

Oracle9i Warehouse Builder

Installation Guide

Release 9.0.2

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Oracle9i Warehouse Builder Installation Guide, Release 9.0.2

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Author: Kavita Nayar

Contributors: Sri Ganti, John Leigh, David Allan, Ron Gonzalez.

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Oracle9i Warehouse Builder Installation Guide, Release 9.0.2

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- Did you find any errors?
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- Do you need more information? If so, where?
- Are the examples correct? Do you need more examples?
- What features did you like most about this manual?

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

- Electronic mail: dwhdoc_us@oracle.com
- Postal service:
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MS 2op713
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Redwood Shores, CA 94065

If you would like a reply, please give your name, address, telephone number and email address below.

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

Preface

Purpose

This manual provides instructions for installing Oracle Warehouse Builder 9*i* and a core set of related products. Use this manual to install the Warehouse Builder client on your Windows NT system and the Warehouse Builder Repositories on your UNIX or Windows NT server systems.

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 Release Notes for further details.

Audience

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

- System Analysts
- System Administrators
- Other MIS Professionals

To install Warehouse Builder, you must be familiar with installing Oracle8*i* or 9*i*.

How This Manual Is Organized

This manual is organized as follows:

- Chapter 1 discusses the Warehouse Builder installation requirements. Verify your system requirements to install the Warehouse Builder Client and repositories.

- Chapter 2 provides step-by-step instructions for a typical installation of the Warehouse Builder Client, Warehouse Builder Browser, and the Warehouse Builder Repositories.
- Chapter 3 provides step-by-step instructions for upgrading metadata from a previous version of Warehouse Builder to Warehouse Builder 9i.
- Chapter 4 provides guidelines for installing and configuring Oracle Enterprise Manager and Oracle Workflow with Warehouse Builder to schedule jobs and manage job dependencies.
- Chapter 5 explains how to deinstall the Warehouse Builder components.
- Appendix A lists modifications you need to make to the init.ora file to prepare your database for the Warehouse Builder installation.

Related Publications

The Warehouse Builder documentation set includes these manuals:

- *Oracle Warehouse Builder Installation Guide*
- *Oracle Warehouse Builder User's Guide*

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

- *Oracle8i/9i SQL Reference*
- *Oracle Developer Getting Started*
- *Oracle Enterprise Manager Configuration Guide*

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

Contacting Oracle

Oracle Metalink

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.

Metalink is located at:

<http://www.oracle.com/support/metalink/index.html>

Check Metalink 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.

Oracle Documentation Sales Web site:

<http://oraclestore.oracle.com>

Oracle Customer Support Web site:

<http://www.oracle.com/support>

Warehouse Builder Installation Requirements

Warehouse Builder Overview

Oracle9i Warehouse Builder (OWB) is an integrated system for the design, implementation, and management of an enterprise-wide data warehouse or data mart. Warehouse Builder provides the framework to create your data warehouse and populate it from your existing Oracle products as well as other non-Oracle data sources. You can use Warehouse Builder to create a logical model of your data warehouse and generate code to extract, transform, and load the data into your data warehouse.

Warehouse Builder Installation Components

A complete, working Oracle 9i Warehouse Builder environment includes:

Table 1–1 *Warehouse Builder environment*

Software	Components	Database Objects
Oracle 8.1.7/ 9i (Required)	Oracle Agent	
	TNS Listener	
9i Application Server (Optional)	Portal	Portal Tables
	HTTP Server	
	XML Developer Kit	

Software	Components	Database Objects
Warehouse Builder (Required)	Warehouse Builder Client	
	Repository Assistant	Repository Tables
	Runtime Assistant	Runtime Tables
	Browser Assistant	Browser Tables
Oracle Enterprise Manager (OEM) 2.2 (Optional)	Oracle Management Server (OMS)	OEM Repository
	Client Console	
	WEB Console (optional)	
Oracle Workflow 2.6 (Optional)	Workflow Client (Designer)	Workflow Tables
	WEB Monitor	
	Workflow Server	
	Queue Listener	

Install the Oracle 8.1.7/ 9i Database

You need the Oracle 8.1.7/9i database to install the Warehouse Builder Repository, the Warehouse Builder Runtime Repository, the Warehouse Builder Browser and optionally, the OEM Repository and OWF tables.

Install 9i Application Server (9i AS)

When you install 9i AS, you also install Oracle Portal, the XML Developer Kit, and an HTTP server. These components are required to run the Warehouse Builder Browser that can be used to view your metadata and run metadata web reports.

Install the Warehouse Builder Client

The Warehouse Builder client software includes the client side repositories and a web reporting tool. During the install, you can create the Warehouse Builder Repository, the Warehouse Builder Runtime Repository, and Warehouse Builder Browser tables in your database.

Install Oracle Enterprise Manager and Oracle Workflow

You can use Oracle Enterprise Manager (OEM) to schedule jobs and Oracle Workflow (OWF) to manage job dependencies.

You can install these components in any order, using the Oracle Universal Installer (OUI). Here are a few recommendations:

- All products must be installed using the instructions in the respective installation guides. This install guide provides general guidelines for installing software other than Warehouse Builder.
- All references to a system, port, Oracle_Home, and SID must be tailored to your specific installation requirements.

Planning Your Configuration

Based upon your business requirements and the size of your data warehouse, you can install Warehouse Builder in a three-tier environment. The flexibility of a three-tier architecture enables you to install the tiers on the same computer or on separate computers.

Unlike a two-tier client-server structure, a three-tier architecture provides reliability, scalability, and fault tolerance for enterprise environments. A single-tier installation is only recommended for demonstration purposes, not for optimal performance.

Table 1–2 Warehouse Builder three-tier Installation

Client Tier	Middle Tier	Database Tier
Warehouse Builder Client	Oracle 8.1.7/ 9i	Oracle 8.1.7/ 9i
Warehouse Builder Browser Assistant	9i AS (Portal and HTTP Server)	Oracle Agent
Warehouse Builder Runtime Assistant	Warehouse Builder Browser Objects	TNS Listener
Warehouse Builder Repository Assistant	Oracle Management Server	Warehouse Builder Repository
Warehouse Builder MDL Upgrade Utility	Workflow Monitor	Warehouse Builder Runtime Repository
Warehouse Builder Runtime Audit Viewer	Workflow Queue Listener	OEM Repository
NET 80 Client		Workflow Tables
Web Browser		
OEM/CM Console		
Workflow Client		

Client Tier—Console Applications

The client tier maintains the GUI console applications such as the Warehouse Builder client and its components, the Enterprise Manager console, the Workflow client, and your web browser.

Middle Tier—9i AS and OMS

The middle tier provides centralized intelligence and distributed control between the console (client tier) and the managed nodes (database tier). The second tier maintains 9i AS, OMS, and the Workflow Monitor and Queue Listener.

Database Tier—Database and Other Services

The database tier comprises any machine on your network that has a database and other services that you want to administer. This tier maintains the Oracle 8i or 9i database, the Warehouse Builder and OMS repositories, and the Workflow tables.

Hardware and Software Installation Requirements

You must observe the following requirements to install the Warehouse Builder Repository, the Warehouse Builder Runtime Repository, and the Warehouse Builder Client.

Table 1–3 Warehouse Builder installation requirements

Installation Type	Hard Disk (MB)	RAM (MB)
Typical Repository Server	100	256 ¹
Typical Client (without OEM/CM & OWF)	243 ²	256
Warehouse Builder Client (with OEM Client and OWF Client)	350	512

¹ Actual memory requirements may be higher for production systems, depending on the size of the repository and the number of users.

² All disk space requirements are estimates only, and may be higher on drives using the FAT file system. For installations of multiple typical packages on one computer, the total disk space is usually less than the sum of their components, since the packages share common elements.

Memory requirements increase depending on the functions being performed and the number of users connected. You must also make sure you have ample swap space.

Client Requirements

A Warehouse Builder client system requires Microsoft Windows NT 4.0 with Service Pack 4 or higher.

Warehouse Builder Client Memory Requirements

The Warehouse Builder Client is configured to use a maximum of 256 MB of RAM. You can increase the memory limit by editing this file:

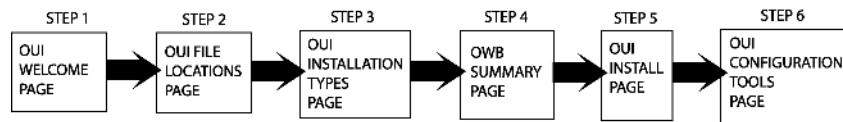
```
X:\OWB_HOME\owb\bin\win32\owbclient.bat
```

Change the parameter -mx to a larger amount of memory. Make sure you have enough RAM to support the Warehouse Builder Client and all other concurrent processes.

Installing Oracle9i Warehouse Builder Components

Insert the *Oracle Warehouse Builder 9i for Microsoft Windows NT* CD in your client machine to install the Warehouse Builder Client, the Warehouse Builder Repository, the Warehouse Builder Runtime Repository, and the Warehouse Builder Browser.

Figure 2–1 Steps for a typical Warehouse Builder client Installation



The Oracle Universal Installer (OUI) Welcome page displays.

1. Click **Installed Products** to view a list of all Oracle products installed on your machine. You can also use this list to review and select products you may want to deinstall.
2. Click **Next**.

OUI displays the File Locations page.

3. Confirm the path for the files you are installing, and the location and destination of the Warehouse Builder product files:
 - **Source:** If you are installing from the Warehouse Builder installation CD, accept the default. Otherwise, browse your system for the source of your installation files.
 - **Destination Name:** Type the name and path of the Oracle Home where you are installing Warehouse Builder.

-
- **Destination Path:** Click **Browse** to locate the path of your Oracle Home for Warehouse Builder.

4. Click **Next**.

OUI displays the Installation Types page.

5. Select **Typical Warehouse Builder Products** to install the Warehouse Builder Client, the Warehouse Builder Repository, the Warehouse Builder Runtime Repository, and the Warehouse Builder Browser.

You can also choose **Custom** if you want to separately install these Warehouse Builder components.

6. Click **Next**.

OUI displays the Summary page.

7. Review your installation parameters.

8. Click **Install** to perform a typical Warehouse Builder installation.

The Configuration Tools page displays once the client installation is complete. This page displays the list of tools that are automatically started, in the order of execution, to install the remaining components on your system. These tools comprise the Warehouse Builder Repository Assistant, the Warehouse Builder Runtime Assistant, and the Warehouse Builder Browser Assistant.

Each of these tools helps you install its respective component on your machine. If you want to exit the installer at this time, you may cancel out of the wizards and run these tools later.

Once you exit out of the Oracle Universal Installer, you are able to access the following when you select **Start**, then **Programs**, then **<Oracle Home>**:

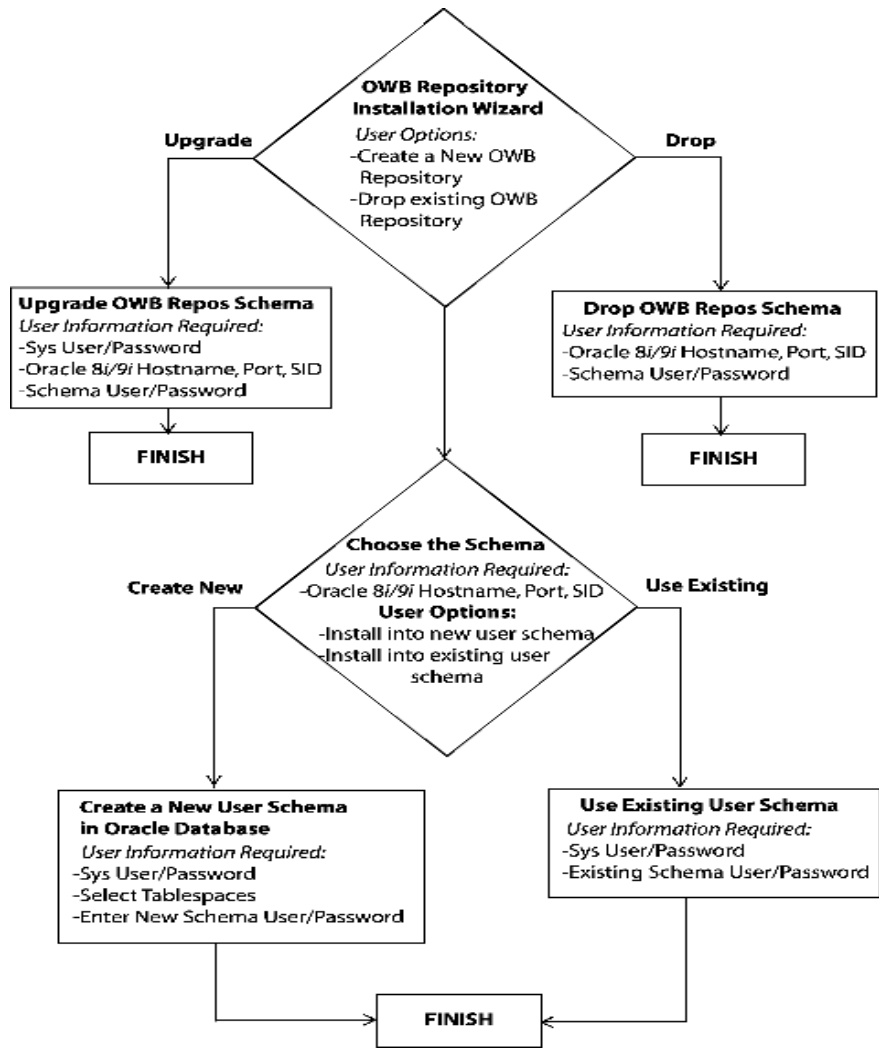
- Warehouse Builder Client
- Warehouse Builder Repository Assistant
- Warehouse Builder Runtime Assistant
- Warehouse Builder Runtime Audit Viewer
- Warehouse Builder Browser Assistant
- Warehouse Builder MDL File Upgrade Utility

Install the Warehouse Builder Repository

To login to your Warehouse Builder client, you need to first create a new Warehouse Builder repository within a schema object in your database. The Warehouse Builder repository stores metadata definitions for all the objects created to populate your data warehouse. The Warehouse Builder Repository Assistant is used to create a new repository. It can be started by selecting **Start**, then choosing the Warehouse Builder Repository Assistant from the **Programs** menu.

The following chart provides an overview of the Warehouse Builder Repository Installation process. You can choose to create the new repository in a new schema or within an existing one. You can also use this assistant to drop an existing Warehouse Builder repository. Use this diagram for an overview of the steps and to gather all the information you require before performing the installation.

Figure 2–2 Warehouse Builder installation overview



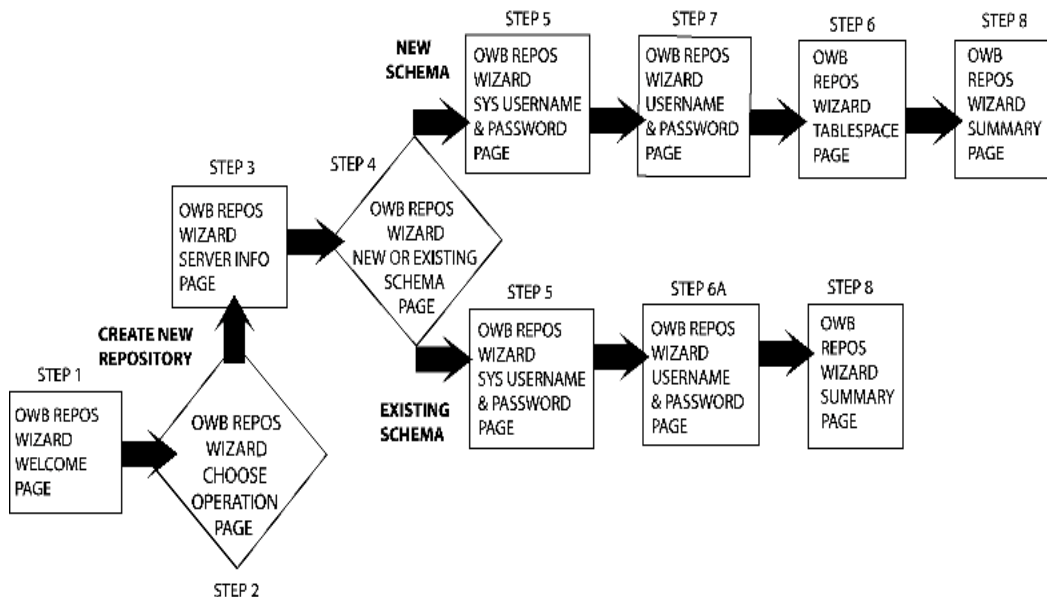
Prerequisite

Install Oracle 8.1.7 or 9i Database.

Overview

The following chart outlines the steps for a new Warehouse Builder Repository Installation.

Figure 2–3 Steps for Warehouse Builder repository installation



If you want to drop an existing Warehouse Builder Repository from your system, refer to [Chapter 5, "Deinstalling Warehouse Builder Components"](#).

Warehouse Builder Repository Installation Wizard (New Schema)

To install the Warehouse Builder Repository into a new or existing schema:

1. The Warehouse Builder Repository Assistant Welcome page summarizes the steps you follow to create a Warehouse Builder Repository. Review the steps and click **Next**.

The Choose Operation page displays.

2. Choose **Create a new Warehouse Builder Repository** for a new installation.
3. Click **Next**.

The Server Information page displays.

To drop existing Warehouse Builder Repository objects, choose **Drop Warehouse Builder Repository objects**. (Refer to [Deinstall Warehouse Builder Repository Objects](#), in the Chapter 5 'Deinstall Warehouse Builder Components'.)

4. Provide the connection information for the Warehouse Builder Repository.
 - **Host Name:** Name of the machine where you want to install the Warehouse Builder Repository.
 - **Port Number:** The port number on your host machine (default: 1521).
 - **Oracle SID:** Oracle database SID.
5. Click **Next**.

The New or Existing Schema page displays.

6. Choose whether you want to create a new schema or install the repository into an existing user schema. If you are creating a new schema, choose **Create and Install into a new user schema**. If you are installing into an existing schema, choose **Install into existing user schema**.

Note: If the existing schema already contains Warehouse Builder repository objects, the installation will fail. You must first drop the existing objects, and then proceed with the installation.

If you already have repository objects from Warehouse Builder 3*i*, you must choose **Upgrade Repository objects** to upgrade your repository objects to Warehouse Builder 9*i*. This option is only valid if you are upgrading from Warehouse Builder 3*i* to Warehouse Builder 9*i*. It is not valid for upgrading Warehouse Builder versions 2.x.

7. Click **Next**.

The System User Name and Password page displays.

8. Provide the password for the sys user.

Note: You must use the sys account with SYSDBA privileges in order to access or create the Warehouse Builder Repository schema. The Warehouse Builder Repository user requires access to certain v_\$ tables and these grants are made by the SYSDBA account when you create the repository.

To ensure that the SYSDBA privilege is granted to SYS, you must set your database parameter **remote_login_parameterfile=EXCLUSIVE**.

9. Click **Next**.

The User Name and Password page displays.

10. Create the user name and password for the new schema. You use this information to login to your Warehouse Builder Repository.

If you are creating the Warehouse Builder Repository within an existing schema, provide the user name and password for that schema.

Note: You can install new repository objects within an existing schema only if the schema contains no previous repository objects.

11. Click **Next**.

The Tablespace page displays.

12. Select the following tablespaces from the ones available in your repository database:

- **Default tablespace for Repository data:** Stores objects (such as tables) created by a user.
- **Default tablespace for indexes:** Stores the indexes for the repository.
- **Temporary tablespace:** Stores temporary segments required to perform large sorts.

13. Click **Next**.

The Summary page lists the new Warehouse Builder Repository setup information.

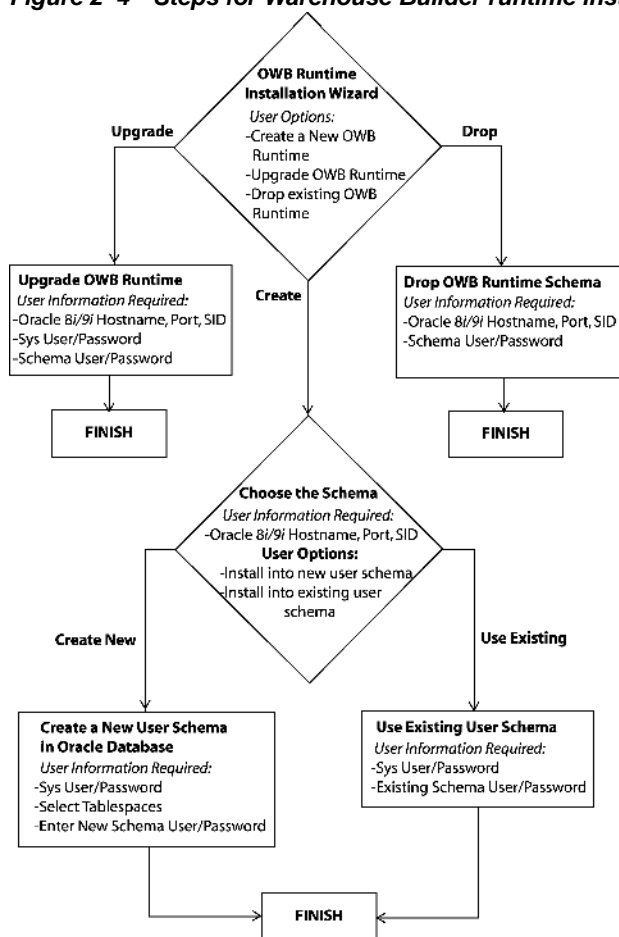
14. Review and click **Finish** to create the new Warehouse Builder Repository.

Install Warehouse Builder Runtime Libraries

After you define your warehouse using Warehouse Builder, you need to create a runtime library for each schema in the physical instance where you want to deploy your warehouse. 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 library. Warehouse Builder runtime components use this library 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 Viewer or the Discoverer Runtime workbooks. (For detailed information see the *Oracle9i Warehouse Builder User's Guide*.)

Overview

The following chart provides an overview of the Warehouse Builder Runtime Installation process. Use this assistant to create a new runtime library or drop an existing one. Use the following diagram to gather all the information you require to perform the installation.

Figure 2–4 Steps for Warehouse Builder runtime installation

Warehouse Builder Runtime Installation Wizard

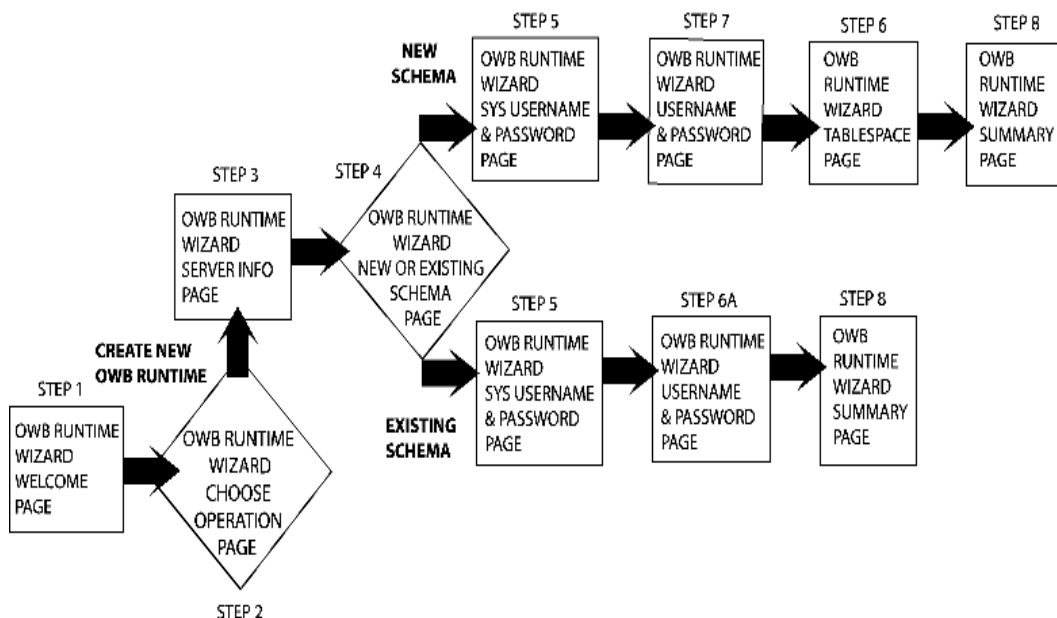
You can install the Warehouse Builder runtime objects as part of the Warehouse Builder Client installation or you may choose to install it later. In either case, you must run the Warehouse Builder Runtime Assistant for each of your target warehouse schemas.

Important: When you install Warehouse Builder Runtime, make sure you first have a working Oracle 8.1.7 or 9i installation with Jserver installed and the *java_pool_size* parameter (in the init.ora file) set to a non-zero value.

Overview

The following chart provides the steps for a new Warehouse Builder Runtime schema installation.

Figure 2–5 New Warehouse Builder Runtime Installation pages



If you want to drop existing Warehouse Builder Runtime objects from your system, refer to [Chapter 5, "Deinstalling Warehouse Builder Components"](#).

To install Warehouse Builder runtime objects into a new or existing schema:

1. The Warehouse Builder Runtime Assistant welcome page summarizes the steps you follow to create a Warehouse Builder Runtime schema. Review the steps and click **Next**.

The Choose Operation page displays.

2. Choose **Install a new Warehouse Builder Runtime** to create Warehouse Builder runtime objects within the target warehouse database.

If you already have runtime objects from a previous version of Warehouse Builder, you must choose **Upgrade Warehouse Builder Runtime objects** and upgrade your Warehouse Builder runtime objects to the current version of Warehouse Builder.

To drop existing Warehouse Builder runtime objects, choose **Drop Warehouse Builder Runtime Objects**.

3. Click **Next**.

The Server Information page displays.

4. Provide the connection information for the database where you are installing the Warehouse Builder runtime objects.
 - **Host Name:** Name of the machine where you are installing the Warehouse Builder runtime objects.
 - **Port Number:** Port number of the host machine. The default is 1521.
 - **Oracle SID:** Database unique identifier.

5. Click **Next**.

The New or Existing Schema page displays.

6. Specify whether you want to create and install the Warehouse Builder runtime objects into a new schema or an existing one.
 - If you are creating a new schema, choose **Create and Install into new user Schema**.
 - If you are installing into an existing schema, choose **Install into existing user schema**.
7. Click **Next**.

The System User Name and Password page displays.

8. Provide the password for the sys user.

Important: You must use the sys account that has SYSDBA privileges in order to access or create the Warehouse Builder Runtime schema.

To ensure that the SYSDBA privilege is granted to SYS, you must set your database parameter **remote_login_parameterfile=EXCLUSIVE**.

9. Click **Next**.

The User Name and Password page displays.

10. Create a user name and password for the new schema.

If you are installing runtime objects into an existing schema, provide the user name and password for that schema.

Note: You can install new runtime objects within an existing schema only if the schema contains no existing Runtime objects.

11. Click **Next**.

The Tablespace page displays.

12. Select the following from the tablespaces available in your database:

- **Default tablespace for Runtime data:** Default tablespace that stores your runtime data.
- **Default tablespace for indexes:** Stores the indexes for the Warehouse Builder runtime data.
- **Temporary tablespace:** Stores temporary segments required to perform large sorts on runtime data.

13. Click **Next**.

The Summary page lists the new Warehouse Builder runtime schema setup information.

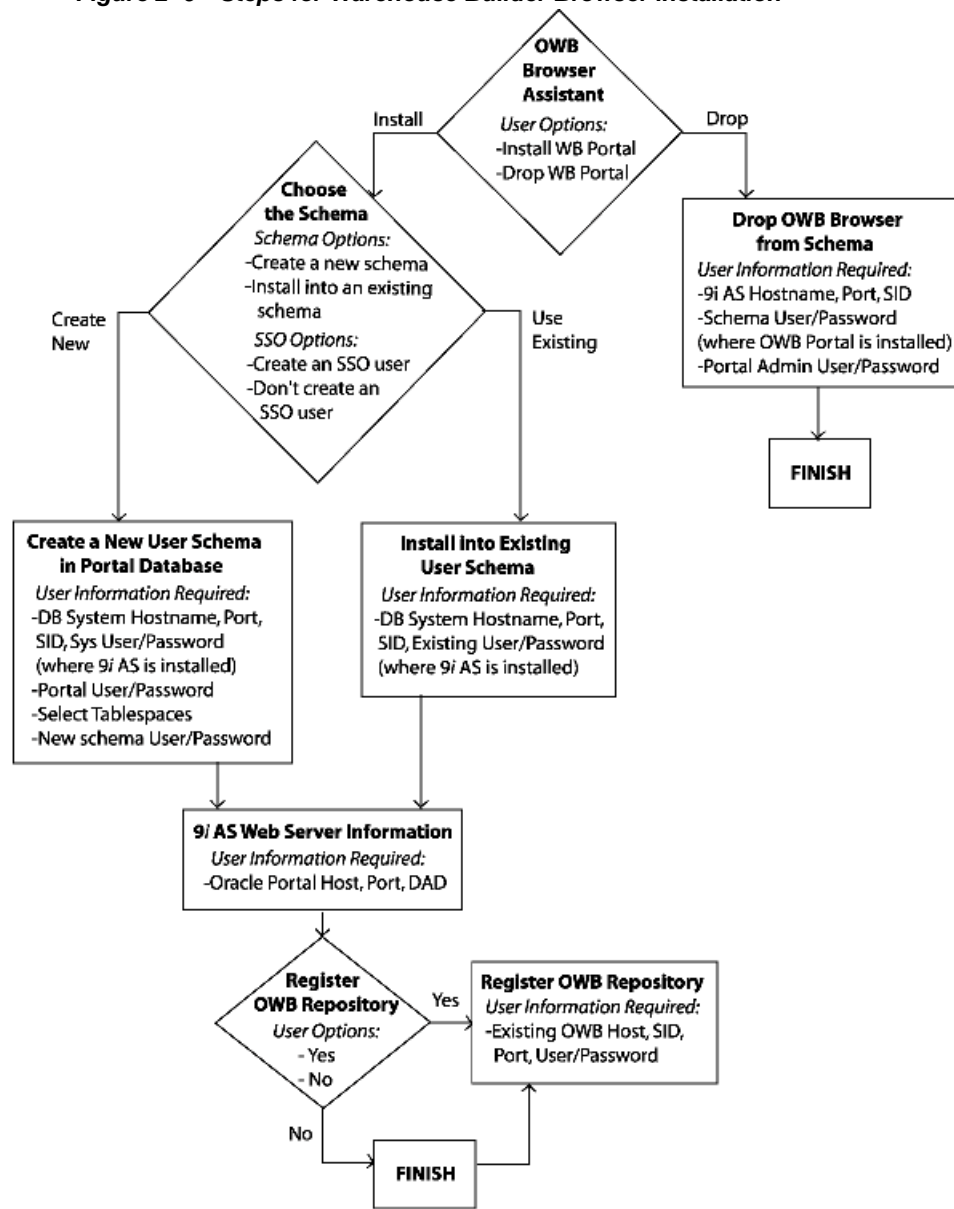
14. Click **Finish** to create the Warehouse Builder runtime objects.

Install the Warehouse Builder Browser

The Warehouse Builder Browser Assistant guides you through the installation of the Warehouse Builder Browser. You can use the Warehouse Builder Browser to view your metadata, run web reports, and perform lineage and impact analysis on your metadata. For more information on using the Warehouse Builder Browser, refer to the *Warehouse Builder User's Guide*.

The following chart provides an overview of the Warehouse Builder Browser installation process. Use this diagram to gather all the information you require before performing the installation.

Figure 2–6 Steps for Warehouse Builder Browser installation



Warehouse Builder Browser Assistant

When you install Warehouse Builder Browser, make sure you first have a working Oracle Portal installation. (Oracle Portal and the HTTP server are required components installed with Oracle 9i AS.)

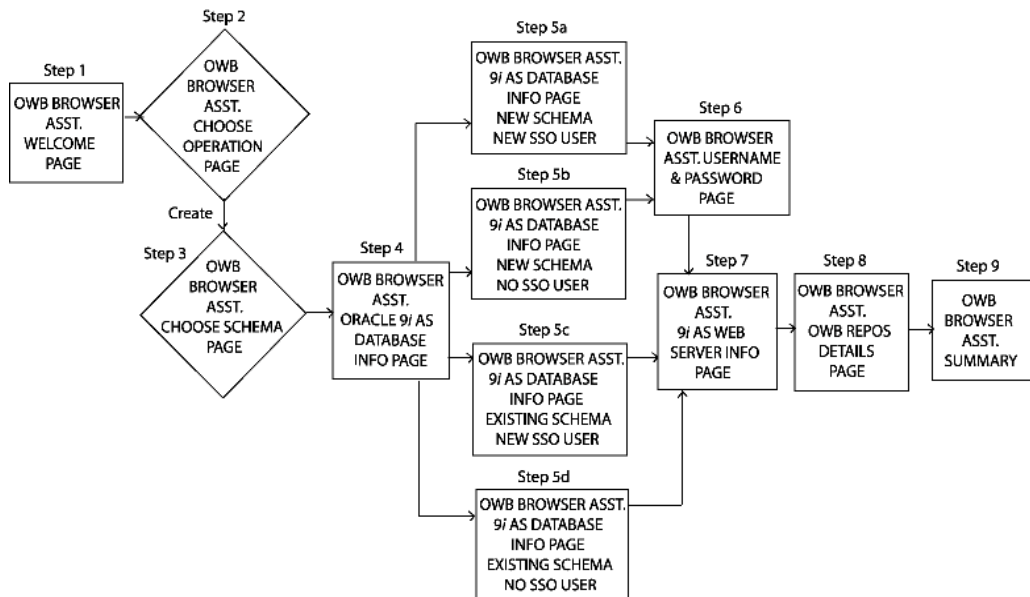
Prerequisites

- Install Oracle 8.1.7 or 9i Database
- Install Oracle 9i AS.

Overview

The following chart provides the steps for a new Warehouse Builder Browser Installation.

Figure 2–7 Warehouse Builder Browser Wizard steps



If you want to drop existing Warehouse Builder Browser objects from your schema, refer to [Chapter 5, "Deinstalling Warehouse Builder Components"](#) in this guide.

To install the Warehouse Builder Browser:

1. The Warehouse Builder Browser Assistant Welcome page summarizes the steps you follow to install the Warehouse Builder Browser. Review the steps and click **Next**.

The **Choose Operation** page displays.

In the Choose Operation page, you can choose whether you want to install the Warehouse Builder Browser or drop existing Warehouse Builder Browser objects (if you have previously performed the Warehouse Builder Browser installation).

2. Choose **Install the Warehouse Builder Browser** and click **Next**.

The Choose Schema page displays.

If you are dropping existing Warehouse Builder Browser objects, select the **Uninstall the Warehouse Builder Browser** and skip to [Chapter 5, "Deinstalling Warehouse Builder Components"](#) to follow the instructions.

3. Choose to create and install the Warehouse Builder Browser into a new schema or into an existing one. Also choose whether you want to create a single-sign-on (SSO) user name for the Warehouse Builder Browser during this installation.

You need an SSO user name to log into Oracle Portal. If you do not already have one, you can use the Warehouse Builder Browser Assistant to create it for you, with enough privileges to access the Warehouse Builder Browser portlet. Or, you can create a user later by logging into Oracle Portal using the default administrator user account (portal30).

4. Choose your options and click **Next**.

The Oracle 9i AS Database Information page displays.

5. Provide the following 9i AS database connection information:

- **Host Name:** Name of the host machine where the Oracle 9i AS database is installed. (For example, server8)
- **Port Number:** Port number of the machine where the Oracle 9i AS database is installed. (For example, 1521)
- **Oracle SID:** The unique database identifier of the machine where the Oracle 9i AS database is installed. (For example, dev817)

6. Click **Next**.

Depending on your set of choices in Step 3, the installer displays different pages for this step.

- a. If you choose to install into a new user schema and create an SSO user, refer to Step 7(a).
 - b. If you choose to install into a new user schema but not to create an SSO user, refer to Step 7(b).
 - c. If you choose to install into an existing schema and create an SSO user, refer to Step 7(c).
 - d. If you choose to install into an existing schema and not to create an SSO user, refer to Step 7(d).
7. Depending on your set of choices in Step 3, the installer displays different pages for this step. Based upon your choice, refer to the correct instructions.
- a. If you chose to install Warehouse Builder Browser into a new user schema and create an SSO user, provide the following Oracle 9i AS database information:
 - * **System Administrator User:** Admin username of the system where the Oracle 9i AS database is installed.
 - * **System Administrator Password:** Admin password of the system where the Oracle 9i AS database is installed.
 - * **Portal Administrator User:** Oracle Portal user name set during 9i AS install. This is the schema where you installed Oracle Portal. (Default: portal30)
 - * **Portal Administrator Password:** Oracle Portal password set during 9i AS install. This is the schema where you installed Oracle Portal. (Default: portal30)
 - * **SSO User:** Create a new SSO user name to login to the Oracle Portal.
 - * **SSO Password:** Create a new SSO password to login to the Oracle Portal.

Click **Next** to proceed to Enter Username and Password page (Step 8).

- b. If you chose to install Warehouse Builder Browser into a new user schema but not to create an SSO user at this time, provide the following Oracle 9i AS database information:
 - * **System Administrator User:** Admin user name of the system where the Oracle 9i AS database is installed.
 - * **System Administrator Password:** Admin password of the system where the Oracle 9i AS database is installed.

- * **Portal Administrator User:** Oracle Portal user name set during 9i AS install. This is the schema where you installed Oracle Portal. (Default: portal30)
- * **Portal Administrator Password:** Oracle Portal password set during 9i AS install. This is the schema where you installed Oracle Portal. (Default: portal30)

Click **Next** to proceed to Enter Username and Password page (Step 8).

- c. If you choose to install into an existing schema and create an SSO user, you need to provide the following Oracle 9i AS database information:

- * **Portal Administrator User:** Oracle Portal user name set during 9i AS install. This is the schema where you installed Oracle Portal. (Default: portal30)
- * **Portal Administrator Password:** Oracle Portal password set during 9i AS install. This is the schema where you installed Oracle Portal. (Default: portal30)
- * **Schema User:** Username of the existing schema in the 9i AS database where you want to install Warehouse Builder Browser.
- * **Schema Password:** Password of the existing schema in the 9i AS database where you want to install Warehouse Builder Browser.
- * **SSO User:** Create a new SSO user name to login to the Oracle Portal.
- * **SSO Password:** Create a new SSO password to login to the Oracle Portal.

Click **Next** to proceed to the Oracle 9i AS Web Server Information page (step 11).

- d. If you choose to install into an existing schema and not to create an SSO user at this time, provide the following Oracle 9i AS database information:

- * **Portal Administrator User:** Oracle Portal user name set during 9i AS install. This is the schema where you installed Oracle Portal. (Default: portal30)
- * **Portal Administrator Password:** Oracle Portal password set during 9i AS install. This is the schema where you installed Oracle Portal. (Default: portal30)
- * **Schema User:** User name of the existing schema in the 9i AS database where you want to install Warehouse Builder Browser.

- * **Schema Password:** Password of the existing schema in the 9i AS database where you want to install Warehouse Builder Browser.

Click **Next** to proceed to the Oracle 9i AS Web Server Information page (step 11).

8. If you are installing Warehouse Builder Browser in a new schema (Step 3), then in the Enter Username and Password page, choose the default and temporary tablespaces for Warehouse Builder Browser objects.

Also enter the user name and password to log into the new schema you are creating in the Oracle 9i AS database. You are installing the Warehouse Builder Browser objects in this schema.

9. Click **Next**.

The Oracle 9i AS Web Server Information page displays.

10. Provide the following information:

- **Oracle Portal Host Name:** Host name of the machine where Oracle Portal is installed.
- **Web Server Listener Port:** Port number of the machine where the web server is installed.
- **Oracle Portal DAD:** Portal Database Access Descriptor set during Oracle Portal installation.

11. Click **Next**.

The Warehouse Builder Repository Details page displays.

The Warehouse Builder Details page is an optional step that enables you to register your Warehouse Builder Repository with Warehouse Builder Browser. If you choose to do this later, you can skip this step to proceed to the Summary page.

12. If you choose to register an Warehouse Builder Repository, select **Yes** and provide the following information:

- **Warehouse Builder Repository User:** User name to login to your Warehouse Builder Repository.
- **Warehouse Builder Repository Password:** Password to login to your Warehouse Builder Repository.
- **Host Name:** Name of the computer where your Warehouse Builder Repository is located.

- **Port Number:** Number of the port where the Warehouse Builder Repository is located.
- **Oracle SID:** Unique database identifier of the machine where the Warehouse Builder Repository is located.

13. Click Next.

The Summary page displays.

14. Review the information and click **Back if you want to revise any information.**

15. Click **Finish to complete the Warehouse Builder Browser installation.**

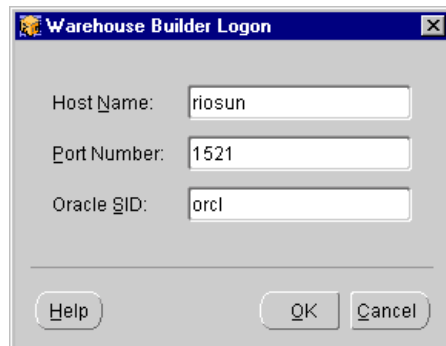
For information on configuring Warehouse Builder Browser, refer to the [Configure Warehouse Builder Browser](#) section at the end of this chapter.

Configure Oracle Warehouse Builder

1. Start the Warehouse Builder Client (choose **Start** then **Programs** then **Oracle_Home** then **Oracle Warehouse Builder Client**).



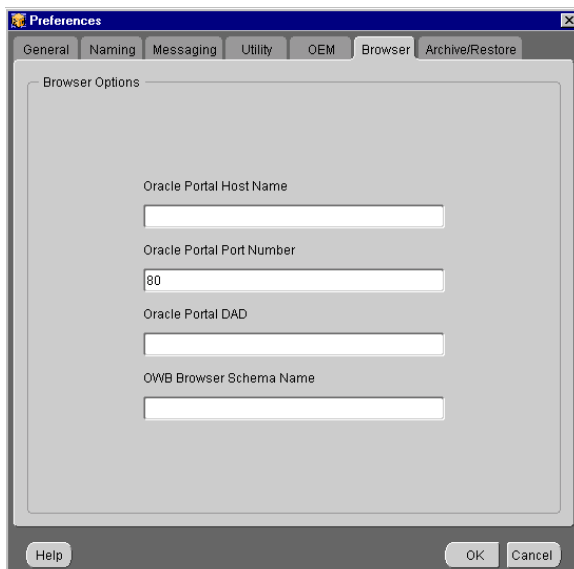
2. In the Warehouse Builder Logon page, enter the following information:
 - **User Name:** The user name you created to logon to the Warehouse Builder repository. For example, owb_user.
 - **Password:** The password for the Warehouse Builder repository user. For example, owb_user.
3. Click **Connection Info** and enter the following information to connect to the Builder Repository:



- **Host Name:** Name of the computer where the Warehouse Builder Repository resides.
- **Port Number:** Port number of the computer where the Warehouse Builder repository is located (Example: 1521).
- **Oracle SID:** Unique Database Identifier.

Click **OK**. Then, click **Logon** to start the Warehouse Builder client.

4. In the Welcome to Oracle Warehouse Builder page, click **OK** to accept the default project.
5. From the **Project** menu, choose **Preferences**.
The Preferences property sheet displays.



6. Select the **Browser** tab and provide the Oracle Portal and the Warehouse Builder Browser schema connection information. For example, the Host name and port number of the system where Oracle Portal resides.
7. Select the **Utility** tab.
8. Click each utility in the Contents of Utility Drawer list and change the value in the Full Path field to the correct subdirectory as shown in [Table 2-1](#).

Table 2–1 Utilities and their locations

Utility	Full Path Example
SQL*PLUS	D:\Oracle\Ora817\bin\sqlplusw.exe
Oracle Workflow	D:\Oracle\Orant\bin\wfbldr20.exe

9. Click **Update**.
10. Exit the Warehouse Builder Client.
11. In the Exit Confirmation dialog, click **Yes**.

Configure Warehouse Builder Browser

To use the complete Warehouse Builder Browser functionality, you need to follow these configuration steps.

Log in to Oracle Portal as the Portal Administrator

1. Open your Web Browser.
2. Access Oracle Portal.

For example in Windows NT you type: `http://server:80/pls/portal30`

Where server is the Web server host name, 80 is the web server port number for Windows NT, and portal30 is the DAD name.

The Welcome to Oracle Portal page displays.

3. Click **Login** (in the upper right corner).
4. In the Single Sign-On page, enter the portal administrator user name and password (example: portal30).

Refresh the Portlet Repository

1. From the Oracle Portal Home Page, click the **Administer** tab.
2. Scroll down to locate the Portlet named Providers.
3. Click **Display Portlet Repository**.
4. Click the **Refresh** icon at the top of the page.
5. Scroll down to locate the Warehouse Builder Provider.
6. Click on the **Provider** and you will see the Warehouse Builder Browser portlet.
7. Click the **Warehouse Builder Browser** link.
8. Click **Refresh**.

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

Add privileges to your newly created SSO user

1. From the Administer tab, locate the Portlet named Users
2. Type the name of the SSO user that you created using the Warehouse Builder Browser Assistant and click **Edit** or you can **Create a New User**.

3. In the Group Membership section, make your user a member of PORTAL_DEVELOPERS if he needs to access the Warehouse Builder Browser or a member of PORTAL_ADMINISTRATORS if he needs to access the Warehouse Builder Browser Admin pages.
4. Click **OK** to save your changes.

For detailed information on running and configuring Warehouse Builder Browser, see the *Oracle 9i Warehouse Builder User's Guide*.

Upgrading Metadata from Warehouse Builder 2x to Oracle9i Warehouse Builder

This chapter provides instructions for upgrading metadata from a previous version of Warehouse Builder to Oracle9i Warehouse Builder.

The following topics are covered:

- [Upgrading from a Previous Version of Warehouse Builder](#)
 - [Step 1. Preparation: Export Metadata from your existing Warehouse Builder repository](#)
 - [Step 2. Install Warehouse Builder in a separate directory](#)
 - [Step 3. Run the MDL File Upgrade Utility](#)
 - [Step 4. Import the metadata into the new Warehouse Builder Repository](#)

This chapter shows you how to migrate your metadata from Warehouse Builder 2x to the current version. To find out about migrating the runtime from Warehouse Builder 2x, see [Install Warehouse Builder Runtime Libraries](#).

Upgrading from a Previous Version of Warehouse Builder

To upgrade your metadata from an older version of Warehouse Builder to Oracle 9i Warehouse Builder, use the new 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.

Before you perform the upgrade, be aware of the following:

- The current version of this utility does not support Peoplesoft modules. These files are skipped during the upgrade and if these entities are referenced within any mappings, Warehouse Builder displays an error message stating that the entity type is not supported for this version.
- Files from SAP sources version 2.1 can be upgraded to Oracle9i Warehouse Builder using the MDL utility. However, the intermediate files created for 3i are not supported by Warehouse Builder 3i.
- 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 2.1 (example: indexes) are changed to conform to the database naming standards.
- All 2.1.1 file and datawarehouse objects are upper-cased. All Oracle installed modules remain unchanged, except for the installed module which is 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.

To upgrade your metadata from a previous version of Warehouse Builder, follow the steps listed below.

Step 1. Preparation: Export Metadata from your existing Warehouse Builder repository

To upgrade your current repository, you must export each project to Metadata Loader (MDL) files. Then, install Warehouse Builder, convert the MDL files using the new Upgrade Utility, and import the files into Warehouse Builder.

To export existing metadata into an MDL file:

1. Use the Warehouse Builder Client to login to the Project you want to export.

2. From the **Project** menu, choose **Export Metadata**.

You can choose how you want to export the files within a project. For example, if you are exporting three source modules and two target modules, you can choose to export them separately or all together.

The Metadata Loader assigns a path and file name to the exported MDL file. Make a note of the path and filename for each module you export, or you can type a meaningful pathname and filename for the new MDL files and log files. The filename you assign must end with **.mdl**.

Note: You must keep your old repository until the entire upgrade process has been performed and tested.

Step 2. Install Warehouse Builder in a separate directory

To install a new Warehouse Builder system in parallel to the existing one:

1. Install the new version of the Warehouse Builder software.
2. Create a new Warehouse Builder repository. (Refer to [Install the Warehouse Builder Repository](#) P. 2-12 in this manual.)

Step 3. Run the MDL File Upgrade Utility

To perform the MDL File Upgrade:

- Use the MDL File Upgrade Wizard if you exported each project as a single MDL file or,
- Use the command line if you exported a project as multiple MDL files

The MDL Upgrade utility automatically converts the files as follows:

1. Warehouse Builder 2.0.4 to 2.0.5
2. Warehouse Builder 2.0.5 to 2.1
3. Warehouse Builder 2.1 to 3i (3.0)
4. Warehouse Builder 3i to 9i Warehouse Builder

Note: The MDL Upgrade Utility Wizard converts your files directly to the current version of Warehouse Builder. If you want to upgrade to a lower intermediate version, you must use the command line utility.

The Upgrade utility eliminates the need to have your old repository running on the same system as your new Warehouse Builder repository or for older versions of Warehouse Builder to be installed on your system.

Run the MDL File Upgrade Wizard

To access the MDL File Upgrade wizard:

1. Go to your NT Program group for Warehouse Builder and select Oracle Warehouse Builder MDL File Upgrade Utility.

The MDL File Upgrade Wizard Welcome page displays.

2. Click **Next**.

The Source page displays.

3. Click **Browse** to select the mdl file you want to convert to a higher version of Warehouse Builder. The order in which you select these files is important. For example, entities must be upgraded before mappings.

Note: To upgrade multiple MDL files, Warehouse Builder provides a command line utility (refer to P. 3-9). You will receive an error message if you select multiple files for upgrade in this 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, destination, and order 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.

Warnings and Error Messages

- If the upgrade finishes with warnings, the .mdl file will import; if the upgrade has errors, it will either terminate in the middle of the upgrade or the upgrade will complete with warnings.
- If warnings and errors are shown after an upgrade, search for the words Warning and Error in the log file to find out what problem has occurred and where.
- If an unexpected error occurs and the upgrade terminates, the log file [name] for details message displays in the middle of the upgrade. Check your log file or contact Oracle Support.

Run the MDL File Upgrade Utility Using Command Line

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

- For 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 older version of the Warehouse Builder Repository:

```
mdlconvert sourcefile parameterfile
```

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

Example of a source file format:

```
SOURCE  
Mdl21Sample1.mdl
```

```
Mdl21Sample2.mdl
TARGET
Mdl21Sample1_3i.mdl
Mdl21Sample2_3i.mdl
LOGFILE
Mdl21Sample1.log
Mdl21Sample2.log
```

Example of a parameter file format:

```
fieldseparator= ^ or |           (default: ^ )
verbose= true/false(default: false)
tempdir = some directory         (default: .\temp)
sourceversion = 2.0.4/2.0.5/2.1/3i (default: 2.1)
targetversion = 2.0.4/2.0.5/2.1/3i (default: 3i)
```

Tips:

When you upgrade from Warehouse Builder 2.1 to the current version of Warehouse Builder:

- All local variables are converted to global variables.
- DDL Maps are not upgraded since they are not supported in Warehouse Builder.
- Granular exported maps 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

Thus, the source file format would be:

```
SOURCE
fact1.mdl
fact2.mdl
map.mdl
TARGET
fact1_owb3i.mdl
fact2_owb3i.mdl
map_owb3i.mdl
```

```
LOG
fact1_owb3i.log
fact2_owb3i.log
map_owb3i.log
```

Step 4. Import the metadata into the new Warehouse Builder Repository

1. From the new Warehouse Builder Client console, select the **Administration** environment.
2. From the **Administration menu**, select **Metadata Import**, and then **File**.
Locate the path and file name to the exported data from your former repository.
3. Select **Import**.
4. Review and commit your data.
5. After testing the new version of Warehouse Builder, remove the old version and its repository.

Upgrading Mappings

The MDL upgrade enables the mappings upgraded from your 2.x repository to generate the exact same code in your current repository.

However, certain operators can lose information on the keys of the objects they reference. If you want to continue working on your mapping design using the upgraded repository, you must first reconcile your mapping operators with their referenced objects. The keys of the referenced objects are then restored to the upgraded mapping operators.

Before you work on your upgraded mapping:

1. Launch Warehouse Builder.
2. Double-click the upgraded mapping name to display the Mapping Editor.
3. Select the upgraded mapping operator and from the **Edit** menu, select **Reconcile Inbound**.

Warehouse Builder displays the Inbound Reconcile dialog.

4. Select **Match by Physical Name** and click **OK**.

The referenced keys are restored in the upgraded mapping operator. You are now ready to continue with your mapping design.

Difference Between MDL File Upgrade and Warehouse Upgrade

The MDL File Upgrade Utility is a migration tool that enables you to upgrade your metadata from an older version of Warehouse Builder to its current version. The Warehouse Upgrade feature enables you to propagate changes in the Warehouse Builder Repository to your Warehouse Builder target warehouse.

The MDL File Upgrade Utility Wizard is:

- Used to upgrade Warehouse Builder 2.x version to the current version of Warehouse Builder
- The only way to upgrade a 2.x repository to a 3i repository
- A standalone wizard

Warehouse Upgrade:

- Is used on the deployment side of Warehouse Builder.
- Enables you to change objects that have already been deployed without affecting the entire data.
- Produces Impact Analysis Reports (i.e. what objects will be affected by the change).
- Determines all conflicts and errors.

Installing Oracle Enterprise Manager and Oracle Workflow

Oracle Enterprise Manager (OEM) is a scheduling tool included in the Oracle 8.1.7 or 9i 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 chapter provides instructions for enabling Enterprise Manager and Workflow on your server and client systems.

This chapter includes the following topics:

- [Configuring Oracle Enterprise Manager](#)
- [Installing Oracle Workflow](#)
- [Installing Warehouse Builder Workflow Queue Listener](#)
- [On Unix](#)

Note: This Installation Guide only outlines the important installation steps. For details, see the *Oracle Enterprise Manager Installation Guide* and the *Workflow Server Installation Guide*.

Configuring Oracle Enterprise Manager

Configure the Enterprise Manager client and server software (installed with Oracle 8.1.7) using the following guidelines:

Step 1: Create the Enterprise Manager Repository

1. On your Enterprise Manager Console (client) host system, start the Enterprise Manager Configuration Assistant. This wizard helps you create the Enterprise Manager repository in the Warehouse Builder repository instance.
2. In the Configuration Operation page, select **Create a New Repository**.
3. In the Select Database for Repository page, provide the following information:
 - **User Name:** system
 - **Password:** manager <or appropriate system password>
 - **Service:** owbrepos
4. In 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. In 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, on NT, start the OMS by going to control services. On Unix, start the OMS by accessing the Oracle/home/bin directory and typing the command:

```
oemctrl 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**.
 - a. If you are newly configuring the service, the Add Management Server dialog box appears. Type the host name of the Warehouse Builder repository server.
 - b. In the Management Servers page, click **OK**.
 - c. In 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)
 - d. In the Security Warning screen, provide the following information:
 - **Password:** sysman
 - **Confirm Password:** sysman
11. Select **Nodes** from the navigation tree. Right-click and select **Discover Nodes** from the pop-up menu.

The Discovery Wizard Specify Nodes page displays.
12. Type the name of the computer on which the Warehouse Builder target warehouse resides.
13. Click **Next** to view the results.

Step 2: Create Windows NT User

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

1. From the **Start** menu, select **Administrative Tools**, and then **User Manager**.

The User Manager window displays.
2. From the **User** menu, select **New User**.

The New User window displays.
3. 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.
4. Click **OK**.

Windows inserts the new user name into the list of user names.
 5. From the User Manager Console, select the new user name, then **Policies**, and then **User Rights**.

The User Rights panel displays.
 6. In the User Rights Policy panel, check the **Show Advanced User Rights** box and then select the **Logon as a Batch Job** option from the drop-down list in the Right field.
 7. Click **Add**.

Windows NT displays the Add Users and Groups panel.
 8. Select the domain for the user from the List Names From drop-down list.
 9. Click **Show Users** and select the name of the new Enterprise Manager user you just created.
 10. Click **Add** and select **OK** to add rights.

Step 3: Configure 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.

This is the user name you created for the Windows NT host in the previous section.

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 machine 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](#).

Step 4: Configure Enterprise Manager Preferences within Warehouse Builder

To set Enterprise Manager preferences within Warehouse Builder:

1. Login to the Warehouse Builder client.
2. From the **Project** menu, select **Preferences**.

The Preferences property sheet displays.

3. Select the **OEM** tab.

4. Provide the following information:
 - **Domain:** Name of the machine where the OMS service is running.
 - **Console User:** Administrator of the Enterprise Manager Console (default: Sysman).
 - **Console Password:** Password of the Administrator of the Enterprise Manager Console.
5. Click **OK** to save this information.

Note: If you are accessing 9i OMS, then the job registration code works with these settings. If you are accessing 8i OMS, then the OEM Directory setting must point to a valid 8i OEM Oracle Home.

Enterprise Manager Intelligent Agent Database Compatibility Matrix

Table 4–1 *Enterprise Manager Intelligent Agent compatibility matrix*

Enterprise Manager Release	Supports Creation of Repository in Database Releases	Supported by Intelligent Agent Releases	Manages Database Releases
9.0.1	9.0.1.x	9.0.1.x	9.0.1.x
	8.1.7.x	8.1.7.x	8.1.7.x
	8.1.6.x	8.1.6.x	8.1.6.x
	8.0.6.x	8.0.6.x	8.0.6.x
2.2.x	8.1.7.x	8.1.7.x	8.1.7.x
	8.1.6.x	8.1.6.x	8.1.6.x

Notes:

- An Intelligent Agent release monitors and manages databases of the same release or earlier. For example, Intelligent Agent Release 8.1.7 monitors or manages database release 8.1.7 and earlier. If a newer release of the Intelligent Agent is used to manage an older release of the database, the Intelligent Agent must be installed in its own Oracle Home, or in an Oracle Home whose version is consistent with the Intelligent Agent's version.
- Intelligent Agent Releases 8.0.5 and above include Data Collection Services (Data Gatherer).
- Backup Management Wizards Release 2.2 support database releases 8.0.6 and above.
- Support for JServer management is only available when connected to an 8.1.7 database
- In this table, Database Releases implies all editions of the database (Enterprise, Standard, Workgroup, and Personal Edition). The Personal Edition does not include support for Enterprise Manager jobs and events, or an Intelligent Agent.

Installing Oracle Workflow

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

- [Install the Oracle Workflow Server](#)
- [Install the Workflow Client](#)
- [Apply a Patch to Enterprise Manager 2.2](#)
- [Apply a Patch to Oracle Workflow](#)

Install the Oracle Workflow Server

This section outlines the Oracle Workflow installation procedure using Oracle Portal. For details, see the *Oracle Workflow Option Server Installation Notes for Windows NT*.

Step 1: Edit the database init.ora parameter file

Before you install Oracle Workflow, you must set the following parameters in the database init.ora file.

- **AQ_TM_PROCESSES:** Enable the time manager process in Oracle8i Advanced Queuing (AQ) by adding the following line to the init.ora parameter file:

```
AQ_TM_PROCESSES = 1
```

The time manager process is required by Workflow to monitor delay events in queues, as in the case of Workflow standard wait activity. The minimum recommended number of time manager processes for Workflow is one.

- **JOB_QUEUE_PROCESSES:** Specify the number of SNP job queue processes for your instance. For example, to set the number of job queue processes to two, add the following line to the init.ora parameter file:

```
JOB_QUEUE_PROCESSES = 2
```

Workflow requires job queue processes to handle propagation of Business Event System event messages by AQ queues. You must start at least one job queue process to enable message propagation. The minimum recommended number of processes for Workflow is two.

- **JOB_QUEUE_INTERVAL:** Specify the job queue interval to determine how frequently each SNP job queue process in your instance wakes up. For example,

to set the job queue interval to five seconds, add the following line to the `init.ora` parameter file:

```
JOB_QUEUE_INTERVAL = 5
```

To allow queues to be rechecked for messages with specified latency, Workflow requires the job queue interval to be less than or equal to the latency parameter defined for your AQ propagation schedules. The recommended job queue interval for Workflow is five seconds.

- **UTL_FILE_DIR:** Specify the directory that Oracle should use for PL/SQL file input I/O. You should set this parameter to the directory from which you upload the Workflow seed data file. This file is located in the `wf/res` subdirectory within your Oracle Home. For example, add the following line to the `ini.ora` parameter file:

```
UTL_FILE_DIR = <ORACLE_HOME>/wf/res
```

Restart your database to make these changes effective. For more information refer to the *Oracle8i Reference* and *Oracle 8i Application Developer's Guide - Advanced Queuing*.

Step 2: Create a Database Access Descriptor (DAD) for the Oracle Workflow Schema

1. Using your web browser, access the Oracle Portal PL/SQL Gateway Settings page:

```
http://<server_name>:<portID>/pls/<your Workflow  
DAD>/admin_/gateway.htm
```

For example: `http://myserver:80/Portal/admin_/gateway.htm`

Note: Make sure your Portal Listener is running.

2. Create a DAD for Oracle Workflow by entering the information shown below. You must create a new DAD.

Table 4–2 Information for creating a Workflow DAD

Field Name	Entry
Database Access Descriptor Name	<your Workflow DAD>
Schema Name	<Leave Blank>

Field Name	Entry
Oracle User Name	<Leave Blank>
Oracle Password	<Leave Blank>
Oracle Connect String	<CONNECT_STRING>
Authentication Mode	Basic
Session Cookie Name	<Leave Blank>
Create a Stateful Session?	No
Keep Database Connection Open Between Requests?	Yes
Default (Home) Page	wfa_html.home

Note: You must leave the Oracle User Name and Oracle Password null to enable mod_plsql database authentication.

Step 3: Install Workflow Server

On the computer where you installed the Oracle Data Warehouse database instance, install Oracle Workflow Server from the CD for *Oracle Workflow 2.6 for Microsoft Windows NT and Sun SPARC Solaris*. Follow the installation steps in the *Oracle Workflow Installation Guide*.

Step 4: Verify Your Base URL

To invoke the Oracle Workflow web services, append the appropriate procedure and arguments to your base URL. Once you define your web security and web users, you can verify your base URL by connecting as a valid user to the Oracle Workflow home page:

```
http://<server_name>:portID]/pls/<your Workflow DAD>/wfa_html.home
```

where `server_name` is the name of the server where you installed Oracle Portal. For example:

```
http://myserver:80/pls/WF_DAD/wfa_html.home
```

You can authenticate yourself with a database user name and password. When you install Oracle Workflow and its demonstration workflow processes, you also install

a demonstration data model that seeds a set of demonstration users in the directory service and creates the same users as database accounts. The users are: **sysadmin**, **wfadmin**, **blewis**, **cdouglas**, **kwalker**, and **spierson**. Their passwords are the same as their user names.

With Oracle Portal, you can authenticate your connection to an Oracle Workflow web page with any of these database user names and passwords. Public grants and synonyms are created so that these database accounts have full access to the Oracle Workflow web-based user interface.

Step 5: Set Up the Workflow Monitor

The Oracle Workflow Monitor is a Java applet that enables users and workflow administrators to view and optionally manipulate workflow process instances. The Workflow Monitor can be accessed by a web browser that supports Java Development Kit (JDK) Version 1.1.4 and AWT, such as Netscape Communicator 4.04 or higher.

Add a virtual directory mapping called `/OA_JAVA/` to your web listener that points to the Workflow java area on your file system. The java area is `<ORACLE_HOME>/wf/java`. The Oracle Universal Installer automatically installs the Java code in a directory tree in the Workflow java area when you install or upgrade the Oracle Workflow Server.

Add a virtual directory mapping called `/OA_MEDIA/` that points to the Workflow icon area on your file system. The icon area is `<ORACLE_HOME>/wf/java/oracle/apps/fnd/wf/icons/`. All icon and .gif files that are requested by the Workflow web interface must be stored in the `/OA_MEDIA/` virtual directory.

1. To add the required virtual directory mappings in *iAS*, add aliases for the Workflow java area and the Workflow icon area to the `<ORACLE_HOME>/Apache/Apache/conf/httpd.conf` or `httpds.conf` file. This configuration file defines the behavior of Oracle HTTP Server. Add the aliases using the following format:

On Unix:

```
Alias /OA_JAVA/ "$ORACLE_HOME/wf/java/"
Alias /OA_MEDIA/ "$ORACLE_HOME/wf/java/oracle/apps/fnd/wf/icons/"
```

For example:

```
...
#
```

```
# Aliases: Add here as many aliases as you need (with no limit). The format
is
# Alias fakename realname
#
...
Alias /OA_JAVA/ " /oracle8i/wf/java/ "
Alias /OA_MEDIA/ " /oracle8i/wf/java/oracle/apps/fnd/wf/icons/"
...
```

On Windows NT:

```
Alias /OA_JAVA/ " <ORACLE_HOME>\wf\java/ "
Alias /OA_MEDIA/ " <ORACLE_HOME>\wf\java\oracle\apps\fnd\wf\icons/"
```

For example:

```
#
# Aliases: Add here as many aliases as you need (with no limit). The format
is
# Alias fakename realname
#
...
Alias /OA_JAVA/ "C:\oracle8i\wf\java/"
Alias /OA_MEDIA/ "C:\oracle8i\wf\java\oracle\apps\fnd\wf\icons/"
...
```

Note: You must add a trailing slash to each alias name and physical directory path.

2. Restart Oracle HTTP Server.

Step 6: Set Up HTML Help

Oracle Workflow provides access to HTML help from the Help button located on each of its web pages. The HTML help is context-sensitive and provides links to the entire contents of the Oracle Workflow Guide, the Oracle Workflow 2.6 Release Notes, and the Oracle Workflow Documentation Updates.

To set up HTML help:

1. Create a directory for the HTML files on your file system.
2. Transfer the Workflow doc zip file \Doc\Wfdoc2.6.zip from the CD to the directory you just created.

3. Use an unzip utility, such as WINZIP from NicoMak, to extract the doc directory tree from the zip file.

This creates the following subdirectories:

- <doc>\wf\doc\<lang>\wf
- <doc>\wf\doc\<lang>\wfnew
- <doc>\wf\doc\<lang>\wfcust

4. Add a virtual directory mapping to your web listener that points to the doc directory tree you just installed on your file system.
5. Using your Web browser, navigate to the Oracle Portal Listener Settings page:

`http://<server_name>:<portID>/<DAD>/admin_/listener.htm`

6. Add a virtual directory mapping called /OA_DOC/ to your web listener that points to the new Workflow documentation area on your file system.
 - In iAS, add an alias for the Workflow documentation area to the <ORACLE_HOME>/Apache/Apache/conf/httpd.conf or httpds.conf file. The configuration file defines the behavior of Oracle HTTP Server. Add the alias using the following format:

On Unix:

```
Alias /OA_DOC/ <$ORACLE_HOME>/wf/doc/
```

For example:

```
...
#
# Aliases: Add as many aliases as you need(with no limit). The format is
# Alias fakenam realname
#
...
Alias /OA_DOC/ " /oracle8i/wf/doc/"
...
```

On Windows NT:

```
Alias /OA_DOC/ <$ORACLE_HOME>\wf\doc/
```

For Example:

```
...
#
# Aliases: Add as many aliases as you need(with no limit). The format is
```

```
# Alias fakename realname
#
...
Alias /OA_DOC/ C:\oracle8i\wf\doc/
...
```

Note: You must add a trailing slash to each alias name and physical directory path.

Install the Workflow Client

On the computer where you installed Warehouse Builder client, install the Oracle Workflow Client from the CD for *Oracle Workflow Client Release 2.6 for Microsoft Windows NT*. Follow the installation steps in the *Oracle Workflow Installation Guide*.

Apply a Patch to Enterprise Manager 2.2

This step is critical for the integration of Oracle Workflow with Warehouse Builder. You can find the Enterprise Manager patch information at <http://metalink.oracle.com>:

To download this patch from MetaLink:

1. Login to MetaLink.
2. Click on the link labeled **Patches** in the left-hand navigation bar.
3. On the new page, click the link labeled **Click here for Patches released after February 19, 2001 and for all Application Patches**.
4. On the new page, enter **1799032** in the patch number field.
5. Select the platform for which you require the patch: MS Windows NT/2000 Server or Sun SPARC Solaris.
6. Click **Submit**.
7. On the new page, click **Download**.

Apply a Patch to Oracle Workflow

This step is critical for the integration of Oracle Workflow with Warehouse Builder. This patch can be applied by all Workflow Server 2.6.0 and Workflow Server 2.6.1

users on *8i* or *9i*, including US and JA languages. You can find the patch information at <http://metalink.oracle.com>:

To download this patch from MetaLink:

1. Login to MetaLink.
2. Click on the link labeled **Patches** in the left-hand navigation bar.
3. On the new page, click the link labeled **Click here for Patches released after February 19, 2001 and for all Application Patches**.
4. On the new page, enter **1784138** in the patch number field.
5. Select the platform for which you require the patch: MS Windows NT/2000 Server or Sun SPARC Solaris.
6. Click **Submit**.
7. On the new page, click **Download**.

Installing Warehouse Builder Workflow Queue Listener

The Warehouse Builder Queue Listener enables communication between Enterprise Manager and Workflow when you schedule Warehouse Builder jobs and dependencies with these tools. You must install the Queue Listener to ensure that all Warehouse Builder job dependencies are managed when jobs are run by Enterprise Manager.

On Windows NT

To install Warehouse Builder Queue Listener on a Windows NT host:

1. On your Windows NT host, copy the wfql_nt/owb directory from the misc directory in the installed image to your Windows NT Oracle Home server edition.

The owb directory resides directly under your Oracle Home. It contains lib and bin sub-directories, with the following structure:

```
owb/bin/win32/workflowqclr.bat
owb/bin/win32/workflowqlsnr.bat
owb/bin/win32/workflowqlsnr1bat
owb/lib/int/workflowrt.jar
owb/lib/int/rts.jar
owb/lib/ext/aqapi11.jar
owb/lib/ext/ewt.zip
owb/lib/ext/rts.zip
owb/lib/ext/share.zip
```

The batch scripts use the 1.1 JVM held in your Oracle Home JRE sub-directory.

2. You are now ready to execute the scripts. The following is a summary of the scripts supplied:
 - **workflowqlsnr.bat:** Warehouse Builder workflow queue listener.
 - **workflowqlsnr1.bat:** Warehouse Builder workflow queue listener.
 - **workflowqclr.bat:** Warehouse Builder workflow script for clearing contents of workflow queues for an item type.

On Unix

To install Warehouse Builder Queue Listener on a UNIX host:

1. On your UNIX host, copy the wfql_unix/owb directory from the misc directory in the installed image to your UNIX Oracle Home server edition.

The owb directory now resides directly under your Oracle Home. The owb directory contains lib and bin sub-directories, containing the following structure:

```
owb/bin/solaris/workflowqclr.sh
owb/bin/solaris/workflowqlsnr.sh
owb/bin/solaris/workflowqlsnr1.sh
owb/lib/int/workflowrt.jar
owb/lib/int/rts.jar
owb/lib/ext/aqapi11.jar
owb/lib/ext/ewt.zip
owb/lib/ext/rts.zip
owb/lib/ext/share.zip
```

The shell scripts use the 1.1 JVM held in your Oracle Home JRE sub-directory.

2. To provide the scripts with execute permissions:

```
cd $ORACLE_HOME/owb/bin/solaris
chmod a+x workflowqclr.sh
chmod a+x workflowqlsnr.sh
chmod a+x workflowqlsnr1.sh
```

3. You are now ready to execute the scripts. The following is a summary of the scripts supplied:
 - **workflowqlsnr.bat:** Warehouse Builder workflow queue listener.
 - **workflowqlsnr1.bat:** Warehouse Builder workflow queue listener (silent).
 - **workflowqclr.bat:** Warehouse Builder workflow script for clearing contents of workflow queues for an item type.

Deinstalling Warehouse Builder Components

This chapter contains instructions for deinstalling Warehouse Builder components.

This chapter includes:

- [Deinstall Warehouse Builder Browser Objects](#)
- [Deinstall Warehouse Builder Repository Objects](#)
- [Deinstall Warehouse Builder Runtime Repository Objects](#)
- [Deinstall Warehouse Builder Client](#)

Overview

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

Note: 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.

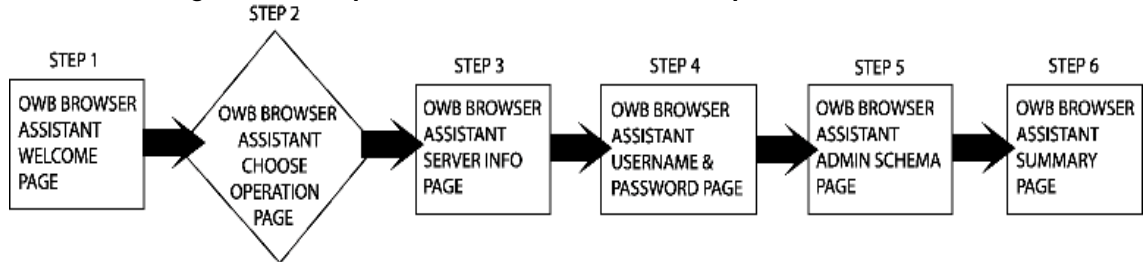
To remove existing Oracle software prior to installing new products:

1. Start the Oracle Universal Installer (OUI) by inserting an Oracle product installation CD in your computer.
OUI displays the Welcome page.
2. On the OUI Welcome page, click **Installed Products** to obtain an inventory of all Oracle products installed on your system.
The Available Product Components page displays a list of all Oracle products on your system.
3. Select and delete all existing Oracle products and their components.

Deinstall Warehouse Builder Browser Objects

To deinstall the Warehouse Builder Browser objects:

1. From the **Start** menu, select **Programs**, then **Oracle Warehouse Builder Browser Assistant**.
The Warehouse Builder Browser Installation Assistant Welcome page displays.
2. Click **Next**.
The Choose Operation page displays.
3. Select **Deinstall Warehouse Builder Browser Objects**.
Follow the wizard to deinstall the Warehouse Builder Browser objects from your database.

Figure 5–1 Drop Warehouse Builder browser steps

Deinstall Warehouse Builder Repository Objects

To deinstall an Warehouse Builder Repository:

1. From the **Start** menu, select **Warehouse Builder Repository Assistant**.

The Repository Installation Assistant Welcome page displays.

2. Click **Next**.

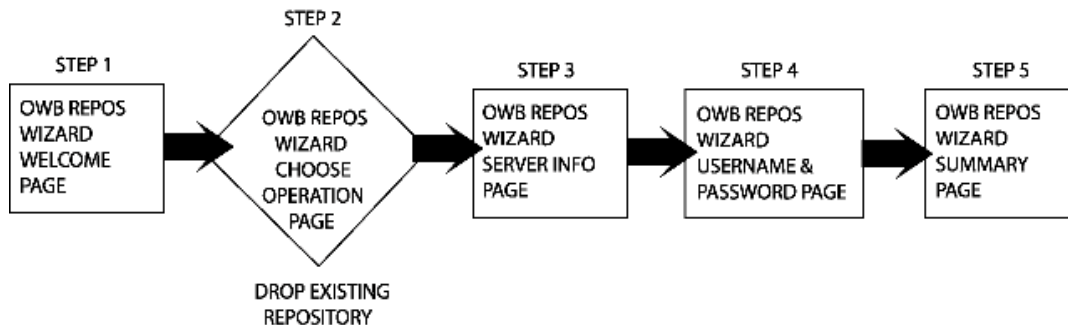
The Choose Operation page displays.

3. Select **Drop Existing Repository Objects**, then proceed from there.

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

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

Figure 5–2 Drop Repository wizard steps



Deinstall Warehouse Builder Runtime Repository Objects

To deinstall an Warehouse Builder Runtime Repository:

1. From the **Start** menu, select **Warehouse Builder Runtime Assistant**.

The Runtime Installation Assistant Welcome page displays.

2. Click **Next**.

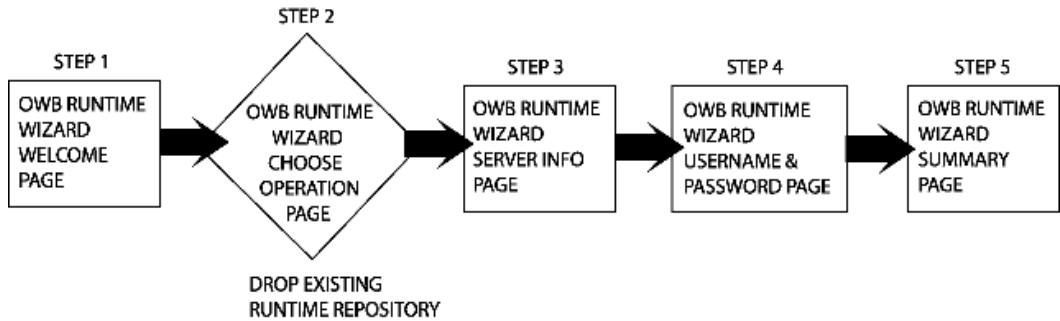
The Choose Operation page displays.

3. 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.

Figure 5–3 Drop Runtime wizard steps



Deinstall Warehouse Builder Client

To deinstall the Warehouse Builder Client software, select **Deinstall** from the initial Welcome page, then select client components you want to drop.

Note: You must deinstall the Warehouse Builder repositories before you deinstall the Warehouse Builder Client.

Preparing an 8.1.7 or 9i Database

Before installing Warehouse Builder, you need to prepare your Oracle 8.1.7 or 9i database by setting the following configuration parameters.

For the Repository Database Instance

The Warehouse Builder Repository database runs on standard Oracle8i/9i OLTP configuration parameters. To specify these parameters, modify the init.ora file in the directory [Drive:]\Oracle\admin\owbrepos\pfile\.

[Table A–1](#) lists the configuration parameters that can be used as an initial guide to improving performance.

Table A–1 Initialization Parameters for Warehouse Builder Repository Instance

Initialization Parameter	Set to Value...	Comments
GLOBAL_NAMES	FALSE	Allows you to create database link names without the restrictions that Oracle Names imposes. Note that if you set this parameter to FALSE on the Oracle Warehouse Builder databases, you may not be able to access other databases that have Oracle Names enabled.
OPEN_CURSORS	200	You may specify a higher value.
DB_BLOCK_SIZE	8192	This parameter is set when the database is created and cannot be changed. The recommended value is 8192 or greater depending on your business requirements.
DB_BLOCK_BUFFERS	4098	Consult your DBA for the correct settings for your installation.

Table A–1 Initialization Parameters for Warehouse Builder Repository Instance

Initialization Parameter	Set to Value...	Comments
REMOTE_LOGIN_PARAMETERFILE	EXCLUSIVE	Required to ensure that the SYSDBA privilege is granted to the SYS user.

For the Runtime Repository (Warehouse) Database Instance

To support the Warehouse Builder runtime component, you need to modify the Oracle8i/9i Enterprise Edition instance on the system where your data warehouse will reside. The Warehouse Builder Runtime Assistant creates a runtime schema with sufficient privileges to create materialized views and query rewrite.

In order for the materialized views to perform properly in the runtime, you must set the following initialization parameters for the Runtime Repository instance in its init.ora file, which is found in the directory [Drive:]\Oracle\admin\owbdw\pfile\.

Important:	Configure the Warehouse Builder Runtime instance to have at least one non-system rollback segment. Otherwise the seeded runtime packages will not compile.
-------------------	--

Table A–2 lists the initialization parameters.

Table A–2 Initialization Parameters for Warehouse Builder Runtime Repository Instance

Initialization Parameter	Set to Value...	Comments
GLOBAL_NAMES	FALSE	Allows you to create database link names without the restrictions that Oracle Names imposes. Note that if you set this parameter to FALSE on the Oracle Warehouse Builder databases, you may not be able to access other databases that have Oracle Names enabled.
OPEN_CURSORS	200	You may specify a higher value.

Table A–2 Initialization Parameters for Warehouse Builder Runtime Repository Instance (Cont.)

Initialization Parameter	Set to Value...	Comments
DB_BLOCK_SIZE	16384	<p>This parameter is set when the database is created. Do not change it.</p> <p>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.</p>
DB_BLOCK_BUFFERS	20000	<p>This change is optional. Depending upon your requirements, set the buffer size to 80000 or even 200000. Use a large enough number to hold most of the largest dimension table, but not so large that it causes paging and swapping. If your computer has less than 512 MB of RAM, use the default value for this parameter.</p>
COMPATIBLE	8.1.0	<p>If this parameter is not in the initialization file, add it to the end of the file.</p>
OPTIMIZER_MODE	CHOOSE	<p>For other possible optimizer modes, see <i>Oracle8i Designing and Tuning for Performance</i> and <i>Oracle8i Data Warehousing Guide</i>.</p>
QUERY_REWRITE_ENABLED	TRUE	<p>If you plan to generate materialized views with the QUERY REWRITE option.</p>
DB_FILE_MULTIPLE_BLOCK_READ_COUNT	16	<p>A value of 16 is recommended, 32 is preferred. If you use disk striping or RAID5, set this parameter according to the stripe size: $stripe_size = 2 * DB_BLOCK_SIZE * DB_FILE_MULTIBLOCK_READ_COUNT$.</p>
DBWR_IO_SLAVES	<i>n</i>	<p>n = number of CPUs (minimum) or $n = 2 * \text{the number of CPUs}$ (recommended)</p>
LOG_BUFFER	<i>n</i>	<p>$n = 20 * DB_BLOCK_SIZE$ (minimum) or $40 * DB_BLOCK_SIZE$ (recommended)</p>
HASH_AREA_SIZE	1 MB (1000000)	
SORT_AREA_SIZE	1 MB (1000000)	
Add to End of Parameter File:		

Table A–2 Initialization Parameters for Warehouse Builder Runtime Repository Instance (Cont.)

Initialization Parameter	Set to Value...	Comments
UTL_FILE_DIR	*	Specifies the directories that PL/SQL can use for file I/O. UTL_FILE_DIR = * specifies that all directories can be used for file I/O. If you want to specify individual directories, repeat this parameter on contiguous lines for each directory. If you are creating flat file targets in Warehouse Builder, this parameter needs to be set to the directory where you want to create the flat file target so that your database engine has access to it. (Refer to note below for details).
AQ_TM_PROCESSES	1	OWB/OWF Advanced Queueing System: Workflow Engine only.
ENQUEUE_RESOURCES	3000	
Parameters for Parallel Query —Depending on how familiar you are with administering parallel processing in Oracle8i, we suggest the following:		
For Novice Users:		
PARALLEL_AUTOMATIC_TUNING	TRUE	
For Experienced DBAs:		
PARALLEL_MIN_PERCENT	50	
PARALLEL_MIN_SERVERS	2	
PARALLEL_MAX_SERVERS	<i>n</i>	Where $n > 4$ * the number of CPUs on the servers. Increase PARALLEL_MAX_SERVERS if you run several mappings at the same time.

To configure Target Data File Path for Flat file Targets, you need to make sure that this path is set in the init.ora file of warehouse instance. The UTL_FILE_DIR parameter needs to be set to the directory where you want to create the flat file targets so that your database engine has access to it.

For example, if you want the server to put the output flat file into D:\Data\FlatFiles\File1.dat, then the UTL_FILE_DIR parameter in your init.ora should be:

UTL_FILE_DIR = D:\Data\FlatFiles

If you want to have multiple valid locations such as both D:\Data\FlatFiles and

E:\OtherData) you need to configure the init.ora parameter as follows:

UTL_FILE_DIR = D:\Data\FlatFiles

UTL_FILE_DIR = E:\OtherData

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

You can bypass this checking of directories (not recommended for production databases, only for development & testing purposes) by using the following:

UTL_FILE_DIR = *

Warehouse Builder Validation service returns a warning that this parameter must be set in the init.ora file, but the validation does not actually verify if this parameter is set or not.

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