
Oracle Workflow[™] Server Installation Notes

(Release 2.6)

Purpose

These notes explain how to install or upgrade the Oracle Workflow server.



Attention: Do not install the Oracle Workflow server in an Oracle E-Business Suite database. If you are licensing Oracle Workflow to define new workflow processes in Oracle E-Business Suite, you can continue to use the version of the Oracle Workflow server embedded in Oracle E-Business Suite.

Audience

These notes are written for the person or persons responsible for installing or upgrading Oracle Workflow server components. The person(s) performing this installation may need assistance from the:

- Operating System Administrator
- Oracle System Administrator
- Oracle DBA
- Oracle Internet Application Server Administrator

Table of Contents

Oracle Workflow Server	Page 3
Oracle Workflow Server Hardware and Software Requirements	Page 5
Oracle Workflow Server Installation	Page 6
Additional Setup Steps	Page 20



Oracle Workflow Server

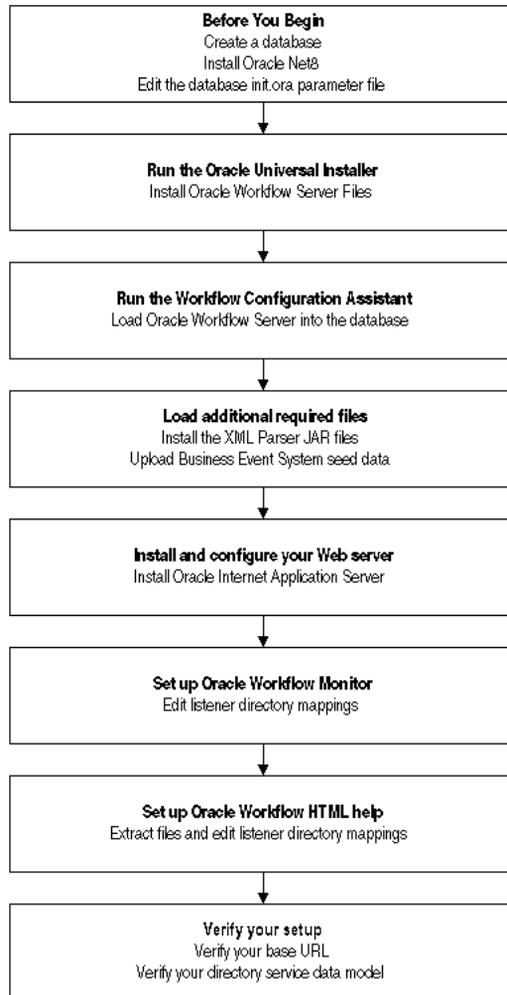
Oracle Workflow Server contains several components that are installed using the Oracle Universal Installer from the Oracle Workflow Server CD:

- Oracle Workflow server objects
- Oracle Workflow server executables
- Oracle Workflow Monitor
- Oracle Workflow HTML help

The Oracle Universal Installer and the Oracle Workflow Server 2.6 installation instructions and components for all available server platforms are included on the Oracle Workflow Server CD. The CD contains the following directory structure and files when viewed from a PC with access to a CD-ROM drive:

- **Oracle Workflow Server**—\install*<platform>*
- **Release Notes**—\wfrelnotes.txt, \wfrelnotes.pdf
- **Installation Notes**—\wfinstsrv.txt, \wfinstsrv.pdf

Installing the Oracle Workflow Server



Oracle Workflow Server Hardware and Software Requirements

The components of Oracle Workflow Server require the following hardware and software configurations:

- Oracle8i Enterprise Edition database version 8.1.6 or higher, along with the Oracle Objects and JServer Options, installed on a supported server machine
- At least 20 Mb of available disk space for Oracle Workflow Server once it is installed in your Oracle Home
- At least 128 Mb of memory, 256 Mb recommended
- Oracle Net8 8.1.6 or higher
- SQL*Plus 8.1 or higher
- Oracle Internet Application Server 1.0.1 or higher, installed on a server machine
- A Web browser that supports frames, JavaScript, Java Development Kit (JDK) Version 1.1.4 and AWT, such as Netscape Communicator 4.04 or higher
- UNIX Sendmail or a MAPI-compliant mail application
- An unzip utility, such as WINZIP from NicoMak, to extract the Workflow HTML help from the wfdoc26.zip file
- Java Runtime Environment (JRE) Version 1.1.8 or higher to run the Oracle Workflow 2.6 Java Function Activity Agent

If you are installing Oracle Workflow Server on Microsoft Windows NT, the following additional hardware and software configurations are required:

- ISO 9660 format CD-ROM available as a logical drive
- Microsoft Windows NT 4.0 or higher

Notification Mailer

- The notifications component includes a program called the Notification Mailer. This program communicates notifications to users via e-mail and interprets responses. The Notification Mailer has implementations that can integrate directly with UNIX Sendmail or MAPI-compliant mail applications.

- The UNIX Sendmail implementation is installed automatically during the Oracle Workflow Server installation process. This implementation requires UNIX Sendmail to be installed on the same server as Oracle Workflow.
- The MAPI-compliant implementation is installed on your Windows NT PC using the Oracle Universal Installer from the Oracle Workflow Client CD. This implementation requires a Windows NT MAPI-compliant mail application installed on the PC that is acting as your mail server.

Oracle Workflow Monitor

- Oracle Internet Application Server must be installed on a server machine with access to an ISO 9660 format CD-ROM. If you do not have access to a CD-ROM drive from the workstation, then you must be able to copy files using binary file transfer from a PC or other machine with a CD-ROM drive.

Note: These notes assume that you have an understanding of web technology and the Oracle Internet Application Server architecture. For additional information, refer to the online help provided with Oracle Internet Application Server.

- To use the Workflow Monitor you need access to a Web browser that supports Java Development Kit (JDK) Version 1.1.4 and AWT. Netscape Communicator 4.0.4 or higher is an example of such a client.

Oracle Workflow Notifications

- To view the Notifications web pages, you need access to a Web browser that supports frames and JavaScript. Netscape Communicator 4.0.4 or higher is an example of such a client.
- To respond to e-mail notifications with HTML attachments, your e-mail application must support HTML attachments and you must use a Web browser application that supports frames and JavaScript to view the attachment. Netscape Communicator 4.0.4 is an example of such a client.

Oracle Workflow Server Installation

Perform the following steps to install Oracle Workflow Server or to upgrade an existing version of Oracle Workflow Server Release 2.5 to Release 2.6.



Attention: To upgrade to Release 2.6, your existing Oracle Workflow Server must be Release 2.5.0 or higher. Before you upgrade an existing Oracle Workflow server, ensure that there are no users accessing the server. Otherwise, locks in the database will prohibit a successful upgrade.



Attention: The Oracle Workflow 2.6 server installation and upgrade are available only in English. However, Oracle Workflow server translation patches will become available in other languages. To support access to Oracle Workflow in another language, you must apply the translation patch for your language preference after you complete the installation steps described in these notes.

Note: The following typeface represents commands that you enter for your environment. Any variable input is enclosed in brackets and is italicized.

```
cd <workflow_top_directory>
```

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 Oracle Workflow to monitor delay events in queues, as in the case of the Oracle Workflow standard Wait activity. The minimum recommended number of time manager processes for Oracle 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
```

Oracle 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 Oracle 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
```

Oracle Workflow requires the job queue interval to be less than or equal to the latency parameter defined for your AQ propagation schedules, to allow queues to be rechecked for messages with the specified latency. The recommended job queue interval for Oracle 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 will upload the Oracle Workflow seed data file. The seed data file is located in the wf/res subdirectory within your Oracle Home. For example, add the following line to the init.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 *Oracle8i Application Developer's Guide – Advanced Queuing*.

Step 2. Install Oracle Workflow Server Files using the Oracle Universal Installer.

Run the Oracle Universal Installer to copy the Oracle Workflow Server files to your system. The installation should take approximately 15 minutes, depending on your system's speed and capacity.

Note: Before you begin running the Oracle Universal Installer, you should close other applications you may have running, including Java applications, Oracle-based applications, and any other applications that consume large amounts of memory, hard disk space, or CPU time. However, you should not close any components of the Oracle8i database where you want to install Oracle Workflow.

1. Start the Oracle Universal Installer.

On UNIX:

- Insert the Oracle Workflow Server CD into the CD-ROM drive.
- Set the environment variable DISPLAY to your host machine. For example, in C shell, enter the following command:

```
setenv DISPLAY <host>:0.0
```

In Korn shell or Bourne shell, enter the following commands:

```
DISPLAY = <host>:0.0  
export DISPLAY
```

- Enter the following command to run the UNIX version of the Oracle Universal Installer:

```
<CD_ROM>/install/solaris/runInstaller
```

On Windows NT:

- Insert the Oracle Workflow Server CD into your PC's CD-ROM drive.
- For Windows NT Version 4.0, choose Run from the taskbar Start button. Enter the following command to run the Windows NT version of the Oracle Universal Installer:

```
<CD_ROM_drive_letter>:\install\win32\setup.exe
```

2. When the Oracle Universal Installer is started, the Welcome window appears. Click Next.

Note: Click Help in any Oracle Universal Installer window for more information about that window.

3. The File Locations window appears. Review the stage location of the Oracle Workflow Server files, and enter the Oracle Home location where you want to install Oracle Workflow Server. Then click Next.
4. The Launch Configuration Assistant Option window appears. Select whether you want to launch the Workflow Configuration Assistant automatically. The Workflow Configuration Assistant loads Oracle Workflow into your database by creating the Workflow database objects in the database.
 - **Yes**—When the Oracle Universal Installer finishes copying the Workflow files to your system, the Workflow Configuration Assistant launches automatically to load Oracle Workflow into your database.
 - **No**—The Oracle Universal Installer copies the Workflow files to your system without loading Oracle Workflow into your database. You must run the Workflow Configuration Assistant manually to complete your configuration.

After selecting the option you want, click Next.

5. The Summary window appears. Review the summary information to ensure you have enough disk space. When you are ready to begin the installation, click Install.
6. The Install window appears, displaying the progress of the installation.
7. If you chose to launch the Workflow Configuration Assistant automatically, the Configuration Tools window appears when the installation is complete, and the Workflow Configuration Assistant launches. For instructions on performing the configuration, see Step 3. Run the Workflow Configuration Assistant: Page 10.

8. The End of Installation window appears. Click Exit to exit the Oracle Universal Installer. You can also click Next Install to return to the File Locations window.

Step 3. Run the Workflow Configuration Assistant.

Run the Workflow Configuration Assistant to load Oracle Workflow into your database. You can either launch the Workflow Configuration Assistant automatically from the Oracle Universal Installer, or you can run it manually at a later time. The configuration should take approximately 10 minutes, depending on your system's speed and capacity.

Note: Before you begin running the Workflow Configuration Assistant, you should close other applications you may have running, including Java applications, Oracle-based applications, and any other applications that consume large amounts of memory, hard disk space, or CPU time. However, you should not close any components of the Oracle8i database where you want to load Oracle Workflow.

1. Start the Workflow Configuration Assistant.
 - If you chose to launch the Workflow Configuration Assistant automatically during your installation, then the Oracle Universal Installer launches the Workflow Configuration Assistant for you when the installation is complete. See: Step 2. Install Oracle Workflow Server files using the Oracle Universal Installer: Page 8.
 - You can also run the Workflow Configuration Assistant manually. Use the following commands:

On UNIX:

```
$(ORACLE_HOME)/wf/install/wfinstall
```

On Windows NT:

```
\<ORACLE_HOME>\wf\install\wfinstall.bat
```

2. In the Oracle Workflow Configuration Assistant window, enter the following user information:

- **Workflow Account**—The user name of your Oracle Workflow database account. The default Workflow account for a fresh installation is `OWF_MGR`.
- **Workflow Password**—The password for your Oracle Workflow database account.

Note: If you are performing a fresh installation of Oracle Workflow, the Workflow Configuration Assistant creates a new database account for Oracle Workflow with the

user name and password you specify. The default tablespace for this account defaults to `USERS`, and the temporary tablespace defaults to `TEMP`.

If you are upgrading an existing installation of Oracle Workflow, you should enter the user name and password for your existing Oracle Workflow database account.

- **SYS Password**—Your SYS password. See your Oracle DBA if you need more information.
- **SYSTEM Password**—Your SYSTEM password. See your Oracle DBA if you need more information.
- **Install Option**—Select `Install` to perform a fresh installation of Oracle Workflow, or select `Upgrade` to upgrade an existing installation of Oracle Workflow.



Attention: To upgrade to Release 2.6, your existing Oracle Workflow Server must be Release 2.5.0 or higher.

- **Connect Method**—Select `Local` to connect to a local database using the Oracle SID, or select `Remote` to connect to a remote database through Net8 using `LOCAL` on Windows or `TWO_TASK` on UNIX.
 - **Connect String**—If you choose the Remote connect method, enter the connect string for the remote database.
3. Click Submit to begin the configuration. You can also click Quit to exit the Workflow Configuration Assistant without performing the configuration.
 4. When the configuration is complete, a confirmation window appears. Click OK.
 5. You can check the status of the configuration by reviewing the `workflow.log` file located in the `wf/install` subdirectory within your Oracle Home.

Step 4. Install the XML Parser JAR Files (conditionally required)

Oracle Workflow requires the XML Parser JAR files to be installed in the database with public synonyms to enable XML-based Workflow features. If your database does not already have these JAR files loaded, you must install the files manually.

Use the following SQL script to determine which XML Parser class files have not been created as public synonyms. The script returns one row for each Java class, showing the object name, object type, and `EXIST` or `NOT EXIST` as the status of the public synonym.

- If the status is `EXIST` for each class file, then the public synonyms have been created already, and you can skip this step.

- If the status is NOT EXIST for any class, then the class has been installed, but the public synonym for that class has not yet been created. You should either create the public synonym or reinstall the JAR files manually.
- If the script does not retrieve any records, then the JAR files have not been loaded. You must install the files manually.

To check the XML Parser files, connect to the SYS account in your database and run the following script:

```
prompt ** Checking Account for XML Parser JAR files
prompt ** which have public synonyms
set pagesize 100
col OBJECT_NAME for a30 Head "Object Name"
col OBJECT_TYPE for a14 Head "Object Type"
col PUBLIC_SYNONYM for a14 Head "Public Synonym"
select ao.object_name, ao.object_type,
decode(asy.synonym_name,ao.object_name, 'EXIST','NOT EXIST') PUBLIC_SYNONYM
from all_objects ao, all_synonyms asy
where ao.object_type = 'JAVA CLASS'
and ao.object_name like 'oracle/xml/parser%'
and ao.object_name = asy.synonym_name(+)
/
```

To install the XML Parser JAR files manually, perform the following steps:

1. Set the environment variable ORACLE_SID to the database where Oracle Workflow is installed.
2. Load the XML Parser JAR files to the SYS account in your database, creating public synonyms. Use the following commands:

```
loadjava -r -s -user SYS/<SYS password> -v <WF_TOP>/xml/java/lib/xmlparserv2.jar
```

```
loadjava -r -s -user SYS/<SYS password> -v <WF_TOP>/xml/plsql/lib/java/xmlplsql.jar
```

Replace *<SYS password>* with the password for the SYS account, and *<WF_TOP>* with the path where the Workflow files are located on your system.

Step 5. Upload Business Event System seed data.

To enable communication of business events between systems, upload the seed data for the Business Event System.

Note: Many of the web pages for the Business Event System will not be available until this step is complete.

1. Ensure that the UTL_FILE_DIR parameter in the database init.ora file is set to the directory from which you will upload the seed data file. The seed data file is located in the wf/res subdirectory within your Oracle Home. For example, add the following line to the init.ora parameter file:

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

2. Upload the seed data file by running the script wfscdupld.sql. This script is located in the wf/admin/sql subdirectory within your Oracle Home. Connect to your Oracle Workflow database account using SQL*Plus and run the script using the following command:

```
sqlplus <WF user/WF pwd> @<ORACLE_HOME>/wf/admin/sql/wfscdupld <directory> wfscdupld.xml
```

Replace *<directory>* with the directory from which you will upload the seed data file. This directory must be exactly the same directory that is specified in the UTL_FILE_DIR parameter.

3. After you install and configure your Web server for Oracle Workflow, use the Global Workflow Preferences web page and the Event Manager web pages to verify the seed data that was uploaded.

When you set up the Business Event System, you should also enable the local system as well as any seeded agents and subscriptions that you need to communicate business events. Refer to the Setting Up Oracle Workflow and Managing Business Events chapters in the *Oracle Workflow Guide* for more information on using the Global Workflow Preferences and Event Manager web pages, respectively.

Step 6. Install and configure your Web server.

Oracle Workflow requires that you integrate with Oracle Internet Application Server (iAS) 1.0.1 or higher as your Web server. Oracle Internet Application Server is available separately from Oracle Corporation and includes its own installation and reference documentation. Your Web server installation must be able to access the Oracle Workflow java area, the Oracle Workflow icon area, and the Oracle Workflow documentation area.

1. Install the following Oracle Internet Application Server components:
 - Oracle HTTP Server (powered by Apache)
 - Oracle Mod PL/SQL Gateway

Refer to your Oracle Internet Application Server installation documentation for further details.

- Using your web browser, navigate to the following URL:

```
http://<server_name>[:<portID>]/
```

Replace *<server_name>* and *<portID>* with the server and port number on which your web listener accepts requests. For example:

```
http://test.company.com:80/
```

- In the Oracle HTTP Server Components page, choose "mod_plsql".
- In the Gateway Configuration Menu page, choose "Gateway Database Access Descriptor Settings".
- In the Database Access Descriptors page, choose "Add Default (blank configuration)".
- Create a DAD for Oracle Workflow by entering the information shown below.

Database Access Descriptor Name	<i><your Workflow DAD></i>
Schema Name	<Leave Blank>
Oracle User Name	<Leave Blank>
Oracle Password	<Leave Blank>
Oracle Connect String	<i><CONNECT_STRING></i>
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



Attention: Be sure you leave the Oracle User Name and Oracle Password null to enable mod_plsql database authentication.

- To access Oracle Workflow's web services, navigate to the following URL:

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

Note: The icons on the Oracle Workflow web pages will appear as broken images until you add a virtual directory mapping to the Oracle Workflow icon area. See Step 7. Set up the Oracle Workflow Monitor: Page 15.

Step 7. Set up the Oracle Workflow Monitor.

The Oracle Workflow Monitor is a Java applet that allows users and workflow administrators to view and optionally manipulate workflow process instances. The Oracle 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 Oracle 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 Oracle Workflow java area when you install or upgrade the Oracle Workflow Server.

Also, add a virtual directory mapping called `/OA_MEDIA/` that points to the Oracle 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 required by Oracle Workflow's 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 Oracle Workflow java area and the Oracle 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\fnf\wf\icons/"
...

```



Attention: Be sure to add a trailing slash to each alias name and physical directory path.

2. Restart Oracle HTTP Server.

Step 8. Set up Oracle Workflow HTML help.

Oracle Workflow provides access to HTML help from the Help button on each of its web pages. The HTML help that appears is context-sensitive and provides links to the entire contents of the *Oracle Workflow Guide*.

When you install Oracle Workflow Server, the Oracle Universal Installer copies a zip file containing the HTML help to the Workflow directory in your Oracle Home. The zip file is `<ORACLE_HOME>/wf/wfdoc26.zip`. To set up the HTML help, you must extract the doc directory tree from the zip file and add a virtual directory mapping called `/OA_DOC/` to your web listener that points to the documentation area on your file system.

1. Use an unzip utility to extract the doc directory tree from the zip file within the Workflow directory.

Note: You need at least 4 Mb of free disk space to extract the zip file.

The doc directory tree that is created includes the Oracle Workflow documentation area, `<ORACLE_HOME>/wf/doc`, and the following subdirectories:

- `<ORACLE_HOME>/wf/doc/<lang>/wf`—Oracle Workflow Guide.
- `<ORACLE_HOME>/wf/doc/<lang>/wfnew`—Oracle Workflow Release 2.6 New Features and Changes.
- `<ORACLE_HOME>/wf/doc/<lang>/wfcust`—Custom Help. You can optionally add your own customized Workflow help in this directory.

Note: You can also install the doc directory tree on a PC file system. Create a directory for the HTML help on your PC. Then transfer the HTML help zip file, `wfdoc26.zip`, from the Workflow subdirectory within your Oracle Home to the new directory on your PC. Use an unzip utility to extract the doc directory tree from the zip file in that directory.

2. After extracting the doc directory tree, you can optionally remove the zip file.
3. Add a virtual directory mapping called `/OA_DOC/` to your web listener that points to the new Oracle Workflow documentation area on your file system.
 - In *iAS*, add an alias for the Oracle Workflow documentation 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 alias using the following format:

On UNIX:

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

For example:

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

On Windows NT:

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

For example:

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



Attention: Be sure to add a trailing slash to each alias name and physical directory path.

- After adding the alias, restart Oracle HTTP Server.
4. After the `/OA_DOC/` virtual directory mapping is added to your web listener, you can access the HTML help from the Help button on any Oracle Workflow web page. You can also access any HTML help file directly by appending its virtual path to your web listener base URL.

The path for the contents page of the Oracle Workflow Guide is:

```
http://<server_name>[:<portID>]/OA_DOC/<lang>/wf/wftop.htm
```

The path for the contents page of the Oracle Workflow Release 2.6 New Features and Changes is:

```
http://<server_name>[:<portID>]/OA_DOC/<lang>/wfnew/wfnew.htm
```

The path for the contents page of your Oracle Workflow Custom Help is:

```
http://<server_name>[:<portID>]/OA_DOC/<lang>/wfcust/wfcust.htm
```

Step 9. Verify your base URL.

To invoke Oracle Workflow's web services, you simply 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
```

If you are using Oracle Internet Application Server, you can authenticate yourself with a database username 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 these same users as database accounts. The users are: sysadmin, wfadmin, blewis, cdouglas, kwalker, and spierson. Their passwords are the same as their usernames.

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

Step 10. Verify your directory service data model.

Run the script `wfdirchk.sql` in SQL*Plus to verify the integrity of your directory service data model. The script is located on your Oracle Workflow server in the Oracle Workflow `admin\sql`

subdirectory. Refer to the Workflow Administration Scripts chapter of the *Oracle Workflow Guide* for more information.



Additional Setup Steps

After you complete the Oracle Workflow installation process, you must perform some additional steps to set up Oracle Workflow for your site. Some of the setup steps are required; other steps are optional, depending on the Oracle Workflow features you want to implement. Refer to the Setting Up Oracle Workflow and the Managing Business Events chapters in the *Oracle Workflow Guide* for information on how to complete these and other setup steps for Oracle Workflow. The setup steps include:

1. (Required) Configuring the default global user preferences for your enterprise.
2. (Required) Mapping Oracle Workflow's directory service views to your organization's users and roles. Oracle Universal Installer automatically executes the *wfdirouv.sql* script to map the directory service views to your native Oracle users and roles. You can either create your own script or customize and rerun this script to map the directory service views to the users and roles defined in your organization's directory repository.



Attention: The *wfdirouv.sql* script sets each native Oracle user's e-mail address to the user's respective username. As a minimal setup step, you should edit the *wfdirouv.sql* script to either link your native Oracle users to an existing mail directory store through the WF_ROLES view definition or, if the usernames and e-mail account names match, then simply add the domain for your organization, such as '@oracle.com', to the usernames in the WF_USERS view definition. Typically, the columns that you change are EMAIL_ADDRESS in WF_USERS and EMAIL_ADDRESS in WF_ROLES.

3. (Required) Creating a view called WF_LANGUAGES that identifies the languages defined in your Oracle8i installation. The *wfdirouv.sql* script run by the Oracle Universal Installer automatically creates a sample WF_LANGUAGES view for you. If you want to use this view, you should verify it first by connecting to SQL*Plus using your Workflow database account and querying the view for all languages defined in your Oracle8i installation.
4. (Optional) Defining an environment variable called http_proxy if you plan to use the Notification Mailer.
5. (Required) Defining an environment variable called WF_RESOURCES if your Workflow Server is installed on a UNIX platform.



Attention: Do not enclose environment variable values in double quotes (" ") as this is not supported.

6. (Optional) Defining a document management system node for Oracle Workflow if you want to integrate document management attachments in a workflow process.

7. (Required) Initiating background Workflow engines to process deferred work and timed out activities.
8. (Optional) Configuring and running the Notification Mailer program, to allow users to receive e-mail notifications or e-mail notification summaries.
9. (Optional) Customizing e-mail notification templates.
10. (Optional) Customizing the logo displayed on Oracle Workflow's web pages.
11. (Optional) Adding custom icons to Oracle Workflow.
12. (Optional) Starting the Java Function Activity Agent to run external Java functions.
13. (Optional) Setting up database links and queues for the Business Event System to communicate events between systems.
14. (Optional) Setting up the WF_EVENT_OMB_QH queue handler to use Oracle Message Broker to propagate event messages between systems.
15. (Optional) Scheduling Business Event System listeners and propagations to receive and send event messages.
16. (Optional) Setting up event subscriptions to synchronize Business Event System data on different systems.

