Oracle® Application Server InterConnect

Installation Guide

10*g* (9.0.4)

Part No. B10693-01

November 2003

ORACLE®

Oracle Application Server InterConnect Installation Guide, 10*g* (9.0.4)

Part No. B10693-01

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Oracle Application Server InterConnect Installation Guide, 10*g* (9.0.4)

Part No. B10693-01

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Preface

This preface contains these topics:

Intended Audience

Oracle Application Server InterConnect Installation Guide is intended for system administrators and others responsible for installing Oracle products.

Documentation Accessibility

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

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Organization

This document contains:

Chapter 1, "Overview"

This chapter provides an overview of Oracle Application Server InterConnect (OracleAS InterConnect) installation process.

Chapter 2, "Installing OracleAS InterConnect"

This chapter contains instructions for installing OracleAS InterConnect.

Chapter 3, "Integrating Oracle Workflow with OracleAS InterConnect"

This chapter describes how to integrate Oracle Workflow with OracleAS InterConnect.

Chapter 4, "Managing OracleAS InterConnect"

This chapter describes how to manage OracleAS InterConnect after installation.

Chapter 5, "Configuring Oracle Enterprise Manager"

This chapter describes how to configure Oracle Management Server, Oracle Intelligent Agent, and the Oracle Enterprise Manager Console 9*i* (9.2) to manage OracleAS InterConnect.

Related Documents

For more information, refer to the following Oracle resources:

- *Oracle Application Server InterConnect User's Guide*
- *Oracle Application Server 10g Installation Guide*

Printed documentation is available for sale in the Oracle Store at

`http://oraclestore.oracle.com/`

To download free release notes, installation documentation, white papers, or other collateral, please visit the Oracle Technology Network (OTN). You must register online before using OTN; registration is free and can be done at

`http://otn.oracle.com/membership/`

If you already have a username and password for OTN, then you can go directly to the documentation section of the OTN Web site at

`http://otn.oracle.com/documentation/`

Conventions

This section describes the conventions used in the text and code examples of this documentation set. It describes:

- Conventions in Text
- Conventions in Code Examples
- Conventions for Windows Operating Systems

Conventions in Text

We use various conventions in text to help you more quickly identify special terms. The following table describes those conventions and provides examples of their use.

Convention	Meaning	Example
Bold	Bold typeface indicates terms that are defined in the text or terms that appear in a glossary, or both.	When you specify this clause, you create an **index-organized table**.
Italics	Italic typeface indicates book titles or emphasis.	*Oracle9i Database Concepts* Ensure that the recovery catalog and target database do *not* reside on the same disk.
`UPPERCASE monospace (fixed-width) font`	Uppercase monospace typeface indicates elements supplied by the system. Such elements include parameters, privileges, datatypes, RMAN keywords, SQL keywords, SQL*Plus or utility commands, packages and methods, as well as system-supplied column names, database objects and structures, usernames, and roles.	You can specify this clause only for a `NUMBER` column. You can back up the database by using the `BACKUP` command. Query the `TABLE_NAME` column in the `USER_TABLES` data dictionary view. Use the `DBMS_STATS.GENERATE_STATS` procedure.
`lowercase monospace (fixed-width) font`	Lowercase monospace typeface indicates executables, filenames, directory names, and sample user-supplied elements. Such elements include computer and database names, net service names, and connect identifiers, as well as user-supplied database objects and structures, column names, packages and classes, usernames and roles, program units, and parameter values. **Note:** Some programmatic elements use a mixture of UPPERCASE and lowercase. Enter these elements as shown.	Enter `sqlplus` to open SQL*Plus. The password is specified in the `orapwd` file. Back up the datafiles and control files in the `/disk1/oracle/dbs` directory. The `department_id`, `department_name`, and `location_id` columns are in the `hr.departments` table. Set the `QUERY_REWRITE_ENABLED` initialization parameter to `true`. Connect as `oe` user. The `JRepUtil` class implements these methods.
`lowercase italic monospace (fixed-width) font`	Lowercase italic monospace font represents placeholders or variables.	You can specify the *`parallel_clause`*. Run `U`*`old_release`*`.SQL` where *`old_release`* refers to the release you installed prior to upgrading.

Conventions in Code Examples

Code examples illustrate SQL, PL/SQL, SQL*Plus, or other command-line statements. They are displayed in a monospace (fixed-width) font and separated from normal text as shown in this example:

```
SELECT username FROM dba_users WHERE username = 'MIGRATE';
```

The following table describes typographic conventions used in code examples and provides examples of their use.

Convention	Meaning	Example
[ ]	Brackets enclose one or more optional items. Do not enter the brackets.	DECIMAL (*digits* [, *precision*])
{ }	Braces enclose two or more items, one of which is required. Do not enter the braces.	{ENABLE | DISABLE}
|	A vertical bar represents a choice of two or more options within brackets or braces. Enter one of the options. Do not enter the vertical bar.	{ENABLE | DISABLE} [COMPRESS | NOCOMPRESS]
...	Horizontal ellipsis points indicate either: ■ That we have omitted parts of the code that are not directly related to the example ■ That you can repeat a portion of the code	CREATE TABLE ... AS *subquery*; SELECT *col1*, *col2*, ... , *coln* FROM employees;
. . .	Vertical ellipsis points indicate that we have omitted several lines of code not directly related to the example.	SQL> SELECT NAME FROM V$DATAFILE; NAME ---------- /fs1/dbs/tbs_01.dbf /fs1/dbs/tbs_02.dbf . . . /fs1/dbs/tbs_09.dbf 9 rows selected.
Other notation	You must enter symbols other than brackets, braces, vertical bars, and ellipsis points as shown.	acctbal NUMBER(11,2); acct CONSTANT NUMBER(4) := 3;

Convention	Meaning	Example
Italics	Italicized text indicates placeholders or variables for which you must supply particular values.	`CONNECT SYSTEM/`*`system_password`* `DB_NAME =` *`database_name`*

`UPPERCASE`	Uppercase typeface indicates elements supplied by the system. We show these terms in uppercase in order to distinguish them from terms you define. Unless terms appear in brackets, enter them in the order and with the spelling shown. However, because these terms are not case sensitive, you can enter them in lowercase.	`SELECT last_name, employee_id FROM employees;`
		`SELECT * FROM USER_TABLES;`
		`DROP TABLE hr.employees;`

`lowercase`	Lowercase typeface indicates programmatic elements that you supply. For example, lowercase indicates names of tables, columns, or files.
	Note: Some programmatic elements use a mixture of UPPERCASE and lowercase. Enter these elements as shown.
		`SELECT last_name, employee_id FROM employees;`
		`sqlplus hr/hr`
		`CREATE USER mjones IDENTIFIED BY ty3MU9;`

Conventions for Windows Operating Systems

The following table describes conventions for Windows operating systems and provides examples of their use.

Convention	Meaning	Example
Choose Start >	How to start a program.	To start the Database Configuration Assistant, choose Start > Programs > Oracle - *HOME_NAME* > Configuration and Migration Tools > Database Configuration Assistant.
File and directory names	File and directory names are not case sensitive. The following special characters are not allowed: left angle bracket (<), right angle bracket (>), colon (:), double quotation marks ("), slash (/), pipe (|), and dash (-). The special character backslash (\) is treated as an element separator, even when it appears in quotes. If the file name begins with \\, then Windows assumes it uses the Universal Naming Convention.	`c:\winnt"\"system32 is the same as C:\WINNT\SYSTEM32`
`C:\>`	Represents the Windows command prompt of the current hard disk drive. The escape character in a command prompt is the caret (^). Your prompt reflects the subdirectory in which you are working. Referred to as the *command prompt* in this manual.	`C:\oracle\oradata>`
Special characters	The backslash (\) special character is sometimes required as an escape character for the double quotation mark (") special character at the Windows command prompt. Parentheses and the single quotation mark (') do not require an escape character. Refer to your Windows operating system documentation for more information on escape and special characters.	`C:\>exp scott/tiger TABLES=emp QUERY=\"WHERE job='SALESMAN' and sal<1600\"` `C:\>imp SYSTEM/`*`password`*` FROMUSER=scott TABLES=(emp, dept)`
HOME_NAME	Represents the Oracle home name. The home name can be up to 16 alphanumeric characters. The only special character allowed in the home name is the underscore.	`C:\> net start Oracle`*`HOME_NAME`*`TNSListener`

Convention	Meaning	Example
ORACLE_HOME and *ORACLE_BASE*	In releases prior to Oracle8*i* release 8.1.3, when you installed Oracle components, all subdirectories were located under a top level *ORACLE_HOME* directory. For Windows NT, the default location was `C:\orant`. This release complies with Optimal Flexible Architecture (OFA) guidelines. All subdirectories are not under a top level *ORACLE_HOME* directory. There is a top level directory called *ORACLE_BASE* that by default is `C:\oracle`. If you install the latest Oracle release on a computer with no other Oracle software installed, then the default setting for the first Oracle home directory is `C:\oracle\ora`*nn*, where *nn* is the latest release number. The Oracle home directory is located directly under *ORACLE_BASE*. All directory path examples in this guide follow OFA conventions. Refer to *Oracle9i Database Getting Starting for Windows* for additional information about OFA compliances and for information about installing Oracle products in non-OFA compliant directories.	Go to the *ORACLE_BASE*`\`*ORACLE_HOME*`\rdbms\admin` directory.

1

Overview

This chapter provides an overview of Oracle Application Server InterConnect (OracleAS InterConnect) installation process.

Topics discussed are:

- OracleAS InterConnect Overview
- OracleAS InterConnect Installation Types
- Dependent Products
- Deployment Topology
- Hardware Requirements
- Software Requirements
- Multiple OracleAS InterConnect Adapters on One Computer

OracleAS InterConnect Overview

This section explains terminology used in this guide:

Design Time The phase of integration development where you model the integration scenario. The modeling information is stored as metadata. The following components are required for modeling your integration:

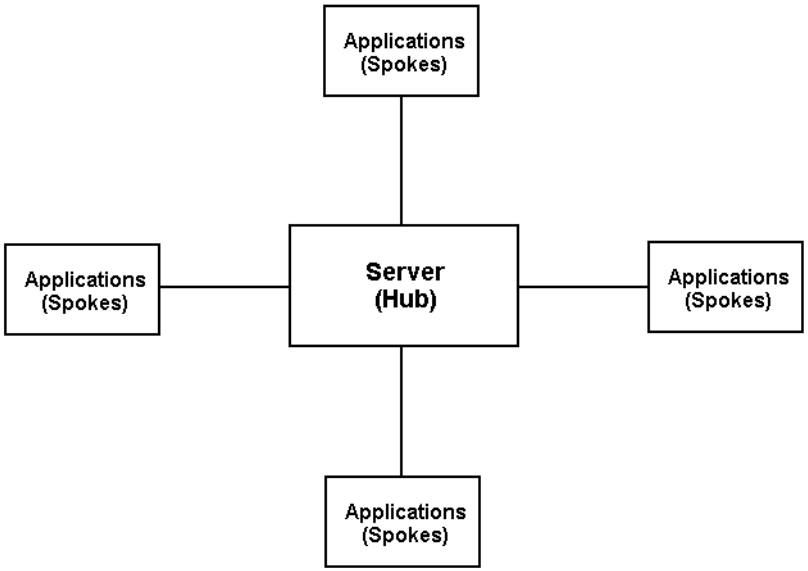
- iStudio
- Repository
- Hub Database
- Oracle Workflow Builder (required only if your scenario has business process modeling)

Runtime At runtime, the metadata gathered at design time is used to carry out integration. The following components are required for runtime:

- Adapters
- Repository
- Hub Database
- Oracle Workflow (required only if your scenario has business process modeling)
- Oracle Workflow Communication (required only if your scenario has business process modeling)
- Oracle Enterprise Manager

Hub and Spoke These are industry standard terms that describe the physical architectural approach for integration used by OracleAS InterConnect. In this approach, all applications (spokes) are connected through a central server (hub), as illustrated in Figure 1–1.

Figure 1–1 Hub and Spoke Architecture



The OracleAS InterConnect hub has the following components:

- Hub Database
- Repository
- Oracle Workflow
- Oracle Workflow Communication

At the spokes are the adapters connecting to the applications.

iStudio The tool used at design time to model the integration. All the modeled integration is stored in the hub database through the repository.

Repository This is a middle-tier repository server communicating with the repository schema in the hub database to store and retrieve metadata. At design time, this server is used to store metadata in the hub database. At runtime, the repository provides access to this metadata to adapters so that they carry out the integration.

Hub Database The hub database has three uses:

- **Store Metadata**: The repository schema contains all the metadata modeled at design time through iStudio.
- **Store and Forward Messages**: At runtime, all messages enter and leave the OracleAS InterConnect hub AQ queues.
- **Store Tracking and Error Information**: At runtime, all message tracking and error information is stored in the repository schema.

Adapters They are the runtime engines that carry out the integration based on the metadata modeled during design time.

Oracle Workflow Builder This component is used to model a business process at design time.

Oracle Workflow Communication This component is used to communicate between OracleAS InterConnect hub and Oracle Workflow at runtime.

Oracle Workflow The collection of Workflow design time (Oracle Workflow Builder) and runtime components.

Oracle Enterprise Manager The tool used for monitoring OracleAS InterConnect at runtime.

OracleAS InterConnect Development Kit This contains iStudio and adapter SDKs that allow you to extend OracleAS InterConnect.

See Also: *Oracle Application Server InterConnect User's Guide*

OracleAS InterConnect Installation Types

OracleAS InterConnect installation types are presented in Table 1–1. You can choose the installation types on the "Install Types" screen during installation.

Table 1–1 OracleAS InterConnect Installation Types

Installation Type	Description
Hub	Installs the OracleAS InterConnect Repository and Oracle Workflow Communication.
Adapter	Installs OracleAS InterConnect Adapters.
Development Kit	Installs iStudio (Windows only) and OracleAS InterConnect Development Kit.

Dependent Products

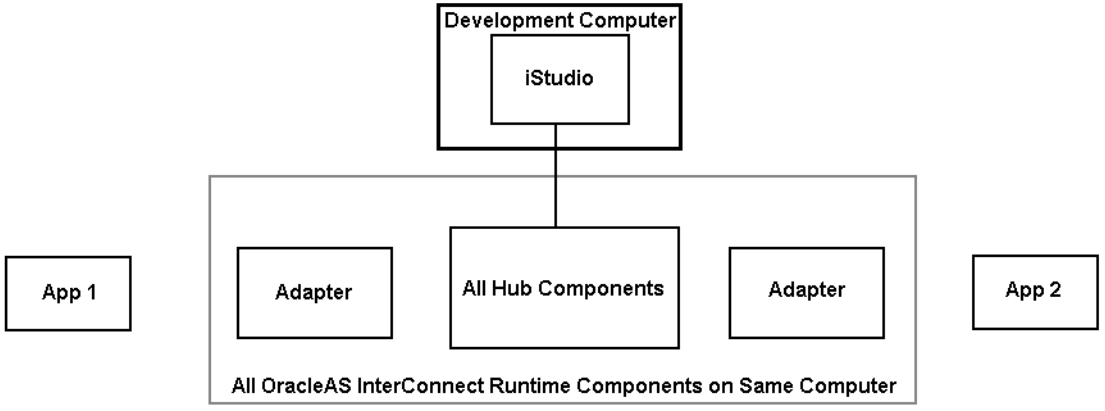
You must use an Oracle 9.2 database as hub database to run OracleAS InterConnect.

Deployment Topology

Following are the commonly used deployment topologies:

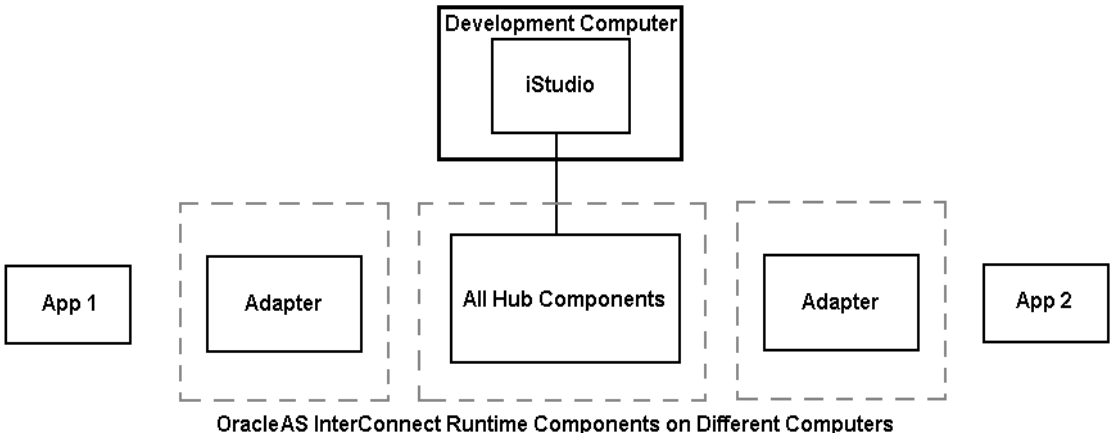
- All OracleAS InterConnect runtime components on one computer and iStudio on a separate development computer, as illustrated in Figure 1–2.

Figure 1–2 OracleAS InterConnect Components on One Computer



- All hub components on one computer and all spoke components on separate computers and iStudio on a separate development machine, as illustrated in Figure 1–3. In this case, there is a dedicated computer for the hub components. Adapters have either have dedicated separate computers, or are co-located with the applications they are connected to.

Figure 1–3 OracleAS InterConnect Runtime Components on Different Computers



The OracleAS InterConnect hub can exist on the same, or a different computer as the hub database. If you are installing OracleAS InterConnect hub on the same computer as the database, you must install it in a different Oracle home from the Oracle database.

iStudio is typically installed separately from the hub and spoke components on a Windows machine.

Hardware Requirements

This section contains hardware requirements for the following:

- Hub Computer
- Adapters
- OracleAS InterConnect Development Kit

Hub Computer

If you are installing OracleAS InterConnect hub on a computer that does not have an Oracle Application Server installation, the computer should meet the minimum requirements listed in Table 1–2.

Table 1–2 Hardware Requirements for Hub Computer

Hardware	UNIX	Windows
Memory	512 MB	512 MB
Disk Space	10 GB	10 GB
CD-ROM Device	A CD-ROM drive to install, or the ability to access a CD-ROM device over the network.	A CD-ROM drive to install, or the ability to access a CD-ROM device over the network.

Note: Do not perform the installation remotely on a UNIX computer using Exceed as that can cause problems during installation.

Adapters

Table 1–3 lists the hardware requirements for OracleAS InterConnect adapters.

Table 1–3 Hardware Requirements for Adapters

Hardware	UNIX	Windows
Memory	512 MB	512 MB
Disk Space	5 GB	5 GB

OracleAS InterConnect Development Kit

Table 1–4 lists hardware requirements for OracleAS InterConnect Development Kit.

Table 1–4 Hardware Requirements for Development Kit

Hardware	UNIX	Windows
Memory	N/A	512 MB
Disk Space	N/A	500 MB

See Also: *Oracle Workflow Administrator's Guide* for hardware requirements.

Software Requirements

This section contains the software requirements for the following:

- Operating System
- Java Runtime Environment
- Operating System Patches

Operating System

Table 1–4 lists the operating systems that the hub computer and the spoke computer run on:

Table 1–5 Operating System Requirements

Operating System	Version
Windows NT	Version 4.0 with service pack 6 or higher
Windows 2000	With service pack 1 or higher
IBM-AIX5L	AIX-based systems 64-bit, version 5.1
HP Tru64	HP Tru64 UNIX, version 5.1a
HP-UX	HP 9000 Series HP-UX 64 bit, Version 11.0, HP-UX 11i (11.11) PA-RISC or higher
LINUX	LINUX Intel 32-bit, RedHat Advanced Server, version 2.1, UnitedLinux 1.0
Sun SPARC Solaris	Versions 8 and 9

Java Runtime Environment

OracleAS InterConnect runs on Java Runtime Environment (JRE) 1.4.1.

JRE is bundled with OracleAS InterConnect on Sun SPARC Solaris, Linux, and Windows. When you install OracleAS InterConnect on these platforms, JRE is automatically installed for you.

> **See Also:** Platform-specific installation and user's guide for details.

Operating System Patches

The operating system requirements can be found at Oracle*MetaLink*:

`http://metalink.oracle.com`

Multiple OracleAS InterConnect Adapters on One Computer

Oracle Universal Installer does not allow you to install more than one of the same OracleAS InterConnect adapter types in an Oracle home. When you install the same OracleAS InterConnect adapter a second time, the first installation is deinstalled. For example, you cannot install more than one database adapter in an Oracle home.

If you need to install more than one instance of the same OracleAS InterConnect adapter on the same computer, you have the following two options:

- Create multiple Oracle homes on the computer. When you install an adapter the second time, choose a different Oracle home than the first adapter installation.
- Use the `copyAdapter` script located in *`ORACLE_HOME`*`/oai/9.0.4/bin` to install multiple OracleAS InterConnect adapters of the same type in the same Oracle home.

  Usage: `copyAdapter` *`app1 app2`*

2

Installing OracleAS InterConnect

This chapter contains instructions for installing OracleAS InterConnect.

Topics discussed are:

- Installing OracleAS InterConnect
- Installing OracleAS InterConnect Hub
- Installing OracleAS InterConnect Adapters
- Installing OracleAS InterConnect Development Kit

Installing OracleAS InterConnect

This section contains instructions for installing OracleAS InterConnect.

> **See Also:** *Oracle Application Server 10g Release Notes* for latest information about OracleAS InterConnect.

Perform the following steps to install OracleAS InterConnect:

1. Insert the Oracle Application Server InterConnect CD-ROM in your CD-ROM drive.
2. Start the Oracle Universal Installer by doing the following:
   - UNIX: Type `runInstaller`
   - Windows: Double-click `setup.exe`

   > **See Also:** *Oracle Application Server 10g Installation Guide* for additional information on invoking `runInstaller`

3. The Oracle Universal Installer Welcome screen appears. It provides information about Oracle Universal Installer.
   a. Review the Oracle Universal Installer Welcome screen. The following buttons appear on the screen:
      – **Deinstall Products**: Deinstalls individual components, or the entire product. This button appears only on the Welcome screen.
      – **About Oracle Universal Installer**: Provides the version number of the installer in use.
      – **Help**: Provides detailed information about the functionality of each screen.
      – **Installed Products**: Enables you to view currently installed products, or to deinstall the entire product or components.
      – **Next**: Enables you to proceed to the next screen.
      – **Cancel**: Cancels the installation process and exit the installer.
   b. Click **Next**.

4. The Specify File Locations screen appears.
   a. Enter the following information in the fields provided:
      - **Source**: The default value displays. Do not change this value.
      - **Destination Name**: Enter desired Oracle home name.
      - **Destination Path**: Browse or enter the path to your Oracle home.
   b. Click **Next**.
5. The Select Installation Type screen appears.
   a. Select the OracleAS InterConnect installation type from the following list:
      - OracleAS InterConnect Hub
      - OracleAS InterConnect Adapters
      - OracleAS InterConnect Development Kit

      See Also: "OracleAS InterConnect Installation Types" on page 1-5 for descriptions of the OracleAS InterConnect installation types

   b. Click **Next**.

The following links direct you to installation information for each installation type.

- **OracleAS InterConnect Hub**: Installing OracleAS InterConnect Hub
- **OracleAS InterConnect Adapters**: Installing OracleAS InterConnect Adapters
- **OracleAS InterConnect Development Kit**: Installing OracleAS InterConnect Development Kit

Installing OracleAS InterConnect Hub

This section contains instructions for installing OracleAS InterConnect hub.

OracleAS InterConnect Hub installation type installs Oracle Workflow Server and the OracleAS InterConnect repository. This section contains the following topics:

- Hub Preinstallation Tasks
- Hub Installation Process
- Hub Postinstallation Tasks

Hub Preinstallation Tasks

Before installing OracleAS InterConnect hub, verify the values of the following parameters in the `init.ora` file of the metadata repository database:

- `AQ_TM_PROCESSES`: Oracle Workflow requires the time manager process in Oracle Advanced Queuing (AQ) 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 or more. Verify that the `AQ_TM_PROCESSES` parameter is set in the `init.ora` file. For example:

  ```
  AQ_TM_PROCESSES = 2
  ```

- `JOB_QUEUE_PROCESSES`: Oracle Workflow leverages Oracle Advanced Queuing, which requires job queue processes to handle message propagation. You must start at least one job queue process to enable message propagation. The minimum recommended number of processes for Oracle Workflow is 10, and may need to be increased if sufficient processes are not available for propagation. Verify that the `JOB_QUEUE_PROCESSES` parameter is set in the `init.ora` file to specify the number of SNP job queue processes for your instance. For example:

  ```
  JOB_QUEUE_PROCESSES = 10
  ```

  You can either modify the preceding parameters in the `init.ora` file and restart your database to make the changes effective, or you can use the `ALTER SYSTEM` statement to dynamically modify the parameter values for the duration of the instance.

  See Also: *Oracle9i Reference* and *Oracle9i Application Developer's Guide - Advanced Queuing*

If your integration scenario involves leveraging Oracle Workflow functionality, make sure that you have installed Oracle Workflow in Oracle Application Server middle-tier.

> **See Also:** Chapter 3, "Integrating Oracle Workflow with OracleAS InterConnect" to determine different options for installing Oracle Workflow. Make note of the Oracle Workflow schema password as it is required during the OracleAS InterConnect installation process.

Hub Installation Process

When installing the OracleAS InterConnect hub on a machine that does not contain Oracle Application Server, you see two dialogs; one enables you to specify the database to use as the hub database, and the other enables you to set the password for the OracleAS InterConnect schema.

These dialogs appear after you select OracleAS InterConnect Hub on the Select Installation Type screen.

If you have an existing Oracle Workflow Server setup, you need to migrate it to Oracle Application Server Workflow Server after hub installation.

> **See Also:** *Oracle Application Server 10g Upgrading to 10g (9.0.4)* for your platform for more information on Oracle Workflow migration.

Perform the following steps to install OracleAS InterConnect hub:

1. Select **OracleAS InterConnect Hub** from the Select Installation Type screen, then click **Next**.

   > **See Also:** "Installing OracleAS InterConnect" on page 2-2 for instructions on how to display the Specify Installation Types screen.

2. The OracleAS InterConnect Hub Database screen appears. Specify database connection information on this screen.
   a. Enter database connection information in the following fields:
      - **Host Name**: Host name for the database. The default is `localhost`.
      - **Port Number**: Port number for the database. The default is `1521`.
      - **Database SID**: SID for the database. The default is `iasdb`.
   b. Click **Next**.
3. The OracleAS InterConnect Metadata Repository screen appears. Set the password for the `oaihub904` schema on this screen.
   a. Verify the following information:
      - **Database**: Database indicated on the previous screen. The value is entered as `host:port:sid`.
      - **Schema Name**: `oaihub904`.
   b. Enter the appropriate information in the following fields:
      - **Password**: New password for the schema.
      - **Confirm Password**: Re-enter the new password.
   c. Click **Next**.
4. Another OracleAS InterConnect Metadata Repository screen appears. Set the the password for the `owf_mgr` schema on this screen.
   a. Verify the following information:
      - **Database**: Database indicated on the previous screen. The value is entered as `host:port:sid`.
      - **Schema Name**: `owf_mgr`.
   b. Enter the appropriate information in the following fields:
      - **Password**: New password for the schema.
      - **Confirm Password**: Re-enter the new password.
   c. Click **Next**.

5. The Summary screen appears. Review the selections made on previous screens and click **Install**.
6. The End of Installation screen appears, indicating that the installation has completed. Click **Exit** to exit the installer.

Hub Postinstallation Tasks

After installing OracleAS InterConnect hub, perform the following postinstallation tasks:

1. Create the OracleAS InterConnect schema in the hub database.

   See Also: *ORACLE_HOME*`/oai/9.0.4/repository/post_installation.txt` for instructions on creating OracleAS InterConnect schema

   Make sure you use the same password that you entered during installation.

2. For Oracle Workflow users, perform the tasks listed in Chapter 3, "Integrating Oracle Workflow with OracleAS InterConnect".

Installing OracleAS InterConnect Adapters

This section contains instructions for installing OracleAS InterConnect adapters.

To install one of more OracleAS InterConnect adapters, start the Oracle Universal Installer and complete the following steps.

1. On the Select Installation Type screen:
   a. Select **OracleAS InterConnect Adapters**.
   b. Click **Next**.

   See Also: "Installing OracleAS InterConnect" on page 2-2 for instructions on how to display the Specify Installation Types screen.

2. The Available Product Components screen appears.
   a. Select the adapter you want to install. The following adapters are available:
      – OracleAS InterConnect Adapter for AQ
      – OracleAS InterConnect Adapter for DB
      – OracleAS InterConnect Adapter for MQ Series
      – OracleAS InterConnect Adapter for FTP
      – OracleAS InterConnect Adapter for HTTP
      – OracleAS InterConnect Adapter for SMTP
      – OracleAS InterConnect Adapter for CICS
      – OracleAS InterConnect Adapter for J.D. Edwards OneWorld XE
      – OracleAS InterConnect Adapter for PeopleSoft 7.5x
      – OracleAS InterConnect Adapter for PeopleSoft 8
      – OracleAS InterConnect Adapter for SAP R/3
      – OracleAS InterConnect Adapter for Siebel 2000
      – OracleAS InterConnect Adapter for Siebel 7
   b. Click **Next**.

3. For adapter-specific installation information, refer to Table 2–1.

Table 2–1 Adapter-specific Installation Information

Adapter	Installation Instructions
AQ	*OracleAS InterConnect Adapter for AQ Installation and User's Guide*
CICS	*OracleAS InterConnect Adapter for CICS Installation and User's Guide*
DB	*OracleAS InterConnect Adapter for DB Installation and User's Guide*
FTP	*OracleAS InterConnect Adapter for FTP Installation and User's Guide*
HTTP	*OracleAS InterConnect Adapter for HTTP Installation and User's Guide*
J.D. Edwards OneWorld XE	*OracleAS InterConnect Adapter for J.D. Edwards OneWorld XE Installation and User's Guide*
MQ Series	*OracleAS InterConnect Adapter for MQ Series Installation and User's Guide*
PeopleSoft 7.5x	*OracleAS InterConnect Adapter for PeopleSoft 7.5x Installation and User's Guide*
PeopleSoft 8	*OracleAS InterConnect Adapter for PeopleSoft 8 Installation and User's Guide*
SAP R/3	*OracleAS InterConnect Adapter for SAP R/3 Installation and User's Guide*
Siebel 7	*OracleAS InterConnect Adapter for Siebel 7 Installation and User's Guide*
Siebel 2000	*OracleAS InterConnect Adapter for Siebel 2000 Installation and User's Guide*
SMTP	*OracleAS InterConnect Adapter for SMTP Installation and User's Guide*

Installing OracleAS InterConnect Development Kit

This section describes how to install the OracleAS InterConnect Development Kit. It contains the following topics:

- Development Kit Preinstallation Considerations
- Development Kit Installation Process
- Development Kit Postinstallation Tasks

Development Kit Preinstallation Considerations

Consider the following before starting the installation process:

- If you are installing OracleAS InterConnect on Sun SPARC Solaris, the development kit installation option also includes the OracleAS InterConnect SDK.
- If you want to use iStudio, you must install the OracleAS InterConnect Development Kit on Windows.

Development Kit Installation Process

OracleAS InterConnect Development Kit enables you to create custom OracleAS InterConnect adapters. It also installs all dependencies. If you have not installed the OracleAS InterConnect hub, you need to do so before proceeding with this installation.

> **See Also:** "Installing OracleAS InterConnect Hub" on page 2-4

Perform the following steps to install the OracleAS InterConnect Development Kit:

1. On the Select Installation Type screen:
   a. Select **OracleAS InterConnect Development Kit**.
   b. Click **Next**.

   > **See Also:** "Installing OracleAS InterConnect" on page 2-2 for instructions on how to display the Specify Installation Types screen.

2. The OracleAS InterConnect Hub Database screen appears. Specify database connection information here by entering the following information about the OracleAS InterConnect hub:

   - **Host Name**: Host name of the OracleAS InterConnect hub. The default is the current host.
   - **Port Number**: Port number of the OracleAS InterConnect hub. The default is 1521.
   - **Database SID**: Database SID. The default is `iasdb1`.
   - **Password**: Password for the OracleAS InterConnect hub. This password was set up during the OracleAS InterConnect hub installation. If you have not installed OracleAS InterConnect hub, you will need to do so before proceeding with this installation.

     See Also: "Hub Installation Process" on page 2-5

     Note: This screen appears only when all of the following conditions are met:

     - You are installing the OracleAS InterConnect Development Kit on a UNIX platform.
     - The Oracle home in which you are installing the OracleAS InterConnect Development Kit does not have any OracleAS InterConnect components.

     ---

3. The Summary screen appears. Review the selections made on previous screens and click **Install**.The development kit is installed on your machine in the following directory:

   - UNIX: *ORACLE_HOME*`/oai/9.0.4/sdk`
   - Windows: *ORACLE_HOME*`\oai\9.0.4\sdk`

4. On Windows, configure Oracle Net using the Oracle Net Configuration Assistant. Select the typical configuration option and follow the directions in the configuration assistant help to complete the configuration.

Development Kit Postinstallation Tasks

(Windows only) If you are using Oracle Workflow, after installing the Oracle Workflow Client, perform the following steps:

Step 1 Set up Oracle Workflow HTML Help

When you install Oracle Workflow Builder while installing Oracle Workflow Client, Oracle Universal Installer copies a `.zip` file containing the HTML help, `wfdoc.zip`, in the Workflow directory in your Oracle home, for example, *`ORACLE_HOME`*`\wf\wfdoc.zip`. To view the HTML help, extract the documentation directory tree from the `.zip` file to your file system:

1. Use an `unzip` utility to extract the documentation directory tree from the `.zip` file within the Workflow directory. You need at least 7 MB of free disk space to extract the `.zip` file. Extract the files to *`ORACLE_HOME`*`/wf/`. You should get the following subdirectories:
   - *`ORACLE_HOME`*`\wf\doc\lang\wf`: Contains Oracle Workflow Guide.
   - *`ORACLE_HOME`*`\wf\doc\lang\wfcust`: Contains custom help. You can add your own customized Workflow help in this directory.
2. After extracting the documentation directory tree, you can remove the `.zip` file. This step is optional.
3. You can now view the HTML help using a Web browser.

   The path for the contents page of the *Oracle Workflow Online Help* is:

   `ORACLE_HOME``\wf\doc\lang\wf\toc.htm`

   The path for the contents page of your custom *Oracle Workflow Online Help i*s:

   `ORACLE_HOME``\wf\doc\lang\wfcust\wfcust.htm`

4. To add custom help, replace the placeholder file in the `wfcust` directory, `wfcust.htm`, with your own help material. The HTM file that is the main entry point for your custom help must be named `wfcust.htm` and must contain an anchor named `contents`. Your custom help is accessible through the Custom Help link on the contents page of the *Oracle Workflow Online Help.* This step is optional.

Step 2 Modify Fonts in Oracle Workflow Builder

If you are installing Oracle Workflow Builder in another language, such as Japanese, you can modify the font used by the windows in Oracle Workflow Builder to a font that is appropriate for your language. Any change you make applies to all windows within the program. This step is optional.

1. Choose **Font** from the View menu in Oracle Workflow Builder to display the Fonts properties page.
2. Select the font you want to use in the labels for your icons and in the navigator tree. The Sample region shows the appearance of the font you select. For example, when using Oracle Workflow Builder in Japanese, you might choose the font MS PGothic.
3. Select the font style, for example, regular, bold, italic, or bold italic. Some fonts have a limited selection of font styles.
4. Select the font size. Some fonts have a limited selection of font sizes.
5. Select the Underline or Strikeout check boxes to apply those effects.
6. Click **OK** when you are finished.
7. Close and restart Oracle Workflow Builder. The new font settings should have taken into effect.

Step 3 (UNIX only) Review Documentation for Custom Adapters

If you need to create custom adapters and browsers, refer to the documentation in *ORACLE_HOME*/oai/9.0.4/sdk/cookbook.zip. This step is optional.

3

Integrating Oracle Workflow with OracleAS InterConnect

This chapter describes how to integrate Oracle Workflow with OracleAS InterConnect.

Topics discussed are:

Overview

You can install Oracle Workflow to integrate with OracleAS InterConnect in the following two ways:

- If you do not plan to install OracleAS ProcessConnect, you can install Oracle Workflow from the Oracle Content Management SDK CD.

  See Also: *Oracle Workflow Installation Notes for Oracle Content Management SDK* for installation instructions.

- If you plan to install OracleAS ProcessConnect, you can install the Oracle Workflow schema as part of the OracleAS Metadata Repository and complete the Oracle Workflow installation and configuration from your OracleAS ProcessConnect home.

Installation Process

To install Oracle Workflow from an OracleAS ProcessConnect home, perform the following steps:

Step 1 Install OracleAS Metadata Repository

Install the OracleAS Metadata Repository in an existing 9.2 database using the Oracle Application Server Repository Creation Assistant (OracleAS RepCA). OracleAS Metadata Repository contains the Oracle Workflow schema.

See Also: *Oracle Application Server 10g Installation Guide*

- If you are planning to integrate OracleAS Metadata Repository with Oracle Internet Directory and Oracle Application Server Single Sign-On, check the `DBMS_LDAP` package in your database before installing.

  See Also: *Oracle Application Server 10g Installation Guide* for `DBMS_LDAP` package information.

- If you install OracleAS Metadata Repository into an existing database where Oracle Workflow is already installed, your existing Oracle Workflow server version must be release 2.6.0 or higher. If you have an earlier version of Oracle Workflow, you must upgrade it to release 2.6.0 before you can upgrade it to release 2.6.3.

Step 2 Install OracleAS ProcessConnect

Install OracleAS ProcessConnect on the middle-tier, selecting the OracleAS Metadata Repository you installed in step 1 "Install OracleAS Metadata Repository" to use with this Oracle Application Server middle-tier. Oracle Workflow files are silently installed in the middle-tier Oracle home along with OracleAS ProcessConnect.

> **See Also:** *Oracle Application Server ProcessConnect Installation Guide* for installation procedures.

Step 3 Run Oracle Workflow Configuration Assistant

Run the Workflow Configuration Assistant to configure Oracle Workflow.

After Oracle Workflow is installed and configured, you can also optionally run the Workflow Configuration Assistant again with the **Add Language** option to load additional languages into your Oracle Workflow server database. To do so, perform the following steps:

1. **(Optional)** If you want to configure the Java-based notification mailer service component called the Workflow Notification Mailer, add the following parameters to the `wfinstall.csh` script:
   - `iasname`: *`schema_name.machine_name`*
   - `iasport`: Database listener port
   - `iassid`: Database SID
   - `iasmachine`: Machine name
   - `jdbcconnnode`: Connection with remote database.
   - `fileupdate`: Updates file. This is required to configure the Java mailer.

   For example:

   ```
   /iasname M21_MidTier.hsunnab05 /iasport 1521 /iassid Ora92 /iasmachine
   machine.us.oracle.com /jdbcconnnode machine.us.oracle.com:1521:Ora92
   /fileupdate true
   ```

2. Start the Workflow Configuration Assistant.
   - UNIX: *`ORACLE_HOME`*`/wf/install/wfinstall.csh`
   - Windows: *`ORACLE_HOME`*`\wf\install\wfinstall.bat`

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

   - **Workflow Account**: User name of your Oracle Workflow database account. The default Workflow account for a fresh installation is `owf_mgr`.
   - **Workflow Password**: Password for your Oracle Workflow database account. This password has to be of 8 characters or more. If not, then, while installing OracleAS InterConnect hub, you will not be able to proceed with the installation if the `owf_mgr` schema password is less than 8 characters.

     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 is `USERS`, and the temporary tablespace is `TEMP`. You can change the tablespace, if necessary.

     If you are running the Workflow Configuration Assistant against a database where the Oracle Workflow schema is already created, enter the user name and password for the existing Oracle Workflow schema.

   - **SYS Password**: `SYS` password.
   - **Install Option**: Select **Install** to perform a fresh installation of Oracle Workflow, **Upgrade** to upgrade an existing installation of Oracle Workflow, or **Add language** to load a language into your existing installation of Oracle Workflow.

     If you choose the **Install** or **Upgrade** options, the Workflow Configuration Assistant loads Oracle Workflow into your database, creates a Database Access Descriptor (DAD) for Oracle Workflow in the `dads.conf` configuration file within your Oracle HTTP Server installation, and configures the Oracle Workflow Manager component within Oracle Enterprise Manager Application Server Control.

Note:

- To upgrade to release 2.6.3, your existing Oracle Workflow Server must be release 2.6.0 or higher.
- If you select the **Install** option, but you are installing into a database where there is already an existing installation of Oracle Workflow release 2.6.0 or higher, then the Oracle Workflow Configuration Assistant will switch to **Upgrade** mode to upgrade the existing installation to release 2.6.3.

- **Language Selection**: If you choose the **Add Language** install option, select the language abbreviation for the language you want to add. Oracle Workflow Server supports the languages supported by Oracle Application Server:
  - Arabic (AR)
  - Brazilian Portuguese (PTB)
  - Canadian French (FRC)
  - Czech (CS)
  - Danish (DK)
  - Dutch (NL)
  - English (US)
  - Finnish (SF)
  - French (F)
  - German (D)
  - Greek (EL)
  - Hebrew (IW)
  - Hungarian (HU)
  - Italian (I)
  - Japanese (JA)
  - Korean (KO)
  - Latin American Spanish (ESA)

- Norwegian (N)
- Polish (PL)
- Portuguese (PT)
- Romanian (RO)
- Russian (RU)
- Simplified Chinese (ZHS)
- Slovak (SK)
- Spanish (E)
- Swedish (S)
- Thai (TH)
- Traditional Chinese (ZHT)
- Turkish (TR)

See Also: Locale Data in *Oracle National Language Support Guide* for a list of standard language abbreviations in the Oracle Database

- **Connect Method**: Select **Local** to connect to a local database using the Oracle SID, or select **Remote** to connect to a remote database through Oracle Net 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.

4. To integrate with Oracle Internet Directory (OID) and Oracle Application Server Single Sign-On as your directory repository for Oracle Workflow, select the **Enter LDAP Parameters** check box and choose **Get LDAP Values**.

Note: If you are upgrading an existing installation of Oracle Workflow in which you already implemented OID integration, you must re-enter your LDAP values here to preserve the OID integration during the upgrade.

Enter the following Lightweight Directory Access Protocol (LDAP) server information for the LDAP directory to which you want to connect. After the initial installation, you can update these values if necessary in the Global Workflow Preferences Web page.

> **See Also:** *Oracle Workflow Administrator's Guide* for information on setting up Oracle Workflow.

- **Host Name**: Host on which your LDAP directory resides.
- **Port No.**: Port of the host. This port must be a non-Secure Sockets Layer (non-SSL) port.
- **User Name**: LDAP user account used to connect to the LDAP server. This user name must have write privileges and is required to bind to the LDAP directory, for example, `cn=orcladmin`.
- **Old Password**: Enter the password for the LDAP user account. LDAP password values are masked as asterisks in the display and are stored in encrypted form.
- **Log Base**: LDAP node under which change logs are located. For example: `cn=changelog`.
- **User Base**: LDAP node under which user records can be found. For example: `cn=Base`, `cn=OracleSchemaVersion`.

Then click **OK**.

If you enter values for these LDAP options, the Oracle Workflow Configuration Assistant automatically implements Oracle Workflow directory service views that support OID integration for you. Additionally, it installs the appropriate `WFA_SEC` Workflow security package. Finally, the Oracle Workflow Configuration Assistant also automatically sets up Oracle Application Server Single Sign-On integration for you by protecting the Database Access Descriptor (DAD) for Oracle Workflow in the `mod_osso` configuration file within your Oracle HTTP Server installation.

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

---

5. If you do not want to integrate with OID, then leave the **Enter LDAP Parameters** check box blank. In this case directory service views that use Oracle database users and roles as your directory repository will be automatically implemented for you by default. You should modify the default views to add e–mail addresses for these users if you want them to be able to receive e–mail notifications.

   Note: When the Oracle Workflow Configuration Assistant implements the directory service views using Oracle database users and roles as your directory repository, it sets each native Oracle database 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`. The `wfdirouv.sql` script is located in the Oracle Workflow `sql` subdirectory within your `ORACLE_HOME`. For more information, refer to *Oracle Workflow Administrator's Guide*.

6. To enter configuration parameters for the seeded Java-based notification mailer service component called the Workflow Notification Mailer, select the **Enter Mailer Parameters** check box and choose **Get Mailer Values**. Enter values for the following parameters:

   - **Inbound Mail Server**: Name of the inbound IMAP mail server.
   - **IMAP User Name**: User name of the mail account that the notification mailer uses to send and receive e-mail messages.

- **HTML Agent Name**: Base URL that identifies the Web agent defined for Oracle Workflow in Oracle HTTP Server. Oracle Workflow uses this URL to display its Web pages. The notification mailer also uses this URL to support e-mail notifications with HTML attachments. The HTML agent should be specified in the following format:

  `http://<server.com:port>/pls/wf`

  where `<server.com:port>` represents the server and TCP/IP port number on which your web listener accepts requests, and `wf` is the DAD created for Oracle Workflow.

  Note: You must always enter a value for the HTML Agent Name, because Oracle Workflow requires this URL to display its Web pages.

- **Outbound Host Name**: Name of the outbound SMTP mail server.
- **Reply To**: Address of the e-mail account that receives incoming messages, to which notification responses should be sent.

Then choose **OK**.

After the initial installation, you can update the notification mailer configuration values if necessary in the Oracle Workflow Manager component of the Oracle Enterprise Manager Application Server Control. You can also update the HTML agent value for Oracle Workflow in the Global Workflow preferences Web page.

See Also: *Oracle Workflow Administrator's Guide* for information on Oracle Workflow Manager online help and setting up Oracle Workflow.

7. To change the tablespace assigned to the Oracle Workflow database account, select the **Change Tablespace** check box. Then select an existing tablespace from the list of values.
8. Choose **Submit** to begin the configuration. You can also choose **Quit** to exit the Workflow Configuration Assistant without performing the configuration.
9. When the configuration is complete, a confirmation window appears. Choose **OK**.

Step 4 Verify Oracle Workflow Web Interface Virtual Directory Mappings (optional)

> **Note:** In some previous releases, it was necessary to add the virtual directory mappings for Oracle Workflow manually. In release 2.6.3, however, these virtual directory mappings are configured automatically. You should verify the default mappings and add or edit them, if necessary.

Oracle Workflow requires a virtual directory mapping called `/OA_JAVA/` in your Web listener that points to the Oracle Workflow JAR files on your file system. The JAR files are in a directory called *`ORACLE_HOME`*`/jlib`. Oracle Universal Installer automatically installs the Java code in this directory when you install or upgrade the Oracle Workflow Server.

Oracle Workflow also requires 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.

If you installed Oracle HTTP Server in the same *`ORACLE_HOME`* as Oracle Workflow, the `/OA_JAVA/` and `/OA_MEDIA/` virtual directory mappings are set by default. You should verify these mappings and add them if necessary.

1. To add the required virtual directory mappings in Oracle HTTP Server, add aliases for the `jlib` directory and the Oracle Workflow icon area to the *`ORACLE_HOME`*`/wf/admin/wf.conf` file. The path to this configuration file must be included in the *`ORACLE_HOME`*`/Apache/Apache/conf/oracle_apache.conf` file which helps define the behavior of Oracle HTTP Server. Add the aliases using the following format:

   On UNIX:

   ```
   Alias /OA_JAVA/ "<ORACLE_HOME>/jlib/"
   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/ "/oracleas/jlib/"
Alias /OA_MEDIA/ "/oracleas/wf/java/oracle/apps/fnd/wf/icons/"
...
```

On Windows:

```
Alias /OA_JAVA/ "<ORACLE_HOME>\jlib/"
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:\oracleas\jlib/"
Alias /OA_MEDIA/ "C:\oracleas\wf\java\oracle\apps\fnd\wf\icons/"
...
```

Note: Add a trailing slash to each alias name and physical directory path.

2. Restart Oracle HTTP Server.

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

Step 5 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 documentation.

When you install Oracle Workflow Server, 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/wfdoc.zip`. To set up the HTML help, you must extract the `doc` directory tree from the `.zip` file and verify that you have a virtual directory mapping called `/OA_DOC/` in your Web listener that points to the documentation area on your file system.

If you installed Oracle HTTP Server in the same *ORACLE_HOME* as Oracle Workflow, the `/OA_DOC/` virtual directory mapping is set by default. You should verify this mapping and add it if necessary.

1. Use an `unzip` utility to extract the `doc` directory tree from the `.zip` file within the Workflow directory. You need at least 7 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 online help.
   - *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, `wfdoc.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. Verify that you have a virtual directory mapping called /OA_DOC/ in your Web listener that points to the new Oracle Workflow documentation area on your file system and add this mapping if necessary.

   Note: In some previous releases, it was necessary to add the virtual directory mappings for Oracle Workflow manually. In release 2.6.3, however, these virtual directory mappings are set by default. You should verify the default mappings and add or edit them only if necessary.

   - In Oracle HTTP Server, add an alias for the Oracle Workflow documentation area to the *ORACLE_HOME*/wf/admin/wf.conf file. The path to this configuration file must be included in the *ORACLE_HOME*/Apache/Apache/conf/oracle_apache.conf file which helps define 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/ "/oracleas/wf/doc/"
     ...
     ```

On Windows:

```
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:\oracleas\wf\doc/"
...
```

Note: 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 online help is:
   `http://<server_name>[:<port>]/OA_DOC/<lang>/wf/toc.htm`

   The path for the contents page of your Oracle Workflow custom help is:

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

5. If you want to add custom help, you can replace the placeholder file in the `wfcust` directory, `wfcust.htm`, with your own help material. The HTM file that is the main entry point for your custom help must be named `wfcust.htm` and must contain an anchor named `contents`. Your custom help will be accessible through the Custom Help link on the contents page of the Oracle Workflow help.

Step 6 Migrate Existing User Information to Oracle Internet Directory (optional)

If you are upgrading a previous installation of Oracle Workflow, and you are integrating with Oracle Internet Directory for the first time, migrate your existing Workflow user information to Oracle Internet Directory.

> **Note:** For a new installation of Oracle Workflow, you do not need to perform this step unless you want to access Oracle Workflow with the user names and passwords of the Workflow demonstration users. To enable access as the demonstration users when Oracle Workflow is integrated with OID, you must first migrate the seeded user information for these users to OID.

You must perform a one-time migration of existing Oracle Workflow user information to OID to enable single sign-on and single administration. Ensure that you migrate all the necessary data from `WF_LOCAL_USERS` as well as any other user tables in which you previously stored user information. After performing the migration, you should maintain your user information only through OID.

OID provides a migration tool called `ldifmigrator`. To use this tool, you must extract your user information from the database into an intermediate LDAP Data Interchange Format (LDIF) file, with substitution variables wherever necessary. The `ldifmigrator` tool converts the intermediate entries in the file to actual LDIF entries by replacing the variables based on arguments provided at runtime or information retrieved from the LDAP directory. The LDIF file produced by the `ldifmigrator` can then be uploaded into OID using OID bulk tools.

> **See Also:** *Oracle Internet Directory Administrator's Guide* for more information about the `ldifmigrator`, the format required for the intermediate LDIF file, and OID bulk upload tools

Step 7 Access Oracle Workflow User Interface

To invoke Oracle Workflow's Web pages, append the appropriate procedure and arguments to the base URL for the Workflow Web agent. After 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.com:port>/pls/your_Workflow_DAD/wfa_html.home`

The default name for the Workflow DAD is `wf`.

Notes:

- The Workflow Web agent must be defined before you can access Oracle Workflow's Web pages. If you did not enter the Workflow Web agent in the Workflow Configuration Assistant or set up your DAD, you can load this value manually using a script called `wftoken.sql`. This script is located in the `wf/sql` subdirectory within your Oracle home. Connect to the Oracle Workflow database account using SQL*Plus and run the script using the following command:

  ```
  sqlplus <username>/<pwd> @wftoken WF_WEB_AGENT <web_agent_value>
  ```

  Replace *<web_agent_value>* with the Workflow Web agent name in the following format:

  ```
  http://<server.com:port>/pls/your_Workflow_DAD
  ```

  where *<server.com:port>* represents the server and TCP/IP port number on which your Web listener accepts requests.

- The icons on the Oracle Workflow Web pages may appear as broken images if the virtual directory mapping to the Oracle Workflow icon area has not been added. Refer to Step 4. "Verify Oracle Workflow Web Interface Virtual Directory Mappings (optional)".

- During the installation process, the US language is loaded. To support access to Oracle Workflow in another language, you must load that language after completing the installation and configuration steps for Oracle Workflow. You can run the Workflow Configuration Assistant to load an additional language into your Oracle Workflow Server database.

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. The users are: `sysadmin`, `wfadmin`, `blewis`, `cdouglas`, `kwalker`, and `spierson`. Their passwords are the same as their usernames. You can authenticate your connection to an Oracle Workflow Web page with any of these user names and passwords. Public grants and synonyms were created so that these users have full access to Oracle Workflow's Web-based user interface.

- If you chose to integrate with OID as your directory repository, then the demonstration users are created as ad hoc users in the Workflow local directory service tables. In this case you must migrate the user information for the demonstration users to OID before you can access Oracle Workflow Web pages with these user names and passwords.

  See Also: Step 6. "Migrate Existing User Information to Oracle Internet Directory (optional)" on page 3-15

- If you chose in the Workflow Configuration Assistant to use Oracle Database users and roles as your directory repository, then the Workflow installation creates the demonstration users as database accounts. In this case you can authenticate yourself with a demonstration database username and password to access Oracle Workflow Web pages.

  Note: For security reasons, the installation process automatically locks the demonstration user accounts after they are created. Before you can begin using the accounts, you must unlock them using a script called `wfdemoul.sql`. This script is located in the `wf/demo` subdirectory within your Oracle home. Connect to the `SYSTEM` database account using SQL*Plus and run the script using the following command:

  ```
  sqlplus SYSTEM/<SYSTEM pwd> @wfdemoul
  ```

  Refer to your Oracle DBA if you need more information about the `SYSTEM` account and password.

Oracle Workflow also includes the Oracle Workflow Manager component in Oracle Enterprise Manager, which provides administrative and management tools for Oracle Workflow. If you ran the Workflow Configuration Assistant, after the Oracle Workflow installation and configuration are complete, you can access Oracle Workflow Manager from the Oracle Enterprise Manager Application Server Control.

Step 8 Complete Oracle Workflow Setup

Ensure that you complete all setup steps listed in the "Setting Up Oracle Workflow" chapter in the *Oracle Workflow Administrator's Guide*.

Step 9 Configure Oracle Workflow with OracleAS InterConnect

Use the following configuration steps to allow Oracle Workflow working with OracleAS InterConnect.

1. Navigate to your Oracle Workflow home page. Under **Global Workflow Preferences**, check that the System Status is set to Enabled.
2. Under **Check Setup**, listeners for local inbound agents, schedule listeners for Agents `WF_IN` and `WF_ERROR`. Setting the listener to run every 10 seconds is recommended. If you would like faster response times, schedule additional listeners rather than lowering the interval between runs.

   See Also: *Oracle Workflow Administrator's Guide* for details on scheduling listeners

3. Under Event Subscriptions, add three new subscriptions for the following events:

   - `oracle.apps.wf.event.agent.create`
   - `oracle.apps.wf.event.event.create`
   - `oracle.apps.wf.event.subscription.create`

   For each subscription, specify the following values:

   - **System**: *`your_workflow_system`*
   - **Source Type**: External
   - **Event Filter**: The event you are creating the subscription for (one of the three listed earlier).
   - **Status**: Enabled

- **Rule Data**: Key
- **Rule Function**: `wf_event_functions_pkg.receive`

  See Also: *Oracle Workflow Developer's Guide* for details on Event Subscription.

4

Managing OracleAS InterConnect

This chapter describes how to manage OracleAS InterConnect after installation.

Topics discussed are:

- Starting OracleAS InterConnect
- Changing OracleAS InterConnect and Oracle Workflow Schemas Passwords
- Creating Multiple Repository Schemas in the Same Database
- Creating Multiple Adapters using the copyAdapter Script
- Windows Service Names of the OracleAS InterConnect Components

Starting OracleAS InterConnect

Start OracleAS InterConnect using the following steps:

1. Start the hub database. This is the Oracle8*i* or Oracle9*i* database.
2. Start the hub database listener.
3. Start Oracle Management Server.
4. Start InterConnect Repository.

> **Note:** On both Windows and UNIX, you must run the `start` command from the `repository` directory, as indicated in the following instructions.

On UNIX:

Use the `start` command:

```
cd ORACLE_HOME/oai/9.0.4/repository
./start
```

On Windows:

Use the `start.bat` command or the Service panel for the repository:

```
cd ORACLE_HOME\oai\9.0.4\repository
.\start.bat
```

5. Use iStudio to design integration metadata. To start iStudio, use the following shortcut from the Start menu:

   Start > Programs > *ORACLE_HOME_NAME* > Application Development

6. Start adapter(s).

> **See Also:** Table 2–1 on page 2-9 for a list of adapter-specific documentation.

Changing OracleAS InterConnect and Oracle Workflow Schemas Passwords

You might need to change the passwords of the `oaihub904` and `owf_mgr` schemas on a regular basis, depending on your company's security policy. The `oaihub904` is the schema for OracleAS InterConnect, and `owf_mgr` is the schema for Oracle Workflow.

Change the passwords of the `oaihub904` and `owf_mgr` schemas in the Oracle database using the following steps:

1. Obtain the necessary system privileges to change schema passwords in the database.

   See Also: Refer to the Oracle database documentation for details on changing schema passwords.

2. Encrypt the new password using the `encrypt` utility in the *`ORACLE_HOME`*`/oai/9.0.4/bin` directory. This is the OracleAS InterConnect Oracle home (as opposed to the database Oracle home).

   When you run `encrypt`, you are prompted to enter the password to encrypt.

3. Update the appropriate parameter in the `.ini` files with the encrypted password. This is the OracleAS InterConnect Oracle home (as opposed to the database Oracle home).

   Table 4–1 contains information about updating files with encrypted passwords.

Table 4–1 Update Files with Encrypted Password

Enter the encrypted password for this schema	In this parameter	In this file	On these machines
`oaihub904`	`encrypted_hub_password`	*`ORACLE_HOME`*`/hub/hub.ini`	All machines
`owf_mgr`	`encrypted_aq_bridge_password`	*`ORACLE_HOME`*`/workflow/adapter.ini`	Hub machine

Creating Multiple Repository Schemas in the Same Database

The first schema was created in the repository database during the hub installation. If you need a second schema in the repository database, you can create it using the following steps:

1. Run the installation procedure.

   When the installer prompts you for database information, enter hub information (database host, port, and SID) that is identical to the hub information in the first install.

2. Make a copy of the following files so that you have a copy of the original. You will be making changes to these files:

   - *ORACLE_HOME*/oai/9.0.4/repository/hubschema
   - *ORACLE_HOME*/oai/9.0.4/repository/oaiexport
   - *ORACLE_HOME*/oai/9.0.4/repository/oaiimport
   - *ORACLE_HOME*/oai/9.0.4/repository/sql/hub1.sql
   - *ORACLE_HOME*/oai/9.0.4/repository/sql/deinstall_schema.sql
   - *ORACLE_HOME*/oai/9.0.4/hub/hub.ini

3. Replace all occurrences of `oaihub904` with the name of the new schema in the original files.

   For example, if you want the new schema to be called `oaihub`, replace `oaihub904` with `oaihub`.

4. Execute the modified `hubschema` script to create the new hub user (`oaihub` in this example) in the hub database.

5. Run postinstallation steps as described in "Hub Postinstallation Tasks" on page 2-7.

Creating Multiple Adapters using the copyAdapter Script

The `copyAdapter` script is copied to the following `bin` directory only during hub installation:

- UNIX: *`ORACLE_HOME`*`/oai/9.0.4/bin`
- Windows: *`ORACLE_HOME`*`\oai\9.0.4\bin`

If you need to use this script to create multiple adapters on a spoke machine, copy the script to the `bin` directory on the spoke machine, and edit the script to reflect the new Oracle home.

Windows Service Names of the OracleAS InterConnect Components

The Windows Service Names of the OracleAS InterConnect Components are:

- **OracleAS InterConnect Adapters**: `Oracle<`*`OracleHomeName`*`>InterConnect-<`*`adapterName`*`>`, for example, `myAQApp`
- **OracleAS InterConnect Repository**: Oracle<*`OracleHomeName`*>InterConnectRepository
- **Oracle Workflow**: `Oracle<`*`OracleHomeName`*`>InterConnect`

5

Configuring Oracle Enterprise Manager

This chapter describes how to configure Oracle Management Server, Oracle Intelligent Agent, and the Oracle Enterprise Manager Console 9*i* (9.2) to manage OracleAS InterConnect.

Topics discussed are:

Overview

Oracle Enterprise Manager 9*i*, which installs with the Oracle9*i* Database, consists of the Oracle Management Server, Oracle Intelligent Agents, Oracle Enterprise Manager Console, and the Oracle Enterprise Manager Repository.

Oracle Management Server exposes all Oracle Enterprise Manager services, such as the job system and the event system, and the group and user administration services, to external client applications. In addition to the standard services provided with Oracle Enterprise Manager, additional external services that are unique to a specific client application can be added to Oracle Management Server. Once an external service has been integrated with Oracle Management Server, a client application is able to access all services available to Oracle Enterprise Manager. As part of Oracle Management Server, integrated services are started and shut down along with Oracle Management Server. In case the external service fails prematurely, an error message is reported in Oracle Management Server logs. OracleAS InterConnect offers an external service implementation to monitor the repository and adapters through Oracle Enterprise Manager Console.

Note: OracleAS InterConnect uses the Oracle Enterprise Management components, such as Oracle Enterprise Manager Console and Oracle Management Server, that are shipped with the 9.2 Oracle Database CD. Make sure that these components are configured against the 9.2 hub database.

See Also:

- *Oracle Enterprise Manager Concepts Guide, Release 9.2.0*
- *Oracle Enterprise Manager Administrator's Guide, Release 9.2.0*
- *Oracle Enterprise Manager Configuration Guide, Release 9.2.0.2*

Configuring Management Infrastructure

Follow these steps to configure the management infrastructure:

1. Copy and unzip the following file in *OMS_ORACLE_HOME* and *EM_ORACLE_HOME*:
   - UNIX: *ORACLE_HOME*/oai/9.0.4/console/console-unix.zip
   - Windows: *ORACLE_HOME*\oai\9.0.4\console\console-win.zip

   Note: The following examples provided are UNIX-specific. Follow instructions in *ORACLE_HOME*\oai\9.0.4\console\console-win.zip for instructions for Windows.

2. Copy oai.jar from *OAI_ORACLE_HOME*/oai/9.0.4/lib to *OMS_ORACLE_HOME*/oai/9.0.4/lib and *EM_ORACLE_HOME*/oai/9.0.4/lib, where
   - OMS_ORACLE_HOME: Oracle home of the Oracle Management Server, 9.2 installation.
   - EM_ORACLE_HOME: Oracle home of the Oracle Enterprise Management Client, 9.2 installation.

   Note: OMS_ORACLE_HOME and EM_ORACLE_HOME can be the same, or separate Oracle homes.

3. Copy *OAI_ORACLE_HOME*/oai/9.0.4/hub.ini file to *OMS_ORACLE_HOME*/oai/9.0.4/hub and *EM_ORACLE_HOME*/oai/9.0.4/hub directories.

The following sections contain postinstallation steps for:

- Configuring Oracle Management Server
- Configuring Oracle Enterprise Manager Client

Configuring Oracle Management Server

The OMSExternralRegistry.registry loads the external service information to the Oracle Management Server repository during the startup. External registry is located in the *ORACLE_HOME*/sysman/config directory.

Sample registry for OracleAS InterConnect service is located at:

ORACLE_HOME/oai/console/server/omsexternalregistry.tmp

Perform the following steps to configure Oracle Management Server:

1. Navigate to *OMS_ORACLE_HOME*/oai/9.0.4/console/server directory.
2. Update all files in this directory by changing *OMS_ORACLE_HOME* to the Oracle home where Oracle Management Server, 9.2 is installed.
3. Append OMSExternalRegistry.registry.tmp to *OMS_ORACLE_HOME*/sysman/config/OMSExternalRegistry.registry. If the destination file does not exist, create one and append the contents of OMSExternalRegistry.registry.tmp to that file.
4. Copy the following TCL files to the locations specified:
   - filecheck.tcl and createfile.tcl: Copy to *OMS_ORACLE_HOME*/network/agent/events/oracle/host/generic
   - oai_system.tcl: Copy to *OMS_ORACLE_HOME*/network/agent/config
5. Append "oai_system.tcl" at the end of *OMS_ORACLE_HOME*/network/agent/config/nmiconf.lst.
6. Create a directory named notify in the *OMS_ORACLE_HOME*/network/agent directory, and append "Created by OAI" string to a new file named updown.txt in that directory.
7. Execute the following steps:
   a. Navigate to the *OMS_ORACLE_HOME*/oai/9.0.4/console/server directory.
   b. Execute the following command:

      ```
      post_install_server [oms_repo_user]/[password]@tnsname
      ```

      where tnsname is the hub database tnsname.

Configuring Oracle Enterprise Manager Client

Oracle Enterprise Manager Client Registry is a client side registry which is available to all the Enterprise Manager client applications, including Oracle Enterprise Manager Console, installed on a particular client. Oracle Enterprise Manager Console uses the client side registry to find out about applications which have registered for launch, and objects which are registered for inclusion into the Oracle Enterprise Manager Console navigator. The Enterprise Manager Client Registry is a properties file and is located in the *ORACLE_HOME*/sysman/config directory with a file name, OEMClient.properties.

Perform the following steps to configure Oracle Enterprise Manager Client:

1. Navigate to the *OEM_ORACLE_HOME*/oai/9.0.4/console/client directory.
2. Edit the *EM_ORACLE_HOME*/bin/oemapp file using the following steps:
   a. After the line that starts "XMLCLASSES" variable, add the following as a new line:

      ```
      OAIXMLCLASSES=$ORACLE_HOME/lib/xmlparserv2.jar:$ORACLE_
      HOME/lib/xmlcomp.jar:$ORACLE_HOME/oai/9.0.4/lib/oai.jar
      ```

   b. On the line that starts "CLASSPATHADD" variable, add the following:

      ```
      ":$OAIXMLCLASSES"
      ```

      Sample:

      ```
      CLASSPATHADD=$ORBCLASSES:$BALICLASSES:$HELPCLASSES:$DBUICLASSES:$JDBCCLA
      SSES:$CLASSROOT:$OEMCLASSES:$KODIAKCLASSES:$SECURITYCLASSES:$OSDNETCLASS
      ES:$OSDPKICLASSES:$NETMGRCLASSES:$XMLCLASSES:$NETCHARTCLASSES:$AURORACLA
      SSES:$OLAPCLASSES:$MISCCLASSES:$QSMACLASSES:$OAIXMLCLASSES
      ```

3. Append contents of oai.registry.tmp to *EM_ORACLE_HOME*/sysman/config/OEMClient.properties.
4. Append contents of oaievents.registry.tmp to *EM_ORACLE_HOME*/sysman/config/OEMClient.properties.

Managing Enterprise Management Components

This section contains information about managing the following enterprise management components:

- Oracle Intelligent Agent
- Oracle Management Server
- Oracle Enterprise Manager Console

Oracle Intelligent Agent

Use the following commands to start and stop the Oracle Intelligent Agent:

Start: *ORACLE_HOME*/bin/agentctl start agent

Stop: *ORACLE_HOME*/bin/agentctl stop agent

Oracle Management Server

Use the following commands to start and stop the Oracle Management Server:

Start: *ORACLE_HOME*/bin/oemctl start oms

Stop: *ORACLE_HOME*/bin/oemctl stop oms <*username/password*>

Oracle Enterprise Manager Console

Use the following commands to start and stop the Oracle Enterprise Manager Console:

Start: *ORACLE_HOME*/bin/oemapp console

When you run this command, the console window appears. To quit the console, select Exit from the File menu.

> **See Also:** *Oracle Enterprise Manager Administrator's Guide, Release 9.2.0* for detailed information on managing Enterprise Management components, including corresponding information for Windows.

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