represent fractional values.

Enhancements in Database Connectivity

Warehouse Builder now enables you to create public database links that can be shared across a database. Public database links can be created by repository owners, as well as any user with the CREATE PUBLIC DATABASE LINK privilege.

Warehouse Builder Available on HP-UX and AIX

Starting with Warehouse Builder 9.2, Warehouse Builder is available on HP-UX and AIX platforms. This new availability is an addition to the UNIX (Solaris and Linux), and Windows (NT, 2000, and XP) platforms, which have been available from previous releases. (Note that the MITI Bridges feature is only available on Windows platforms.)

Public Application Programming Interface

Starting with Warehouse Builder 9.2, Warehouse Builder now includes a Public Application Programming Interface (API). To access the API, unzip and extract the following file to a folder on your local machine:

<owb home directory>\owb\lib\int\pubapi_javadoc.jar

Double click the file index.html. Select the Help link for information on how to use the API.

Conventions

In this manual, Windows refers to the Windows NT, Windows 2000, and Windows XP operating systems. The SQL*Plus interface to Oracle Database may be referred to as SQL.

In the examples, an implied carriage return occurs at the end of each line, unless otherwise noted. You must press the Return key at the end of a line of input.

The following conventions are also used in this manual:

Convention	Meaning
	Horizontal ellipsis points in statements or commands mean that parts of the statement or command not directly related to the example have been omitted.
boldface text	Boldface type in text refers to interface buttons and links. Boldface type also serves as emphasis to set apart main ideas.
italicized text	Italicized text applies to new terms introduced for the first time. Italicized text also serves as an emphasis on key concepts.
unicode text	Unicode text denotes exact code, file directories and names, and literal commands.
italicized unicode text	Italicized unicode text refers to parameters whose value is specified by the user.
[]	Brackets enclose optional clauses from which you can choose one or none.

Related Publications

The Warehouse Builder documentation set includes these manuals:

- Oracle Warehouse Builder Installation and Configuration Guide
- Oracle Warehouse Builder User's Guide
- Oracle Warehouse Builder Transformation Guide
- Oracle Warehouse Builder Scripting Reference
- Oracle Warehouse Builder Release Notes

In addition to the Warehouse Builder documentation, you can refer to other documents listed as follows:

Oracle Data Warehousing Guide

Oracle provides additional information sources, including other documentation, training, and support services that can enhance your understanding and knowledge of Oracle Warehouse Builder.

 For more information on Oracle Warehouse Builder technical support, contact Oracle World Wide Support services at:

http://www.oracle.com/support

• For the latest information on, and downloads of, software and documentation updates to Oracle Warehouse Builder, visit Oracle*MetaLink* at:

http://metalink.oracle.com

You can order other Oracle documentation at:

http://oraclestore.oracle.com

Contacting Oracle

Oracle MetaLink

Oracle*MetaLink* is the Oracle support Web site where you can find the latest product information, including documentation, patch information, BUG reports, and TAR

entries. Once registered, you can access email, phone and Web resources for all Oracle products. Oracle*MetaLink* is located at:

http://metalink.oracle.com

Check OracleMetaLink regularly for Warehouse Builder information and updates.

Documentation

You can order Oracle product documentation by phone or through the World Wide Web:

- **Phone:** Call 800-252-0303 to order documentation or request a fax listing of available Oracle documentation.
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1

Warehouse Builder Installation Requirements

This chapter discusses the hardware and software requirements for an Oracle Warehouse Builder installation. This chapter includes the following topics:

- Quick Steps for Installing Warehouse Builder on page 1-1
- Hardware Requirements on page 1-2
- Software Requirements on page 1-3
- Coexistence: ORACLE_HOME Considerations on page 1-7
- Pre-Installation Checklist on page 1-8

1.1 Quick Steps for Installing Warehouse Builder

These high-level installation steps are for experienced Warehouse Builder installers. If you have installed Warehouse Builder before, and if your system hardware and software already conforms to the Warehouse Builder requirements, you can follow the steps in this section and use the rest of this manual for reference only.

Note: The installation quick steps are not recommended for first-time installers. If you are not an experienced Warehouse Builder installer, please read this entire chapter to ensure that your system conforms to Warehouse Builder installation requirements, and then proceed to Chapter 2, "Installing Warehouse Builder" to ensure that you make the proper installation choices.

This section contains a short description of the required installation steps. The rest of this chapter discusses the system and environment requirements for a successful Warehouse Builder installation. For expanded information about each parameter and for instructions on installing optional components, refer to the detailed installation instructions Chapter 2, "Installing Warehouse Builder".

Step 1. Install Warehouse Builder on the Target Schema Host

Start Oracle Universal Installer and follow the instructions to install Warehouse Builder into its own Oracle home directory. (The documentation refers to your Warehouse Builder Oracle home directory as *OWB_ORACLE_HOME*, to distinguish it from the Oracle home directory in which your Oracle Database is installed.) If you are installing on a UNIX operating environment, make sure to install the *OWB_ORACLE_HOME* into the same operating system user as Oracle Database ORACLE_HOME.

Step 2. Install the Design Repository Using the Repository Assistant

- 1. Start the Repository Assistant from your Warehouse Builder program group.
- **2.** Enter the connection information for the system on which you are installing. The user name you specify must have SYSDBA privileges.
- **3.** Create a new Warehouse Builder Design Repository, enter the user name and password for the new repository schema, and follow the instructions in the Repository Assistant.

Step 3. Install Runtime Objects Using the Runtime Assistant

- 1. Start the Runtime Assistant from your Oracle Warehouse Builder program group and enter the connection information for the system on which you are installing the runtime objects. The user name you specify must have SYSDBA privileges.
- 2. Select **Runtime Repository**. Select **Create a new Warehouse Builder Runtime Repository**. Then select **Create and install into a new user** and follow the instructions in the Runtime Assistant.
- **3.** When you are finished installing the Runtime Repository, select **Create a new Warehouse Builder Target Schema** and follow the instructions in the Runtime Assistant.

Step 4. Configure the Design and Runtime Audit Browser Environments

- 1. Add LOCALHOST to your Web browser Proxy Server Bypass list.
- **2.** On the same host as the Warehouse Builder Design Repository, ensure that the Oracle HTTP server that was installed with the database is started.
- **3.** Add one Database Access Descriptor (DAD) pointing to each Warehouse Builder Design Repository. Each DAD should have the same name as the Design Repository schema to which it points.
- **4.** Configure Web Browser Settings on Each Computer that Will Run the Warehouse Builder Browsers by adding LOCALHOST to your Web browser proxy server bypass list and configuring your Web browser cache management as instructed in Section 2.5.2.2.

1.2 Hardware Requirements

You must observe the requirements in Table 1–1 to install the Warehouse Builder software. These requirements are in addition to the requirements of any other Oracle products you are installing on the same computer. Refer to the documentation for each Oracle product you are installing to determine complete system requirements.

Operating System	Disk Space	Available Memory	Page File Size, TMP, or Swap Space
Design and Runtime Components on Windows	545 MB	384 MB	384 MB
Design and Runtime Components on UNIX	775 MB	384 MB	500 MB

 Table 1–1
 Warehouse Builder Hardware Requirements

Memory requirements increase depending on the functions being performed and the number of users connected.

1.3 Software Requirements

This section discusses the required software for a successful Warehouse Builder installation.

1.3.1 Operating System Information

Consult the *Oracle Database 10g Installation Guide* for your operating system, and install required operating system patches before installing Oracle Database 10g.

1.3.1.1 Supported Operating System Platforms

Warehouse Builder 10g Release 1 (10.1) is available on the same platforms as Oracle Database 10g, with two exceptions. Warehouse Builder 10g Release 1 (10.1) is *not* available on the following operating systems:

- HP OpenVMS Alpha
- IBM OS/390 (MVS)

1.3.1.2 UNIX Operating Systems

On UNIX platforms, Warehouse Builder is installed alongside Oracle Database, and shares the same system requirements. For operating system requirements, refer to *Oracle Database 10g Installation Guide* for your UNIX platform.

1.3.1.3 Microsoft Windows Operating Systems

On Windows platforms, Warehouse Builder can be installed alongside Oracle Database, but can also be installed alone on computers designated as Design Clients. Table 1–2 contains the Windows operating environment software requirements.

Requirement	Value
System Architecture	32-bit and 64-bit
	Note: Oracle will provide both 32-bit and 64-bit versions of Warehouse Builder. The 32-bit version of Warehouse Builder must run on the 32-bit version of the operating system. The 64-bit version of Warehouse Builder must run on the 64-bit version of the operating system.
Operating System	Warehouse Builder is supported on the following operating systems:
	 Windows NT Server 4.0, Windows NT Server Enterprise Edition 4.0, and Terminal Server Edition with service pack 6a or higher are supported. Windows NT Workstation is no longer supported.
	 Windows 2000 with service pack 1 or higher. All editions, including Terminal Services and Windows 2000 MultiLanguage Edition (MLE), are supported.
	 Windows Server 2003
	 Windows XP Professional

Table 1–2 Windows Operating Environment Software Requirements

1.3.2 Required Products

The Warehouse Builder architecture consists of the components shown in Figure 2–1 on page 2-2.

This section discusses the components that comprise the Oracle Warehouse Builder installation. A complete, working Warehouse Builder environment includes the software and components in Table 1–3.

Software (Required and Optional)	Components Used by Warehouse Builder
Oracle Database (Required)	 Oracle Database server with the Oracle XML Toolkit option
are supported:	Oracle Agent
 Oracle Database 10g 	 TNS Listener
• Oracle9 <i>i</i> Release 2 (9.2.x)	Oracle HTTP Listener and Apache Server
• Oracle8 <i>i</i> Release 3 (8.1.7.4.x)	(Optional)
Refer to Figure 2–1 on page 2-2 for information on the recommended installation configuration.	Oracle HTTP Listener and Apache Server are necessary to enable the client version of the Warehouse Builder Design Browser, used to view and report on your ETL design metadata.
Oracle Warehouse Builder 10g Release 1	Warehouse Builder Client
(10.1) Software (Required)	Design Repository
	Runtime Repository
	Runtime Platform (RTP) Service
Oracle Application Server (Optional)	Oracle9iAS Portal
Oracle9 <i>i</i> Application Server Release 2	Oracle HTTP Listener
(9.0.2) or Oracle Application Server 10g (9.0.4)	XML Developer Kit
This is an option for users to integrate the Warehouse Builder Design Browser and Runtime Audit Browser with Oracle Application Server, instead of running the client versions of these browsers.	 Oracle Container for Java (OC4J)
Oracle Enterprise Manager and Oracle	Oracle Management Server (OMS)
This is an aption if you shapes to use	Client Console
Oracle Enterprise Manager to schedule jobs	WEB Console (optional)
and Oracle Ŵorkflow to manage job dependencies.	Warehouse Builder is compatible with the following versions of Oracle Enterprise Manager and Oracle Workflow:
	 Oracle9<i>i</i> Enterprise Manager Release 1 and Release 2
	Oracle Enterprise Manager 10g Release 1
	• Oracle9 <i>i</i> Workflow Release 1 and Release 2
	Oracle Workflow 10g Release 1
Name and Address Adapter and Data Libraries (Optional) This is an option if you plan to use the	You will need the following from one of the certified vendors listed on Oracle Technology Network:
Name and Address operator to cleanse	Regional data libraries
name and address data.	Name and Address adapter software

 Table 1–3
 Software Required for a Complete Warehouse Builder Environment

Install all products using the instructions in the respective product installation guides. This installation guide covers instructions for installing Oracle Warehouse Builder, and provides only general guidelines for installing software other than Warehouse Builder. Please refer to the installation guides of the respective products for further instructions.

1.3.2.1 Oracle Database (Required)

Install Oracle Database before installing Warehouse Builder, following these guidelines:

- You can run Warehouse Builder 10g Release 1 (10.1) on the following releases of Oracle Database:
 - Oracle Database 10g
 - Oracle9*i* Release 2 (9.2.x)
 - Oracle8*i* Release 3 (8.1.7.4.x)
- You must have Oracle Database installed on any machine where you create a Warehouse Builder Design Repository or a Runtime Repository and Target Schema. Refer to Section 2.1.1, "Warehouse Builder Product Architecture" on page 2-1 for a description of the installation configuration.
- You can install only Warehouse Builder, without an Oracle Database instance, on computers used as design clients. These computers access the repositories on other computers.
- Install Oracle Database with the Oracle XML Toolkit option if you plan to use the client versions of the Warehouse Builder Design Browser or Runtime Audit Browser.
- Note that Oracle Database 10g Release 1 (10.1) no longer automatically installs Oracle HTTP Server. For HTTP Server installation information, refer to the Oracle Database Companion CD Installation Guide for your operating system.
- Install and configure Oracle HTTP Server and Apache Server on the same host where your Oracle Database server resides if you plan to use the client versions of the Warehouse Builder Design Browser or Runtime Audit Browser.
- After installing Oracle Database and prior to installing Warehouse Builder, refer to Appendix A, "Preparing an Oracle Database" for recommended Oracle Database initialization parameters.

1.3.2.2 Oracle Warehouse Builder 10g Release 1 (10.1) Software (Required)

The Warehouse Builder software includes:

- The Warehouse Builder Client and Server: This software is installed by Oracle Universal Installer, and includes the design client, the OMB Plus scripting interface, the Runtime Platform Service, and the client versions of the Design and Runtime Audit Browsers. It also includes and the Repository, Runtime, and Browser Assistants, which you must use to create the remaining components.
- The Design and Runtime Repositories: After installing the Warehouse Builder software, you must use the Repository Assistant to create a Design Repository, and the Runtime Assistant to create the a Runtime Repository. The Design Repository contains your design metadata. The Runtime Repository contains your runtime audit information.
- Design Browser and Runtime Audit Browser: The Design Browser is used for viewing and reporting on the metadata in your Design Repository. The Runtime Audit Browser is used for viewing and reporting on the runtime audit results in your Runtime Repository.

Client Version: Both browsers are available in a client version installed automatically with Warehouse Builder and require only minor configuration to run independently of Oracle Application Server. The client versions require that you install Oracle Database 10g with the Oracle XML Toolkit option, that you have a Web browser installed, and that your Oracle HTTP server is running on the database instance that hosts your Design Repository.

Integration with Oracle Application Server: You also have the option to integrate the Warehouse Builder Design Browser and Runtime Audit Browser with Oracle Application Server. In this case, you must install Oracle Application Server and create Warehouse Builder Browser tables in your Oracle Application Server database using the Browser Assistant.

1.3.2.3 Oracle Application Server (Optional)

You have the option to integrate the Warehouse Builder Design Browser (used to view and report on design metadata) and Runtime Audit Browser (used to view runtime audit results) with Oracle Application Server. In this case, you must install Oracle Application Server. Warehouse Builder is certified with Oracle9*i* Application Server Release 2 (9.0.2) and Oracle Application Server 10g (9.0.4).

The required Oracle Application Server components are:

- Oracle Portal
- Oracle Container for J2EE (OC4J)—only for the Warehouse Builder Runtime Audit Browser
- XML Developer Kit

Integrating the Design and Runtime Audit Browsers with Oracle Application Server is optional, because Warehouse Builder also provides client versions of the Design and Runtime Audit Browsers, as discussed in Section 1.3.2.2. These client versions of the Design and Runtime Audit Browsers are included in the Warehouse Builder repository installation, and only require minor setup. For information on the advantages of integrating the Design and Runtime Audit Browsers with Oracle Application Server, refer to Section 2.5.3 on page 2-23.

Note: Typically, Oracle Application Server is not installed in the same instance as the Oracle Database server. However, if you are going to integrate the Warehouse Builder Design or Runtime Audit Browser with Oracle Application Server, the browser schema must be in the Portal (Oracle Application Server) instance.

1.3.2.4 Oracle Enterprise Manager and Oracle Workflow (Optional)

You can use Oracle Enterprise Manager OEM to schedule jobs and Oracle Workflow OWF to manage job dependencies. The Oracle Enterprise Manager Change Management Pack is also used for life cycle management of a data warehouse. This pack is installed as part of the Runtime Repository when you run the Oracle Warehouse Builder Runtime Repository Assistant.

1.3.2.5 Name and Address Adapter and Data Libraries (Optional)

Warehouse Builder gives you the option to perform name and address cleansing on your data with the Name and Address operator. The Name and Address operator identifies and corrects errors and inconsistencies in name and address source data. The operator identifies inconsistencies by comparing input data to data libraries supplied by the third-party name and address cleansing software vendors. If you plan to use the Name and Address operator to cleanse your name and address data, you must purchase the following from one of the certified vendors listed on Oracle Technology Network at

http://otn.oracle.com/products/warehouse/htdocs/OTN_Partners.htm
1:

- Warehouse Builder Name and Address adapter software
- Regional data libraries that the Name and Address operator uses to compare and correct your data records

For more information on name and address cleansing, consult the *Oracle Warehouse Builder User's Guide*.

1.4 Coexistence: ORACLE_HOME Considerations

An Oracle home directory corresponds to the environment in which Oracle components run. This environment includes the location of installed component files, PATH variable pointing to binary files of installed components, registry entries, service names, and program groups. Oracle homes also have a name associated with them, which you specify along with their location during installation

This section provides information about the coexistence of Oracle products in one Oracle home directory, and guidelines for installing multiple Oracle products on one computer.

- Install Warehouse Builder into a separate Oracle home (ORACLE_HOME) directory from Oracle Database or any other Oracle product. This document refers to the Warehouse Builder Oracle home directory as OWB_ORACLE_HOME.
- *ORACLE_HOME* is the root directory in which the Oracle Database is installed.
- OWB_ORACLE_HOME is the root directory in which Warehouse Builder is installed.

To set the ORACLE_HOME environment variable for UNIX, use the following command:

- For C Shell: setenv ORACLE_HOME full_path
- For Korn Shell: export ORACLE_HOME=full_path
- For Bourne Shell: ORACLE_HOME=full_path; export ORACLE_HOME

In the examples, *full_path* is the path into which Warehouse Builder 10g Release 1 (10.1) will be installed.

To set the LD_LIBRARY_PATH environment variable for UNIX, use the following command:

- For C Shell: setenv LD_LIBRARY_PATH \$ORACLE_HOME/lib
- For Korn Shell: export LD_LIBRARY_PATH=\$ORACLE_HOME/lib
- For Bourne Shell: LD_LIBRARY_PATH=\$ORACLE_HOME/lib; export LD_LIBRARY_PATH

To set the **SHLIB_PATH** environment variable for HP-UX, use the following command:

- For C Shell: setenv SHLIB_PATH \$ORACLE_HOME/lib32
- For Korn Shell: export SHLIB_PATH=\$ORACLE_HOME/lib32
- For Bourne Shell: SHLIB_PATH=\$ORACLE_HOME/lib32; export LD_LIBRARY_PATH

1.5 Pre-Installation Checklist

This section contains additional points to address before installing:

Before installing Warehouse Builder, review the Oracle Warehouse Builder Release Notes. The Oracle Warehouse Builder Release Notes are available on the Oracle Warehouse Builder CD-ROM. The latest Release Notes and Documentation Addenda are also available on Oracle Technology Network at:

http://otn.oracle.com

- □ Choose an Oracle home directory for installing only Oracle Warehouse Builder. Throughout this guide, this home directory is referred to as *OWB_ORACLE_HOME*.
- ☐ If you are running Windows NT/2000/XP Professional, ensure that you are logged on to your system as a member of the local computer's Administrators group.
- On UNIX, be sure you are not logged in as the root user when you start the Oracle Universal Installer. If you are, then only the root user will have the permissions required to manage Oracle Warehouse Builder.
- □ Make sure the following environmental variables do not exceed 1,024 characters, as that might generate errors such as "Word too long" during installation:

PATH

CLASSPATH

LD_LIBRARY_PATH (UNIX Only)

SHLIB_PATH (HP-UX only)

- □ Close all other open applications.
- □ If you have deinstalled Warehouse Builder, and it has left behind the path *OWB_ORACLE_HOME*\owb\j2ee\owbb, delete the owbb directory before installing Warehouse Builder again.

1.6 About Oracle Universal Installer

Oracle Warehouse Builder uses Oracle Universal Installer to install components and to configure environment variables. The installer guides you through each step of the installation process.

The installer includes features that perform the following tasks:

- Explore and provide installation options for products
- Detect pre-set environment variables and configuration settings
- Set environment variables and configuration during installation
- Deinstall products

1.6.1 Inventory Directory

The installer creates the Inventory or oraInventory directory the first time it is run on your machine. The inventory directory keeps a record of the products that the installer installs on your machine as well as other installation information. If you have previously installed Oracle products, then you may already have an inventory directory.

- Do not delete or manually alter the inventory directory or its contents. Doing so
 can prevent the installer from locating products that you have installed on your
 machine.
- For Windows, the default location of Inventory is \Program
 Files\Oracle\Inventory. For information on the default location of the
 Inventory directory for a UNIX operating system, refer to the Oracle Database 10g
 Installation Guide for your UNIX platform.

1.6.2 Starting Oracle Universal Installer

Follow these instructions to start Oracle Universal Installer, which installs Oracle Warehouse Builder.

1.6.2.1 For Windows Users

To Start Oracle Universal Installer:

- 1. Insert the Oracle Warehouse Builder CD-ROM.
- 2. If your machine does not support the autorun feature, locate the executable setup.exe in the root directory of the CD-ROM. Start the installer by launching the setup.exe program.
- **3.** If your machine supports the autorun feature, the autorun window will automatically launch the Oracle Warehouse Builder installation.

Proceed to Chapter 2, "Installing Warehouse Builder" for further instructions.

1.6.2.2 For UNIX Users

Note: You need access to the root account.

For operating environments that do not support automatic mounting of CD-ROMs, the Oracle Warehouse Builder installation CD-ROMs must be mounted manually. You must have root privileges to mount or unmount a CD-ROM. Be sure to unmount a CD-ROM before removing it from the drive. Refer to Appendix B, "Mounting CD-ROMs" for instructions.

1.6.2.3 Running Oracle Universal Installer

After mounting the installation CD-ROM as instructed in Appendix B, "Mounting CD-ROMs", you can run Oracle Universal Installer from the CD-ROM. Do not run the Installer while the CD-ROM directory is the current directory or you will be unable to unmount the next CD-ROM when prompted to do so.

Note: Be sure you are not logged in as the root user when you start the Oracle Universal Installer. If you are, then only the root user will have permissions to manage Oracle Warehouse Builder.

To run Oracle Universal Installer from the CD-ROM:

- 1. Log in as the oracle user.
- 2. Start the installer from the CD mount point by typing the following at the prompt:

cd mount_point

./runInstaller

This launches Oracle Universal Installer, which walks you through the installation of Oracle Warehouse Builder. Proceed to Chapter 2, "Installing Warehouse Builder" for further instructions.

Installing Warehouse Builder

This chapter provides instructions for installing Warehouse Builder components. Unlike the high-level instructions in Section 1.1, this chapter contains a step-by-step procedure for the entire installation.

Note: If you are upgrading from a previous version of Oracle Warehouse Builder to 10g Release 1 (10.1), read Chapter 3, "Upgrading to 10g Release 1 (10.1) and Migrating Data" before following the installation instructions in this chapter.

This chapter includes the following topics:

- Overview of Warehouse Builder Architecture and Components on page 2-1
 - Before You Begin, You Need Access to a SYSDBA User on page 2-9
- Step 1. Install Warehouse Builder on the Target Schema Host on page 2-9
- Step 2. Install the Design Repository Using the Repository Assistant on page 2-9
- Step 3. Install Runtime Objects Using the Runtime Assistant on page 2-12
- Step 4. Configure the Design and Runtime Audit Browser Environments on page 2-17
- Step 5. (Optional) Install Third-Party Name and Address Data on page 2-34

2.1 Overview of Warehouse Builder Architecture and Components

This section describes the Warehouse Builder product architecture and illustrates common installation scenarios on a variety of operating systems. This section also lists the commands installed by the Oracle Universal Installer and the components you can start and stop with these commands.

2.1.1 Warehouse Builder Product Architecture

The Warehouse Builder architecture consists of the components shown in Figure 2–1.





Figure 2–1 illustrates the following points about Warehouse Builder architecture:

- Design Client and Deployment Manager: The rectangle (labeled 'A') represents the Design Client, which provides the graphical interface used to define sources and design your targets and ETL processes. The design client contains the Deployment Manager. Generated code from the Deployment Manager goes to the Runtime Access User (labeled '1') on the Oracle Database server. The design client connects to an Oracle Database. You can install Warehouse Builder without an Oracle Database on any number of computers designated as design clients.
- Design Repository Schema, Design Repository, and Design Browser: The database instance (labeled 'x') containing the Design Repository schema is typically installed on a server shared by a number of Design Clients (labeled 'A'). The Design Repository schema (labeled 'B') contains the Design Repository, which stores metadata definitions for all the sources, targets, and ETL processes that constitute your design metadata. Through the Design Browser (labeled 'C₁' or 'C₂'), you can access the content in the Design Repository in read-only mode.
- Runtime Instance of Oracle Database: This instance is typically installed on a server. At least three users are created in your target database: Runtime Access User (labeled '1'), the Runtime Repository schema (labeled '2'), and the Target Schema (labeled '3').

You can install the Design and Runtime Repositories in the same database, or in separate databases.

- Runtime Access User: Because the Runtime Repository schema (labeled '2') requires many system privileges, the Runtime Access User (labeled '1') is the security measure that shields it from abuse. The Runtime Access User is a separate user that has no privileges, but enables users to access the Runtime Repository. Runtime Access User accesses the Runtime Repository schema to deploy and execute ETL processes.
- Runtime Repository Schema: The Runtime Repository schema (labeled '2') owns the audit tables and audit/service packages that are accessed by the Target Schema (labeled '3'). The Runtime Repository schema is the central user within your system that manages connections to the various targets in the Target Schema.
- Runtime Audit Browser: The Runtime Audit Browser (labeled 'D₁' or 'D₂') also communicates with the Runtime Repository schema (labeled '2') to enable you to run reports on the audit and error information captured when you run jobs to load and refresh your ETL targets.
- **Target Schema:** The Target Schema (labeled '3'), is the actual target to which you load your data, and contains the target data and data objects, such as cubes, dimensions, views, and mappings. The Target Schema contains packages to execute the ETL processes that access the audit/service packages in the Runtime Repository schema (labeled '2'). Multiple targets can be associated with one Runtime Repository. All the information pertaining to a target, such as execution and deployment information, is stored in the Runtime Repository.
- Runtime Platform Service: The Runtime Platform Service (labeled '4') manages native execution and calls to Oracle Enterprise Manager for remote execution, and also includes the Warehouse Builder Name and Address components. It must be active for you to perform any activities in the runtime environment, and must be installed on the machine that hosts the target database. The Runtime Platform Service runs on top of the server-side Oracle Database instance hosting the three users.
- Design and Runtime Audit Browsers in Oracle Application Server: Finally, the optional browser configuration, in which the Design and Runtime Audit Browsers are integrated with Oracle Application Server, is depicted independently of the other components. The Application Server versions of the Design Browser (labeled 'C₂') and the Runtime Audit Browser (labeled 'D₂') are installed in Oracle Application Server, alongside the Middle Tier and the Infrastructure Database. Refer to Section 2.5.3.1, "Why Integrate Warehouse Builder Browsers with Application Server?" for the advantages of this configuration.

2.1.2 Typical Installation Scenarios

You must install Warehouse Builder software on the computer hosting the Runtime Oracle Database instance.

In addition, install Warehouse Builder software on all machines that you will be using for Warehouse Builder Design work. This section discusses the three most common installation scenarios.

2.1.2.1 Microsoft Windows Server and Optional Clients

Figure 2–2 depicts an installation on a group of computers running the Microsoft Windows operating system. In this scenario, Microsoft Windows computers designated as servers each host both Oracle Database and a complete installation of

Warehouse Builder. Follow the instructions in this chapter to install the entire Warehouse Builder product into its own Oracle home directory on a server that hosts an instance of Oracle Database. Install the Design and Runtime Repositories on this server, as well as one or more Target Schemas. Most installations separate the design environment from the runtime environment, as shown in this example, but this is not required.

You can perform design work directly on the server, or you can designate additional Windows computers as design clients. If you need design clients, follow the instructions in Section 2.2 to install Warehouse Builder on each client. You do not have to install any additional repositories. To use the Design or Runtime Audit Browsers on the clients, follow the configuration steps in Section 2.5. The Design and Runtime Audit Browsers access the Design and Runtime Repositories on the server.



Figure 2–2 Microsoft Windows Sever and Optional Clients

2.1.2.2 Consultant Profile

Figure 2–3 depicts an installation on a single laptop computer. This scenario is common to consultants who use Warehouse Builder at client sites, and who travel with minimal hardware. In this scenario, the computer already hosts an instance of the Oracle Database. Follow the instructions in this chapter to install the entire Warehouse Builder product into a separate Oracle home directory used only for Warehouse Builder (*OWB_ORACLE_HOME*). Install both the Design and Runtime Repositories on

this computer, as well as one or more Target Schemas. This computer acts as both the server and design client.



Figure 2–3 Consultant Profile: Single Computer

2.1.2.3 UNIX Server and Microsoft Windows Clients

Figure 2–4 depicts Scenario 3, with a mixture of operating systems. In this scenario, a computer running a UNIX operating system, such as Tru64, hosts an instance of the Oracle Database. Follow the instructions in this chapter to install the entire Warehouse Builder product on this server, making sure to install into a separate Oracle home directory used only for Warehouse Builder (*OWB_ORACLE_HOME*). Install the Design and Runtime Repositories on this computer, as well as one or more Target Schemas.

You can perform design work directly on the server, or you can designate Microsoft Windows computers as design clients. If you need design clients, follow the instructions in Section 2.2 to install Warehouse Builder on each client. You do not have to install any additional repositories. To use the Design or Runtime Audit Browsers on the clients, follow the configuration steps in Section 2.5. The Design and Runtime Audit Browsers will access the Design and Runtime Repositories on the server.



Figure 2–4 UNIX Server with Microsoft Windows Clients

2.1.3 Components Installed by Oracle Universal Installer

The Oracle Warehouse Builder CD installs the client and server-side software at the same time. After you complete the installation, you can launch the following Warehouse Builder components, listed here in the order that they appear in your Microsoft Windows Start menu:

OWB Browser Assistant The Browser Assistant enables you to integrate the Design and Runtime Audit Browsers (denoted by " C_2 " and " D_2 " in Figure 2–1) with Oracle Application Server. Refer to Section 2.5.3.1, "Why Integrate Warehouse Builder Browsers with Application Server?" for information on the advantages of integration.

- For Windows: Select Start, Programs, OWB_ORACLE_HOME, Warehouse Builder, then OWB Browser Assistant.
- For UNIX: Locate OWB_ORACLE_HOME/owb/bin/unix and execute browserasst.sh.

OWB Client The Warehouse Builder Client is the design client (denoted by "A" in Figure 2–1) that provides the graphical interface used to define sources and design your targets and ETL processes. Note that a Design Repository has to exist before you can start using the design client.

- For Windows: Select Start, Programs, OWB_ORACLE_HOME, Warehouse Builder, then OWB Client.
- For UNIX: Locate OWB_ORACLE_HOME/owb/bin/unix and execute owbclient.sh.

OWB Design Browser This command enables you to start the client version of the Warehouse Builder Design Browser (denoted by " C_1 " in Figure 2–1), where you can view your metadata, run Web reports, and perform lineage and impact analysis on your metadata.

The client version of the Design Browser is independent of Oracle Application Server, and is installed automatically with the regular installation, requiring few configuration steps. Note that an OC4J instance must be running for you to start the Design Browser.

- For Windows: Select Start, Programs, OWB_ORACLE_HOME, Warehouse Builder, then OWB Design Browser.
- For UNIX: Locate OWB_ORACLE_HOME/owb/bin/unix and execute openDB.sh.

OWB MDL File Upgrade Utility Enables you to upgrade your metadata from a previous version of Warehouse Builder to the current version.

- For Windows: Select Start, Programs, OWB_ORACLE_HOME, Warehouse Builder, then OWB MDL File Upgrade Utility.
- For UNIX: Locate OWB_ORACLE_HOME/owb/bin/unix and execute mdlconvertui.sh.

OWB OMB Plus Enables you to launch the Oracle Metabase (OMB) Plus scripting utility. For more information on OMB Plus, refer to the *Oracle Warehouse Builder Scripting Reference*.

- For Windows: Select Start, Programs, OWB_ORACLE_HOME, Warehouse Builder, then OWB OMB Plus.
- For UNIX: Locate OWB_ORACLE_HOME/owb/bin/unix and execute OMBPlus.sh.

OWB Repository Assistant The Repository Assistant enables you to create a Warehouse Builder Design Repository (denoted by "B" in Figure 2–1) in your database to store the metadata definitions that describe your sources, targets, and ETL processes.

- For Windows: Select Start, Programs, OWB_ORACLE_HOME, Warehouse Builder, then OWB Repository Assistant.
- For UNIX: Locate OWB_ORACLE_HOME/owb/bin/unix and execute reposinst.sh.

OWB Runtime Assistant The Runtime Assistant enables you to create the Runtime Repository schema (denoted by "2" in Figure 2–1), the Runtime Access User (denoted by "1" in Figure 2–1), and the Target Schema (denoted by "3" in Figure 2–1).

- For Windows: Select Start, Programs, OWB_ORACLE_HOME, Warehouse Builder, then OWB Runtime Assistant.
- For UNIX: Locate OWB_ORACLE_HOME/owb/bin/unix and execute runtimeinst.sh.

OWB Runtime Audit Browser This command launches the client version of the Warehouse Builder Runtime Audit Browser (denoted by " D_1 " in Figure 2–1), where you can run reports on the audit and error information captured when you run jobs to load and refresh your ETL targets.

The client version of the Runtime Audit Browser is independent of Oracle Application Server, and is installed automatically with the regular installation, requiring few configuration steps.

- For Windows: Select Start, Programs, OWB_ORACLE_HOME, Warehouse Builder, then OWB Runtime Audit Browser.
- For UNIX: Locate OWB_ORACLE_HOME/owb/bin/unix and execute openRAB.sh.

Note that an OC4J instance must be running for you to start the Runtime Audit Browser. Refer to "Start OWB OC4J Instance" on page 2-8 for instructions.

Start Local RTP Service Enables you to start a local Runtime Platform Service (denoted by '4' in Figure 2–1) on your desktop. You can use this component if the server-side software has been installed, but the runtime platform service is not active.

- For Windows: Select Start, Programs, OWB_ORACLE_HOME, Warehouse Builder, then Start Local RTP Service, and provide login details to the Runtime Repository
- For UNIX: Locate OWB_ORACLE_HOME/owb/bin/unix and execute local_service_login.sh -startup OWB_ORACLE_HOME

Start OWB OC4J Instance Enables you to start an OC4J instance to run the client version of the Design and Runtime Audit Browsers.

- For Windows: Select Start, Programs, OWB_ORACLE_HOME, Warehouse Builder, then Start OWB OC4J Instance.
- For UNIX: Locate OWB_ORACLE_HOME/owb/bin/unix and execute startOwbbInst.sh.

Stop Local RTP Service Enables you to stop a local Runtime Platform Service that is executing on your desktop machine.

- For Windows: Select Start, Programs, OWB_ORACLE_HOME, Warehouse Builder, then Stop Local RTP Service, and provide logon details to the Runtime Repository
- For UNIX: Locate OWB_ORACLE_HOME/owb/bin/unix and execute local_service_login.sh -closedown OWB_ORACLE_HOME

Stop OWB OC4J Instance Enables you to stop the OC4J instance required to run the client version of the Design and Runtime Audit Browsers.

- For Windows: Select Start, Programs, OWB_ORACLE_HOME, Warehouse Builder, then Stop OWB OC4J Instance.
- For UNIX: Locate OWB_ORACLE_HOME/owb/bin/unix and execute stopOWBBInst.sh.

2.1.4 Before You Begin, You Need Access to a SYSDBA User

Before you can start installing Warehouse Builder, you need access to a user with SYSDBA privileges because the Warehouse Builder Assistants require you to provide

SYSDBA credentials when installing the Design Repository or Runtime Repository components.

For more information on setting your Oracle Database parameters for Warehouse Builder, refer to Appendix A, "Preparing an Oracle Database" and to Oracle Database Server documentation. If you have problems accessing a user with SYSDBA privileges, refer to Appendix E, "Diagnostics and Debugging".

2.2 Install Warehouse Builder on the Target Schema Host

Insert the Oracle Warehouse Builder CD and follow the instructions in Oracle Universal Installer to install the Warehouse Builder software. Refer to Appendix B, "Mounting CD-ROMs" for instructions on mounting CD-ROMs on UNIX platforms. Refer to Section 1.6, "About Oracle Universal Installer" to learn more about Oracle Universal Installer.

Install Warehouse Builder software into its own Oracle home directory on a computer that contains the database instance of the Target Schema with these considerations:

- Begin by installing Warehouse Builder on a computer that has or will have the Oracle Database instance hosting your Target Schema. An Oracle Database is required to install the Design and Runtime Repositories in the next steps.
- Later, you can install Warehouse Builder on any number of computers that you
 plan to use as design clients. These installations do not require an Oracle Database
 instance. They will access repositories on other computers.
- Install Warehouse Builder into a separate Oracle home directory from any other Oracle product. Future references to this directory will be OWB_ORACLE_HOME.
- If you are installing on a UNIX operating environment, make sure to install the *OWB_ORACLE_HOME* into the same operating system user as Oracle Database ORACLE_HOME.

2.3 Install the Design Repository Using the Repository Assistant

In this step, you install the Warehouse Builder Design Repository, denoted by "B" in Figure 2–1 on page 2-2. To log in to your Warehouse Builder client, you need to create a new Warehouse Builder Design Repository within a schema in your database. The Warehouse Builder Design Repository stores metadata definitions for all the sources, targets, and ETL processes that constitute your design metadata. You use the Warehouse Builder Repository Assistant to create a new Design Repository.

This installation automatically grants the Create Public Database Link privilege to the Design Repository owner.

You can create the new Design Repository in a new or existing schema. You can also use the assistant to drop an existing Warehouse Builder Design Repository.

To install the Warehouse Builder Design Repository:

- 1. Start the Warehouse Builder Repository Assistant.
 - For Windows: Select Start, Programs, OWB_ORACLE_HOME, Warehouse Builder, and then select OWB Repository Assistant.
 - For UNIX: Start a shell and navigate to: *OWB_ORACLE_HOME*/owb/bin/unix. For example, type: cd /private/home/OWB92/owb/bin/unix Then run reposinst.sh.

- 2. At the **OWB Repository Assistant: Welcome** page, review the installation steps and click **Next**.
- **3.** At the **OWB Repository Assistant: Server and SYSDBA Information** page, enter the connection information for the database into which you are installing Warehouse Builder Design Repository objects.
 - User Name: A user name with SYSDBA privileges. You must use the SYS account or any account with SYSDBA privileges in order to access or create the Warehouse Builder Design Repository schema. Grants to certain system privileges require the SYSDBA privilege. For more information on setting Oracle Database parameters, refer to the Appendix A, "Preparing an Oracle Database" and Appendix E, "Diagnostics and Debugging".
 - **Password:** The password that corresponds to the SYSDBA user.
 - Host Name: The name of the system running the database that hosts or will host the Design Repository.
 - **Port Number:** The port number through which Oracle Warehouse Builder can access the database on the host system. Default:1521.
 - **Oracle Service Name:** The name of the Oracle Database service.

Click Next.

4. At the **OWB Repository Assistant: Create or Drop** page, if this is your first installation, choose **Create a new Warehouse Builder Repository**. Otherwise, choose between creating a new Warehouse Builder Design Repository, dropping an existing one, or adding languages to support object translations.

Click Next.

5. At the **OWB Repository Assistant: New or Existing User** page, if your user does not yet exist, choose **Create and install into a new user schema.** Otherwise, choose whether you want to create a new schema or install the Design Repository into an existing user schema.

Click Next.

6. At the OWB Repository Assistant: User Name and Password (New or Existing) page, specify the User Name and Password for the new or existing schema. You use this information to log in to your Warehouse Builder Design Repository.

In this step, you are creating the schema for the Design Repository owner, as opposed to additional users, which you can create using the Oracle Warehouse Builder Security feature. For more information on creating additional users with this feature, refer to the *Oracle Warehouse Builder User's Guide*.

Click Next.

7. A **Database Configuration Warning** may appear if your machine does not meet the recommended installation parameters.

Click **OK** to continue.

Stop the installation and refer to Appendix A, "Preparing an Oracle Database" for more information on recommended parameters.

Perform the installation after preparing your database.

8. At the **OWB Repository Assistant: Tablespace** page, select the following tablespaces from the ones available in your Design Repository database:

- Select the tablespace for data. The tablespace for data stores the tables that Warehouse Builder creates in order to store the client's metadata. If you plan to run lineage impact analysis reports on your design metadata, do not select a tablespace that is locally managed and whose Segment Management Clause is set to AUTO. Default: USERS. (Recommendation: >50MB.)
- Select the tablespace for indexes. The default tablespace for indexes stores the indexes that Warehouse Builder creates on top of its relational structures to facilitate performance. Default: INDX. (Recommendation: >50MB.)
- Select the tablespace for temporary data. The Temporary tablespace provides a workspace on the disc that stores temporary segments required to perform large sorts or temporary tables or indexes that are created during the processing of a structured query language (SQL) statement. Default: TEMP.
- Select the default tablespace for snapshots. The default tablespace for snapshots stores metadata snapshots that you can create in order to perform metadata change management. Metadata snapshots capture information about select objects in your Design Repository at the time of snapshot creation, and vary in size according to the kinds of information they capture. (Recommendation: >5MB if you do not plan to use the snapshot feature; otherwise, > 60MB.) For more information on metadata snapshots, see the *Oracle Warehouse Builder User's Guide*.

Click Next.

9. At the **OWB Repository Assistant: Define Languages** page, select multiple-language support (MLS) options. Multiple-language support enables you to store multiple logical names and descriptions for each object, and requires you to select a base language, and one or more display languages.

After you have selected the languages, you cannot later delete your choices. You can add more languages to your list at any time by running the Repository Assistant again selecting **Add More Languages to Support Object Translations** in the **OWB Repository Assistant: Create or Drop** page.

For information on the international standard ID for each language, consult Appendix F, "Warehouse Builder Supported Languages" on page F-1.

- Choose MLS Base Language: This language, which you can set only when installing your Design Repository, is used when Warehouse Builder stores data. Make sure that your Oracle Database supports the character set for the base language you choose.
- Choose MLS Other Languages: Languages you select here will be available as display languages when you are using Warehouse Builder. A *display language* is one you can use to edit and display user-defined logical names and descriptions of Warehouse Builder objects. Installing multiple display languages enables you to store multiple labels and descriptions for each object: one in each language.

To select the display languages you want to install, choose a language from the **Available Language Choices** field and click the arrows to move your choice to the **Selected Languages** field. You can choose multiple languages at the same time by holding down the **Ctrl** or **Shift** key while making your selection.

You can choose which display language you use in Warehouse Builder from the languages you have installed. Refer to the *Oracle Warehouse Builder User's Guide* for instructions on setting or changing the display language you are using.

Click Next.

10. At the OWB Repository Assistant: Summary screen, click Finish.

2.4 Install Runtime Objects Using the Runtime Assistant

Before you can deploy your metadata definitions, you must install a runtime environment. Run the Runtime Assistant on the computer hosting the Oracle Database instance you are using for your runtime environment, and where you have already installed Warehouse Builder software.

In this step, you first use the Runtime Assistant to install the Runtime Repository schema (denoted by "2" in Figure 2–1 on page 2-2) and the Runtime Access User (denoted by "1" in Figure 2–1 on page 2-2). You then use the Runtime Assistant to install the Target Schema (denoted by "3" in Figure 2–1 on page 2-2).

Notes:

- When you install Warehouse Builder Runtime, you must have a working Oracle Database installation with J server installed and the JAVA_POOL_SIZE parameter (in the init.ora file) set to at least 20MB.
- If you plan to drop an existing repository user, you must first use the Runtime Assistant to drop the Runtime Repository itself. Then you can drop the user using SQL*Plus.

The Warehouse Builder Runtime Assistant installs the following components:

- owbrt_sys: This user contains the Runtime software and Runtime Platform Service location on the database. If you are installing into a Real Application Cluster (RAC) environment, this user contains the Runtime Platform Service location for each instance in the cluster.
- Name and Address Server packages: If you plan to use the name and address cleansing functionality, the Name and Address Server packages installed here enable you to perform data cleansing as part of your ETL process.

Note that the first time you run the Runtime Assistant, you cannot do it remotely.

2.4.1 Installing a Runtime Repository and Runtime Access User

In this step, you use the Runtime Assistant to install the Runtime Repository schema (denoted by "2" in Figure 2–1 on page 2-2) and the Runtime Access User (denoted by "1" in Figure 2–1 on page 2-2). These components are described in Section 2.1.1.

The Warehouse Builder Runtime Assistant creates a new schema, or uses an existing one, within the target instance and initializes it with the Warehouse Builder runtime objects. Warehouse Builder runtime components use these objects for deployment of warehouse objects in your target instance, or to log audit and error information captured when you run jobs to load and refresh the target instance. The audit and error information can be viewed using the Warehouse Builder Runtime Audit Browser. For details, see the *Oracle Warehouse Builder User's Guide*.

If you are installing the Warehouse Builder runtime into a Real Application Cluster (RAC) environment, you must perform this installation on any node in the cluster where you want the Runtime Platform Service to execute. You can enable such a node for a Runtime Repository.
Note: If you are installing into an existing schema, some of the settings described in this procedure are already defined within the schema and cannot be changed in Warehouse Builder. For information on changing the storage parameters for a user, refer to the *Oracle SQL Reference Guide*.

To install a Warehouse Builder Runtime Repository and Runtime Access User:

- 1. Start the Warehouse Builder Runtime Assistant.
 - For Windows: Select Start, Programs, OWB_ORACLE_HOME, Warehouse Builder, and then select OWB Runtime Assistant.
 - For UNIX: Start a shell and navigate to: *OWB_ORACLE_HOME*/owb/bin/unix. For example, type: cd /private/home/OWB92/owb/bin/unix Then run runtimeinst.sh.
- 2. At the OWB Runtime Assistant: Welcome page, click Next.
- **3.** At the **OWB Runtime Assistant: Server and SYSDBA Information** page, provide the following information about the system where you are installing the Warehouse Builder Runtime objects:
 - User Name: A user name with SYSDBA privileges. You must use the SYS account or any account with SYSDBA privileges in order to access or create the Warehouse Builder Runtime Repository schema. Grants to certain system privileges require the SYSDBA privilege. For more information on setting Oracle Database parameters, refer to the Appendix A, "Preparing an Oracle Database" and Appendix E, "Diagnostics and Debugging".
 - **Password:** The password that corresponds to the SYSDBA user.
 - Host Name: The name of the system running the database that hosts or will host the Runtime Repository. If you are installing a Runtime Repository for the first time on a target instance, the Host Name must be the localhost from which you are running the Runtime Assistant.
 - **Port Number:** The port number through which Oracle Warehouse Builder can access the database on the host system. Default:1521.
 - Oracle Service Name: The name of the Oracle Database service.

When installing on a node in the Real Application Cluster, the host should be the node's host-value, and the Oracle Service Name should be its unique instance name. The Host, Port, and Service Name are recorded for each instance-node and can be managed using the Service Node Report in the Runtime Audit Browser.

Click Next.

4. At the OWB Runtime Assistant: Choose Option page, select Runtime Repository (denoted by "2" in Figure 2–1 on page 2-2).

If you are installing in a Real Application Cluster (RAC) environment, select **Runtime Repository** for the first node in the cluster. When you install on all subsequent nodes, select **Register RAC Instance**. This option shortcuts the creation of a Runtime Repository, but records that the node has the Runtime Platform software installed on it. Such a node becomes the candidate for supporting the Runtime Platform Service, and can be enabled for supporting a Runtime Repository using the Service Node report in the Runtime Audit Browser.

Click Next.

5. At the **OWB Runtime Repository: Create or Drop** page, select **Create a new Warehouse Builder Runtime Repository**.

Click Next.

6. At the OWB Runtime Repository: New or Existing User page, if your user does not yet exist, choose Create and install into a new user schema. Otherwise, choose whether you want to create a new schema or install the Runtime Repository into an existing user schema.

Note that if the existing schema already contains Warehouse Builder Runtime Repository objects, the installation will fail. You must first drop the existing repository using the Runtime Assistant, and then proceed with the installation.

Click Next.

7. At the OWB Runtime Repository: User Name and Password (New or Existing) page, specify the User Name and Password for the owner of the new or existing schema.

Note that you can install new Runtime Repository objects within an existing schema only if the schema contains no previous repository objects.

Based on the user name you specify, the Runtime Assistant will create the following four roles to control access to the Runtime Repository: **WB_D_*** with Developer privileges, **WB_R_*** with Runtime privileges, **WB_A_*** with Administrator privileges, and **WB_U_*** with User privileges.

Click Next.

- **8.** A **Database Configuration Warning** may appear if your machine does not meet the recommended installation parameters. Click **OK** to continue.
- **9.** At the **OWB Runtime Repository: Tablespace** page, specify tablespaces for each category by selecting from the tablespaces available in your database.
 - Select the tablespace for data: The tablespace for data stores the tables that Warehouse Builder creates in order to store your runtime deployment and audit data. Default: USERS.
 - Select the tablespace for indexes: The default tablespace for indexes stores the indexes that Warehouse Builder creates on top of its relational structures to facilitate performance. Default: INDX.
 - Select the tablespace for temporary data: The Temporary tablespace provides a workspace on the disc that stores temporary segments required to perform large sorts or temporary tables or indexes that are created during the processing of a structured query language (SQL) statement. Default: TEMP.

Click Next.

10. At the **OWB Runtime Repository: Runtime Access** page, if this is your first installation, select **Create a New Runtime Access User**.

The Runtime Access User is denoted by "1" in Figure 2–1 on page 2-2. Instead of connecting directly to the Runtime Repository user, you use a Runtime Access user as an intermediate connection. This schema accesses services in the Runtime Repository user. The Runtime Assistant creates one default user. You can create additional users later.

If this is not your first installation, choose between creating a new Runtime Access schema and installing into an existing one.

Click Next.

11. At the **OWB Runtime Repository: Runtime Access User (New or Existing)** page, enter the **User Name** and **Password** for the Runtime Access User.

Click Next.

12. At the **OWB Runtime Repository: Name and Address Port** page, enter the **Port Number** to communicate with the Name and Address Server. The default is 4040.

Click Next.

- **13.** At the **OWB Runtime Assistant: Summary** page, click **Finish**.
- **14.** After a successful installation, the following page appears: Oracle Warehouse Builder Runtime Repository installation is successful. Do you want to install a Target Schema?

Click **Yes** and follow the instructions in the next procedure.

2.4.2 Installing a Warehouse Builder Target Schema

In this step, you use the Runtime Assistant to install the Target Schema. The Target Schema stores the implementation of your design, and is where your warehouse jobs run; it is denoted by "3" in Figure 2–1 on page 2-2. You can perform the target installation locally on the server, or remotely if you have run the Runtime Assistant before.

The Target Schema is the actual target, and contains the target data and data objects, such as cubes, dimensions, views, and mappings. The Target Schema contains packages to execute the ETL processes that access the audit/service packages in the Runtime Repository Schema. You can have multiple targets associated with one Runtime Repository. All the information pertaining to a target, such as execution and deployment information, is stored in the Runtime Repository.

When you install a Target Schema, the Runtime Assistant implicitly creates the Create Any Directory and Drop Any Directory privileges. This enables you to create or drop Connectors that are realized as directories in Warehouse Builder, without having to explicitly create those privileges yourself.

To create a Target Schema:

- 1. If you are already in the Warehouse Builder Runtime Assistant after having installed a Runtime Schema and a Runtime Access user, then skip to Step 4. Otherwise, start the Runtime Assistant.
 - For Windows: Select Start, Programs, OWB_ORACLE_HOME, Warehouse Builder, and then select OWB Runtime Assistant.
 - For UNIX: Start a shell and navigate to: *OWB_ORACLE_HOME*/owb/bin/unix. For example, type: cd /private/home/OWB92/owb/bin/unix Then run runtimeinst.sh.
- 2. At the OWB Runtime Assistant: Welcome page, click Next.
- **3.** At the **OWB Runtime Assistant: Server and SYSDBA Information** page, provide the following information about the system where you are installing the Warehouse Builder Runtime objects:
 - User Name: A user name with SYSDBA privileges. You must use the SYS account or any account with SYSDBA privileges in order to access or create the Warehouse Builder Runtime Repository schema. Grants to certain system

privileges require the SYSDBA privilege. For more information on setting Oracle Database parameters, refer to the Appendix A, "Preparing an Oracle Database" and Appendix E, "Diagnostics and Debugging".

- **Password:** The password that corresponds to the SYSDBA user.
- Host Name: The name of the system running the database that hosts or will host the Runtime Repository. If you are installing a Runtime Repository for the first time on a target instance, the Host Name must be the localhost from which you are running the Runtime Assistant.
- **Port Number:** The port number through which Oracle Warehouse Builder can access the database on the host system. Default:1521.
- Oracle Service Name: The name of the Oracle Database service.

Click Next.

4. At the **OWB Runtime Assistant: Choose Option** page, select **Target Schema** (denoted by "3" in Figure 2–1 on page 2-2).

Click Next.

5. At the OWB Target Schema: Create or Drop page, select Create a new Warehouse Builder Target Schema.

Click Next.

6. At the OWB Target Schema: Runtime Repository page, enter the User Name and Password for the owner of the Runtime Repository (denoted by "2" in Figure 2–1 on page 2-2) you defined in Step 7 of this procedure.

If you created a Runtime Repository in the same installation session, its information appears as a default.

Click Next.

7. At the OWB Target Schema: New or Existing User page, if your user does not yet exist, choose Create and install into a new user schema.

Otherwise, choose whether you want to create a new target schema or designate an existing user schema as the target schema.

Click Next.

8. At the OWB Target Schema: User Name and Password (New) or (Existing) page, enter the User Name and Password for the new (or existing) Target Schema.

Click Next.

9. A Database Configuration Warning may appear. Click OK to continue.

Stop the installation and refer to Appendix A, "Preparing an Oracle Database" to ensure that your database parameters are set properly.

Then run the installation again.

- **10.** At the **OWB Target Schema: Tablespace** page, specify tablespaces for each category by selecting from the tablespaces available in your database.
 - Select the tablespace for data: This tablespace stores the warehouse objects deployed to the Target Schema. Default: USERS.
 - Select the tablespace for indexes: The default tablespace for indexes stores the indexes that Warehouse Builder creates on top of its relational structures to facilitate performance. These indexes are for the warehouse objects deployed

to the Target Schema and the objects used to run warehouse jobs. Default: INDX.

 Select the tablespace for temporary data: The Temporary tablespace provides a workspace on the disc that stores temporary segments required to perform large sorts or temporary tables or indexes that are created during the processing of a structured query language (SQL) statement. This temporary data is for the warehouse objects deployed to the Target Schema and the objects used to run warehouse jobs. Default: TEMP.

Click Next.

11. At the **OWB Runtime Assistant: Summary** page, click **Finish**.

If you ran this assistant from Oracle Universal Installer, then the End of Installation page displays when the installation is complete.

You can set up multiple Target Schemas. To do so, you must run this Runtime Assistant once for each Target Schema you want to create.

12. Click Exit.

2.5 Configure the Design and Runtime Audit Browser Environments

The Design Browser connects to the Design Repository you created in Section 2.3, and enables you to view your metadata, run Web reports, and perform lineage and impact analysis on your metadata. The Runtime Audit Browser connects to the Runtime Access User you created in Section 2.4, and enables you to audit your runtime execution activity. For more information on using the Warehouse Builder Design and Runtime Audit Browsers, refer to the *Oracle Warehouse Builder User's Guide*.

There are two versions of the Design and Runtime Audit Browsers: the standalone client version, and the version that is integrated with Oracle Application Server.

The Client Version of the Browsers

The client versions of these browsers are included in the Warehouse Builder installation, run independently of Oracle Application Server, and require only minimal configuration. If you plan to use only the client version of the browsers, complete the instructions in Section 2.5.1 and Section 2.5.2. Skip Section 2.5.3.

The Application Server Version of the Browsers

The Application Server version of these browsers is integrated with Oracle Application Server, requires additional configuration steps, and offers the advantages of Oracle Portal, Single Sign-On Service, and other Oracle Application Server features. For a list of reasons to choose the Application Server version of the browsers, see Section 2.5.3.1, "Why Integrate Warehouse Builder Browsers with Application Server?". If you choose the Application Server version of the browsers, complete all the instructions in Section 2.5.

2.5.1 Enable the Client Version of the Design Browser

You can only perform this step after you have installed a Design Repository using the Repository Assistant (see Section 2.3).

To enable the Warehouse Builder Design Browser client, denoted by " C_1 " in Figure 2–1 on page 2-2, add a Database Access Descriptor (DAD) pointing to the Warehouse Builder Design Repository. This DAD should have the same name as the Design Repository. If you have multiple repositories, you will need to create multiple DADs.

2.5.1.1 For Oracle9*i* Release 2 (9.2.x) or Oracle8*i* Release 3 (8.1.7.4.x)

To enable the client version of the Warehouse Builder Design Browser:

- 1. On the computer that hosts the Warehouse Builder Design Repository, start the Oracle HTTP server that was installed with the database:
 - For Windows: In the Control Panel, open Services, and select Oracle *Apache_ORACLE_HOME* HTTP Server.
 - For UNIX: From *Apache_ORACLE_HOME*/Apache/Apache/bin, run apachectl start. (To stop, run apachectl stop.)
- 2. From each computer that will run the client version of the Design Browser, go to http://hostname:port/
 - The *hostname* is the name of the computer hosting the Design Repository and is often preceded by http://.
 - For *port*, 7777 is the default on UNIX platforms; 80 or 7778 are the defaults on Windows platforms, or as specified during installation. If you have multiple installations of Oracle HTTP Server on the same host, the port number is typically increased by one for each additional installation. Refer to the Oracle HTTP Server documentation for more information. You can find your port number in a text file located in *DATABASE_ORACLE_HOME*\APACHE\APACHE\SETUPINFO.TXT. The port number is often preceded by the hostname and appears after the colon (:).
- **3.** Select Mod_plsql Configuration Menu, then Gateway Database Access Descriptor Settings, and then Add Default (blank configuration).
- **4.** Enter the **Database Access Descriptor Name**: Use the Warehouse Builder Design Repository schema Name.
- Under Database Connectivity Information, leave the Oracle User Name and Oracle Password fields blank. Enter the Oracle Connect String: HOST: PORT: SID to point to Warehouse Builder Design Repository instance.

If your database instance does not support SID, use the full TNS connection string in this format:

```
(HOST=your_host) (PORT=1521) (CONNECT_DATA=(SERVICE_NAME=your_o racle_service_name)).
```

- 6. Leave other fields blank and click **OK** to save your work.
- 7. Click Close.

2.5.1.2 For Oracle Database 10g Release 1 (10.1)

Oracle Database 10*g* separates the Apache Server from the database server and requires additional steps to set up the Apache Server. The setup instructions depend on your operating system.

Note: Oracle Database 10g Release 1 (10.1) no longer automatically installs Oracle HTTP Server. If you are using Oracle Database 10g, you must first install the HTTP Server. For HTTP Server installation information, refer to the *Oracle Database Companion CD Installation Guide* for your operating system.

To set up Apache Server on Microsoft Windows platforms:

1. Stop the Apache service.

- For Windows: In the Control Panel, open Services, select Oracle, Apache_ORACLE_HOME Process Manager, and stop the service.
- **For UNIX:** Enter the following command:

cd Apache_ORACLE_HOME/opmn/bin

./opmnctl stopall

- 2. Open the DAD configuration file: *Apache_ORACLE_HOME*\Apache\modplsql\conf\dads.conf
- **3.** Edit the DAD configuration file by adding the following lines, making sure to replace the variables with your system values:

<Location \pls\YOUR_DESIGN_REPOSITORY_USER_NAME>

SetHandler pls_handler

Order allow, deny

Allow from All

AllowOverride None

PlsqlDatabaseUsername YOUR_DESIGN_REPOSITORY_USER_NAME

PlsqlDatabasePassword YOUR_DESIGN_REPOSITORY_PASSWORD

PlsqlDatabaseConnectString HOST_NAME:PORT:SERVICE_NAME
ServiceNameFormat

PlsqlSessionStateManagement	StatelessWithResetPackageState
PlsqlMaxRequestsPerSession	1000
PlsqlFetchBufferSize	128
PlsqlBindBucketWidths	32
PlsqlBindBucketWidths	128
PlsqlBindBucketWidths	1450
PlsqlBindBucketWidths	2048
PlsqlBindBucketWidths	4000
PlsqlBindBucketLengths	4
PlsqlBindBucketLengths	20
PlsqlBindBucketLengths	100
PlsqlBindBucketLengths	400

4. Obfuscate the password with the following commands in DOS:

cd Apache_ORACLE_HOME/Apache/modplsql/conf

set ORACLE_HOME=Apache_ORACLE_HOME

- set PATH=%ORACLE_HOME%\Apache\modplsql\conf;%PATH%
- set PATH=%ORACLE_HOME%\perl\5.6.1\bin\MSWin32-x86;%PATH%
- set PATH=%ORACLE_HOME%\bin;%PATH%

```
perl dadTool.pl -o
```

- **5.** Start the Apache service.
 - For Windows: In the Control Panel, open Services, select Oracle
 Apache_ORACLE_HOME Process Manager, and start the service.
 - For UNIX: Enter the following command:

```
cd Apache_ORACLE_HOME/opmn/bin
```

```
./opmnctl startall
```

To set up Apache Server on UNIX platforms:

- 1. Set the following environment variables:
 - Set the ORACLE_BASE variable to Apache_ORACLE_HOME
 - Set the ORACLE_HOME variable to Apache_ORACLE_HOME
 - Set the PATH=\$ORACLE_HOME/Apache/modplsql/conf:\${PATH}
 - Set the LD_LIBRARY_PATH=\${LD_LIBRARY_PATH}:\$ORACLE_HOME/lib
- 2. Stop all Apache services with the following command:

cd Apache_ORACLE_HOME/opmn/bin opmnctl stopall

3. Open the DAD configuration file for editing with the following command:

```
cd Apache_ORACLE_HOME/Apache/modplsql/conf edit dads.conf
```

4. Edit the DAD configuration file by adding the following lines, making sure to replace the variables with your system values:

```
<Location /pls/YOUR_DESIGN_REPOSITORY_USER_NAME>
SetHandler pls_handler
```

Order allow, deny

Allow from All

AllowOverride None

PlsqlDatabaseUsername YOUR_DESIGN_REPOSITORY_USER_NAME PlsqlDatabasePassword YOUR_DESIGN_REPOSITORY_PASSWORD

PlsqlDatabaseConnectString
YOUR_HOST_NAME:YOUR_PORT:YOUR_SERVICE_NAME ServiceNameFormat

PlsqlSessionStateManagement StatelessWithResetPackageState

PlsqlMaxRequestsPerSession 1000

- PlsqlFetchBufferSize 128
- PlsqlBindBucketWidths 32
- PlsglBindBucketWidths 128
- PlsqlBindBucketWidths 1450
- PlsqlBindBucketWidths 2048
- PlsqlBindBucketWidths 4000
 - PlsqlBindBucketLengths 4

PlsqlBindBucketLengths	20
PlsqlBindBucketLengths	100
PlsqlBindBucketLengths	400

5. Obfuscate the password with the following command:

cd Apache_ORACLE_HOME/Apache/modplsql/conf
perl dadTool.pl -o

- **6.** Start all Apache services with the following command:
 - cd Apache_ORACLE_HOME/opmn/bin opmnctl startall

2.5.1.3 Before Starting the Client Version of the Design Browser

Before you can start the client version of the Design Browser, you must configure the Web browser on each computer that will access the Design Browser, as described in Section 2.5.2. You must also run **Start Oracle Warehouse Builder OC4J Instance** before starting the Design Browser Client.

2.5.2 Configure Web Browser Settings on Each Computer that Will Run the Warehouse Builder Browsers

In this step, you configure your Web browser settings to enable the Design and Runtime Audit Browsers. Perform these steps on every computer that will run the Design or Runtime Audit Browser, regardless of whether you choose the client or Application Server version of these browsers.

2.5.2.1 Add "LOCALHOST" to Your Web Browser Proxy Server Bypass List

First add "localhost" to your Netscape or Microsoft Internet Explorer proxy server bypass list.

To add "localhost" to your Internet Explorer proxy server bypass list:

- 1. From the **Tools** menu, select **Internet Options**.
- 2. In the Connections tab, click LAN Settings.
- 3. Check the Bypass proxy server for local addresses option.
- 4. Click OK.

To add "localhost" to your Netscape proxy server bypass list:

- 1. From the Edit menu, select Preferences.
- 2. In the navigation panel, expand **Advanced** and select **Proxies**.
- 3. Select Manual proxy configuration and click View.
- **4.** In the **Exceptions** section of the screen, add your localhost to the proxy exceptions.
- 5. Click OK.

2.5.2.2 Configure the Cache Management in Your Web Browser

You must set the cache management on your Web browser for any client you use to access the Design and Runtime Audit Browsers.

To configure the cache management in Internet Explorer:

- 1. From the Tools menu, select Internet Options.
- 2. In the General tab, in the Temporary Internet files section, click Settings.
- **3.** For the **Check for newer versions of stored pages** option, select **Every visit to the page**.
- 4. Click OK.

To configure the cache management in Netscape or Mozilla:

- 1. From the Edit menu, select Preferences.
- 2. In the navigation panel, expand **Advanced** and select **Cache**.
- 3. Make sure cached documents are always compared to the network versions.
 - In Netscape: For the Document in cache is compared to document on network option, select Every time.
 - In Mozilla: For the Compare the page in the cache with the page on the network option, select Every time.
- 4. Click OK.

2.5.2.3 Configure Warehouse Builder with a Net Service Name

Adding a Net Service Name enables you to use the Net Service Name option on the Runtime Audit Browser Login screen. You can add the Net Service Name in Net Manager, or you can add it manually by editing the tnsnames.ora file.

To add a Net Service Name using Net Manager:

- 1. Start Net Manager.
 - For Windows: Select Start, then Programs, OWB Group, then Configuration and Migration Tools, and Net Manager.
 - For UNIX: Start OWB_ORACLE_HOME/bin/netmgr.
- **2.** Select **Local**, then **Service Naming**, and add a new local Service Name that points to the instance of Oracle Database that hosts your Runtime Repository.

To add a Net Service Name manually:

1. Edit OWB_ORACLE_HOME/network/admin/tnsnames.ora and add a new entry that points to the instance of Oracle Database that hosts your Runtime Repository. For example, add:

```
DWSUN42 =
(DESCRIPTION =
    (ADDRESS_LIST =
        (ADDRESS = (PROTOCOL = TCP)(HOST = dwsun42)(PORT = 1521))
    )
    (CONNECT_DATA =
        (SERVICE_NAME = dev920.us.oracle.com)
    )
)
Continue of the statement of th
```

2. Save the file and exit.

2.5.2.4 Start the Client Versions of the Design and Runtime Audit Browsers

You can now start the client versions of the Design Browser or the Runtime Audit Browser.

To start the client versions of the Design and Runtime Audit Browsers:

- Make sure that an OC4J instance is running. Refer to "Start OWB OC4J Instance" on page 2-8.
- **2.** Start the browsers. Refer to "OWB Design Browser" on page 2-7 and "OWB Runtime Audit Browser" on page 2-8.

2.5.3 (Optional) Integrate with Oracle Application Server

Because Warehouse Builder provides a client version of both the Design Browser and the Runtime Audit Browser, integrating these browsers with Oracle Application Server is optional. This option is illustrated at the bottom of the diagram in Figure 2–1 on page 2-2. The integration includes running the Warehouse Builder Browser Assistant, and configuring the Browsers. The following steps are required:

- Decide whether you want to integrate the browsers with Oracle Application Server. Refer to "Why Integrate Warehouse Builder Browsers with Application Server?" on page 2-24.
- Install Browsers into Oracle Application Server with the Browser Assistant on page 2-24
- **3.** Configure Warehouse Builder Design Browser on page 2-26
- 4. Configure the Warehouse Builder Runtime Audit Browser on page 2-27
- Start Application Server Versions of Design and Runtime Audit Browsers on page 2-33

2.5.3.1 Why Integrate Warehouse Builder Browsers with Application Server?

The following are advantages of integrating the Design Browser and the Runtime Audit Browser with Oracle Application Server:

- Multiple-user support: Users are not required to install Warehouse Builder on their computers to access the information in the Design and Runtime Repositories. With the Application Server versions of the Design and Runtime Audit Browsers, users can access the information by starting a Web browser.
- Portlets and Portal page layout: You can access the Warehouse Builder Design and Runtime Audit Browser functionality through portlets. Portlets give you the flexibility to lay out your Portal pages as you wish. For example, you have the option to place your Oracle Warehouse Builder Portlets alongside your Oracle Reports Portlets, and your end users can have a single launch point for all their applications, and can each have a list of favorites.
- Multiple repository access: You can access multiple Warehouse Builder repositories at once. The repositories to which you have access appear on the Portal navigation tree.
- Single Sign-On (SSO) Server: The Design and Runtime Audit Browsers are integrated with the Single Sign-On (SSO) server. You can use a Warehouse Builder browser administrator portlet to give SSO users or groups access to selected repositories or roles. Certain roles have access to more reports than others.

- **Create reports in Oracle Portal:** You can use Oracle Portal to create your own reports against Warehouse Builder metadata and then display those reports within the Warehouse Builder Design and Runtime Audit Browser portlets.
- Hyperlinks to documents on different servers: You can create hyperlinks from Warehouse Builder Design and Runtime Audit Browser to other related documents, regardless of where these other documents are hosted. One user can create these links and make them public for other users to access.

2.5.3.2 Install Browsers into Oracle Application Server with the Browser Assistant

The Warehouse Builder Browser Assistant guides you through the installation of the Design and Runtime Audit Browsers into Oracle Application Server. You need a working installation of Oracle Application Server with Oracle Portal and, if you want to integrate the Runtime Audit Browser, you also need Oracle Container for J2EE (OC4J).

If you want to drop existing Warehouse Builder Browser objects from your schema, refer to Chapter 4, "Deinstalling Warehouse Builder Components" in this guide.

To install the Warehouse Builder Browsers into Oracle Application Server:

1. Start the Warehouse Builder Browser Assistant.

For Windows: Select Start, Programs, OWB_ORACLE_HOME, Warehouse Builder, and then select OWB Browser Assistant.

For UNIX: Start a shell and navigate to: OWB_ORACLE_HOME/owb/bin/unix. For example, type: cd /private/home/OWB92/owb/bin/unix Then run browserasst.sh.

- **2.** At the **Warehouse Builder Browser Assistant Welcome** page, review the installation steps and click **Next**.
- **3.** At the **Choose Operation** page, choose **Install the Oracle Warehouse Builder Design and Runtime Audit Browsers** and click **Next**.
- **4.** At the Choose Schema page, choose to create and install the Warehouse Builder Browser into a new schema or into an existing one.

If you are dropping existing Warehouse Builder Browser objects, select **Uninstall the Warehouse Builder Browser** and skip to Chapter 4, "Deinstalling Warehouse Builder Components" to follow the instructions.

Click Next.

- **5.** At the **Input the Oracle9iAS Database Information** page, provide the following connection information pointing to the Oracle Application Server infrastructure database:
 - Host Name: Name of the host machine where the Oracle Application Server infrastructure database is installed. (For example, server8)
 - **Port Number:** TNS port number of the machine where the Oracle Application Server infrastructure database is installed. (For example, 1521)
 - Oracle Service Name: The name of the Oracle Database service.

Click Next.

- **6.** At the **Oracle9iAS Database Information continued** page, provide the additional connection information:
 - **SYS User Name:** Name of the SYS user.

- SYS Password: Password for the SYS user.
- Oracle Portal Schema Name: Oracle Portal user name set during the Oracle Application Server installation. This is the schema where you installed Oracle Portal. (Default: portal)

Click Next.

- **7.** At the **Tablespace and Schema Information** page, select the tablespaces to store data.
 - Default tablespace for browser data: Default tablespace that stores your browser data.
 - **Temporary tablespace:** Stores temporary segments required to perform large sorts on browser data.
 - Enter the Warehouse Builder Design Browser Schema Name and Password.

Click Next.

8. At the **Oracle9iAS Single Sign-On (SSO) Server Information** page, enter the information from your installation of Oracle Application Server.

Click Next.

9. The information in the **Warehouse Builder Design Repository Details (Optional)** page is optional.

You can choose to skip it and enter it later, directly in the Warehouse Builder Browser Administration window. If you want to enter the Design Browser information now, click **Yes** and provide the following information that corresponds to " C_1 " in Figure 2–1 on page 2-2. Otherwise, click **No**.

- OWB Design Repository User: User name to log in to your Warehouse Builder Design Repository.
- OWB Design Repository Password: Password to login to your Warehouse Builder Design Repository.
- Host Name: Name of the computer where your Warehouse Builder Design Repository is located.
- Port Number: Number of the TNS listener port of the database in which the Warehouse Builder Design Repository is located.
- **Oracle Service Name:** The name of the Oracle Database service.

Click Next.

10. The information in the **Warehouse Builder Runtime Repository Details** (**Optional**) page is optional.

You can choose to skip it and enter it later, directly in the Warehouse Builder Browser Administration window.

If you want to enter the Runtime Audit Browser information now, click **Yes** and provide the following information that corresponds to " D_1 " in Figure 2–1 on page 2-2. Otherwise, click **No**.

- **OWB Runtime Repository User:** User name to log in to your Warehouse Builder Runtime Repository.
- OWB Runtime Repository Password: Password to login to your Warehouse Builder Runtime Repository.

- **Host Name:** Name of the computer where your Warehouse Builder Runtime Repository is located.
- **Port Number:** Number of the TNS listener port of the database in which the Warehouse Builder Runtime Repository is located.
- **Oracle Service Name:** The name of the Oracle Database service.

Click Next.

11. At the **Summary** page, click **Finish**.

2.5.3.3 Configure Warehouse Builder Design Browser

To use the Warehouse Builder Design Browser, log in to Oracle Portal as the Portal Administrator, add a portlet provider, and refresh the portlet repository.

To log in to Oracle Portal as the Portal Administrator:

1. Open your Web browser and access Oracle Portal.

For example, type: http://server:7778/pls/portal/ (where server is the Web server host name, 7778 is the Web server port number, and portal is the DAD name).

- 2. At the Welcome to Oracle Portal page, click Login (in the upper right corner).
- **3.** At the Single Sign-On page, enter the portal administrator user name and password; for example, portal.

To add a portlet provider for Oracle Application Server:

- 1. Log in to Oracle Portal as Administrator and click **Builder** and enter the Register a Portlet Provider page through the Providers portlet.
 - For Oracle Application Server 9.0.2: select the Administer tab, and click Register a Provider.
 - For Oracle Application Server 9.0.4: select the Build tab, and click Register a Portlet Provider.
- **2.** Provide the following information:
 - Name: Name used by the Portal Provider. No spaces are enabled. For example, sso_username_owb_browser
 - Display Name: For example, Warehouse Builder Portal.
 - Timeout: Enter at least 100 seconds.
 - Timeout Message: For example, 'The provider has timed out'.
 - Implementation Style: Database.
 - **Owning Schema:** Provide the Warehouse Builder schema name.
 - Package Name: wmp_provider

For all other fields, accept the default values and click OK to create the provider.

To refresh the Portlet Repository:

- 1. From the Oracle Portal Home Page, click the Administer tab.
- 2. Scroll down to locate the Portlet named Portlet Repository.
- 3. Click Refresh Portlet Repository.

4. Click Refresh.

The Warehouse Builder Browser portlet displays in the show portlet mode. You can now view the Warehouse Builder Design Repository and assign roles to your SSO users.

2.5.3.4 Configure the Warehouse Builder Runtime Audit Browser

The procedure to configure the Runtime Audit Browser in Oracle Application Server Portal consists of four general tasks, discussed in the following sections.

General steps to configure the Warehouse Builder Runtime Audit Browser:

- 1. Create the OC4J Instance on page 2-27
- 2. Deploy the Runtime Audit Browser Application on page 2-28
- 3. Bind the Application to the Schema on page 2-29
- 4. Make the Runtime Audit Browser Visible Through Oracle Portal on page 2-31
- 5. Configure Warehouse Builder with a Net Service Name on page 2-32

2.5.3.4.1 Create the OC4J Instance Begin the configuration of the Warehouse Builder Runtime Audit Browser by creating the Oracle Container for Java (OC4J) instance.

To create the OC4J instance:

- **1.** Log in to Online Enterprise Manager on Oracle Application Server as an administrator.
 - The default port number for Oracle Enterprise Manager is 1810. If you have Oracle Application Server 10g (9.0.4), you can also use 1812.
 - The default Oracle Enterprise Manager administrator user is ias_admin.
 - The typical password is welcome1.

The first page displays two standalone instances. One was created when you installed the Oracle Application Server infrastructure; the other was created when you installed Oracle Application Server.

2. Select the Application Server instance (middle tier) by clicking on the instance name link.

The page displays all the existing OC4J instances.

Click Create OC4J Instance.

3. At the Create OC4J Instance page, provide your OC4J Instance Name; for example, owbb.

Click Create.

After the OC4J instance is created, you can see it under the System components of your Application Server Instance page. Note that the OC4J instance status is down. You will start it after you deploy your EAR file later in this procedure.

If you are working with Oracle Application Server 10g (9.0.4), you have finished creating the OC4J instance. If you are working with Oracle9*i*AS Release 2 (9.0.2), complete the remaining steps in this procedure.

4. For Oracle9*i*AS Release 2 (9.0.2) only:In your OC4J instance page, select Deployed Applications, then Default Application, then Name Default.

Click Default.

5. For Oracle9*i*AS Release 2 (9.0.2) only: In the Application Default page for this OC4J instance, select Administration, then Properties.

Click General.

6. For Oracle9*i*AS Release 2 (9.0.2) only:In the Properties page, under the Library Paths heading, remove the following jar files:

../../jlib/uix2.jar

- ../../jlib/share.jar
- 7. Click **Apply** and then click **OK**.

2.5.3.4.2 Deploy the Runtime Audit Browser Application After you create the OC4J instance, deploy the Runtime Audit Browser application. Deploy the Runtime Audit Browser application to a different port than the Oracle HTTP Server port.

To deploy the Runtime Audit Browser Application:

1. Return to the OC4J instance page.

Click Deploy EAR File.

- 2. In the Deploy Wizard, click Next.
- 3. In the Select Application page:
 - Click Browse and open the following file in the \$oracle_home/browserasst/ directory:

For Oracle9iAS Release 2 (9.0.2): owbb.ear

For Oracle Application Sever 10g (9.0.4): owbb_v904.ear

- In the Application Name field, enter the application name you want to give to your Warehouse Builder Browser; for example, My OWBB.
- In the **Parent Application** field, leave the value default.

Click Next.

4. In the URL Mapping for Web Modules screen, enter the URL binding for your browser application. Enter /owbb. This means your browser can be accessed by the URL: http://hostname:port/owbb/.

Note that Warehouse Builder reserves the use of owbb. If you have multiple OC4J instances of the Runtime Audit Browser, only one instance can be active an any given time.

Click Finish.

- 5. In the **Summary** screen, click **Deploy**.
- 6. When the owbb.ear is deployed, return to the OC4J instance page and click the application name you just deployed.

2.5.3.4.3 Bind the Application to the Schema After you deploy the Runtime Audit Browser application, you must bind it to the schema. Note that there are two sets of instructions depending on the release of Oracle Application Server into which you are installing: one set of instructions for Oracle9*i* Application Server Release 2 (9.0.2) and one for Oracle Application Server 10*g* (9.0.4).

To bind the application to the schema for Oracle9*i* Application Server Release 2 (9.0.2):

1. In the OC4J instance, at the **Application** page for the application you deployed in Section 2.5.3.4.2, select **Administration**, then **Resources**.

Click **Data Sources**.

- 2. At the Data Source page, click Create Data Source.
- **3.** At the **Create Data Source** page, enter the following information to create your data source.

Note that the only values you can change are: **Name**, **Description**, **Schema**, **Username**, and **Password**.

- **Name:** Enter a name; for example, owbb_demo.
- Description: Enter a description; for example, My Oracle Warehouse Builder Browser demo.
- Data Source Class: Enter com.evermind.sql.OrionCMTDataSource. You can also enter com.evermind.sql.DriverManagerDataSource, but this alternative does not work for Linux.
- Schema: The schema into which you installed the Browser; for example, owbb_demo.
- Username: The user name you created after running the Browser Assistant; it is usually the schema name; for example, owbb_demo.
- Password: Password for your Warehouse Builder Browser schema; for example, owbb_demo.
- JDBC URL: Enter

jdbc:oracle:thin:@host_name_of_the_Oracle_Application_Serv er_database_into_which_you_put_your_owbb_schema:database_p ort_number:database_SID.

For example,
jdbc:oracle:thin:@dwsun21.us.oracle.com:1521:iasdb.

For a JDBC URL pointing to an Oracle Service Name instead of an SID, use the following format:

jdbc:oracle:thin:@(DESCRIPTION=(ADDRESS=(PROTOCOL=TCP)(HOS T=your_host)(PORT=1521))(CONNECT_DATA=(SERVICE_NAME=your_o racle_service_name)))

- JDBC Driver: Enter oracle.jdbc.driver.OracleDriver
- Location: Enter jdbc/owbb
- Transctional(XA) Location: Enter jdbc/owbb
- EJB Location: Enter jdbc/owbb

Click Create.

4. If the information you entered is correct, a confirmation page displays and asks whether you want to restart the server to take the data source in effect.

Click **Yes**.

Your OC4J instance restarts.

To bind the application to the schema for Oracle Application Server 10g (9.0.4):

1. In the OC4J instance, at the **Application** page for the application you deployed in Section 2.5.3.4.2, select **Administration**, then **Resources**.

Click Data Sources.

- 2. At the Data Source page, click Create.
- **3.** At the **Create Data Source** page, enter the following information to create your data source.

Note that the only values you can change are: **Name**, **Description**, **Schema**, **Username**, and **Password**.

- Name: Enter a name; for example, owbb_demo.
- Description: Enter a description; for example, My Oracle Warehouse Builder Browser demo.
- Data Source Class: Enter com.evermind.sql.OrionCMTDataSource.
- JDBC URL: Enter

jdbc:oracle:thin:@host_name_of_the_database_into_which_you _put_your_owbb_schema:database_port_number: database_SID.

For example,

jdbc:oracle:thin:@dwsun21.us.oracle.com:1521:iasdb.

For a JDBC URL pointing to an Oracle Service Name instead of an SID, use the following format:

```
jdbc:oracle:thin:@(DESCRIPTION=(ADDRESS=(PROTOCOL=TCP)(HOS
T=your_host)(PORT=1521))(CONNECT_DATA=(SERVICE_NAME=your_o
racle_service_name)))
```

- JDBC Driver: Enter oracle.jdbc.driver.OracleDriver
- Schema: Leave this field blank.
- Username: Select the Use Cleartext option. Enter the user name you created after running the Browser Assistant; it is usually the Schema name; for example, owbb_demo.
- Password: Password for your Warehouse Builder Browser schema; for example, owbb_demo.

Enter the following under JNDI Locations:

- Location: Enter jdbc/owbb
- Transctional(XA) Location: Enter jdbc/owbb
- EJB Location: Enter jdbc/owbb

Accept the default values for any remaining fields.

Click Create.

4. If the information you entered is correct, a confirmation page displays and asks whether you want to restart the server to take the data source in effect.

Click Yes.

Your OC4J instance restarts.

2.5.3.4.4 Make the Runtime Audit Browser Visible Through Oracle Portal After your OC4J instance restarts, you make the Runtime Audit Browser accessible from Oracle Portal by registering your portlets into Oracle Portal.

To make the Runtime Audit Browser accessible through Portal:

1. Log in to Oracle Portal as an administrator.

- 2. Click Builder, then click Register a Portlet Provider in the Providers portlet.
- **3.** Enter the following information:
 - Name: Enter any name, but do not use spaces; for example, owb_runtime_audit_viewer.
 - **Display Name**: Enter any name that you want displayed; for example, OWB Runtime Audit Browser.
 - **Timeout:** Set this value to a large number in seconds; for example, 10000 seconds.
 - **Timeout Message:** A typical timeout message is "RAB portlet provider has timed out".
 - **Implementation Style:** Accept the default (web).
- 4. In the General Properties page, enter the following information.
 - Enter your Provider URL. The Provider URL is depends on the value you entered for the URL mapping in Section 2.5.3.4.2, Step 4. For example, if in Section 2.5.3.4.2, Step 4, your URL binding is /owbb, then your provider URL is: http://hostname:port/owbb/providers/
 - Check the **Web provider in same cookie domain as the portal** option under the URL input box.
 - Select The user has the same identity in the Web providers application as in the Single Sign-On identity.
 - For User/Session Information, select User and set Login Frequency to Once per user Session.
 - Select **Require portal user specific session information**.

Click Next.

5. In the **Grant Access** page, to grant portal users privileges to access the provider, input the user name in the **Grantee** box, select a privilege, then click **Add**.

Click Finish.

6. Follow standard portal steps to add the **Oracle Warehouse Builder Runtime Audit Browser** portlet to your page from the provider you just created.

2.5.3.4.5 Configure Warehouse Builder with a Net Service Name If you have integrated the Runtime Audit Browser with Oracle Application Server, following these steps enables you to use the Net Service Name option on the Runtime Audit Browser Create Database Link page. You must add the Net Service Names first, and then start an Oracle Application Server OPMN process on the middle tier.

To add a Service Name in Net Manager:

1. You must add the Service Name from both the infrastructure ORACLE_HOME and the middle tier ORACLE_HOME.

First, navigate to the infrastructure ORACLE_HOME and follow the remaining steps.

Then, navigate to the middle tier ORACLE_HOME and repeat the remaining steps.

- **2.** Start Net Manager.
 - For Windows: Select Start, then Programs, then iAS Group, then Configuration and Migration Tools, and then Net Manager.
 - For UNIX: Start ORACLE_HOME/bin/netmgr.

- 3. Select Local, then Service Naming.
- 4. Add a new local Service Name.

To add a Service Name manually:

 Edit ORACLE_HOME/network/admin/tnsnames.ora and add a new entry. For example,

```
DWSUN42 =
(DESCRIPTION =
    (ADDRESS_LIST =
        (ADDRESS = (PROTOCOL = TCP)(HOST = dwsun42)(PORT = 1521))
    )
    (CONNECT_DATA =
        (SERVICE_NAME = dev920.us.oracle.com)
    )
)
```

2. Save the file and exit.

If you have Oracle9*i* Application Server Release 2 (9.0.2), perform the following procedure to restart the OC4J instance on the middle tier host only. You do not need to perform this procedure if you have Oracle Application Server 10g (9.0.4).

To restart the OC4J instance on the middle tier host (for Oracle9*i* Application Server 9.0.2 only):

- Stop the OPMN process by running \$ORACLE_HOME/opmn/bin/opmnctl stopall.
- 2. Edit \$ORACLE_HOME/opmn/conf/opmn.xml to pass the default OC4J library path to the OWBB instance.

```
<ias-instance xmlns="http://www.oracle.com/ias-instance">
. . . . . .
<process-manager>
. . . . . .
<oc4j maxRetry="3" instanceName="home" numProcs="1">
. . . . . .
</oc4i>
. . . . . .
</oc4j>
<oc4j instanceName="owbb" gid="owbb">
<config-file path="/usr/iasv2_portal/j2ee/owbb/config/server.xml"/>
<oc4j-option value="-properties"/>
<port ajp="3001-3100" rmi="3101-3200" jms="3201-3300"/>
<environment>
<prop name="%LIB_PATH_ENV%" value="%LIB_PATH_VALUE%"/>
<prop name="LD LIBRARY_PATH" value="/usr/iasv2_portal/lib"/>
</environment>
</oc4j>
<log-file path="/usr/iasv2_portal/opmn/logs/ipm.log" level="3"/>
</process-manager>
</ias-instance>
```

In this example, the highlighted text is added to opmn.xml. It is created by OC4J after a Warehouse Builder instance is created.

In this example, **/usr/iasv2_portal** is the middle tier ORACLE_HOME.

3. For Windows only, add the following to the relevant Warehouse Builder Browser instance in the *OWB_ORACLE_HOME*/opmn/config/opmn.xml file:

```
<prop name="%LIB_PATH_ENV%" value="%LIB_PATH_VALUE%"/>
<prop name="PATH" value="<path to oracle home>/bin"/>
</environment>
```

- **4.** Restart the host machine.
- 5. Start the OPMN processes again by running \$OWB_ORACLE_HOME/opmn/bin/opmnctl startall.

If you have Oracle Application Server 10g (9.0.4), follow these steps to verify the configuration.

To verify the configuration (for Oracle Application Server 10g (9.0.4) only):

- 1. Access Oracle Enterprise Manager online.
- 2. Select the newly created OWBB instance, then Server Properties, and Environment Variables.
- **3.** Add the new environment variable LD_LIBRARY_PATH pointing to the library directory of the corresponding middle tier ORACLE_HOME. For example, /usr/iasv2_portal/lib.

2.5.3.5 Start Application Server Versions of Design and Runtime Audit Browsers

You can now start the Application Server versions of the Design Browser or the Runtime Audit Browser. Start the OC4J instance:

- For Windows: Select Start, Windows, OWB_ORACLE_HOME, Warehouse Builder, then Start OWB OC4J Instance.
- For UNIX: Locate OWB_ORACLE_HOME/owb/bin/unix and execute startOwbbInst.sh.

2.6 (Optional) Install Third-Party Name and Address Data

Warehouse Builder gives you the option to perform name and address cleansing on your data with the Name and Address operator. The Name and Address operator identifies and corrects errors and inconsistencies in name and address source data. The operator identifies inconsistencies by comparing input data to data libraries supplied by the third-party name and address cleansing software vendors. Purchase the data libraries directly from these vendors.

To install data libraries, refer to the installation instructions of the name and address cleansing software vendor of your choice. For the list of certified name and address cleansing software providers, refer to Oracle Technology Network at http://otn.oracle.com/products/warehouse/htdocs/OTN_Partners.html 1.

If you are a Warehouse Builder customer upgrading to Warehouse Builder 10g Release 1 (10.1), please refer to the *Oracle Warehouse Builder Release Notes* for information on the packaging changes for data cleansing components.

To take advantage of name and address cleansing:

- 1. Purchase data libraries from one of the certified vendors listed on Oracle*MetaLink* at http://metalink.oracle.com.
- **2.** Install Warehouse Builder as instructed in this guide.
- **3.** Install and access a certified vendor's data libraries and Name and Address adapter following the vendor's instructions.

If you are installing in a Real Application Cluster environment, you may be able to install the name and address adapter on many nodes to benefit from the parallelism and failover enabled by the RAC architecture. Check with your vendor to see if your purchase license allows a multiple-node installation.

You do not need to install the data libraries on multiple nodes. However, if you install all data libraries on one node, performance may suffer due to file access time latency. Follow the recommendations of your name and address cleansing software vendor.

4. Design a mapping using the Name and Address operator to cleanse name or address data. Refer to the *Oracle Warehouse Builder User's Guide* for information on designing mappings using the Name and Address operator.

Upgrading to 10g Release 1 (10.1) and Migrating Data

This chapter provides instructions for upgrading an existing system that was built using a prior version of Warehouse Builder to Oracle Warehouse Builder 10g Release 1 (10.1). Upgrading to the current version consists of upgrading your Oracle Database environment, upgrading your Warehouse Builder software, migrating your design metadata, and migrating your runtime system. Test the new installation before you deinstall the previous Warehouse Builder version and its repositories. The upgrade consists of the following high-level steps:

- Installing Warehouse Builder in a Separate ORACLE_HOME on page 3-2
- Upgrading or Migrating Your Oracle Database Environment on page 3-2
- Upgrading Design Metadata on page 3-8
- Upgrading Runtime Data on page 3-10
- Deploying Your Mappings to the New Target Schemas on page 3-15
- Updating Mapping Configuration to Benefit from New Features on page 3-15
- Optional: Deinstalling the Old Version of Warehouse Builder on page 3-16

Why Upgrade to Warehouse Builder 10g Release 1 (10.1)?

The following are reasons to upgrade to Warehouse Builder 10g Release 1 (10.1):

- You must upgrade to Warehouse Builder 10g Release 1 (10.1) if any of your data sources are on Oracle Database 10g, or if you plan to use Oracle Database 10g for any of your data targets.
- If you are upgrading from Warehouse Builder Release 9.0.4.x or earlier, the process for upgrading to Warehouse Builder 10g Release 1 (10.1) is simpler than the process for upgrading to Warehouse Builder 9.2.0.2.8 with the required 9.2.0.4.0 patches.
- Warehouse Builder 9.2.x will not be supported with any additional patches after 9.2.0.4.0.
- Warehouse Builder 10g Release 1 (10.1) is supported on more operating systems than its predecessor. Refer to Section 1.3.1, "Operating System Information" for more information.

Using This Chapter

Begin by reading the *Oracle Warehouse Builder Release Notes* for this new release. The section entitled "Upgrade" provides useful information that is not in this manual.

In this chapter, the process of upgrading to Oracle Warehouse Builder 10g Release 1 (10.1) has been divided into seven sections, which you must complete in the order presented in this document. Depending on the specifics of your upgrade scenario, you will be instructed to skip some sections, procedures, or steps because they do not apply to your platform, software version, or upgrade choice. If you are instructed to skip any section, proceed to the next section.

3.1 Installing Warehouse Builder in a Separate ORACLE_HOME

Without deinstalling your current Warehouse Builder software, follow the installation instructions in Section 2.2 to install the Warehouse Builder 10g Release 1 (10.1) software in a new, separate Oracle home directory.

If you are moving the Oracle Database instance hosting your Target Schemas to another computer as part of your upgrade, you must install Warehouse Builder on that new computer.

3.2 Upgrading or Migrating Your Oracle Database Environment

Warehouse Builder 10g Release 1 (10.1) is compatible with the following versions of Oracle Database:

- Oracle8*i* Release 3 (8.1.7.4.x)
- Oracle9i Release 2 (9.2.x)
- Oracle Database 10g Release 1 (10.1)

If you are currently using a version of Oracle Database that is compatible with Warehouse Builder, you can choose to upgrade to a higher compatible version of the database, or you can choose to keep your current version. You can migrate your Oracle environment to a different instance of Oracle Database, or you can continue with your work on the same instance.

Keeping the Same Version and Instance of Oracle Database

If you are not upgrading to a higher version of Oracle Database, and if you are not changing the database instance, skip the rest of Section 3.2 and continue to Section 3.3.

Upgrading Oracle Database

Section 3.2 is for users upgrading to Oracle9*i* Release 2 (9.2.x) or to Oracle Database 10g Release 1 (10.1).

Note: Before you upgrade Oracle Database, stop the Warehouse Builder Runtime Platform Service if it is running.

To stop the Runtime Platform Service:

- 1. Log on to the Runtime Platform as the Runtime Repository owner.
- 2. Run the ORACLE_HOME\owb\rtp\sql\stop_service.sql script.

If you are upgrading to Oracle Database 10g (recommended), refer to the *Oracle Database 10g Upgrade Guide* (Part Number B10763-01) for instructions on upgrading and migrating your Oracle Database environment. If you are upgrading to Oracle9*i* Release 2 (9.2), refer to the *Oracle9i Database Migration* guide (Part Number A96530-02).

You can migrate your Oracle Database environment in one of three ways:

- Full Database Export/Import if Moving to a New Database Instance
- Database Migration Utility if Keeping the Same Database Instance
- Partial Database Export/Import for a Selective Migration

3.2.1 Full Database Export/Import if Moving to a New Database Instance

Use this option if you are moving to a new Oracle Database instance as you upgrade. Refer to the upgrade documentation for Oracle Database 10g for detailed instructions.

When you have successfully completed the database import, proceed to Section 3.3, "Upgrading Design Metadata".

If Oracle Workflow is Installed on the Oracle Database Instance Being Moved

After you move the Oracle Database instance and upgrade Warehouse Builder, your process flows remain registered to the Oracle Workflow installed on your *old* Oracle Database instance. To re-register them to the new database instance, take the following precautions prior to running the RT_Upgrade_to_10_1 script discussed in Section 3.4.2 of this chapter.

To register a Process Flow to the Oracle Workflow on your new Oracle Database instance:

- 1. Before following the instructions in Section 3.4.2, run the Oracle Workflow assistant in **Upgrade** mode on your new database instance to upgrade the workflow schema.
- 2. Make sure that the old instance is still running.
- **3.** Continue with the instructions in Section 3.4.2.
- **4.** Your workflow locations are now upgraded, but they remain registered to your old instance of Oracle Workflow. Manually re-register the workflow locations and redeploy the process flow packages.

3.2.2 Database Migration Utility if Keeping the Same Database Instance

Use this option if you are upgrading to Oracle Database 10*g*, but staying on the same database instance. Refer to the upgrade documentation for Oracle Database 10*g* for detailed instructions.

When you have successfully completed the database migration, proceed to Section 3.3, "Upgrading Design Metadata".

3.2.3 Partial Database Export/Import for a Selective Migration

You can only use Partial Database Export/Import if your prior version of Warehouse Builder was 9.0.4.x or 9.2.x. If your prior version of Warehouse Builder was 9.0.3.x or earlier, you must use the Full Database Ex2port/Import or the Database Migration Utility and skip Section 3.2.3.

When you have successfully completed the database import, proceed to Section 3.3, "Upgrading Design Metadata".

Considerations

This option is for users upgrading to Oracle Database 10g who want to be selective about what is moved from the prior version of Oracle Database to the new version. Do not use the Partial Database Export/Import if either the Full Database Export/Import

or the Database Migration Utility can meet your needs. If you choose the Partial Database Export/Import, you must:

- Pre-create the tablespaces in your Oracle Database 10g environment to exactly match the tablespaces in your prior version of Oracle Database.
- Whenever an upgrade instruction in this chapter requires creating a Warehouse Builder user, create the user with the identical schema name and default tablespaces as its prior counterpart in Warehouse Builder 9.0.4.x or 9.2.x.

3.2.3.1 Migrating Design Metadata with Partial Database Export

Migrating your design metadata involves:

- Exporting your design metadata
- Importing your design metadata

After you have completed these two procedures on your design metadata, continue with the rest of this chapter. Make sure to follow the instructions in Section 3.3.2.1, "Automatic Upgrade Script for Warehouse Builder Design Metadata" to complete your design metadata upgrade.

To export and import your design metadata, perform this procedure for each Target Schema owned by the Runtime Repository you are migrating:

1. Use Oracle Export in your Oracle8*i* Release 3 (8.1.7.4.x) or Oracle9*i* Release 2 (9.2.x) database to export your old Design Repository into a DMP file by entering:

```
exp OldOWBDesignUserName/OldOWBDesignUserPassword@
Old_DBTNSConnection owner=OWBDesignUserName
FILE=OWBDesignUserName.dmp LOG=OWBDesignUserName.log
```

OldOWBDesignUser stands for your prior Warehouse Builder Design Repository user.

For example, enter:

exp owb_design/owb_design owner=owb_design
FILE=owb_design.dmp LOG=owb_design.log

2. Identify all the tablespaces for your old Warehouse Builder Design Repository schema user.

Connect to SQL*Plus in your Oracle8*i* Release 3 (8.1.7.4.x) or Oracle9*i* Release 2 (9.2.x) database as the Warehouse Builder Design Repository user, and enter the following command:

select distinct TABLESPACE_NAME from user_segments;

Enter the following to check the default and temporary tablespaces for your old Warehouse Builder Design Repository schema user:

```
select DEFAULT_TABLESPACE, TEMPORARY_TABLESPACE from
user_users;
```

- **3.** In your Oracle Database 10*g* database instance, create the tablespaces you listed from your prior instance in Step 2.
- **4.** In your Oracle Database 10g database instance, connect as the SYS user and create the new Warehouse Builder Design Repository user with the same name, the same default data tablespace, and the same temporary tablespace as your old Design Repository. For example, in SQL*PLus, type:

connect SYS/SYS as sysdba;

create user owb_design identified by owb_design default tablespace users temporary tablespace temp;

5. In your Oracle Database 10g database instance, connect as the SYS user in SQL*Plus and grant privileges to the Warehouse Builder Design Repository user.

You can obtain a list of the required privileges in OWB_ORACLE_HOME\owb\reposasst\grantpriv.sql

Use the following command in SQL*PLus:

connect SYS/SYS as sysdba;

SET DEFINE %

define user=OWBDesignRepositoryUser

@OWB_ORACLE_HOME\owb\reposasst\grantpriv.sql

6. Create two roles under the Warehouse Builder Design Repository user: the OWB_OWBDesignRepositoryUser role and the OWBR_OWBDesignRepositoryUser role. For example, in SQL*PLus, type:

connect owb_design/owb_design;

create role OWB_owb_design;

create role OWBR_owb_design;

7. Use Oracle Import to import the old design metadata DMP file into the new Warehouse Builder Design Repository user as follows:

imp OWBDesignUserName/OWBDesignUserPassword
@New_dbTNSConnection
FILE=OWBDesignUserName.dmp LOG=OWBDesignUserName.log

For example, in SQL*PLus, enter:

imp owb_design/owb_design@old_server FILE=owb_design.dmp LOG=owb_design.imp.log

3.2.3.2 Migrating the Runtime Environment

Migrating the runtime environment involves:

- Exporting the Target Schemas and Creating the New Runtime Environment
- Copying External Directory References to Your New Database Instance
- Importing the Target Schemas to Your New Database Instance

After you have completed these three procedures on your runtime environment, continue with the rest of this chapter. Make sure to follow the instructions in Section 3.4.2.1, "Upgrading Audit Data from Warehouse Builder 9.0.4.x or 9.2.x" to complete your runtime upgrade.

3.2.3.2.1 Exporting the Target Schemas and Creating the New Runtime Environment first export your runtime data from your current version of Warehouse Builder and import it into your new Warehouse Builder Runtime Repository.

To export and import your runtime data:

Use Oracle Export in your Oracle8*i* Release 3 (8.1.7.4.x) or Oracle9*i* Release 2 (9.2.x) database to export your old Target Schemas into a DMP file with the following command for each schema:

exp OldOWBTargetUserName/OldOWBTargetUserPassword@ Old_DBTNSConnectionOwner=OldOWBTargetUserName FILE=OldOWBTarget.dmpLOG=OldOWBTarget.log

OldOWBTargetUser stands for your Warehouse Builder Target Schema user from your prior version of Warehouse Builder.

For example, type:

```
exp owb_target/owb_target owner=owb_target
FILE=owb_target.dmp LOG=owb_target.log
```

2. Identify all the tablespaces for your each of your old Warehouse Builder Target Schema users.

Connect to SQL*Plus in your Oracle8*i* Release 3 (8.1.7.4.x) or Oracle9*i* Release 2 (9.2.x) database as the Warehouse Builder Target Schema user, and enter the following command:

select distinct TABLESPACE_NAME from user_segments;

Enter the following to check the default and temporary tablespaces for your old Warehouse Builder Target Schema user:

select DEFAULT_TABLESPACE, TEMPORARY_TABLESPACE from
user_users;

- **3.** In your Oracle Database 10*g* instance, create the tablespaces you listed from your prior instance in Step 2.
- **4.** Following the instructions in Section 2.4.1, use the Runtime Assistant in Warehouse Builder 10*g* Release 1 (10.1) to create the new Runtime Repository and the Runtime Access User.

Make sure the names and tablespaces you specify for your new Runtime Repository and Runtime Access user match the the names and tablespaces from your previous Oracle Database instance. Both default and temporary tablespaces must match the previous version.

5. In your Oracle Database 10*g*, connect as a SYS user to SQL*Plus to create each Target Schema and grant privileges to it.

Make sure to assign to each new schema the same name, the same default data tablespace, and the same temporary tablespace as in the previous version of your Warehouse Builder Target Schemas.

For each Target Schema you create, enter the following command in SQL*PLus:

connect SYS/SYS as sysdba;

```
create user OldOWBTargetSchemaUser identified by
OldOWBTargetSchemaPassword default tablespace users temporary
tablespace temp;
```

SET DEFINE %

define user=OldOWBTargetSchemaUser

@NewOWB_ORACLE_HOME\owb\rtasst\warehouse_system_rights.sql

@NewOWB_ORACLE_HOME\owb\rtasst\xmltk_grant.sql

6. In your Oracle Database 10*g*, connect to SQL*Plus as a the Warehouse Builder Runtime Repository user and grant privilege on WB_RT_MAPAUDIT to each of the Target Schema users.

Use the following command in SQL*PLus:

grant execute on WB_RT_MAPAUDIT to
OldOWBTargetSchemaUserName;

3.2.3.2.2 Copying External Directory References to Your New Database Instance Complete this section if you had external directories in your previous Warehouse Builder environment.

External directories have two elements: the logical and the physical. The logical element is the reference residing in the database to a directory located outside the database. The Partial Database Export/Import does not automatically move these references that reside in your current Oracle Database to your new Oracle Database instance. You must move them yourself by following the procedure in this section. The physical element of external directories is addressed later in this chapter, in Section 3.4.2.2.

If you had external tables in your Warehouse Builder 9.0.4.x or 9.2.0.x environment, follow these instructions to migrate references to external directories to your new instance of Oracle Database:

To migrate the external directories for each of your Target Schema users to the new instance of Oracle Database 10g:

- 1. Locate OWB_ORACLE_HOME\owb\mig\gen_ext_dirs.sql and copy the file to a temporary location on the computer hosting your prior version of Oracle Database.
- 2. In SQL*Plus, connect as each of the Warehouse Builder Target Schema users, and run TEMP\gen_ext_dirs.sql.
- **3.** Locate the ext_dirs.sql file generated in the SQL*Plus default directory (typically, this default directory is ORACLE_HOME\bin).
- 4. Transfer the ext_dirs.sql file to a temporary location on the computer hosting Oracle Database 10g.
- 5. In SQL*Plus, connect as each of your Warehouse Builder 10g Release 1 (10.1) Target Schema users, and execute ext_dirs.sql.

3.2.3.2.3 Importing the Target Schemas to Your New Database Instance Use Oracle Import to import the Target Schema files into the new user you created.

To import a Target Schema:

1. Use Oracle Import to import the Target Schema DMP file you exported from your prior version of Warehouse Builder into the new Target Schema user you created in Section 3.2.3.2.1. Enter the following command:

imp OldOWBTargetUserName/OldOWBTargetUserPassword@ New_DBTNSConnection FILE=OldOWBTarget.dmp LOG=NewOWBTarget.log

OldOWBTargetUser stands for your Warehouse Builder Target Schema user from your prior version of Warehouse Builder.

For example, enter:

imp owb_target/owb_target@New10gConnection
FILE=owb_target.dmp LOG=c:\temp\owb_target_import.log

2. Examine the import log file, whose name and location you specified in your import command.

Proceed with the rest of the steps only if the last line of the log file states: "Import terminated successfully without warnings."

If the last line of the log file states: "Import terminated unsuccessfully," you must fix all import errors before proceeding with the rest of the steps.

3. Repeat these instructions for each Target Schema you are importing.

3.3 Upgrading Design Metadata

Create a full database backup before you begin. Additionally, create metadata export (MDL) files for all your Warehouse Builder projects. Keep these backups until you have completed and tested the entire upgrade process.

The steps you follow depend on your existing version of Warehouse Builder:

- Upgrading Design Metadata from Warehouse Builder 9.0.3.x or Earlier on page 3-8
- Upgrading Design Metadata from Warehouse Builder 9.0.4.x or 9.2.x on page 3-9

3.3.1 Upgrading Design Metadata from Warehouse Builder 9.0.3.x or Earlier

Follow these instructions if you are upgrading from Warehouse Builder 9.0.3 or earlier, regardless of whether you have upgraded your Oracle Database. You must export your design metadata from your prior version of Warehouse Builder into an MDL file, then use your new version of Warehouse Builder to create a new Design Repository and import the metadata into it.

3.3.1.1 Exporting Design Metadata from a Prior Release of Warehouse Builder

Export each project or collection you want to migrate to Metadata Loader (MDL) files. For more information on exporting metadata, see the *Oracle Warehouse Builder User's Guide*.

Note: To upgrade, you must export and import your metadata using the Metadata Loader (MDL). Warehouse Builder upgrade does not support files that were exported or imported using back end database commands.

To export existing metadata into an MDL file:

- **1.** Use the prior version of the Warehouse Builder client to select the Project you want to export.
- 2. From the **Project** menu, choose **Export Metadata**.

The Metadata Loader assigns a path and file name to the exported MDL file. Make a note of the path and filename for all data you export. For more information on exporting metadata, refer to the *Oracle Warehouse Builder User's Guide*.

3.3.1.2 Creating a New Warehouse Builder 10g Release 1 (10.1) Design Repository

Create a new Warehouse Builder Design Repository, following the instructions in Section 2.3, "Install the Design Repository Using the Repository Assistant".

3.3.1.3 Importing Design Metadata to Warehouse Builder 10g Release 1 (10.1)

After having installed the new software, you must import and upgrade your design metadata into the new version of Warehouse Builder. For more information on importing metadata, see the *Oracle Warehouse Builder User's Guide*.

Note: Warehouse Builder upgrade does not support files that were exported or imported using back end database commands.

To import and upgrade metadata into the new Warehouse Builder repository:

- 1. From the new Warehouse Builder console, select the **Project** menu, **Metadata Import**, and **File**.
- **2.** Locate the path and file name to the exported data from your former repository. Select **Import.**

If the file is from the current version of Warehouse Builder, the Metadata Import Progress panel displays. This dialog displays the object types and the number of each type that were imported or skipped. For a detailed view of the import process, click **View Log File**.

If Warehouse Builder detects that the file is from a prior version of Warehouse Builder, the Metadata Upgrade Confirmation dialog displays. In this case, Warehouse Builder automatically upgrades the MDL file to the current version and then imports it.

- **3.** Click **OK** to automatically upgrade the file to the current version and import it into Warehouse Builder. The Metadata Loader Upgrade Utility dialog displays for you to enter a file and a log name.
 - Migrated File Name: Specify the path and name of the new, upgraded MDL file. Use the Browse button to specify the destination of the file.
 - Log File: Specify the path and name of the log that MDL creates during the upgrade process. Use the Browse button to specify the destination of the file.
 - Click **OK** to continue the upgrade and import.

You can click **Cancel** to stop the upgrade and import of the file. You can upgrade the file manually by using the MDL File Upgrade utility. For more information, refer to Appendix D, "Upgrading Metadata with the MDL File Upgrade Utility".

Note: You must import the metadata using **Universal Identifier** as your **Match by** option.

3.3.2 Upgrading Design Metadata from Warehouse Builder 9.0.4.x or 9.2.x

If you are upgrading from Oracle Warehouse Builder Release 9.0.4.x or 9.2.x to the current release, you can upgrade your Oracle Database if you have decided to do so. Note that Oracle highly recommends upgrading to Oracle Database 10*g* if you upgrade to Warehouse Builder 10*g* Release 1 (10.1).

Regardless of whether you are upgrading Oracle Database, you must now upgrade your design metadata in one of two ways:

 Automatic Upgrade Scripts: You can upgrade your design metadata by running one of the scripts included with this release of Warehouse Builder, as instructed in Section 3.3.2.1. Metadata Export and Import: Instead of a scripted upgrade, you can choose to import and export the design metadata as described in Section 3.3.1 for older versions of Warehouse Builder. With this method, you export your design metadata from your prior version of Warehouse Builder into an MDL file, then use your new version of Warehouse Builder to create a new Design Repository and import the metadata into it.

3.3.2.1 Automatic Upgrade Script for Warehouse Builder Design Metadata To upgrade your Warehouse Builder 9.0.4.x or 9.2.x design metadata:

- 1. Run the automatic upgrade script. The script you use depends on the version of Warehouse Builder from which you are upgrading.
 - If you are upgrading from Warehouse Builder 9.0.4.x, run the following script:
 - For Windows, navigate to OWB_ORACLE_HOME\owb\bin\win32 and run DTupg904to10g.bat.
 - For UNIX, navigate to OWB_ORACLE_HOME/owb/bin/unix and run DTupg904to10g.sh.
 - If you are upgrading from Warehouse Builder 9.2.x, run the following script:
 - For Windows, navigate to OWB_ORACLE_HOME\owb\bin\win32 and run DTupg92to10g.bat.
 - For UNIX, navigate to OWB_ORACLE_HOME/owb/bin/unix and run DTupg92to10g.sh.

The script prompts you for seven parameters describing your new Warehouse Builder 10*g* Release 1 (10.1) environment.

- Host Name, Port Number, and Service Name: If you are not migrating to a new Oracle Database instance, the first three parameters are the connect string to your current Design Repository. If you are migrating, enter the connection information to your newly created Design Repository.
- **SYS User Name and Password:** Your SYS account information.
- User Name and Password: These last two parameters are for your new Design Repository.
- **Tablespace for Indexes:** If you are upgrading from Warehouse Builder 9.0.4.x, the script prompts you for the name of the tablespace for indexes.
- **2.** Examine the log file for any errors.
 - For Windows, examine OWB_ORACLE_HOME\owb\reposasst\upg\LOG.TXT.
 - For UNIX, examine OWB_ORACLE_HOME/owb/reposasst/upg/LOG.TXT.

3.4 Upgrading Runtime Data

In this step you upgrade your runtime data so that your new Runtime Repository shows the correct status, history, location details, and version numbers for deployed and executed objects.

The steps you follow depend on your existing version of Warehouse Builder:

- Upgrading Runtime Data from Warehouse Builder 9.0.3.x or Earlier on page 3-11
- Upgrading Runtime Data from Warehouse Builder 9.0.4.x or 9.2.x on page 3-13

3.4.1 Upgrading Runtime Data from Warehouse Builder 9.0.3.x or Earlier

If you are upgrading from Warehouse Builder 9.0.3.x or earlier, you must migrate data from your old Target Schemas or to the Target Schemas of the current release.

First, follow the instructions in Section 2.4 to install a Runtime Repository and one or more Target Schemas. Then, choose from three methods to migrate data from your old runtime environment to the new Target Schemas you created:

- Option 1. Regenerate Database Objects Using Warehouse Builder
- Option 2. Export and Import Database Objects in the Oracle Database Server
- Option 3. Create Synonyms for Original Objects in the New Target Schema

Once you have selected a method, repeat that procedure for each Target Schema you are migrating.

3.4.1.1 Option 1. Regenerate Database Objects Using Warehouse Builder

In this method, consider using the Warehouse Builder interface for a one-time migration. This method is recommended for beginning and intermediate users of Warehouse Builder, if your old Warehouse Builder environment does not stray from the recommended setup.

Table 3–1 describes the advantages and drawbacks of this method.

Outcome	Description
Advantages	• Complete: This method results in a complete migration. You can fully deinstall your old system.
	• Straightforward: This is the simplest method for a complete migration.
	 Fully up-to-date deployment audit.
Drawbacks	• Time-consuming: This method is more labor-intensive.
	 Requires a copy environment: You must duplicate data until you decommission your old system.

Table 3–1 Advantages and Drawbacks of Migrating in the Warehouse Builder Interface

To migrate data using the Warehouse Builder interface:

- **1.** In the Deployment Manager of your upgraded Warehouse Builder client, register the new locations for your database objects.
- **2.** One at a time, select each Target module and click **Default Action**. Because the objects are new to this version, the default action is creation.
- **3.** Click **Generate/Deploy**. You are ready to migrate your data following Steps 4 through 7.
- 4. Create a Source module pointing to your old Target Schema.
- **5.** Create simple mappings that extract from your old Target Schema as a source and load to your new Target Schema objects.
- **6.** Deploy these migration mappings and run them only once. Test to ensure that a 1-to-1 migration occurred.
- **7.** When you are satisfied with the results, delete the one-time migration mappings and the Source modules you created that point to the old Target Schema.

For more instructions on registering locations, creating source and target modules, and creating and executing mappings, refer to the *Oracle Warehouse Builder User's Guide*.

3.4.1.2 Option 2. Export and Import Database Objects in the Oracle Database Server

This method is recommended for advanced users of Warehouse Builder. You perform the data migration in the back end by exporting and importing the appropriate Warehouse Builder database objects.

Table 3–2 describes the advantages and drawbacks of this method.

Outcome	Description		
Advantages	• Complete: This method results in a complete migration. You can fully deinstall your old system.		
	• Fast: This is the fastest route to a complete migration.		
Drawbacks	• Complex: This method requires the most detailed knowledge of Warehouse Builder database objects.		
	 Inaccurate Deployment Audit Results: Your deployment audit data will not be accurate. It will show existing database objects to be new. This drawback only applies if you are upgrading from Warehouse Builder Release 9.0.3 or earlier. 		

Table 3–2 Advantages and Drawbacks of Migrating Using Oracle Database

To migrate by exporting and importing database objects in the back end:

Follow instructions in the Oracle Database Server documentation to export and import database objects.

Make sure that you are only working with database objects that you created, and not with Warehouse Builder objects generated by Warehouse Builder. To this end, consider migrating the data and then regenerating the constraints, indexes, dimensions, and other objects you can generate in the database.

Examples of objects you should not export or import follow:

- Do not export or import runtime audit tables or packages. If your old Warehouse Builder environment does not stray from the standard, then the tables and packages related to audit data are in your Runtime Schema.
- Do not export or import objects whose names begin with WB. These objects are generated by Warehouse Builder.

After the data migration, regenerate all mappings.

3.4.1.3 Option 3. Create Synonyms for Original Objects in the New Target Schema

This method is a shortcut in which you create synonyms pointing to your original database objects in your new Target Schema. Instead of actual data, your new Target Schema will contain only the regenerated mappings and the pointers to the database objects containing the data.

Table 3–3 describes the advantages and drawbacks of this method.

Table 3–3 Advantages and Drawbacks of Migrating by Using Synonyms

Outcome	De	ption	
Advantages		Fast: This is a shortcut if you do not require a complete migration.	

Outcome	Description		
Drawbacks	 Incomplete: This method does not constitute a complete migration; you will not be able to completely phase out your old system. 		
	• Inaccurate Deployment Audit Results: Your deployment audit data will not be accurate. It will show existing database objects to be new. This drawback only applies if you are upgrading from Warehouse Builder Release 9.0.3 or earlier. If you are upgrading from Warehouse Builder Release 9.0.4.x or 9.2.x, Upgrading Runtime Data, ensures accurate audit data even with this option.		

Table 3–3 (Cont.) Advantages and Drawbacks of Migrating by Using Synonyms

To migrate by creating synonyms to existing objects:

Follow instructions in the Oracle Database Server documentation to create synonyms in your new Target Schema that point to existing database objects in your old environment.

Make sure that you are only working with database objects that you created yourself, and not with Warehouse Builder objects generated by Warehouse Builder. To this end, simply create synonyms for the data objects and then regenerate the mappings.

For example, do not create synonyms for audit tables or packages. If your old Warehouse Builder environment does not stray from the standard, then the tables and packages related to audit data are in your Runtime Schema.

3.4.2 Upgrading Runtime Data from Warehouse Builder 9.0.4.x or 9.2.x

To upgrade your runtime data from Warehouse Builder 9.0.4.x or 9.2.x, the script you run depends on whether you are changing the database instance for your new Runtime Repository and Target Schemas.

3.4.2.1 Upgrading Audit Data from Warehouse Builder 9.0.4.x or 9.2.x

The steps you complete to upgrade your audit data depend on whether you are keeping the same database instance, whether you are upgrading to Oracle Database 10g, and on the version of Oracle Database from which you upgraded.

To upgrade audit data from Warehouse Builder 9.0.4.x or 9.2.x:

- 1. Run the automatic upgrade script. The script you run depends on whether you are keeping the same database connection (that is, the *host:port:servicename* does not change) or changing to a new database instance or computer.
 - If you are keeping the same database instance, OR if you used either the the Full Database Export/Import (Section 3.2.1) or the Database Migration Utility (Section 3.2.2) to migrate to Oracle Database 10g, run this upgrade script:
 - For Windows, navigate to OWB_ORACLE_HOME\owb\bin\win32 and run RT_upgrade_to_10_1.bat.
 - For UNIX, navigate to OWB_ORACLE_HOME/owb/bin/unix and run RT_upgrade_to_10_1.sh.

The RT_upgrade_to_10_1 script prompts you for several parameters: the database connection string for your Runtime Repository schema (*host:port:servicename*) and the SYS User Name and Password for the Oracle Database instance. You must then choose which Runtime Repository you want to upgrade from a list of your existing Runtime Repositories.

- If you are changing the database instance or the computer hosting the database, AND if you migrated your runtime environment as described in Section 3.2.3.2, "Migrating the Runtime Environment", then run the migration script:
 - For Windows, navigate to OWB_ORACLE_HOME\owb\bin\win32 and run RT_migrate_to_10_1.bat.
 - For UNIX, navigate to OWB_ORACLE_HOME/owb/bin/unix and run RT_migrate_to_10_1.sh.

The RT_migrate_to_10_1 script prompts you for several parameters: the User Name and Password of your original Runtime Repository schema, the database connection string for your original Runtime Repository (in the form of *host:port:servicename*), the User Name and Password for your new Runtime Repository schema (whose values should match the original Runtime Repository), and the database connection string for the new Runtime Repository (also in the form of *host:port:servicename*).

Additionally, as it runs, the script prompts you for SYS User Names and Passwords for the Oracle Database instances for any Target Schemas and Oracle Workflows being upgraded.

2. Skip this step if you are not upgrading to Oracle Database 10g.

If you upgraded to Oracle Database 10*g*, connect to SQL*Plus as the Design Repository user and run the following script to update your location definitions:

OWB_ORACLE_HOME\owb\repoasst\upg\
dt_upgrade_locs_RUNTIME_REPOSITORY_USER_NAME.sql

- **3.** Examine the log file for any errors.
 - For Windows, examine OWB_ORACLE_HOME\owb\bin\admin\ rtupgrade.log.xx
 - For UNIX, examine OWB_ORACLE_HOME/owb/bin/admin/ rtupgrade.log.xx
- **4.** Skip this step if you ran the upgrade script (RT_upgrade_to_10_1).

If you ran the migrate script (RT_migrate_to_10_1), you must now start the Warehouse Builder client and edit your Runtime Repository connections to refer to your upgraded runtime connection information.

5. If you upgraded from Oracle8*i* Release 3 (8.1.7.4) to Oracle Database 10*g*, you must re-register your locations in the Deployment Manager of the Warehouse Builder client.

For more information on working with Runtime Repository connections or registering locations, refer to the *Oracle Warehouse Builder User's Guide*.

3.4.2.2 Copying Flat Files and External Directories to Your New Database Instance

Complete the instructions in this section only if both of the following are true:

 If you moved your Oracle Database 10g from the computer hosting your prior version of Oracle Database to a different computer

AND

 If you had flat files or external tables in your previous Warehouse Builder environment
If both of these points are true, you must copy the following objects from the computer hosting your previous instance of Oracle Database to the computer hosting your new instance:

- Flat Files: Copy any flat files used by SQL*Loader from the computer hosting your previous instance of Oracle Database to the computer hosting your new instance.
- External Directories: You must also copy all external directories from the computer hosting your previous instance of Oracle Database to the computer on which Oracle Database 10g resides. Make sure to recreate identical file system directories.

External directories have two elements: the logical, and the physical. Section 3.2.3.2.2 addressed the logical element, and was only required of users who chose the Partial Database Export/Import option to move their database. In this section, you copy the *physical* directory structure from the computer hosting your previous instance of Oracle Database computer to the computer hosting your new instance.

3.5 Deploying Your Mappings to the New Target Schemas

If you are upgrading from Oracle Warehouse Builder Release 9.0.4.x or 9.2.x and followed the instructions in Section 3.4, "Upgrading Runtime Data", you can choose to skip this step.

If you are upgrading from Oracle Warehouse Builder Release 9.0.3 or earlier, you must redeploy your mappings. With the upgraded version of Warehouse Builder, the runtime architecture has changed. To propagate these changes into your generated code, redeploy your mappings. After you have redeployed your mappings, do not use the old mappings again.

For example, redeployment ensures that your mappings refer to the correct auditing packages. Additionally, redeploying enables you to take advantage of new code generation features available in the new version of Warehouse Builder.

For instructions on deploying mappings, refer to the Oracle Warehouse Builder User's Guide. After redeploying, test your mappings to ensure that they still work.

3.6 Updating Mapping Configuration to Benefit from New Features

After redeploying your mappings, update the configuration of each mapping to benefit from the new features available in the upgraded version of Warehouse Builder.

Use the following criteria to determine whether you can skip this section:

- If you are upgrading from Warehouse Builder Release 9.0.3 or earlier, you must follow the instructions in this section.
- If you are upgrading from Release 9.0.4.x or 9.2.x, you only need to follow these
 instructions if you migrated from an earlier release to Release 9.0.4.x or 9.2.x
 without updating the mapping configuration at that time.
- You can skip this section if Release 9.0.4.x or 9.2.x was your first installation of Warehouse Builder, or if you already performed these steps when you migrated to either of those two releases.

You can update the mapping configuration either by using the Warehouse Builder interface, or by running a script to update all the mappings in the Oracle Metabase (OMB) Plus scripting utility.

To update the configuration of each mapping using the Warehouse Builder interface:

- **1.** In the upgraded Warehouse Builder client, right-click each mapping and select **Configure**.
- 2. In the Configuration Properties box, expand the **Sources and Targets** node.
- 3. In the Sources and Targets node:

Delete the contents of the Schema configuration parameters field.

Delete the contents of the **DB Links** configuration parameters field.

4. Redeploy each mapping for which you changed the configuration properties in order to generate new code. For instructions on deploying mappings, refer to the *Oracle Warehouse Builder User's Guide*.

Alternatively, you can update all your mappings by running the script provided for this purpose on the Oracle Technology Network. The update script is called UpdMapConfig.tcl.

To update the configuration of each mapping using a script:

- Download the UpdMapConfig.tcl file from http://otn.oracle.com/sample_code/products/warehouse/ content.html.
- 2. Start Oracle Metabase (OMB) Plus.
- 3. Connect to your new Design Repository.
- **4.** Change the context in OMB Plus to the correct project and module. You must run this script module by module.
- **5.** Run the script in OMB Plus.

At the OMB Plus prompt, type source, and then the location of the script surrounded by quotation marks.

For every backward slash, enter a second backward slash to escape the first.

For example, if your script is located in c:\temp, type: source "c:\\temp\\UpdMapConfig.tcl"

6. Run the following commands in OMB Plus to update the mappings and commit the changes to the Design Repository:

owb_reset_mapping_conns

OMBCOMMIT

Repeat this step by navigating to other target modules using the OWBCC command and running the owb_reset_mapping_conns command again.

7. Redeploy each mapping for which you changed the configuration properties in order to generate new code. For instructions on deploying mappings, refer to the *Oracle Warehouse Builder User's Guide*.

3.7 Optional: Deinstalling the Old Version of Warehouse Builder

You can gradually phase out your old system once your upgrade has been tested and is working. You can perform this step in parallel with Section 3.6, "Updating Mapping Configuration to Benefit from New Features".

Note: Be selective in removing your old system if you followed Section 3.4.1.3, "Option 3. Create Synonyms for Original Objects in the New Target Schema" when you upgraded your audit data. Do not remove the database objects to which the synonyms you created are pointing.

To phase out your old system:

- **1.** Remove the database objects you created in the back end. For more information, refer to the Oracle Database Server documentation.
- **2.** Remove the old version of the Warehouse Builder software. Use the deinstallation instructions provided with the version of Warehouse Builder you are removing.

Deinstalling Warehouse Builder Components

This chapter contains instructions for deinstalling Warehouse Builder components. If you are deinstalling multiple or all components, make sure to follow the order presented in this chapter.

This chapter presents the deinstallation steps in the order that you must follow them:

- Step 1. Deinstall Design and Runtime Audit Browsers from Oracle Application Server on page 4-1
- Step 2. Deinstall Warehouse Builder Target Schema Objects on page 4-2
- Step 3. Deinstall Warehouse Builder Runtime Repository Objects on page 4-2
- Step 4. Deinstall Warehouse Builder Design Repository Objects on page 4-3
- Step 5. Deinstall Oracle Warehouse Builder or Remaining Oracle Software on page 4-3

4.1 Step 1. Deinstall Design and Runtime Audit Browsers from Oracle Application Server

You only need to follow these instructions if you integrated the Warehouse Builder Design Browser or the Warehouse Builder Runtime Audit Browser with Oracle Application Server. If you never ran the Warehouse Builder Browser Assistant to install these browsers, then you can skip this portion of the chapter.

If you did not follow the instructions in Section 2.5.3, "(Optional) Integrate with Oracle Application Server" to install these browsers into Oracle Application Server, then you are only running the Design and Runtime Audit Browser clients. The browser clients install and deinstall automatically when you run the Oracle Universal Installer Design Time installation.

To deinstall Warehouse Builder Browser objects from Oracle9iAS:

1. Launch the Warehouse Builder Browser Assistant.

For Windows: Select Start, Programs, OWB_HOME, Warehouse Builder, and then select OWB Browser Assistant.

For UNIX: Start a shell and navigate to: OWB_ORACLE_HOME/owb/bin/unix. For example, type: cd /private/home/OWB92/owb/bin/unix Then run browserasst.sh.

2. In the Warehouse Builder Browser Assistant Welcome page, click Next.

3. In the Choose Operation page, select **Deinstall Warehouse Builder Browser Objects.**

Follow the wizard to deinstall the Warehouse Builder Browser objects from your database.

4.2 Step 2. Deinstall Warehouse Builder Target Schema Objects

If you plan to drop a Target Schema user, you must first deinstall the Target Schema repository from that user. You can then drop the user in SQL*Plus.

Note: Deinstalling a Target Schema means deinstalling your warehouse objects and the objects that run your warehouse jobs. Oracle recommends that you use Oracle Enterprise Manager rather than Warehouse Builder Runtime Assistant to deinstall your Target Schema objects.

To deinstall Warehouse Builder Target Schema objects:

1. Start the Warehouse Builder Runtime Assistant.

For Windows: Select Start, Programs, OWB_HOME, Warehouse Builder, and then select OWB Runtime Assistant.

For UNIX: Start a shell and navigate to: OWB_ORACLE_HOME/owb/bin/unix. For example, type: cd /private/home/OWB92/owb/bin/unix Then run runtimeinst.sh.

- 2. In the OWB Runtime Assistant: Welcome page, click Next.
- 3. In the Choose Operation page, select Drop Existing Runtime Objects.

Follow the wizard to deinstall the Warehouse Builder Runtime Repository objects from your database.

Note: The Warehouse Builder Runtime Assistant does not drop user-defined objects from the runtime schema.

4.3 Step 3. Deinstall Warehouse Builder Runtime Repository Objects

To deinstall a Runtime Repository user, first run the Warehouse Builder Runtime Assistant to drop the existing Runtime Repository itself, as described in this section. You can then drop the user in SQL*Plus.

To deinstall Warehouse Builder Runtime Objects:

1. Start the Warehouse Builder Runtime Assistant.

For Windows: Select Start, Programs, *OWB_HOME*, Warehouse Builder, and then select OWB Runtime Assistant.

For UNIX: Start a shell and navigate to: OWB_ORACLE_HOME/owb/bin/unix. For example, type: cd /private/home/OWB92/owb/bin/unix Then run runtimeinst.sh.

2. In the OWB Runtime Assistant: Welcome page, click Next.

3. In the Choose Operation page, select **Drop Existing Runtime Objects**.

Follow the wizard to deinstall the Warehouse Builder Runtime Repository objects from your database.

Note: The Warehouse Builder Runtime Assistant does not drop user-defined objects from the runtime schema.

4.4 Step 4. Deinstall Warehouse Builder Design Repository Objects

To deinstall a Warehouse Builder Design Repository:

1. Start the Warehouse Builder Repository Assistant.

For Windows: Select Start, Programs, OWB_HOME, Warehouse Builder, and then select OWB Repository Assistant.

For UNIX: Start a shell and navigate to: OWB_ORACLE_HOME/owb/bin/unix. For example, type: cd /private/home/OWB92/owb/bin/unix Then run reposinst.sh.

- 2. In the OWB Repository Assistant: Welcome page, click Next.
- **3.** In the Choose Operation page, select **Drop Existing Repository Objects.**

Follow the wizard to deinstall the Warehouse Builder Repository objects from your database.

4.5 Step 5. Deinstall Oracle Warehouse Builder or Remaining Oracle Software

You must restart the Oracle Universal Installer to deinstall any remaining Warehouse Builder components. If you are deinstalling repositories, make sure to do so before you deinstall the Warehouse Builder Client software.

If you installed Warehouse Builder on an Oracle Database server, make sure you complete the following before deinstalling Oracle software:

- Deinstall all the Runtime Repositories created from this computer.
- Stop the Name and Address (NAS) Server as follows:

For Windows: Run OWB_ORACLE_HOME\owb\bin\win32\NAStop.bat.

For UNIX: Run OWB_ORACLE_HOME/owb/bin/unix/NAStop.sh.

Always use the Oracle Universal Installer to remove Warehouse Builder from your computer. If you attempt to remove Warehouse Builder by deleting the directories manually, you can impair the operations of the Oracle Universal Installer.

To deinstall existing Oracle software:

- 1. Start Oracle Universal Installer.
- **2.** On the OUI Welcome page, click **Installed Products** to obtain an inventory of all Oracle products installed on your system.
- **3.** Select the existing Oracle products that you want to remove, along with their components and click **Remove**.

4. If you have deinstalled Warehouse Builder, and it has left behind the path *OWB_HOME*\owb\j2ee\owbb, delete the owbb directory.

Preparing an Oracle Database

Before installing Warehouse Builder, you need to prepare your Oracle Database by setting the following configuration parameters:

- Parameters for the Design Repository Database Instance on page A-1
- Parameters for the Runtime Repository Database Instance on page A-2
- Parameters for the Oracle Application Server Database (Optional) on page A-5

A.1 Parameters for the Design Repository Database Instance

The Warehouse Builder Repository database runs on standard Oracle Database configuration parameters.

Table A–1 lists the configuration parameters to use as an initial guide for ensuring performance.

Initialization Parameter	Set to Value	Comments
REMOTE_LOGIN_ PASSWORDFILE	EXCLUSIVE	This setting is required for the following connect statement to work:
		connect sys/< <sys_password>>@TNS_NAME_ OF_DB as sysdba;</sys_password>
		If, however, this parameter is set to NONE instead of EXCLUSIVE, set the 07_DICTIONARY_ ACCESSIBILITY parameter as described in the next row.
07_DICTIONARY_ ACCESSIBILITY	TRUE	This setting is an alternative to use if you cannot set the REMOTE_LOGIN_PASSWORDFILE parameter to EXCLUSIVE, as recommended in the previous row. If the REMOTE_LOGIN_PASSWORDFILE parameter is set to NONE, then set the O7_DICTIONARY_ ACCESSIBILITY parameter as an alternative. It enables the following statement to work when connecting to a SYS user:
		connect sys/< <sys_password>>@<i>TNS_NAME_</i> <i>OF_DB</i></sys_password>
OPEN_CURSORS	300	You may specify a higher value.
DB_BLOCK_SIZE	8192	This parameter is set when the database is created and cannot be changed.
		Warehouse Builder does not recommend a value higher than 8192 for the Design Repository.

 Table A–1
 Initialization Parameters for the Design Repository Instance

Initialization Parameter	Set to Value	Comments
DB_CACHE_SIZE	104877600	This is 100 MB.
COMPATIBLE	10.0	If this parameter is not in the initialization file, add it to the end of the file.
REMOTE_LOGIN_ PASSWORDFILE	EXCLUSIVE	This setting is required to ensure that the SYSDBA privilege is granted to the SYS user.
LOCK_SGA	TRUE	Oracle recommends locking the design SGA in physical memory.

Table A–1 (Cont.) Initialization Parameters for the Design Repository Instance

A.2 Parameters for the Runtime Repository Database Instance

To support the Warehouse Builder runtime component, you need to modify the Oracle Database Enterprise Edition instance on the system where your data warehouse will reside.

Note: If you install Warehouse Builder on Oracle8*i*, you must configure the Warehouse Builder Runtime instance to have at least one non-system rollback segment for the seeded runtime packages to compile. Warehouse Builder suggests the use of server-managed rollback segments.

Table A–2 lists the database configuration parameters.

Initialization Parameter	Set to Value	Comments
DB_BLOCK_SIZE	16384	This parameter is set when the database is created. Do not change it.
		The recommended value is 16384. If your server does not allow a block size this large, use the largest size available. If your computer has less than 512 MB of RAM, a value of 9600 is recommended.
OPTIMIZER_MODE	all_rows	For other possible optimizer modes, see Oracle Designing and Tuning for Performance, Oracle Database Performance Tuning Guide and Reference, and Oracle Data Warehousing Guide.
LOG_BUFFER	See comments	Set the value to larger than 512K and must be 128K times the number of CPUs.

Table A–2 Initialization Parameters for the Runtime Instance

Initialization Parameter	Set to Value	Comments
SGA_TARGET	500 MB to 1 GB	The larger value, or as close to it as possible, is recommended if computer memory allows it.
		If you set the SGA_TARGET parameter, do not set these following parameters, because they will be automatically adjusted by the server:
		JAVA_POOL_SIZE
		■ DB_CACHE_SIZE
		LARGE_POOL_SIZE
		 SHARED_POOL_SIZE
		Alternatively, you can set the SGA_TARGET parameter to 0, which turns off the automatic sizing feature.
DB_CACHE_SIZE	314632800	This setting amounts to 300 MB. Set this value as high as the system permits.
		Do not set any value for the DB_CACHE_SIZE parameter if you set a value for the SGA_TARGET parameter.
SHARED_POOL_SIZE	52428800	The recommended minimum value is 50 MB. Oracle recommends raising this parameter to 100MB if memory is available. In the unlikely case that you require more than 100MB, ensure that this parameter is tuned by a knowledgeable DBA.
		Do not set any value for the SHARED_POOL_SIZE parameter if you set a value for the SGA_TARGET parameter.
LARGE_POOL_SIZE	0	This setting enables the server to set the LARGE_ POOL_SIZE automatically.
		Prerequisite: PARALLEL_AUTOMATIC_TUNING must be set to TRUE.
		Do not set any value for the LARGE_POOL_SIZE parameter if you set a value for the SGA_TARGET parameter.
DB_FILE_MULTIPLE_ BLOCK_READ_COUNT	16	A value of 16 is recommended, but 32 is preferred.
DISK_ASYNCH_IO	TRUE	If the platform does not support asynchronous I/O, set DBWR_IO_SLAVES to a positive number, such as 4, to simulate asynchronous I/O.
DB_WRITER_PROCESSES	п	<i>n</i> is the number of CPUs. Increase this parameter value by 1 for every 8 CPUs. If you have fewer than 8 CPUs, set DB_WRITER_PROCESSES to 1.
DBWR_IO_SLAVES	п	<i>n</i> is the number of CPUs.
		Disable this parameter by setting it to 0 if:
		 DB_WRITER_PROCESSES has a value greater than 1. In this case, tuning the DBWR_IO_ SLAVES parameter has no effect.
		 there is only 1 CPU, and the platform does not support asynchronous I/O.

Table A–2 (Cont.) Initialization Parameters for the Runtime Instance

Initialization Parameter	Set to Value	Comments
PGA_AGGREGATE_ TARGET	314572800	This is 300 MB. If you perform frequent sorting and aggregation, you can increase this value. However, PGA_AGGREGATE_TARGET must be smaller than the available physical memory size.
PARALLEL_ADAPTIVE_ MULTI_USER	TRUE	Set PARALLEL_AUTOMATIC_TUNING to TRUE as a prerequisite for this parameter.
PLSQL_OPTIMIZE_ LEVEL	2	The PL/SQL compiler in Oracle Database 10g Release 1 (10.1) can perform more elaborate optimization on PL/SQL code.
LOG_CHECKPOINT_ TIMEOUT	3000	This setting increases the timeout for performing checkpoints from the default 3 minutes to 5 minutes.
STATISTICS_LEVEL	TYPICAL	
UNDO_MANAGEMENT	AUTO	With this setting, you do not have to create rollback segments.
ENQUEUE_RESOURCES	3000 or higher if you are importing large MDL files.	A minimum setting of '1' is required for the install to complete without error.
OPEN_CURSORS	500	You may specify a higher value if you launch multiple sessions or if you run multiple or complicated mappings in one session.
QUERY_REWRITE_ ENABLED	TRUE	Set this parameter to TRUE if you plan to generate materialized views with the QUERY REWRITE option.
USE_INDIRECT_DATA_ BUFFERS	See note.	Do not set this parameter to TRUE as that would conflict with other recommendations.
JAVA_POOL_SIZE	20 MB	The minimum recommended value is 20 MB.
		Do not set any value for the JAVA_POOL_SIZE parameter if you set a value other than 0 for the SGA_TARGET parameter.
REMOTE_LOGIN_ PASSWORDFILE	EXCLUSIVE	You must use the SYS account with SYSDBA privileges in order to access or create the Warehouse Builder Runtime Repository schema. The Warehouse Builder Repository user requires access to certain v_\$ tables. These grants are made by the SYSDBA account when you create the repository. This setting ensures that the SYSDBA privilege is granted to SYS.
COMPATIBLE	10.0	If this parameter is not in the initialization file, add it to the end of the file.
AQ_TM_PROCESSES	1	This parameter is required for the Warehouse Builder and Oracle Workflow Advanced Queueing System.

 Table A-2 (Cont.) Initialization Parameters for the Runtime Instance

Initialization Parameter	Set to Value	Comments
UTL_FILE_DIR	*	Specifies the directories that PL/SQL can use for file input and output. UTL_FILE_DIR = * specifies that all directories can be used for file input and output. If you want to specify individual directories, repeat this parameter on contiguous lines for each directory.
		If you use flat file targets in Warehouse Builder, set this parameter to the directory where you want to create the flat file target so that your database engine has access to it. (Refer to Section A.2.1, "Configuring the Target Data File Path for Flat File Targets" for details).
WORKAREA_SIZE_ POLICY	AUTO	
RESOURCE_MANAGER_ PLAN	plan_name	Oracle strongly recommends creating a resource plan for managing resource usages for Warehouse Builder runtime. Refer to the <i>Oracle Database</i> <i>Administration Guide</i> for information on resource plans.
JOB_QUEUE_PROCESSES	>10	Optimal setting is 10. If JOB_QUEUE_PROCESSES is set to 0, the Runtime Platform Service does not run, and the Runtime Assistant produces error messages.

 Table A-2 (Cont.) Initialization Parameters for the Runtime Instance

A.2.1 Configuring the Target Data File Path for Flat File Targets

To configure the Target Data File Path for Flat file Targets, you set this path in the init.ora file of the warehouse instance. Set the UTL_FILE_DIR parameter to the directory for the flat file targets so that the database has access to it.

For example, for the output file location D:\Data\FlatFiles\File1.dat, set the UTL_FILE_DIR parameter in your init.ora file to:

UTL_FILE_DIR = D:\Data\FlatFiles

For multiple valid file locations, such as both D:\Data\FlatFiles and E:\OtherData, set the parameter in init.ora to:

UTL_FILE_DIR = D:\Data\FlatFiles
UTL_FILE_DIR = E:\OtherData

These lines must be consecutive in the init.ora file.

You can bypass this checking of directories by using the following command:

UTL_FILE_DIR = *

A.3 Parameters for the Oracle Application Server Database (Optional)

If you plan to integrate your Warehouse Builder Design Browser and Runtime Audit Browser with Oracle Application Server, set the parameters listed in Table A–3.

 Table A–3
 Initialization Parameters for Oracle Application Server

Initialization Parameter	Set to Value	
GLOBAL_NAMES	FALSE	

 Table A–3 (Cont.) Initialization Parameters for Oracle Application Server

Initialization Parameter	Set to Value
OPEN_CURSORS	300
OPEN_LINK	100

Mounting CD-ROMs

This Oracle product is delivered on more than one CD-ROM. The CD-ROMs are in ISO 9660 format with Rockridge extensions. This appendix describes how to mount and unmount a CD-ROM on each supported platform. It includes information on the following topics:

- Mounting CD-ROMs on AIX on page B-1
- Mounting CD-ROMs on HP-UX on page B-1
- Mounting CD-ROMs on Linux on page B-2
- Mounting CD-ROMs on Solaris on page B-3
- Mounting CD-ROMs on Tru64 UNIX on page B-4

B.1 Mounting CD-ROMs on AIX

To mount a CD-ROM on AIX:

1. Switch user to root:

```
$ su - root
```

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

umount /cdrom

In this example, /cdrom is the mount point directory for the CD-ROM drive.

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

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

In this example, /dev/cd0 is the device name of the CD-ROM drive and /cdrom is the mount point directory.

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

/cdrom

B.2 Mounting CD-ROMs on HP-UX

To mount a CD-ROM on HP-UX:

1. Switch user to root:

\$ su - root

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

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

In this example, / SD_CDROM is the mount point directory for the CD-ROM drive.

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

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

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

Note: To use the this command on the operating system versions listed, the appropriate patches must be installed on the system:

For HP-UX 11.00: Install patches PHCO_26449, PHKL_26448, and PHKL_26450

For HP-UX 11i (11.11): install patches PHCO_25841, PHKL_26269, and PHKL_28025

4. If the Installer displays the Disk Location dialog box, enter the CD-ROM mount point directory path, for example:

/SD_CDROM

B.3 Mounting CD-ROMs on Linux

On most Linux systems, the CD-ROM mounts automatically when you insert it into the CD-ROM drive. If the CD-ROM does not mount automatically, follow these steps to mount it manually.

To mount a CD-ROM on Linux:

1. Switch user to root:

\$ su - root

- **2.** If necessary, enter a command similar to one of the following to unmount the currently mounted CD-ROM, then remove it from the drive:
 - Red Hat:
 - # eject /mnt/cdrom
 - UnitedLinux:

eject /media/cdrom

In these examples, /mnt/cdrom and /cdrom are the mount point directories for the CD-ROM drive.

3. Insert the appropriate CD-ROM into the CD-ROM drive.

- **4.** To verify that the CD-ROM mounted automatically, enter one of the following commands depending on your platform:
 - Red Hat:
 - # ls /mnt/cdrom
 - UnitedLinux:
 - # ls /media/cdrom
- **5.** If the command in step 4 fails to display the contents of the CD-ROM, enter a command similar to the following to mount it, depending on your platform:
 - Red Hat:

mount -t iso9660 /dev/cdrom /mnt/cdrom

UnitedLinux:

mount -t iso9660 /dev/cdrom /media/cdrom

In these examples, /mnt/cdrom and /media/cdrom are the mount point directories for the CD-ROM drive.

6. If the Installer displays the Disk Location dialog box, enter the CD-ROM mount point directory path, for example:

```
/mnt/cdrom
```

B.4 Mounting CD-ROMs on Solaris

On most Solaris systems, the CD-ROM mounts automatically when you insert it into the CD-ROM drive. If the CD-ROM does not mount automatically, follow these steps to mount it:

1. Switch user to root:

\$ su - root

2. If necessary, enter the following command to eject the currently mounted CD-ROM, then remove it from the drive:

eject

- 3. Insert the first CD-ROM (CD 1) into the CD-ROM drive.
- **4.** To verify that the CD-ROM mounted automatically, enter the following command:

ls /cdrom/cdrom0

5. If the previous command fails to display the contents of the CD-ROM, enter a command similar to the following to mount the CD-ROM:

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

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

- **6.** If the Installer displays the Disk Location dialog box, enter the CD-ROM mount point directory path, for example:
 - CD-ROM mounted automatically:

/cdrom/cdrom0

CD-ROM mounted manually:

/cdrom

B.5 Mounting CD-ROMs on Tru64 UNIX

To mount a CD-ROM, follow these steps:

1. Switch user to root:

\$ su - root

- **2.** If necessary, enter a command similar to the following to unmount the currently mounted CD-ROM, then remove it from the drive:
 - # /usr/sbin/umount /cdrom

In this example, /cdrom is the mount point directory for the CD-ROM drive.

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

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

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

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

/cdrom

Installing Oracle Enterprise Manager and Oracle Workflow

Oracle Enterprise Manager is a scheduling tool included in the Oracle Database CD pack. You can configure Enterprise Manager with Warehouse Builder to manually schedule jobs that load or refresh data in your data warehouse. You can manage dependencies for jobs that reside in the Enterprise Manager Job Library using Oracle Workflow.

This appendix provides instructions for enabling Enterprise Manager and Workflow on your server and client systems.

This appendix includes the following topics:

- Configuring Oracle Enterprise Manager on page C-1
- Installing Oracle Workflow on page C-5

Note that this manual outlines only the important installation steps. For detailed installation instructions, see the *Oracle Enterprise Grid Control Installation and Basic Configuration* and the *Oracle Workflow Administration Guide*.

C.1 Configuring Oracle Enterprise Manager

To ensure the integration of Oracle Enterprise Manager with Warehouse Builder, follow these configuration steps:

- Creating the Enterprise Manager Repository
- Creating a Windows User
- Configuring Preferred Credentials

C.1.1 Creating the Enterprise Manager Repository

To create the Enterprise Manager Repository:

- 1. From your Enterprise Manager Console host system, start the Enterprise Manager Configuration Assistant. This wizard helps you create the Enterprise Manager repository in the Warehouse Builder repository instance.
- 2. From the Configuration Operation page, select Create a New Repository.
- 3. On the Select Database for Repository page, provide the following information:
 - User Name: system
 - Password: manager <or appropriate system password>
 - Service: oemrepos

- 4. On the Repository Login Information page, provide the following information:
 - User Name: Schema where the Enterprise Manager Repository will be installed.
 - Password: Password of the schema where the Enterprise Manager Repository will be installed.
- **5.** From the Select Repository User Tablespace page, you can choose to create a new tablespace or accept the default. Click **Next**.
- 6. Click Finish to complete this process.
- 7. After the installation is complete, start the OMS:
 - For Windows: Click Start, then Control Panel, and then Services.
 - For UNIX: Access the \$ORACLE_HOME/bin directory and type the command: oemctl start oms.
- **8.** On the database where you installed the Warehouse Builder runtime, start the Oracle Agent service.
- **9.** On the computer where you installed the Warehouse Builder Client, start the Enterprise Manager Console.

To store generated scripts in the Job Library, Warehouse Builder must log on to the Oracle Management Server (OMS). This server manages the job library.

- **10.** After configuring Enterprise Manager, you must establish a new Enterprise Management Server by clicking **Add Management Server**.
- **11.** If you are newly configuring the service, the Add Management Server dialog box appears. Type the host name of the Warehouse Builder repository server.

On the Management Servers page, click OK.

- 12. On the Oracle Enterprise Manager Login page, provide the following information:
 - Administrator: sysman (initial Enterprise Manager Console login user name)
 - Password: oem_temp (initial Enterprise Manager Console password)
- **13.** On the Security Warning screen, provide the following information:
 - Password: sysman
 - Confirm Password: sysman
- **14.** Select **Nodes** from the navigation tree. Right-click and select **Discover Nodes** from the pop-up menu.
- **15.** In the Discover Wizard Specify Nodes page, type the name of the computer on which the Warehouse Builder target warehouse resides and click **Next** to view the results.

C.1.2 Creating a Windows User

To create a Windows NT user with the permissions Enterprise Manager requires, run the NT User Manager on the Warehouse Builder runtime database instance host.

Note: Skip this step if the node that hosts the Warehouse Builder runtime schema is a UNIX system. The UNIX ORACLE user should have enough permissions to perform any job requested through the job system.

If the Windows user is accessed through Oracle Enterprise Manager Agent 9.2, then the user must be added to the local **Administrators** group.

To create a Windows user:

- 1. From the Start menu, select Administrative Tools, and then User Manager.
- 2. In the User Manager window, from the User menu, select New User.
- 3. In the New User window, provide the following information:
 - User Name: OEM
 - Full Name: OEM Administrator
 - Description: Run as batch job...
 - **Password:** Enter a password.
 - Confirm Password: Enter the password again.
 - Select: Password never expires.

Click OK. Windows inserts the new user name into the list of user names.

- **4.** Configure the user rights.
 - For Windows NT:

From the User Manager Console, select the new user name, then **Policies**, and then **User Rights.** The User Rights panel displays.

In the User Rights Policy panel, check the **Show Advanced User Rights** box.

Select the **Logon as a Batch Job** option from the drop-down list in the Right field.

Click Add. Windows NT displays the Add Users and Groups panel.

For Windows 2000 and XP:

From the **Administrative Tools** folder, launch the **Local Security Settings** applet.

Navigate to Local Policies, then User Rights Assignment.

Add the user to the **Logon as a batch job** right.

- **5.** Select the domain for the user from the List Names From drop-down list.
- **6.** Click **Show Users** and select the name of the new Enterprise Manager user you just created.
- 7. Click Add and select OK to add rights.

C.1.3 Configuring Preferred Credentials

Enterprise Manager schedules jobs on the system that hosts the Warehouse Builder runtime schema. For Enterprise Manager to schedule jobs, you must configure two sets of user names and passwords:

- A set for the host: OEM/Password
- A set for the corresponding database: system/manager

To initialize these credentials:

- **1.** Start the Enterprise Manager Console.
- 2. From the System menu, select Preferences.

Enterprise Manager displays the Edit Administrator Preferences window.

3. Select the **Preferred Credentials** tab.

Enterprise Manager displays a panel that lists Service Names and Types. Each resource node has three service types: Node, Database, and Listener.

4. Select the Service Name that hosts the runtime schema (Service Type is Node).

Enterprise Manager displays a User Name and Password panel.

5. Provide a user name and password that provides access to the Enterprise Manager host.

If you are running a Windows NT host system, then this is the user name you created for the Windows NT host in the previous section.

If you are running a UNIX host system, then this is the UNIX ORACLE user you identified in Step 2.

- **6.** Select the Service Name of the runtime schema (Service Type is Database). This is the service name Enterprise Manager assigned to the database.
- 7. Provide a user name and password that provides access to that database.
- 8. Click OK to commit the information.

Enterprise Manager is now configured to run Warehouse Builder. Before you register the load jobs (Tcl scripts) or schedule jobs with Enterprise Manager, you must start all necessary services on the machine that hosts Enterprise Manager and the system that hosts the target warehouse.

On the host for Enterprise Manager, you must start:

- Enterprise Manager Server
- Oracle Agent

On the host for your target warehouse, you must start:

Oracle Agent

Continue the installation with the next section, Installing Oracle Workflow.

C.1.4 Configuring Enterprise Manager for the Oracle Developer Suite

Follow the instructions in this section only if both of the following are true:

• You plan to run PL/SQL processes using Enterprise Manager.

Using Enterprise Manager for PL/SQL processes is optional.

AND

• You are using Oracle9*i* Enterprise Manager Release 1 (9.1).

If you are not using Enterprise Manager, or you are using a later release of Enterprise Manager, you can skip this step.

Warehouse Builder provides the set_oem_home SQL script for Oracle Developer Suite. This script enables you to set configuration parameters for using Enterprise Manager jobs. You only need to run this script once, as a configuration task. You may need to run it again to reconfigure if required; for example, if you install a new Enterprise Manager repository.

To configure Enterprise Manager for the Oracle Developer Suite:

1. Connected to SQL*Plus as the Warehouse Builder Runtime Repository user.

2. Execute OWB_ORACLE_HOME/owb/rtp/sql/set_oem_home.sql.

The script requires the following parameters:

- **P1:** The Enterprise Manager version you are configuring (9.1 or 9.2).
- P2: The operating system that contains the Warehouse Builder runtime installation (NT for any supported Windows system; UNIX for any supported UNIX system).
- **P3:** The Warehouse Builder runtime home directory.
- P4: The Oracle Database Home directory containing the Enterprise Manager JAR files. This directory must be on the same machine as the Warehouse Builder runtime home directory in order to be valid as an Oracle directory. You cannot use a mapped drive to refer to the directory.

For example, if you are working on a Microsoft Windows system and your Warehouse Builder runtime environment is located at D: \MyRuntimeHomeDir, and you are configuring it to use the Enterprise Manager 9.2 JAR files located at D: \MyOracleDatabase92Home, call the script with the following parameters:

@set_oem_home.sql 9.2 NT D:\MyRuntimeHome D:\My92DBHome

For any Warehouse Builder Runtime Repository, you can run this script once to configure Enterprise Manager 9.1, and again to configure Enterprise Manager 9.2.

C.2 Installing Oracle Workflow

To ensure the integration of Oracle Workflow with Warehouse Builder, follow these installation steps:

- Installing the Oracle Workflow Server
- Installing the Workflow Client (Optional)

C.2.1 Installing the Oracle Workflow Server

Carefully follow the *Oracle Workflow Option Server Installation Notes* for your operating system. These notes include the manual steps you need to follow to set up the Workflow Monitor. Ensure that the Workflow Monitor is operational before proceeding to the next steps.

Note: To enable the Oracle Workflow server to invoke activities through the Warehouse Builder Runtime service, you must grant the EXECUTE ANY PROCEDURE system privilege to the Oracle Workflow repository user.

C.2.2 Installing the Workflow Client (Optional)

The installation of Oracle Workflow Client is optional in Oracle Warehouse Builder because the functionality has been replaced by the Warehouse Builder Process Flow Editor. However, you can install Oracle Workflow Client if you want to be able to view the deployed Warehouse Builder processes in Oracle Workflow.

On the computer where you installed Warehouse Builder client, install the Oracle Workflow Client from the CD for Oracle Workflow Client Release 2.6.3 for Microsoft Windows NT. Follow the installation steps in the *Oracle Workflow Client Installation Guide*.

D

Upgrading Metadata with the MDL File Upgrade Utility

You do not have to use the Metadata Loader File Upgrade Utility to upgrade your metadata from a previous version of Warehouse Builder to Oracle Warehouse Builder 10g Release 1 (10.1). When you import an MDL file into 10g Release 1 (10.1), Warehouse Builder automatically detects the version from which the file was exported and upgrades it to the current version. However, you still have the choice to upgrade your metadata separately by manually running the MDL File Upgrade Utility. This section explains how to use it.

The MDL File Upgrade Utility enables you to upgrade any MDL file created from any production version of Warehouse Builder to the latest version of Warehouse Builder. Use either the MDL File Upgrade Wizard or the MDL Command-Line Utility.

This section includes the following topics:

- About the MDL File Upgrade Utility on page D-1
- Using the MDL File Upgrade Utility on page D-1

D.1 About the MDL File Upgrade Utility

To upgrade your metadata from an older production version of Warehouse Builder to Oracle Warehouse Builder, use the Warehouse Builder Metadata Loader File Upgrade utility. This tool enables you to upgrade any MDL file created from Warehouse Builder 2.0.4.78 repository or higher to the latest version of Warehouse Builder.

You can use the MDL File Upgrade Utility to upgrade metadata from any of the following production versions of Warehouse Builder to Oracle Warehouse Builder:

- Oracle Warehouse Builder 2.0.4 and 2.05
- Oracle Warehouse Builder 2.1.1
- Oracle Warehouse Builder 3.0 and 3.1
- Oracle Warehouse Builder 9.0.2, 9.0.3
- When upgrading from Oracle Warehouse Builder 9.0.4, the upgrade occurs automatically with and MDL import. You do not need to separately upgrade by using the MDL File Upgrade Utility, because when you import, Warehouse Builder will automatically detect the prior version of your MDL file and upgrade it for you.

D.1.1 Using the MDL File Upgrade Utility

You can upgrade metadata using either of the following:

- **MDL File Upgrade Wizard:** Use the MDL File Upgrade Wizard if you exported each project as a single MDL file. The MDL File Upgrade Utility Wizard converts your files directly to the current version of Warehouse Builder.
- MDL Command-Line Utility: Use the command-line if you exported a project as multiple MDL files. Also, use the command-line utility if you want to upgrade to an intermediate version. For more information, refer to the Oracle Warehouse Builder User's Guide.

D.1.1.1 Upgrading Repository Objects from Previous Versions

When you upgrade from previous versions of Warehouse Builder to the current version of Warehouse Builder, the upgrade utility makes the following changes to objects in the repository:

- My Project: The sample project that is prepackaged in Warehouse Builder is renamed from My Project to MY_PROJECT to comply with physical name requirements.
- External Processes: External processes are upgraded to external process activities in a process flow. If you defined an external process in a mapping in a previous release, MDL Upgrade Utility redefines the object as an external process in a process flow.
- Business Areas: Business areas are upgraded to Collections. If you defined a
 business area in a previous release, the MDL File Upgrade Utility prefixes the
 module name to the business area name and redefines it as a collection. For
 example, a business area named ORDERS in a module named REGION1 is
 upgraded to a collection named REGION1_ORDERS.
- **External process mappings:** External process mappings will be migrated to process flows.

The following warnings may appear as a result of standalone transformations from previous releases no longer being an independent function category, but a part of the Warehouse module:

- Transformation name renamed from "old name" to "new name".
- Transformation business name renamed from "old name" to "new name".

Be aware of the following if you are upgrading from Oracle Warehouse Builder 2.1.1:

- SQL*Loader mappings with variables and parameters are converted to group attributes of the Data Generator stage component.
- Control characters in descriptions are replaced with spaces.
- Configuration names in free format in Warehouse Builder 2.1 (for example, indexes) are changed to conform to the database naming standards.
- All Warehouse Builder 2.1.1 file and data warehouse objects are upper-cased. All Oracle modules remain unchanged, except for modules whose names are upper-cased.
- Index columns must reference an actual entity, otherwise the upgrade generates a list of columns that do not satisfy this requirement. If you do not fix this error before upgrading, the upgraded file will fail on import into Warehouse Builder.
- All local variables are converted to global variables.
- DDL mappings are not upgraded because they are not supported in Warehouse Builder.

Granular exported mappings have upgrade limitations. For example, if a mapping is used as a source by Fact 1 and Fact 2, then the order of the upgrade is as follows:

- **1.** Fact 1
- **2.** Fact 2
- 3. Mapping

D.1.1.2 Using the MDL File Upgrade Wizard

Use the MDL File Upgrade Wizard if you exported each project as a single MDL file. The MDL File Upgrade Utility Wizard converts your files directly to the current version of Warehouse Builder.

To access the MDL File Upgrade wizard:

1. Start the MDL File Upgrade Utility:

For Windows: Select Start, then Oracle Database Developer Suite OWB_HOME, then Warehouse Builder and then OWB MDL File Upgrade Utility.

For UNIX: Start a shell and navigate to: OWB_ORACLE_HOME/owb/bin/unix. For example, type: cd /private/home/OWB92/owb/bin/unix Then run mdlconvertui.sh.

- At the MDL File Upgrade Wizard Welcome page, click Next.
- **3.** At the Source page, click **Browse** to select the MDL file you want to convert to the latest version of Warehouse Builder.

Note: To upgrade multiple MDL files simultaneously, use the MDL command-line utility. You will receive an error message if you select multiple files for upgrade in the MDL Upgrade Wizard.

4. Click Next.

The Target page displays.

- **5.** Click **Browse** to select the directory where the output files will be stored on your system.
- 6. Click Next.

The Target page prompts you for your log file location. You can select the default path or click **Browse** to choose a new location.

7. Click Next.

The Summary page displays.

- **8.** Review the upgrade information including the source and destination of the files you have selected for upgrade.
- 9. Click Finish to upgrade the selected files.

The Conversion Progress panel displays the status of the upgrade. At the end of the process, you receive an upgrade successful message.

D.1.1.3 Checking for Warnings and Error Messages

After an upgrading the metadata, check the log file for warnings and errors.

- If you receive warnings during the upgrade, the upgrade utility completes and logs the warnings. If you receive errors, the upgrade utility terminates and logs the errors.
- If warnings and errors are shown after an upgrade, search for the words Warning and Error in the log file to determine the problem.
- If an unexpected error occurs and the upgrade terminates, the log file displays message details. Check your log file or contact Oracle Support.

D.1.2 Running the MDL File Upgrade Utility from the Command-Line

Before using the command-line, be aware of the following:

- For an upgrade of multiple MDL files, all files must belong to a single Warehouse Builder Project.
- The order in which you upgrade these files is important. For example, entities must be upgraded before mappings.

Use the following command-line to upgrade MDL Files from an previous version of the Warehouse Builder Repository:

- For Windows: ORACLE_HOME\owb\bin\win32\mdlconvert sourcefile parameterfile
- For UNIX: ORACLE_HOME/owb/bin/unix/mdlconvert.sh sourcefile parameterfile

The source file contains the list of sources, targets and log file names. The parameter file contains the different attributes for conversion.

Example of a source file format:

```
SOURCE
Mdl21Sample1.mdl
Mdl21Sample2.mdl
TARGET
Mdl21Sample1_9i.mdl
Mdl21Sample2_9i.mdl
LOGFILE
Mdl21Sample1.log
Mdl21Sample2.log
```

Example of a parameter file format:

```
verbose= true/false (default: false)
tempdir = some directory (default: .\temp)
sourceversion = 3.0/3.1/9.1/9.1.1 (default: 9.1.1)
targetversion = 3.0/3.1/9.1/9.1.1 (default: 9.1.1)
```

Ε

Diagnostics and Debugging

This appendix contains reference information to use in the event that you encounter errors or problems with your installation. This appendix includes the following topics:

- Debugging on page E-1
- Diagnostics on page E-4

E.1 Debugging

This section includes the following topics:

- Log File Locations on page E-1
- Oracle Warehouse Builder is Frozen, or Hanging on page E-1
- Additional Error Logging for Errors and Other Unexpected Behavior on page E-2
- Checking Java Virtual Machine (JVM) on page E-3
- Managing the Runtime Platform Service on page E-3

E.1.1 Log File Locations

- Warehouse Builder Repository Assistant:
 OWB_ORACLE_HOME\owb\reposasst\log.txt.0
- Warehouse Builder Runtime Assistant:
 OWB_ORACLE_HOME\owb\rtasst\log.txt.0
- Warehouse Builder Browser Assistant:
 OWB_ORACLE_HOME\owb\browserasst\owbb_browser_install_ log.txt.0
- Warehouse Builder Runtime Platform Service:
 OWB_ORACLE_HOME\owb\log\Runtime_Repository_Name\log.0 on the Oracle Database server
- Warehouse Builder Client: You specify the location in the Preferences screen.

E.1.2 Oracle Warehouse Builder is Frozen, or Hanging

If Warehouse Builder appears to be frozen or hanging, perform a stack trace as follows:

- At the DOS command prompt, enter: cd OWB_ORACLE_HOME\owb\bin\win32\
- 2. Run owbclient.bat.

3. When the program hangs, press Ctrl+Break.

This produces the thread-dump. This information helpS Oracle Support to identify the problem.

E.1.3 Additional Error Logging for Errors and Other Unexpected Behavior

If Warehouse Builder is producing errors or exhibiting other unexpected results, additional error logging can help you or Oracle Support identify the cause.

For additional error logging:

1. At the command prompt, navigate to:

For Windows: OWB_ORACLE_HOME\owb\bin\win32

For UNIX: OWB_ORACLE_HOME/owb/bin/unix

- 2. Run one of the following execution files and pipe the output to a log file (for example, owbclient.bat > owbclient.log):
 - OWB Browser Assistant

For Windows: browserinst.bat

For UNIX: browserinst.sh

OWB Client

For Windows: owbclient.bat

For UNIX: owbclient.sh

OWB Design Browser

For Windows: openDB.bat

For UNIX: openDB.sh

OWB MDL File Upgrade Utility

For Windows: mdlconvertui.bat For UNIX: mdlconvertui.sh

OWB OMB Plus

For Windows: OMBPlus.bat For UNIX: OMBPlus.sh

- OWB Repository Assistant
 For Windows: reposinst.bat
 For UNIX: reposinst.sh
- OWB Runtime Assistant
 For Windows: runtimeinst.bat
 For UNIX: runtimeinst.sh
- OWB Runtime Audit Browser
 For Windows: openRAB.bat
 For UNIX: openRAB.sh
- Start Local RTP Service

For Windows: Run the script OWB_ORACLE_HOME\owb\bin\win32\local_ service_login.bat with -startup OWB_ORACLE_HOME as the parameter

For UNIX: local_service_login.sh -startup OWB_ORACLE_HOME

Start OWB OC4J Instance

For Windows: startOwbbInst.bat

For UNIX: startOwbbInst.sh

Stop Local RTP Service

For Windows: Run the script ORACLE_HOME\owb\bin\win32\local_ service_login.bat with -closedown ORACLE_HOME as the parameter

For UNIX: local_service_login.sh -closedown ORACLE_HOME

Stop OWB OC4J Instance

For Windows: stopOwbbInst.bat

For UNIX: stopOWBBInst.sh

3. Examine the resulting log file.

Use this log when contacting Oracle Support.

E.1.4 Checking Java Virtual Machine (JVM)

To check, verify, or reinstall the Java Virtual Machine (JVM) server in the database, refer to Oracle*MetaLink*:

- 1. In your Web browser, go to: http://metalink.oracle.com.
- 2. Log in to Oracle*MetaLink*, or register as a new user.
- 3. Type the following terms into the Search field (note that they are separated by semicolons): INITJVM.SQL; INSTALL; JAVAVM; JVM; VERIFY; SERVER; INSTALL; CLEANUP
- 4. Press Enter.

This search returns the cleanup notes for the JVM. The number of available documents frequently changes because Oracle Support creates, merges, and deletes various cleanup notes. This string of search words will return the most current and pertinent documents.

E.1.5 Managing the Runtime Platform Service

The Runtime Platform Service is managed automatically by the Oracle Database Server. However, if you need to manually start and stop the service, use the scripts provided with your Warehouse Builder installation for that purpose.

The scripts are in the ORACLE_HOME\owb\rtp\sql directory. To run any of these scripts manually, log on to the Runtime Platform as the Runtime Repository owner. The scripts include:

- start_service.sql: Use this to start the Runtime Platform Service
- stop_service.sql: Use this to stop the Runtime Platform Service
- **show_service.sql:** Use this to check whether the Runtime Platform Service is available.

 service_doctor.sql: Use this to check the install status of the Runtime Platform Service components.

To manually start, stop, and check the Runtime Platform Service:

- 1. Log on to the Runtime Platform as the Runtime Repository owner.
- 2. Run the required script:

To start the Runtime Platform Service: Run the ORACLE_HOME\owb\rtp\sql\start_service.sql script.

To stop the Runtime Platform Service: Run the ORACLE_HOME\owb\rtp\sql\stop_service.sql script.

To check whether the Runtime Platform Service is available: Run the ORACLE_HOME\owb\rtp\sql\show_service.sql script.

To check the install status of the Runtime Platform Service components: Run the ORACLE_HOME\owb\rtp\sql\service_doctor.sql script.

E.1.6 Detecting Database Server Issues When Installing on HP-UX

It is possible that when you install Warehouse Builder Runtime components on an HP-UX operating system, the following error occurs: **INS0022: A spawned program error.** This may be a database server issue.

To identify the database server issue:

1. From SQL*Plus, connect to a SYS user.

Create user test_lj identified by test_lj; Grant connect, resource to test_lj;

2. Create ORACLE_HOME/owb/bin/unix/test.sh with the following contents:

```
.../unix/loadjava -thin -verbose -order -resolve -user
'test_lj/test_
lj@(DESCRIPTION=(ADDRESS=(PROTOCOL=TCP)(HOST=hpdgpa3)(PORT=1522))(CONNECT_
DATA=(SERVICE_NAME=dgpadw)))'
.../../lib/int/rtpserver.jar
```

- 3. Change directory to ORACLE_HOME/owb/bin/unix/.
- 4. Run test.sh.

E.2 Diagnostics

This section includes the following topics:

- SYS user does not have SYSDBA privileges.
- INS0034: The Database Server needs to be configured by running Runtime Repository option locally.
- API5022: Cannot Connect to the Specified Repository
- Runtime Assistant fails with LoadJava Error.
- Error when specifying a SYSDBA user.
- Regional Name and Address Data Libraries Are Not Available.
- Lineage and impact analysis reports: Extensive tablespace requirements for materialized views.

- Java out of memory error occurs during a batch operation.
- ORA-01925: Maximum of 30 enabled roles exceeded
- java.lang.UnsatisfiedLinkError: no ocijdbc9 in java.library.path
- Internal Server Error
- INS0009: Unable to connect to the database. Verify the connect information.
- ORA-12154: TNS: Could not resolve service name.
- ORA-12514: TNS: listener could not resolve SERVICE_NAME given in connect descriptor.
- PL/SQL: ORA-04052: Error occurred when looking up remote object
- IMP-00003: ORACLE error 30371 encountered
- Unable to connect to SQL*Plus in Oracle Database 10g
- ORA-04020 deadlock detected while trying to lock object or ORA-04021 timeout occurred while waiting to lock object

SYS user does not have SYSDBA privileges.

Cause: In a standard database installation, the SYS user has SYSDBA credentials. You can verify this from SQL*Plus by issuing the following connect statement:

connect sys/<<sys_password>>@TNS_NAME_OF_DB as sysdba;

In a standard database installation, the preceding connect statement works because REMOTE_LOGIN_PASSWORDFILE=EXCLUSIVE and the default password file is created by the installation process.

Action: If your database is configured with REMOTE_LOGIN_ PASSWORDFILE=NONE, then the statement connect sys/<<sys_ password>>@TNS_NAME_OF_DB as sysdba; will fail. In this case, you have the following options:

- Reconfigure your database with REMOTE_LOGIN_PASSWORDFILE=EXCLUSIVE and create a password file if none exists.
- If the preceding is not an option, reconfigure your database with O7_DICTIONARY_ACCESSIBILITY=TRUE.
 With this setting, connect sys/<<sys_password>>@TNS_NAME_OF_DB will work, which enables Warehouse Builder Assistants to connect to SYS user.

INS0034: The Database Server needs to be configured by running Runtime Repository option locally.

You can encounter this message when running Oracle Warehouse Builder Runtime Assistant.

Cause: You do not have a database server local to the machine on which you are running Oracle Warehouse Builder Runtime Assistant.

Action: Run the Oracle Warehouse Builder Server Side installation on the machine where your Oracle database server is located and then launch the Runtime Assistant.

API5022: Cannot Connect to the Specified Repository

This error occurs when you try to connect to the Design Repository after having performed a database export or import from the Warehouse Builder repository schema. **Cause:** The package NAMESPACESERVICEIMPL may be invalid. This occurs after a database export or import from the Warehouse Builder Design Repository schema if the repository owner has no SELECT privilege on SYS.V_\$SESSION. You can diagnose the cause as follows:

- 1. In SQL*Plus, connect to the Warehouse Builder Design Repository schema.
- 2. Enter the following command at the SQL prompt:

ALTER PACKAGE NAMESPACESERVICEIMPL compile body;

3. If **Warning: Package body altered with compilation errors** appears, enter the following command at the SQL prompt:

show errors;

4. The following errors mean that the Warehouse Builder repository owner has no SELECT privilege on SYS.V_\$SESSION.

PL/SQL: SQL statement ignored PLS-00201: Identifier 'SYS.V_\$SESSION' must be declared

Action:

- 1. In SQL*Plus, connect as the SYS user.
- **2.** At the SQL prompt, enter the following command:

grant select on V_\$SESSION to Warehouse Builder_Repository_Owner;

- **3.** Connect to the Design_Repository_Owner.
- 4. Enter the following command at the SQL prompt:

alter package NAMESPACESERVICEIMPL compile;

Runtime Assistant fails with LoadJava Error.

Cause: This can occur if the Oracle Database does not have the JServer option installed.

Action: Make sure that the Oracle Database has JServer option installed.

Error when specifying a SYSDBA user.

Oracle Warehouse Builder Assistants require you to provide SYSDBA credentials when installing the Oracle Warehouse Builder Design Repository or Runtime components. **Cause:** In a standard database installation, the SYS user has SYSDBA credentials. You can verify this from SQL*Plus by issuing the following connect statement: connect sys/sys_password@TNS_NAME_OF_DB as sysdba;

In a standard database installation, the preceding connect statement works because REMOTE_LOGIN_PASSWORDFILE=EXCLUSIVE and the default password file is created by the installation process.

If your database is configured with

REMOTE_LOGIN_PASSWORDFILE=NONE, then the statement
connect sys/sys_password@TNS_NAME_OF_DB as sysdba; will fail. In
this case, you have two options.

Action: Reconfigure your database with REMOTE_LOGIN_PASSWORDFILE=EXCLUSIVE and create a password file if none exists.

Action: If the preceding is not an option, reconfigure your database with O7_DICTIONARY_ACCESSIBILITY=TRUE. With this setting, the statement

connect sys/sys_password@TNS_NAME_OF_DB will work, which enables the Warehouse Builder Assistants to connect to SYS user.

Regional Name and Address Data Libraries Are Not Available.

Cause: The Name and Address regional data libraries may not have been installed in the correct location.

Action: Ensure that you have successfully extracted regional data to the NAS_DATA directory.

1. From your OWB_ORACLE_HOME, start the Name and Address Server:

For Windows: Run owb\bin\win32\NAStart.bat.

For UNIX: Run owb/bin/unix/NASTART.sh.

2. Open the log file: owb\bin\admin\NASvr.log.

The log should contain a list of installed countries.

If there is no such list, verify that you have extracted the regional library data to the correct location. If you have extracted the data to the wrong location, you can either reinstall the data, or modify the

owb\bin\admin\NameAddr.properties file to indicate the correct file path. If you modify the NameAddr.properties file, stop and restart the Name and Address Server as follows:

For Windows: Start the server by running owb\bin\win32\NAStart.bat. Stop the server by running owb\bin\win32\NAStop.bat.

For UNIX: Start the server by running owb/bin/unix/NAStart.sh. Stop the server by running owb/bin/unix/NAStop.sh.

3. Once you have verified the installation, you can stop the Name and Address Server if you wish, because it is automatically started at the execution of any mapping that employs the Name and Address operator.

Lineage and impact analysis reports: Extensive tablespace requirements for materialized views.

The first time you refresh a materialized view, it is populated from the Oracle Warehouse Builder repository. The materialized view can occupy up to twice the amount of space allocated to the entire Warehouse Builder Runtime Repository.

Cause: Insufficient space has been allocated to the Warehouse Builder Runtime Repository schema.

Action: If the Warehouse Builder Runtime Repository schema is created in a tablespace that is dedicated to its use, these issues are easier to monitor. Ensure that sufficient free space exists on the physical drive for tablespace expansion. Within Oracle Enterprise Manager, ensure that the tablespace is set to Autoextend On.

Java out of memory error occurs during a batch operation.

Operations requiring large amounts of memory can result in a Java out of memory error, if the system resources (such as virtual memory) are constrained.

Cause: There is not enough virtual memory. The Warehouse Builder client runs with a maximum heap size of 384MB, as defined by the -mx parameter in the owbclient.bat file. The -Dlimit parameter in the owbclient.bat file specifies the memory threshold (80% of Dlimit) at which OWB memory manager begins to assist Java garbage collection. If you change the -mx parameter value, set the -Dlimit parameter to the same value, or at least to 90% of the value. Note

that setting the -Dlimit to a low value can have a negative impact on the performance of Warehouse Builder.

Action: Increase the -Dlimit parameter in Warehouse Builder as follows:

- **1.** Exit Warehouse Builder.
- **2.** Open this file in a text editor:

For Windows: Open the \$OWBHOME\bin\win32\ombplus.bat.

For UNIX: Open the \$OWBHOME\bin\win32\owbclient.sh.

- **3.** Change the -Dlimit parameter to 334.
- **4.** Save and close the file.
- 5. Restart Warehouse Builder.

ORA-01925: Maximum of 30 enabled roles exceeded

This error occurs when you are installing a Design Repository, a Runtime Repository, a Target Schema, or a Runtime User.

Cause: The maximum number of enabled roles in the database has been exceeded. When you create a Design Repository, Runtime Repository, Target Schema, or a Runtime User, new roles are created in the database assigned to the schema in question. When the number of roles exceeds the value of the MAX_ENABLED_ ROLES parameter, this error occurs.

Action: Increase the value of the MAX_ENABLED_ROLES parameter in the init.ora file. When you deinstall a Design Repository, Runtime Repository, Target Schema, or Runtime User, delete the associated roles as well.

java.lang.UnsatisfiedLinkError: no ocijdbc9 in java.library.path

Internal Server Error java.lang.UnsatisfiedLinkError: no ocijdbc9 in java.library.pathat java.lang.ClassLoader.loadLibrary(ClassLoader.java:1349)at java.lang.Runtime.loadLibrary0(Runtime.java:749) This error occurs in the Repository Selection page of the Runtime Audit Browser (Oracle9iAS-integrated version) when you try to view reports for a Runtime Repository using a Net Service-based database link.

Cause: The OWB Browser OC4J instance is not configured with the correct additional environment variable.

Action: Ensure that you have followed all the steps in Chapter 2.

Internal Server Error

This is a Runtime Audit Browser Portlet Error returned by the listener.

Cause: This can occur if your Warehouse Builder Runtime Audit Browser portlet provider is not working because of your Data Source definition or your portlet provider definition.

Action: Check whether the Warehouse Builder Runtime Audit Browser portlet provider is working at the following URL:

http://hostname:port_number/owbb/providers/

For example:

http://dwlin12.us.oracle.com:7778/owbb/providers/

The following text should display:

"Congratulations! You have successfully reached your Provider's Test Page." Checking for components: Portlets are:
Warehouse Builder Runtime Audit Browser

Verify your Data Source definition for the following regardless of whether you see the preceding text:

- For Oracle Application Server Release 2 (9.0.2) only: Remove uix2.jar and shar.jar from the Default application library path as described in Chapter 2.
- The Warehouse Builder Data Source must be defined with the OWBB application, and not the Default application.
- For **Data Source Class**, use com.evermind.sql.OrionCMTDataSource for the Oracle Data Source.
- Check your JDBC URL. Typically if you use something like
 "jdbc:oracle:thin:@dwlin12:1521:iasdb", you will be using JDBC thin driver,
 and "iasdb" can only be an existing SID, not Service Name. Also note there is a
 colon preceding "@" sign. If you must use Service Name in the JDBC URL, try
 a full TNS string such as "(DESCRIPTION =(ADDRESS_LIST =(ADDRESS =
 (PROTOCOL = TCP)(HOST = dwlin16)(PORT = 1521))) (CONNECT_DATA =
 (SERVICE_NAME = ora920.us.oracle.com)))"
- If you make any changes to your Data Source definition, or if you re-deploy the application, you must restart the application.
- Check your portlet provider definition. Make sure it is defined exactly as instructed in Chapter 2.
- Check your OC4J log under the Oracle Portal ORACLE_HOME. For example, a typical path on UNIX for a deployed OWBB application named OWBB is /usr/iasv2_portal/j2ee/owbb/log/owbb_default_island_1:

default-web-access.log
global-application.log
jms.log
rmi.log

server.log

INS0009: Unable to connect to the database. Verify the connect information.

This error occurs when you try to connect to a database.

Cause: See the cause for ORA-12514: TNS: listener could not resolve SERVICE_NAME given in connect descriptor.

Action: Follow the instructions for ORA-12514: TNS: listener could not resolve SERVICE_NAME given in connect descriptor.

ORA-12154: TNS: Could not resolve service name.

This error occurs when you try to connect to a database.

Cause: See the cause for ORA-12514: TNS: listener could not resolve SERVICE_NAME given in connect descriptor.

Action: Follow the instructions for ORA-12514: TNS: listener could not resolve SERVICE_NAME given in connect descriptor.

ORA-12514: TNS: listener could not resolve SERVICE_NAME given in connect descriptor.

This error occurs when you try to connect to a database.

Cause: If you used the Oracle Net Easy Configuration or Oracle Net Assistant tools to create the Net Service Name entry, and you used the default option

(Service Name) on the newly created Net Service Name, the parameter SERVICE_ NAME is added to the TNSNAMES.ORA as a subclause to the CONNECT_DATA section in the Net Service Name entry. This replaces the (SID=<SIDname>) subclause in the previous versions of Oracle Database8*i* (8.1.x).

Action: Implement the TNSNAMES.ORA file as follows:

- 1. Use the GLOBAL_DBNAME parameter in the LISTENER.ORA for each SID that you want to identify as a separate service. Use the value of this parameter as the value of the SERVICE_NAME parameter. You will need to activate any changes you make to LISTENER.ORA for this purpose by stopping and restarting the listener process.
- 2. Use the values of the parameters existing in the INIT.ORA, namely SERVICE_NAMES and DB_DOMAIN, to determine the value of the SERVICE_NAME that you must use in TNSNAMES.ORA. The valid construction of this value is <SERVICE_NAMES>.<DB_DOMAIN> with the period separating the two INIT.ORA values. If your SERVICE_NAMES is BIKES and your DB_DOMAIN is COM, then your SERVICE_NAME is BIKES.COM.
- **3.** If there is no DB_DOMAIN parameter set in your INIT.ORA, or if there is no GLOBAL_DBNAME in the LISTENER.ORA, then you can use the SERVICE_NAMES from the INIT.ORA in your TNSNAMES.ORA for the SERVICE_NAME parameter.

For example, if INIT.ORA contains SERVICE_NAMES = "TEST817" and db_domain is not set, then the TNSNAMES.ORA entry is: CONNECT_DATA = (SERVICE_NAME = "TEST817")).

- 4. If you have multiple values specified in the SERVICE_NAMES parameter in the init.ora, you can use one of them. If SERVICE_NAMES is not set, then you can use DB_NAME.DB_DOMAIN parameters from the INIT.ORA file.
- 5. If SERVICE_NAMES and DB_DOMAIN is not set in the INIT.ORA and there is no GLOBAL_DBNAME in the LISTENER.ORA,then your SERVICE_NAME in TNSNAMES.ORA file is be DB_NAME.

PL/SQL: ORA-04052: Error occurred when looking up remote object

This error occurs when you have upgraded to Oracle Database 10g and are trying to redeploy mappings without first redeploying connectors.

Cause: While upgrading to Oracle Database 10*g*, you moved your database to a new computer. Your old and new database instances do not have the same domain name. You can verify the cause by logging into SQL*Plus as a SYS user and entering the following command: SELECT * FROM GLOBAL_NAME; If the Global Name of the old database does not match that of the new database, then a domain mismatch is causing this error.

Action: Either add the domain name to the Global Name in your new database by issuing a command similar to the following statement: ALTER DATABASE RENAME GLOBAL_NAME TO *xxx10G.US.ORACLE.COM*; or redeploy your connectors. Refer to the *Oracle Warehouse Builder User's Guide* for information on deploying connectors.

IMP-00003: ORACLE error 30371 encountered

ORA-30371: column cannot define a level in more than one dimension

This error occurred when you were importing your Target Schema during migration. Cause: The Warehouse Builder Target Schema is created with the select_ catalog_role privilege privilege. If you have the same dimension object defined in multiple Warehouse Builder Target Schemas, then Oracle Export creates duplicates in the export file, and this error occurs when you import.

Action: Connect as a SYS user to your prior version of Oracle Database, from which you exported the Target Schemas. Enter the following statement in SQL*Plus: revoke select_catalog_role from *OLD_Target_Schema*; Export the Target Schema into an Oracle . DMP file again, and then import the file into Oracle Database 10g.

Unable to connect to SQL*Plus in Oracle Database 10g

Cause: Your Oracle home or Path is not set correctly, or your Net Service Names are not configured.

Action: Ensure your Oracle home and Path are set correctly, and your Net Service Names are configured in Oracle Database 10*g*.

- Ensure that ORACLE_HOME and PATH are set correctly in Oracle Database 10g. Your Oracle home directory must to point to the OWB_ORACLE_HOME. Set your PATH variable to include the OWB_ORACLE_HOME\bin directory before any other Oracle products.
- Ensure that the TNSNames.ora file is configured correctly:

For Windows: From the Oracle Database 10g program group, start **Net Configuration Assistant** and select **Local Net Service Name Configuration** to configure TNSNames.ora.

For UNIX: Set ORACLE_HOME and PATH to the OWB_ORACLE_HOME for Warehouse Builder 10g Release 1 (10.1), then execute OWB_ORACLE_ HOME/bin/netca to start Net Configuration Assistant. Select Local Net Service Name Configuration to configure TNSNames.ora.

ORA-04020 deadlock detected while trying to lock object or ORA-04021 timeout occurred while waiting to lock object

When creating runtime objects, the Runtime Assistant halts and produces these errors in the error log when trying to lock sys.dbms_aq.

Cause: User sessions may be pinning Advanced Queue objects.

Action: First, log in to SQL*Plus as a SYS user and run a query to identify which user sessions are pinning the Advanced Queue packages, using the following query as an example:

```
column s.sid format a5;
column s.serial# format a8;
column s.username format a10;
column objectname format a10;
select distinct
s.sid,
s.serial#,
 s.username,
x.kglnaobj as objectname
from
dba kgllock 1,
v$session s,
x$kgllk x
where
 l.kgllktype = 'Pin' and
 s.saddr = 1.kgllkuse and
```

```
s.saddr = x.kgllkuse and
x.kglnaobj in ('DBMS_AQ', 'DBMS_AQADM');
```

The following is an example of the output you receive:

SID	SERIAL	# USERNAME	OBJECTNAME
9	29623	RTU_4942	DBMS_AQ

Noting the SID and Serial Number, issue the following command to kill the user sessions:

ALTER SYSTEM KILL SESSION 'SIDNoted, SerialNumberNoted';

For example, type the following to kill the session listed in the sample output for this error:

```
ALTER SYSTEM KILL SESSION '9,29623';
```

Warehouse Builder Supported Languages

Table F–1 lists the International Organization for Standardization (ISO) IDs for each display language supported in Warehouse Builder.

ISOID	Language	
en_US	American English	
ar_AE	Arabic	
as_IN	Assamese	
bn_IN	Bangla	
pt_BR	Brazilian Portuguese	
bg_BG	Bulgarian	
fr_CA	Canadian French	
ca_ES	Catalan	
hr_HR	Croatian	
cs_CZ	Czech	
da_DK	Danish	
nl_NL	Dutch	
#ar_EG	Egyptian	
ar_EG	Arabic Egypt	
en_GB	English	
et_EE	Estonian	
fi_FI	Finnish	
fr_FR	French	
de_DE	German	
el_GR	Greek	
gu_IN	Gujarati	
he_IL	Hebrew	
hi_IN	Hindi	
hu_HU	Hungarian	
is IS	Icelandic	

 Table F-1
 ISO IDs for Supported Languages

ISOID Language in_ID Indonesian		
		it_IT
ja_JP	Japanese	
kn_IN	Kannada	
ko_KR	Korean	
es_US	Latin American Spanish	
lv_LV	Latvian	
lt_LT	Lithuanian	
ms_MY	Malay	
ml_IN	Malayalam	
mr_IN	Marathi	
es_MX	Mexican Spanish	
no_NO	Norwegian	
or_IN	Oriya	
pl_PL	Polish	
pt_PT	Portuguese	
pa_IN	Punjabi	
ro_RO	Romanian	
ru_RU	Russian	
zh_CN	Simplified Chinese	
sk_SK	Slovak	
sl_SI	Slovenian	
es_ES	Spanish	
sv_SE	Swedish	
ta_IN	Tamil	
te_IN	Telugu	
th_TH	Thai	
zh_TW	Traditional Chinese	
tr_TR	Turkish	
uk_UA	Ukrainian	
vi_VN	Vietnamese	

Table F–1 (Cont.) ISO IDs for Supported Languages

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