Oracle9*i*™ Application Server

Oracle Portal Configuration Guide
Release 3.0

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Oracle Portal Configuration Guide, Release 3.0

Part No. A86707-02

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Oracle Portal 3.0 Configuration Guide, released with Oracle9*i* Application Server

Part No. A86707-02

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Preface

Welcome to Oracle Portal! This guide provides information about configuring Oracle Portal Release 3.0.

This preface includes the following sections:

- Intended Audience on page xiii
- Structure on page xiv
- Conventions on page xv
- Related Publications on page xv
- Oracle Services and Support on page -xvii

Intended Audience

This guide is intended for users who are responsible for configuring and maintaining Oracle Portal.

Structure

The "*Oracle Portal 3.0 Configuration Guide"* is comprised of the following chapters:

Chapter	Contents
Chapter 1, "Before You Begin"	Provides information about the Oracle Portal system requirements.
Chapter 2, "Post-installation and Configuration Tasks"	Provides general post-installation information including how to access Oracle Portal in your browser, installing and changing the language of a Oracle Portal in your browser, and descriptions of the default Oracle Portal schemas, accounts, and groups created upon installation. Deinstallation information is also provided.
Chapter 3, "Configuring the PL/SQL Gateway"	Provides information about configuring the Apache Listener and PL/SQL gateway for optimal performance.
Chapter 4, "Using interMedia Text in Oracle Portal"	Provides instructions on setting up *inter*Media Text to perform text searching in content areas created with Oracle Portal.
Chapter 5, "interMedia Rich Content in Oracle Portal Reports and Forms"	Provides instructions on including rich content such as graphics, audio, images, and video into Oracle Portal Reports and Oracle Portal Forms.
Chapter 6, "Distributed Oracle Portal Installations"	Provides instructions on running Oracle Portal in a distributed environment to enable portlet providers to be shared across nodes and for increased scalability, availability, and performance.
Chapter 7, "Troubleshooting"	Provides solutions to problems or errors you may encounter while using Oracle Portal.

Conventions

The following typographical conventions are used in this guide:

Convention	Meaning
boldface	Used for emphasis.
	Also used for button names, labels, links, and other user interface elements.
italics	Used to introduce new terms.
	Also used enclosed in angled brackets (<>) to represent a variable. Substitute an appropriate value.
courier	Used to represent text you need to type.
	Also used for file names and directories.

Related Publications

You may also wish to refer to the following publications which are available in Adobe Portable Document Format (PDF) from the Oracle Technology Network at:

`http://technet.oracle.com/docs/products/iportal/listing.htm`

> **Note:** If you have never visited the Oracle Technology Network before, you will be prompted to register. Registration is free.

Oracle Portal publications

Part Number	Title	Description
A86184-01	*Oracle Portal Release Notes*	Describes last minute changes to the product or documentation.
A86188-02	*Oracle Portal Tutorial*	Provides step-by-step lessons that teach you the basics in Oracle Portal.
A86183-02	*Oracle Portal Release 3.0: Building Advanced Portal*	Provides several cases that show you how to use Oracle Portal's advanced features.

Part Number	Title	Description
N/A	*Oracle Portal Development Kit*	Provides detailed information about the Oracle Portal API set as well as numerous examples that demonstrate API implementation. You can find the PDK on the Oracle Technology Network at: `http://technet.oracle.com/`

Other Oracle publications

Part Number	Title
A86240-01	*Oracle9i Application Server Installation Guide for Windows NT, Release 1.0.2*
A83709-04	*Oracle9i Application Server - Migrating from Oracle Application Server*
A86263-02	*Using the PL/SQL Gateway*
A87353-01	*Oracle9i Application Server - Overview*
A77063-01	*Oracle8i interMedia Text Reference*
A77061-01	*Oracle8i interMedia Text Migration*

Oracle Services and Support

A wide range of information about Oracle products and global services is available from:

- `http://www.oracle.com`

The sections below provide URLs for selected services.

Oracle Support Services

Technical Support contact information worldwide is listed at:

`http://www.oracle.com/support`

Templates are provided to help you prepare information about your problem before you call. You will also need your CSI number (if applicable) or complete contact details, including any special project information.

Product and Documentation

For U.S.A customers, Oracle Store is at:

- `http://store.oracle.com`

Links to Stores in other countries are provided from this site.

Product documentation can be found at:

- `http://docs.oracle.com`

Customer Service

Global Customer Service contacts are listed at:

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Training information and worldwide schedules are available from:

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OTN delivers technical papers, code samples, product documentation, self-service developer support, and Oracle key developer products to enable rapid development and deployment of application built on Oracle technology.

1

Before You Begin

Oracle Portal 3.0 is packaged and installed with Oracle9*i* Application Server.

As part of a typical Oracle Portal installation, the following components are installed:

- Oracle Portal Database Objects: images, demos, content areas, common services, utilities, required support files, documentation, Single Sign-On (SSO), and so on.
- Oracle9*i* Application Server Web Server: Servlets, Oracle PL/SQL Gateway (including mod_plsql) and the Oracle HTTP Server *powered by Apache.*

Please refer to the Oracle9*i* Application Server documentation for additional information about the Oracle HTTP Server *powered by Apache,* Oracle HTTP modules (mods), and the overall Oracle9*i* Application Server architecture. Installation instructions are contained in the "*Oracle9i Application Server Installation Guide, Release 1.0.2."*

> **See:** Preface, "Related Publications" on page -xv

This chapter contains the following sections:

- System Requirements on page 1-3
- Beta Features on page 1-7
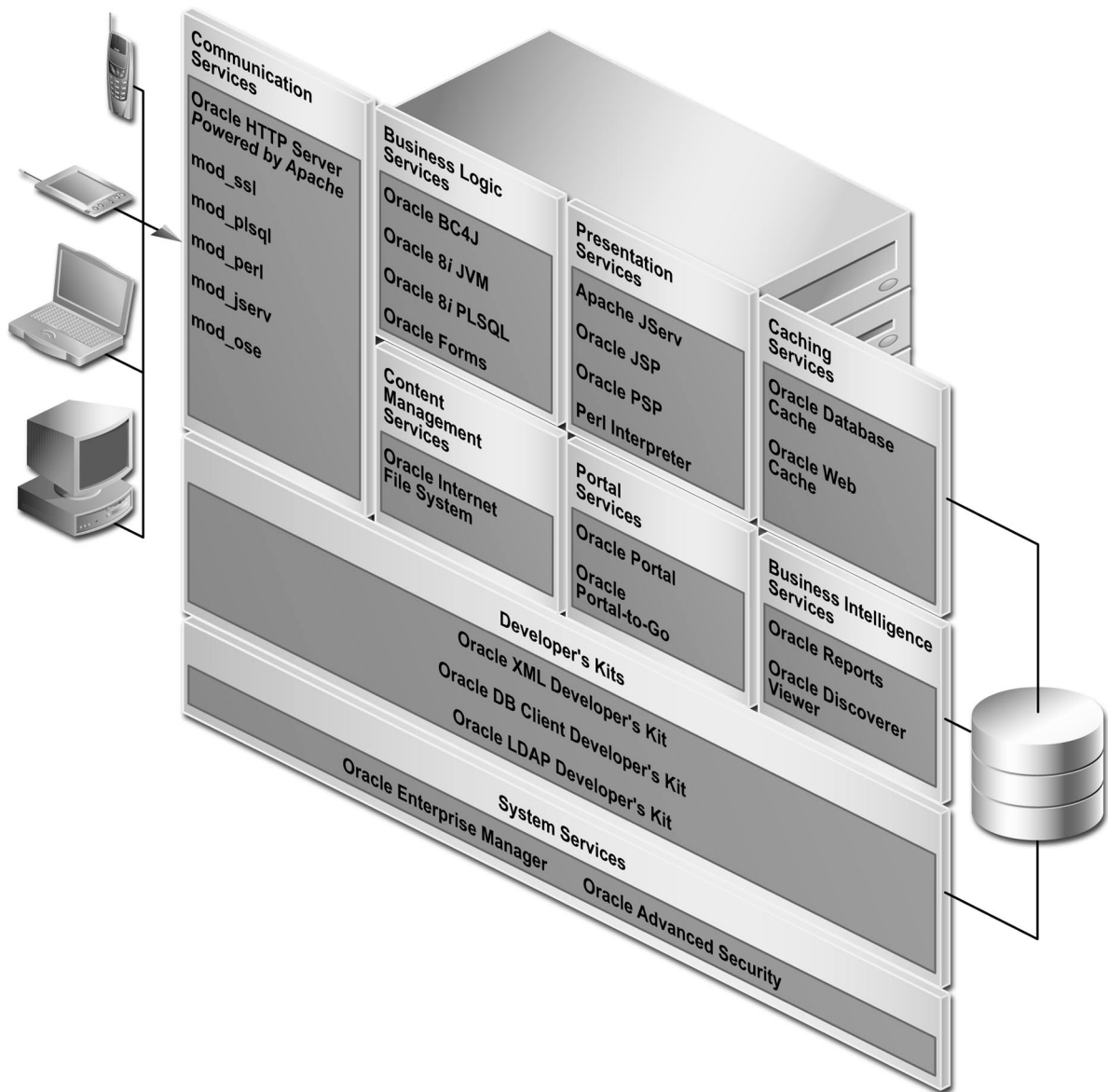
Figure 1–1   Oracle9i Application Server services and components

1.1 System Requirements

Before you install Oracle Portal 3.0, you must have an Oracle8*i* database and Oracle9*i* Application Server running, including the Oracle HTTP Server *powered by Apache.*

Ensure that your system also meets the following requirements before you install Oracle Portal 3.0.

1.1.1 Operating Systems

- Windows NT 4.0 with Service Pack 3 or above
- Solaris 2.6 or above

1.1.2 Oracle Databases

Oracle Portal can be installed in the following databases:

- Oracle8*i* Release 8.1.6.2 Enterprise Edition
- Oracle8*i* Release 8.1.7 Standard and Enterprise Edition
- You must have the SYS user password on your Oracle database.
- The database where you plan to install Oracle Portal must be up and running.

Notes:

- Oracle 8.1.6.2 is required since Oracle Portal makes extensive use of Oracle8*i* PL/SQL features like Native Dynamic SQL, Bulk Collect, Autonomous Transactions, nested tables and objects. Additionally, some of the newer features are exposed through Java.

- The PL/SQL Gateway is dependent on Oracle 8.1.7 client libraries and is installed along with the Oracle HTTP Server *powered by Apache.* With the PL/SQL Gateway, you can Web-enable any procedures stored either in the local database or any remote 8.*x* database. For more information, see Chapter 3, "Configuring the PL/SQL Gateway".

1.1.3 Oracle Home

- With Oracle8*i* Release 8.1.6.2 Enterprise Edition, Oracle Portal must be installed in a *separate* Oracle home directory.

- With Oracle8*i* Release 8.1.7 Standard and Enterprise Edition, Oracle Portal can be installed in the same *or* separate Oracle Home.

1.1.4 Web Browsers

- Netscape 4.0.8 and 4.72

- Microsoft Internet Explorer 4.0.1 with Service Pack 1 and 5.0.1

> **Note:** You may encounter JavaScript errors if you use a browser older than the recommended minimum.

1.1.5 Tablespace

The tablespace requirements are as follows:

- SYSTEM tablespace = 150 MB

- Default tablespace = 100 MB

> **Note:** Content areas are part of the Oracle Portal schema so you do not have to allocate additional tablespace for each content area that you create.

1.1.6 init.ora settings

The `init.ora` parameters in the Oracle Home containing your Oracle Portal installation should be set as follows:

```
max_enabled_roles = 25 (minimum)
open_cursors = 50 (minimum)
compatible = 8.1.0 (or above)
java_pool_size = 20971520
shared_pool_size = 15728640
```

> **Note:** If you are encountering error number 503 in the Oracle
> HTTP Server *powered by Apache*, it could be that the database is not
> configured with enough sessions to handle the load. As a remedy,
> you should try doubling the number of database processes
> configured in the `init.ora` file.

1.1.7 tnsnames.ora settings

The network file, `tnsnames.ora`, which is generated by Oracle Net8 Assistant
must be located in the following location:

```
<ORACLE_HOME>/network/admin
```

The TNS alias or connect string must be pointing to the location where you installed
Oracle Portal. Otherwise, the Oracle HTTP Server *powered by Apache* is unable to
connect to Oracle Portal.

In the C shell, for example, you can type the following at a command line prompt:

```
setenv TNS_ADMIN path
```

where:

path is the path to the `tnsnames.ora` file.

Note: This command differs depending on the shell.

You can also use the TNS_ADMIN variable to point to your `tnsnames.ora`.
However, be sure to add this variable to the following files:

- `<ORACLE_HOME>/Apache/Apache/bin/apachectl`

1.1.8 Terminal settings

You must set your terminal (using the set TERM command) to one of the following types:

```
3151 386 386s 386u 386x
ansi avx3
dec dgd2 dgd4
hft hftc hp iris ncd
sun sun5 tandm
vt100 vt220
wy150 wy50
xsun xsun5
```

1.1.9 *inter*Media Text

If you want to enable *inter*Media Text searching in Oracle Portal, make sure that the following requirements are met:

- Install and configure the Oracle8*i* database with the *inter*Media Text option by running the Oracle Universal Installer (OUI) and the Database Configuration Assistant. See the Oracle8*i* documentation for more information about installing and configuring an Oracle8*i* database to use *inter*Media Text.

    Note: *inter*Media Text should be installed in the same Oracle Home as the database. It is not installed if you choose to perform a Typical or default Custom installation of the Oracle8*i* database.

- Install Oracle Portal 3.0 according to the instructions provided in the *"Oracle9i Application Server Installation Guide"*.

- Set the LD_LIBRARY_PATH to the following before starting your database and Net8 Listener:

    ```
    $LD_LIBRARY_PATH:$ORACLE_HOME/ctx/lib
    ```

- The listener.ora and tnsnames.ora files, which are located in your Oracle8*i* (8.1.6.2 only) database's Oracle Home location, must be properly configured for External Procedure calls.

    See also:

    - Chapter 4, "Using interMedia Text in Oracle Portal"

    - *"Net8 Administrator's Guide"* for more information about creating these configuration files

1.2 Beta Features

You can switch on and off Beta features from the Oracle Portal 3.0 Global Settings page.

1. In the **Services** portlet, click **Global Settings**. By default, the Services portlet is located on the Oracle Portal home page's **Administer** tab.

Beta Features
Select to enable Oracle Portal 3.0 Beta features.

☑ Image Charts From Query Wizard

2. In the **Beta Features** section, select the check box to enable the appropriate Beta feature or clear the check box to disable the feature.

> **Note:**   In this release of Oracle Portal, Image Charts From Query Wizard is the only Beta feature offered. If you disable this feature, you cannot create any new components of this type. However, you can still edit, run, and manage the existing components that you have already created.

2

Post-installation and Configuration Tasks

This chapter provides information about Oracle Portal after installation and the configuration tasks that you can perform.

> **See:** For information about installing Oracle Portal with Oracle9*i* Application Server, see the *"Oracle9i Application Server Installation Guide"*.

Specific topics covered include:

- Default Schemas Created on page 2-2
- Default Oracle Portal Accounts Created on page 2-3
- Default Groups Created on page 2-4
- Accessing Oracle Portal in your Browser on page 2-5
- Deinstalling Oracle Portal on page 2-9
- Enabling Secure Socket Layer (SSL) on page 2-10

2.1 Default Schemas Created

Oracle Portal is installed primarily in the Oracle8*i* database, with some supporting components installed on the middle tier in Oracle9*i* Application Server.

If you install Oracle Portal in the default mode, five schemas are created. The default base schema name is *portal30* which you can change at installation time.

Table 2–1   Default Oracle Portal schemas created

Schema	Description
portal30	This is the product schema for Oracle Portal and contains the installed portal database objects.
*portal30*_public	This is the schema that the portal users map to when executing procedures in the Oracle Portal product schema. The schema name is constructed from the base schema with "_public" appended to it.
*portal30*_sso	This is the product schema for the Login Server. This schema can be renamed in the installer. If not specified, it defaults to the base schema name with "_sso" appended to it.
*portal30*_sso_public	This is the schema that the portal users map to when executing procedures in the Login Server product schema. This name is constructed from the Login Server schema name with "_public" appended to it.
*portal30*_demo	This is a schema which is installed with some Oracle Portal demonstration code. The name of this schema is the base schema name with "_demo" appended to it.
	See also:
	Oracle Portal Release 3.0: Building Advanced Portals (A86183-02)
	Oracle Portal Release 3.0: Tutorial (A86188-02)

Note: The *portal30* and the *portal30_sso* schemas are highly privileged database schemas. For more information, see the *"Using the PL/SQL Gateway"* guide provided with Oracle9*i* Application Server.

2.2 Default Oracle Portal Accounts Created

With each Oracle Portal installation, a default set of accounts is created. Assuming that the product is installed in a schema named *portal30*, the following default accounts are created:

Table 2–2   Default Oracle Portal accounts created

Schema	Description
portal30	This account is created for the Database Administrator (DBA) with the highest privileges in Oracle Portal.
*portal30*_admin	This is the account created for the portal administrator (ADMIN). This account is similar to the DBA account, however, it does not have privileges that provide access to database administration features, such as creating and managing schemas and other database objects.
*portal30*_public	This account is created for public users for unauthenticated sessions. This is the account that all sessions are associated with prior to authentication.
*portal30*_SSO	This account is created for the Login Server application.
	Since the Login Server is implemented with significant reuse of Oracle Portal infrastructure code, this user account is created as a result of this reuse.
*portal30*_SSO_public	This account is for non-authenticated sessions by the Login Server application.

Note: Make sure that all the passwords for these accounts are changed after initial login. By default, the password is set to the user name. You can change the password by logging on to the Login Server and editing the appropriate user accounts and changing their passwords.

See also: Task topics in the "Working with Users" folder from the Oracle Portal Online Help content area.

2.3 Default Groups Created

The following groups are created at installation time:

Table 2–3   Default Oracle Portal groups created

Group	Description
DBA	This group is defined with the maximum privilege levels in the system. All global privileges are granted to this group. When this group is installed, it has only one member - the user with the name of the product schema, for example, portal30.
PORTAL_ ADMINISTRATORS	This group is also a highly privileged group. It has most of the global privileges, except it does not have the database related privileges ANY_SCHEMA/MANAGE and ANY_SHARED_ COMPONENT/MANAGE.
	This group is seeded with the admin user, portal30_admin, and includes the dba group.
PORTAL_DEVELOPERS	This group has privileges to build and manage Oracle Portal components and applications.
PORTLET_PUBLISHERS	This group has the privilege of publishing portlets. This means that members of this group will be able to create components in the system such as folders, charts, calendars, etc.
	This group is initially composed of the portal_administrators group who can then decide which users or groups should be added to this group.
AUTHENTICATED_ USERS	All users that log on to the Oracle Portal are added to this group. This is a convenient mechanism to allow logged on users to perform privileged actions. Specified privileges are granted to this group and group membership cannot be changed.

> **See also:**   Task topics in the *"Understanding Users"* folder from the Oracle Portal Online Help content area.

2.4 Accessing Oracle Portal in your Browser

After you have successfully installed Oracle Portal, you can access it by entering the following in your browser:

```
http://<hostname>:<portnumber>/pls/<dad>
```

Table 2–4   URL to enter in browser to access Oracle Portal

Parameter	Description
hostname	Defines the machine on which you installed Oracle Portal.
	Important:
	■ You must enter both the hostname and the fully-qualified domain name. For example, enter *host.domain*.com.
	■ This name must also match the `ServerName` parameter in the Apache configuration file, `httpd.conf`, located in:
	`<ORACLE_HOME>/Apache/Apache/conf`
portnumber	Defines the port number you specified earlier to access Oracle Portal.
pls	Defines the virtual path and indicates that the request is for a PL/SQL procedure which alerts the Oracle HTTP Server *powered by Apache* to reroute the request appropriately to the PL/SQL Gateway.
dad	Defines the Database Access Descriptor (DAD) you specified earlier for your Oracle Portal installation. The DAD contains information on how to connect to the database. See the Apache Listener Configuration for Oracle Portal DAD window (Oracle HTTP Server *powered by Apache).*

You will be prompted to enter the Single Sign-On (SS0) username and password before gaining access to Oracle Portal. The defaults are as follows:

Username: *portal30*

Password: *portal30*

> **See also:**   Section 2.2, "Default Oracle Portal Accounts Created" on page 2-3.

2.4.1 Installing language support in Oracle Portal

You can choose to install and display the Oracle Portal user interface in any of the 24 supported languages from your browser. To install support for a given language, you must run the `wwvseedus.sql` and `langinst.csh` scripts. Once the language is installed you use the Set Language portlet to choose which language Oracle Portal should use.

The supported languages and their abbreviations are listed in the following table:

Table 2–5   Supported languages and abbreviations

Language	Abbreviation
Czech	cs
German	d
Danish	dk
Spanish	e
Greek	el
French	f
Hungarian	hu
Italian	i
Japanese	ja
Korean	ko
Norwegian	n
Dutch	nl
Polish	pl
Portuguese	pt
Brazilan Portuguese	ptb
Romanian	ro
Russian	ru
Swedish	s
Finnish	sf
Slovak	sk

Table 2–5   Supported languages and abbreviations

Language	Abbreviation
Thai	th
Turkish	tr
Simplified Chinese	zhs
Traditional Chinese	zht

To install support for a given language in Oracle Portal:

1. Start a command line prompt.

2. Change to the `ORACLE_HOME/portal30/admin/plsql/nlsres/ctl/us` directory.

3. Start SQL*Plus and login to the database where Oracle Portal is installed.

4. From SQL*Plus, run the `wwvseedus.sql` script against the PORTAL schema.

5. Change to the `ORACLE_HOME/portal30/admin/plsql` directory.

6. Enter one of the following commands, depending upon your operating system:

UNIX

```
langinst.csh <-s portal_schema> <-p portal_password> <-o sso_schema> <-d sso_
password> <-c portal_connect_string>
-l <language> -available
```

Windows NT

```
langinst.cmd <-s portal_schema> <-p portal_password> <-o sso_schema> <-d sso_
password> <-c portal_connect_string> -l <language> -available
```

Example

```
langinst.csh -s portal30 -p portal30 -o portal30_sso -d portal30_sso -c orcl
  -l cs -available
```

where

Table 2–6   Language script parameters (langinst)

Parameter	Description
-s portal_schema	The database schema for the Oracle Portal database objects.
	Default = PORTAL30
-p portal_password	The Oracle database password for the Oracle Portal schema. Default = <portal_schema>
-o sso_schema	The Oracle database schema for Login Server objects.
	Default = <portal_schema>_SSO
-d sso_password	The Oracle database password for Login Server schema.
	Default = <sso_schema>
-c connect_string	The connect string for the database in which the Oracle Portal schema is installed. You need to provide the connect string only if the schema is located on a remote database.
-l language	The abbreviation for the language you want to install. See Table 2–5, "Supported languages and abbreviations" above.
-available	(Required) Ensures that the tabs are translated.

7. Repeat step 6 for each language for which support is desired in Oracle Portal.

8. To enable users to choose their desired language, you add the Set Language portlet to a portal page. This portlet will display all of the languages currently installed and users can select the language of their choice.

   Typically, it makes sense to add the Set Language portlet to your content area home page, but you could add it to any page. The Set Language portlet can be added to a page just like any other portlet. Refer to the Oracle Portal online help content area for instructions on how to add portlets to pages.

   Notes:

   - In previous releases, Oracle Portal's language support depended upon the setting of your browser's language preference. With the Set Language portlet, this is no longer the case.

- The Login Server's language is set separately from that of Oracle Portal. The Login Server will automatically display a list of installed languages on its login page, which will determine the language used for the Login Server regardless of what you set in the Set Language portlet.

2.5 Deinstalling Oracle Portal

This section describes how to use Oracle Universal Installer to deinstall Oracle products (which deinstalls them from the Oracle Universal Installer inventory) instead of removing them manually.

To deinstall Oracle Portal:

1. Launch the Oracle Universal Installer.

   - On UNIX, enter `./runInstaller`

   - On Windows NT, choose Start > Programs > Oracle Installation Products > Universal Installer.

   The *Welcome* window for Oracle Universal Installer appears.

2. Click **Deinstall Products**.

   The *Inventory* dialog box appears.

3. Expand the tree of installed products until you find the products to deinstall. In this case, choose Oracle Portal.

4. Check the boxes of products to deinstall.

5. Click **Remove**.

   The *Inventory Confirmation* window appears.

6. Click **Yes** to deinstall the selected products.

   > **Note:**   A message may display indicating that removing some products may cause other products to function improperly.

   The products are deinstalled from your computer. The *Inventory* dialog box appears without the deinstalled products.

7. Click **Close** to close the *Inventory* dialog box.

8. Click **Exit** to exit Oracle Universal Installer.

2.5.1 Deinstalling a single Oracle Portal schema or the Login Server

If you need to delete a single Oracle Portal schema or the Login Server, you can do so from the Oracle Portal Configuration Assistant - Step 1 of 6: Installation Options.

To deinstall an Oracle Portal schema or the Login Server:

1. Launch the Oracle Portal Configuration Assistant:

   Windows NT

   - Choose Start > Programs > Oracle Home > Oracle Portal Configuration Assistant

   UNIX

   - Go to the `$OH/assistants/opca` directory and run the `launch.sh` script

2. The Step 1 of 6: Installation Options window appears.

   Click the option to **Deinstall Oracle Portal or the Login Server**.

3. Follow the instructions on the remaining screens to complete this task.

> **See also:**
>
> - *"Oracle9i Application Server Installation Guide"*

2.6 Enabling Secure Socket Layer (SSL)

> **Notes:**
>
> You must be the portal administrator to enable or disable Secure Socket Layer (SSL) in Oracle Portal and on the Login Server.
>
> **See also:** *"Oracle9i* Application Server *Installation Guide"* for enabling SSL on the server.

Oracle Portal and the Login Server can be configured to run in HTTPS mode if your portal requires increased security. For optimal performance, you can also choose to have a mixed configuration where Oracle Portal is run in HTTP mode and the Login Server is run in HTTPS mode.

The Secure Socket Layer (SSL) is responsible for securing Web HTTP communication between a browser and a Web server in plain HTTP over SSL (named HTTPS). Enabling SSL to work with the Oracle HTTP Server is handled by the mod_ssl package which is provided with the Apache Web server. It uses the URL scheme HTTPS rather than HTTP and a different server port.

2.6.1 SSL in Apache

For more information about enabling and disabling SSL, visit the Apache interface to mod_SSL at the following location:

```
http://www.modssl.org
```

2.6.2 SSL in Login Server

In the Login Server, if you need to specify URL prefixes and ports, for example, if you are working with the ssodatan script (which configures your login via the Single Sign-On server) or ssodatax script, or running the Oracle Universal Installer, you would specify https:// and an https port; instead of specifying an http:// and an http port.

When configuring the Login Server for HTTPS, Oracle Portal still requires access to an HTTP port to use UTL_HTTP to connect to the Login Server for some of the communication that it requires. You can specify an available HTTP port from the Global Settings page in the Services portlet.

Figure 2–1   Login Server Settings in Oracle Portal

In the **Query Path URL Prefix** field, enter the URL prefix which is used to construct the URLs for these internal connections to the Login Server. You must specify an available HTTP port for this URL prefix.

For increased security, refer to the Apache documentation for information on restricting access to the HTTP ports to the portal so that only HTTPS connections from Oracle Portal database's IP address (which is performing a UTL_HTTP callout) is accepted.

> **See also:** "Step 4: Associate nodes with the same Login Server" on page 6-12.

2.6.3 Using certificates and HTTPS

With HTTPS, you must use certificates for increased security in Oracle Portal. In this case, the Parallel Servlet must be aware of which port(s) are operating under HTTPS. To set this up, you must edit the `zone.properties` file which is located in the following location by default:

Table 2–7   zone.properties file location

Operating System	Location
Windows NT	`<ORACLE_HOME>\Apache\Jserv\servlets\zone.properties`
UNIX	`<ORACLE_HOME>/Apache/Jserv/etc/zone.properties`

Add the following line to the `zone.properties` file:

`servlet.page.initArgs=httpsports=<port1>:<port2>:. . . :<portn>`

Each port in this list will operate using the HTTPS protocol, and must have a certificate created on the Oracle HTTP Server *powered by Apache* on that port.

> **See also:**
>
> - Oracle9*i* Application Server documentation for further configuration information.
> - "Configuring the Login Server for LDAP user authentication" topic in the Oracle Portal Online Help content area.

3

Configuring the PL/SQL Gateway

This chapter discusses the PL/SQL Gateway, a module provided by Oracle HTTP server *powered by Apache* and installed with Oracle Portal. The PL/SQL Gateway provides support for building and deploying PL/SQL-based applications on the Web. PL/SQL stored procedures can retrieve data from database tables and generate HTTP responses containing data and code to display in a Web browser. The PL/SQL Gateway supports other Oracle products such as WebDB 2.2 and includes a number of new features.

> **See also:** "Using the PL/SQL Gateway" guide (A86263-02) which is provided as part of the Oracle9*i* Application Server documentation set.

This chapter contains the following sections:

- "Oracle HTTP Server Modules (mods)" on page 3-2

- "Configuring the Oracle HTTP Server powered by Apache" on page 3-3

- "Accessing the Gateway DAD Configuration Page" on page 3-5

- "Starting and Stopping the Oracle HTTP Server powered by Apache" on page 3-7

- "Accessing Help" on page 3-7

3.1 Oracle HTTP Server Modules (mods)

In addition to the compiled Apache mods provided with Oracle HTTP server *powered by Apache*, which support current Internet application technologies to deliver dynamic Web pages, Oracle has enhanced several of the standard mods and has added Oracle-specific mods:

Table 3–1   Oracle HTTP Server Modules (mods)

Module	Description
mod_ssl	Provides standard HTTPS that is fully supported by Oracle; enables secure listener connections with an Oracle-provided encryption mechanism via the Secure Sockets Layer (SSL). **See also:** Chapter 2, Section 2.6, "Enabling Secure Socket Layer (SSL)" on page 2-10.
PL/SQL Gateway including mod_plsql	Routes PL/SQL requests to Oracle8*i* PL/SQL service, which, in turn, delegates the servicing of requests to PL/SQL programs.
mod_perl	Forwards Perl application requests to the Perl Interpreter that is embedded in Oracle HTTP Server, providing power and speed.
mod_jserv	Routes all servlet requests to Apache JServ servlet engine that is embedded in Oracle HTTP Server; can share servlets across multiple zones and ensures that requests get routed to the same servlet engine.

See: For a list of Oracle9*i* Application Server documentation, see "Related Publications" in the Preface on page -xv.

The remainder of this chapter discusses the PL/SQL Gateway.

3.2 Configuring the Oracle HTTP Server *powered by Apache*

The installation creates configuration files that you can edit, including the following that affect the PL/SQL Gateway:

3.2.1 Oracle HTTP Server *powered by Apache start and stop script*

This script is used to start and stop the Oracle HTTP Server *powered by Apache* and is located in the Oracle Home in which your Oracle HTTP Server is running:

`<ORACLE_HOME>/Apache/Apache/bin/apachectl`

The contents of this file include three environment variables that affect the PL/SQL Gateway:

Table 3–2   Environment variables set in the apachectl script

Environment Variable	Description
ORACLE_HOME	the Oracle Home in which the PL/SQL Gateway runs.
	Default: `<ORACLE_HOME>`
LD_LIBRARY_PATH	the Oracle libraries required by the PL/SQL Gateway. This must point to an Oracle 8.1.7 database installation. This parameter is for UNIX only.
	Default: `<ORACLE_HOME>/lib`
WV_GATEWAY_CFG	the mod_plsql configuration file.
	Default on UNIX:
	`<ORACLE_HOME>/Apache/modplsql/cfg/wdbsvr.app`
	Default on Windows NT
	`<ORACLE_HOME>/Apache/modplsql/cfg/wdbsvr.app`

If you want to have the PL/SQL Gateway running in another Oracle Home, remember to change both the `ORACLE_HOME` and `LD_LIBRARY_PATH` settings.

On UNIX, if you want the PL/SQL Gateway to use a different WV_GATEWAY_ CFG configuration file, edit the `apachectl` file to point to the new configuration file.

On Windows NT, you can choose Start->Settings->Control Panel->System. Click the Environment tab, modify the system variable named `WV_GATEWAY_CFG` that points

to the new WV_GATEWAY_CFG configuration file. Then, restart your computer for all changes to take effect.

3.2.2 Oracle HTTP Server *powered by Apache* configuration file

The Oracle HTTP Server *powered by Apache* configuration file is located in:

`<ORACLE_HOME>/Apache/Apache/conf/httpd.conf`

This configuration file defines the behavior of the Oracle HTTP Server. You can set your port number as well as other server settings.

3.2.2.1 mod_plsql setup file

The mod_plsql setup file is located in:

`<ORACLE_HOME>/Apache/modplsql/cfg/plsql.conf`

This configuration file describes settings for the mod_plsql module in the PL/SQL Gateway. There settings are configurable:

- `LoadModule plsql_module <MOD_PATH>` - the location of the mod_plsql module.

    - **Default on UNIX:**

        `<ORACLE_HOME>/Apache/modplsql/bin/modplsql.so`

    - **Default on Windows NT:**

        `<ORACLE_HOME>/bin/modplsql.dll`

- `<Location <MOUNT_PATH>>` - the prefix in the URL for which mod_plsql is invoked.

    - Default: `/pls`

3.2.3 mod_plsql configuration file

The mod_plsql configuration file is located in:

`<ORACLE_HOME>/Apache/modplsql/cfg/wdbsvr.app`

This is the main mod_plsql configuration file. It contains all the DAD information. Please do not edit this file directly. Use the Gateway Database Access Descriptor configuration page in Oracle Portal, which you can access through your browser as shown in Section 3.3, "Accessing the Gateway DAD Configuration Page".

3.3 Accessing the Gateway DAD Configuration Page

To access the Gateway Database Access Descriptor configuration page, enter the following URL in your Web browser:

```
http://<hostname>:<port>/pls/DAD/<admin_path>/gateway.htm
```

where:

Table 3–3   PL/SQL Gateway URL path

Parameter	Description
hostname	Is the machine where the application server is running.
	■ This name must also match the ServerName parameter in the Apache configuration file, httpd.conf, located in:
	`<ORACLE_HOME>/Apache/Apache/conf`
port	Specifies the port at which the application server is listening. If omitted, port 80 is assumed.
admin_path	Specifies the URL path element that identifies an administration page. The default is admin_. For example, if you specify the default of admin_, the following URL will display the Gateway DAD configuration page, given that the user is listed in the administrators configuration setting:
	`http://www.myserver.com/pls/admin_/gateway.htm`

Configuration settings are protected by the administration security settings. The Web administration page can only be accessed by those users whose user names appear in the Administrators setting in the configuration file.

3.3.1 plsql.conf configuration file

The Oracle HTTP Listener configuration file includes the modplsql configuration file named plsql.conf. The contents of plsql.conf are provided in the appropriate section below:

3.3.1.1 UNIX

```
#
# Directives added for mod_plsql
#
LoadModule plsql_module %ORACLE_HOME%/modplsql/bin/modplsql.so

#
# Enable handling of all virtual paths beginning with "/pls" by mod-plsql
#
<Location /pls>
  SetHandler pls_handler
  Order deny,allow
  Allow from all
</Location>
```

3.3.1.2 Windows NT

```
#
# Directives added for mod-plsql
#
LoadModule plsql_module %ORACLE_HOME%\bin\modplsql.dll

#
# Enable handling of all virtual paths beginning with "/pls" by mod-plsql
#
<Location /pls>
  SetHandler pls_handler
  Order deny,allow
  Allow from all
</Location>
```

> **Note:** The Oracle Home referenced in the `plsql.conf` file refers to the home location of your Oracle9*i* Application Server installation.

3.4 Starting and Stopping the Oracle HTTP Server *powered by Apache*

The following commands can be executed from your command prompt in UNIX:

To start the Oracle HTTP Server *powered by Apache*, enter:

```
<ORACLE_HOME>/Apache/Apache/bin/apachectl start
```

To stop the Oracle HTTP Server *powered by Apache*, enter:

```
<ORACLE_HOME>/Apache/Apache/bin/apachectl stop
```

To start the Oracle HTTP Server *powered by Apache* with SSL support, enter:

```
<ORACLE_HOME>/Apache/Apache/bin/apachectl startssl
```

> **Note:** You require root access to run this command.

3.5 Accessing Help

For more information about the PL/SQL Gateway, click the Help buttons displayed from the following locations:

```
http://<machine_name>:<port>/pls/admin_/gateway.htm
```

Click to display the *"Using the PL/SQL Gateway"* guide which provides additional information.

Click to display Help for configuration parameters on the following displayed mod_plsql pages:

```
http://<machine_name>:<port>/pls/admin_/globalsettings.htm
http://<machine_name>:<port>/pls/admin_/dadentries.htm
```

4

Using *inter*Media Text in Oracle Portal

This chapter provides information on setting up built-in search capabilities by using *inter*Media Text in Oracle Portal.

This chapter contains the following sections:

- Searching in Oracle Portal on page 4-2
- Prerequisites on page 4-4
- Setting up interMedia Text Searching on page 4-5
- Updating an interMedia Text Index on page 4-11
- Dropping an interMedia Text Index on page 4-12
- Starting the Context Server on page 4-13
- Setting up your Environment for interMedia Text on page 4-15
- Multilingual Functionality (Multilexer) on page 4-17

4.1 Searching in Oracle Portal

As a user of Oracle Portal, you can perform a search using Oracle Portal's search capabilities. There are three levels of search provided with Oracle Portal: basic search, advanced search, and *inter*Media Text search.

4.1.1 Basic search

Search is performed on item attributes such as display name, description, and keywords of items, as well as the display name and description of folders, categories, and perspectives.

Use basic search to search the current content area for items, folders, categories, and perspectives that contain specific words.

> **See also:** "Performing a Basic Search" and "Setting up the search feature" topics in the Oracle Portal Online Help content area which is installed with the Oracle Portal.

4.1.2 Advanced search

If you have advanced search capabilities enabled in Oracle Portal, you can:

- Find content that contains any of the specified words.
- Search across a content area other than the current content area, or across all content areas.
- Restrict the search to a particular folder, category, perspective, item type, or attribute.
- Search to perform near, soundex, and fuzzy searches.

> **See also:** "Performing an Advanced Search" topic in the Oracle Portal Online Help content area which is installed with the product.

4.1.3 *inter*Media Text search

You use Oracle8*i inter*Media Text to build a text query application. Oracle8*i inter*Media Text provides search, retrieval, and viewing capabilities for text. In addition, *inter*Media Text provides concept searching and theme analysis of English language documents.

To index and query, you use standard SQL with a domain index of type `ctxsys.context`. You can also use the supplied *inter*Media Text PL/SQL packages for advanced features such as document presentation and thesaurus maintenance.

If *inter*Media Text is installed and enabled on Oracle Portal, a basic or advanced search also tries to find the specified search words in the content of uploaded documents and the first pages of URL items.

For example, Oracle Portal searches on files such as PDF, PowerPoint, and Word as well as searches on URLs, text, and HTML.

> **See also:**
>
> - Oracle Portal Online Help content area about support for *inter*Media rich content such as GIF, JPG, AU, WAV, MP3, QT, and REAL in Oracle Portal reports and forms.
> - "Oracle8*i inter*Media Text Reference", Release 2 (8.1.6), (A77063-01).

4.1.4 Viewing *inter*Media Text search results

When *inter*Media Text is enabled in Oracle Portal and an index is created, a user can perform a search of all uploaded items of type file, text, or URL. From the search page, you can choose any of the following ways to view the resulting search items:

- View an HTML version of the file.
- View an HTML version of the file with search terms highlighted in any color or font set by the Oracle Portal administrator.
- View major themes in a chart (document theme analysis).
- View a short summary about the file's content (gist).

    > **See also:**
    >
    > Oracle Portal Online Help content area, "Setting up *inter*Media Text searching" topic.

4.2 Prerequisites

> **Note:** You must be logged on as an Oracle Portal administrator to configure *inter*Media Text*,* and create, alter, update, and drop *inter*Media Text indexes.

Before using *inter*Media Text into Oracle Portal, you **must** perform the following tasks:

- Install and configure the Oracle8*i* database with the *inter*Media Text option by running the Oracle Universal Installer (OUI) and the Database Configuration Assistant. See the Oracle8*i* documentation for more information about installing and configuring an Oracle8*i* database to use *inter*Media Text.

- Install Oracle Portal 3.0 according to the instructions provided in the *Oracle9i Application Server Installation Guide."*

- Create an Oracle Portal content area using the Content Area Creation Manager. See the "Creating a content area" topic in the Oracle Portal Online Help content area.

- If this database was an existing ConText site, make sure to remove `text_ enable` from the `init.ora` file. It is no longer used in Oracle8*i*, and will actually prevent 8*i* from operating properly. The error, "cannot find package DR_REWRITE" may appear.

> **See also:** Chapter 1, "Before You Begin", Section 1.1, "System Requirements" on page 1-3.

4.2.1 *inter*Media Text on UNIX

For the *inter*Media Text feature to work, the following UNIX environment variables need to be set before starting the Oracle8*i* database and Net8 Listener.

Korn Shell (ksh):

```
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:$ORACLE_HOME/ctx/lib
export LD_LIBRARY_PATH
```
C-Shell (csh):

```
setenv LD_LIBRARY_PATH ${LD_LIBRARY_PATH}:${ORACLE_HOME}/ctx/lib
```

4.3 Setting up *inter*Media Text Searching

There are four main steps for setting up *inter*Media Text in Oracle Portal:

- Step 1: Setting up the Global page settings on page 4-6

- Step 2: Enabling interMedia Text searching on page 4-7

- Step 3: Creating an interMedia Text index on page 4-8

- Step 4: Maintaining your index on page 4-10
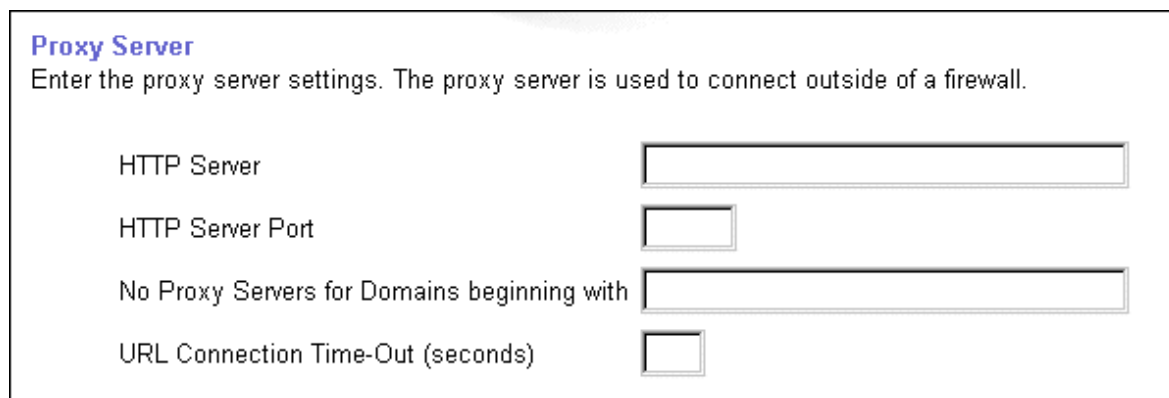
Note: To obtain additional information for any Oracle Portal configuration page, click the small Help icon displayed on the page.

4.3.1 Step 1: Setting up the Global page settings

The first step requires you to configure the global page settings in the following way:

1. In the **Services** portlet, click **Global Settings**. By default, the Services portlet is located on the Oracle Portal home page's **Administer** tab.

Figure 4–1   Global page settings - Proxy Server

2. In the **Proxy Server** section:

    a. Enter the host name of your proxy server for the HTTP Server.

        Note: Do not prefix http:// to the proxy server name.

    b. Enter the domains that you do not want redirected to the proxy server.

    c. Enter the maximum amount of time (in seconds) that a connection should be attempted before timing out.

3. Click **OK**.

4.3.2 Step 2: Enabling *inter*Media Text searching

Before creating the *inter*Media Text indexes, you'll have to configure the *inter*Media Text settings in Oracle Portal in the following way:

1. In the **Services** portlet, click **Search Settings**. By default, the Services portlet is located on the Oracle Portal home page's **Administer** tab.

Figure 4–2   Services portlet - interMedia Text properties

Specify *inter*Media Text Properties
Select whether or not to enable *inter*Media Text searching and themes and gist for your content areas. *inter*Media Text searching enables users to search the actual content of items as well as their titles, descriptions and keywords. Themes and gists provide additional contextual information about the items returned by a search. You can also choose the color and style to use highlight search words in the items returned. For *inter*Media Text searching to work, *inter*Media Text must be supported and installed on your database and you must create an index by clicking Create Index. If the button reads Drop Index, an index already exists which you can drop if desired.

Create Index

☑ Enable *inter*Media Text Searching
☑ Enable Themes And Gists
Highlight Text Color: default
Highlight Text Style: plain

> **Note:**   If you see the message, "*inter*Media Text is not installed", *inter*Media Text was not installed with the database and is not available for your content areas. Arrange with your database administrator to have *inter*Media Text installed.

2. Select **Enable *inter*Media Text Searching** to make *inter*Media Text searching available in your content areas.

3. Select **Enable Themes And Gists** to create a theme and gist for each item returned by the search.

   - A theme shows the nouns and verbs that occur most frequently within the item.

- A gist displays a brief summary of the item, derived from how frequently those nouns and verbs appear.

Note: Themes and gists are not available for all languages.

---

4. In the **Highlight Text Color** list, choose the color to highlight the search words in the HTML renditions of the items returned by the search.

5. In the **Highlight Text Style** list, choose the style to apply to the search words in the HTML renditions of the items returned by the search.

6. Click **OK**.

Now that you've enabled *inter*Media Text, you'll need to create a new *inter*Media Text index.

4.3.3 Step 3: Creating an *inter*Media Text index

To create an *inter*Media Text index:

1. Make sure that you have configured the *inter*Media Text settings in Oracle Portal as discussed in the previous section, Section 4.3.2, "Step 2: Enabling interMedia Text searching".

2. In the **Specify *inter*Media Text Search Properties** section, as shown on the previous page, click **Create Index**.

Notes:

- The time required for creating indexes varies depending on the number of items you have in your content area.

- If properly run, the message "Index created" appears and the *inter*Media Text index is created on the server.

- If you fail to create the index, check that your system has met all the requirements in Section 4.2, "Prerequisites" on page 4-4.

- You can also run the following command in SQL*Plus. Log on using the user name and password for the schema that owns the Oracle Portal content area. For example, if the schema is named "SCOTT", log on with user name and password, "SCOTT".

  ```
  ctxcrind.sql
  ```

The following *inter*Media Text indexes are created:

Table 4–1   interMedia Text indexes created

Index Name	Description
WWSBR_CORNER_CTX_INDX	Index based on folders.
WWSBR_DOC_CTX_INDX	Index based on the items' filename.
WWSBR_PERSP_CTX_INDX	Index based on perspectives.
WWSBR_THING_CTX_INDX	Index based on items.
WWSBR_TOPIC_CTX_INDX	Index based on categories.
WWSBR_URL_CTX_INDX	Index based on the items' Uniform Resource Locator (URL).

4.3.4 Step 4: Maintaining your index

*inter*Media Text lets you create a text index (an inverted index) on documents stored in the database. Updating an inverted index requires heavy processing, so changes to a text column are queued and processed in batch. This is referred to as *synchronizing* the text index.

*inter*Media Text gives you full control over how often each text index is synchronized. You can choose to synchronize every five seconds, for example, if it is important for your application to reflect text changes quickly in the index. Or, you can choose to synchronize once a day, for more efficient use of computing resources and a more optimal index.

After creating your *inter*Media Text index, you'll need to consider a strategy for maintaining the index. For example, if you have many inserts, updates, or deletes (DML) throughout the day, consider synchronizing the *inter*Media Text index on a daily basis.

4.3.4.1 Synchronizing the *inter*Media Text index

The following example, assumes that you've installed `ctx_schedule`.

1. Log on to SQL*Plus with the appropriate username and password:

2. Enter the following commands:

```
exec ctx_schedule.startup ( 'ex1_index', 'SYNC', 1 ) ;
exec ctx_schedule.startup ( 'ex1_index', 'OPTIMIZE FAST', 120 ) ;
```

In this example, the index `ex1_index` is synchronized every minute, and optimized every two (2) hours. This is true even if the database is shutdown and restarted.

4.3.4.2 Stopping index maintenance

1. Log on to SQL*Plus with the appropriate username and password:

2. Enter the following commands:

```
exec ctx_schedule.stop ( 'ex1_index' ) ;
exec ctx_schedule.stop ( 'ex1_index', 'OPTIMIZE FAST' ) ;
```

`ctx_schedule.stop` assumes that the operation to be stopped is 'SYNC', unless you specify otherwise.

> **Note:** If you want new text to be searched immediately (every five seconds), consider using the drbgdml.sql script located in:
>
> `$ORACLE_HOME/ctx/sample/script/drbgdml.sql.`

> **See also:** For *inter*Media Text technical papers, training materials, code samples, and so on, visit:
>
> `http://technet.oracle.com/products/intermedia`

4.4 Updating an *inter*Media Text Index

Index maintenance is necessary after your application inserts, updates, or deletes documents in your base table. If your base table is static, that is, you do no updating, inserting or deleting of documents after your initial index, you do not need to update your index.

However, if you perform DML (inserts, updates, or deletes) on your base table, you must update your index. You can synchronize your index manually with ALTER INDEX. You can also run the Context Server in the background which synchronizes the index automatically at regular intervals. See "Starting the Context Server" on page 4-13 for more information.

To update your index, enter the following command:

```
ALTER INDEX [schema.]index REBUILD [online] [parameters (paramstring)] ('SYNC');
```

where

[online]

Optionally specify the online parameter for non-blocking operation, which allows the index to be queried during an ALTER INDEX synchronize or optimize operation. You cannot specify online for replace, resume, or when adding stopwords or stop sections.

PARAMETERS (paramstring)

Optionally specify paramstring. If you do not specify paramstring, Oracle rebuilds the index with existing preference settings.

The syntax for paramstring is as follows:

```
paramstring = 'replace [datastore datastore_pref]
                       [filter filter_pref]
                       [lexer lexer_pref]
                       [wordlist wordlist_pref]
                       [storage storage_pref]
                       [stoplist stoplist]
                       [section group section_group]
                           [memory memsize]

          |    resume [memory memsize]
          |    optimize [fast | full [maxtime (time | unlimited)]
          |    sync [memory memsize]
          |    add stopword word
          |    add zone section section_name tag tag
          |    add field section section_name tag tag [(VISIBLE | INVISIBLE)]
          |    add attr section section_name tag tag@attr
          |    add stop section tag'
```

See also: *"Oracle8i inter*Media Text *Reference"* included with your Oracle8*i* documentation.

4.5 Dropping an *inter*Media Text Index

In situations where you know that a significant amount of new content has been added to your content area, you might consider dropping and recreating your indexes. This of course is a very time-consuming and resource-intensive operation, so you would want to plan this task during non-business hours.

You can drop *inter*Media Text indexes in the following ways:

1. In the **Services** portlet, click **Search Settings**. By default, the Services portlet is located on the Oracle Portal home page's **Administer** tab.

2. In the *inter*Media Text **Properties** section, click **Drop Index**.

The *inter*Media Text index is dropped from the server.

Notes:

- You can also drop an *inter*Media Text Index, by running the following script in Oracle SQL*Plus and logging in as the Oracle Portal schema owner:

  ```
  ctxdrind.sql
  ```

4.6 Starting the Context Server

As an alternative to the ALTER INDEX command, you can also run the Context Server (ctxsrv) in the background which synchronizes the index automatically at regular intervals to update your index.

IMPORTANT: Every time you restart your machine, you will have to restart the Context Server in the following way.

To create a bat file to start the Context Server:

1. In Windows NT, open Notepad to create a text document.

    On UNIX, open an editor such as the "vi" editor.

2. Enter the following:

    ```
    ctxsrv -user ctxsys/ctxsys
    ```

3. When saving the file, enter "StartContext.bat" as the filename (include the double-quotes in the filename). Save the file onto your Desktop (Save In field).

Figure 4–3 Saving StartContext.bat file
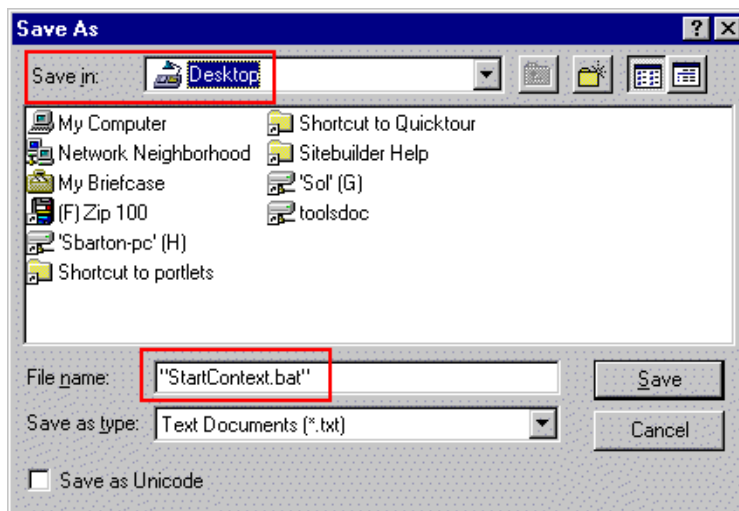
4. Make sure that your database is running before you start the Context Server.

5. Double-click the StartContext.bat file icon on your Desktop to start the Context Server. A system command window opens and the [icon] file is run.

Figure 4–4 DOS box of Context Server startup

4.7 Setting up your Environment for *inter*Media Text

> **Note:** If you are running Oracle8*i* Release 8.1.7, you can ignore this section as the database does not use external procedures to perform document filtering.

For Oracle8*i* Release 8.1.6.2, you must configure the listener.ora and tnsnames.ora files in your Oracle8*i* Home directory to support these external procedures. The listener.ora and tnsnames.ora files on your computer should look similar to the following examples:
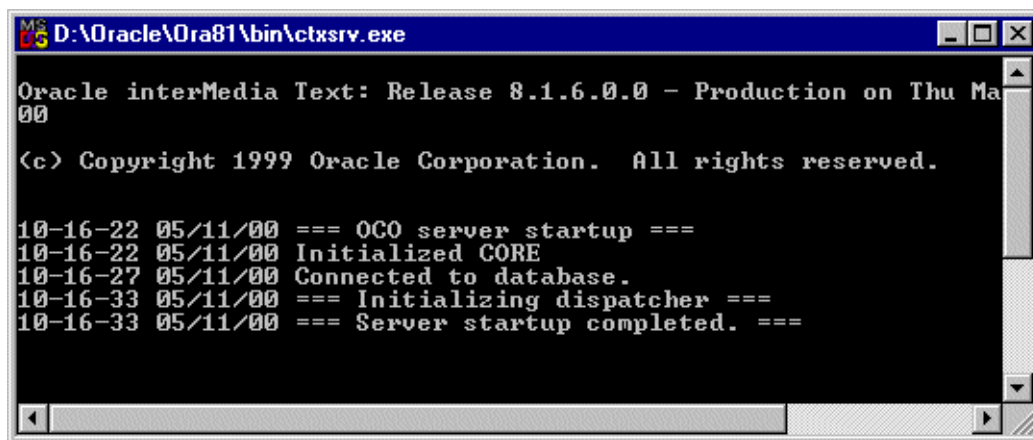
4.7.1 listener.ora

The following lines define a complete listener definition in your listener.ora file.

```
LISTENER =
    (DESCRIPTION_LIST =
    (DESCRIPTION =
    (ADDRESS_LIST =
    (ADDRESS = (PROTOCOL = IPC) (KEY = EXTPROC0))
                    )
    (ADDRESS_LIST =
    (ADDRESS = (PROTOCOL = TCP) (HOST = oracle) (PORT=1521))
```

4.7.1.1 System ID

If you want to add a system identifier (SID) name of PLSExtProc and a program name of EXTPROC in the server's listener.ora file, you can insert the following in the SID_LIST_LISTENER definition:

```
    SID_LIST_LISTENER =
      (SID_LIST =
      (SID_DESC = ...

      (SID_DESC =
      (SID_NAME=PLSExtProc)(ORACLE_HOME=/oracle/db/dev118)
      (PROGRAM=extproc)
```

> **Notes:**
>
> - EXTPROC0 and PRESENTATION=RO ends with the letter "o" not the number zero.
>
> - SID=PLSExtProc is non-negotiable.

4.7.2 tnsnames.ora

Add the following lines to the end of your tnsnames.ora file, to add a net service name description entry for EXTPROC0 in the server's tnsnames.ora file, using SID rather than SERVICE_NAME in the CONNECT_DATA section. For example:

```
extproc_connection_data =
  (DESCRIPTION=
    (ADDRESS_LIST =
       (ADDRESS=(PROTOCOL=IPC)(KEY=EXTPROC0))
    )
    (CONNECT_DATA=
       (SID=PLSExtProc)
       (PRESENTATION = RO)
    )
  )
```

> **Notes:**
>
> - Do not substitute your SID anywhere.
>
> - Do not change the case of any text.
>
> - EXTPROC0 ends with the letter "o" not the number zero.
>
> - Start the Net8 Assistant to help you configure the tnsnames.ora.
>
> - *See also "Net8 Administrator's Guide"* for more information about creating these configuration files.

4.8 Multilingual Functionality (Multilexer)

> **Note:** You may need to increase your tablespace to at least 20 MB to support multilexer.

Oracle8*i* (8.1.6 and above) provides multilexer which allows you to use language-specific features on documents of different languages stored in the same table. Multilexer is a feature of the index and is configured during index creation. Multilexer requires an extra column in your table, which identifies the language of each document.

At query time, the multilexer chooses a language-specific lexer to lex the query tokens. This is based on the NLS_LANG setting for the query session. Thus, a query session in the FRENCH language will use the lexer for FRENCH.

During installation of Oracle Portal, the sbrimtlx.sql script is run to create the language-specific lexer preferences and to gather them together under a single multilexer preference. The Oracle Portal installation creates the following procedures in the ctxsys schema.

- WWSBR_CORNER_CTX_<*n*>

- WWSBR_DOC_CTX_<*n*>

- WWSBR_PERSP_CTX_<*n*>

- WWSBR_THING_CTX_<*n*>

- WWSBR_TOPIC_CTX_<*n*>

where <*n*> is the user_id of the Oracle Portal schema which may be different for each database. This value is the user_id column value from all_users.

> **See also:** *"interMedia Text Reference" included with your Oracle8i documentation.*

5

*inter*Media Rich Content in Oracle Portal Reports and Forms

With Oracle Portal 3.0, you can integrate *inter*Media rich content with Oracle Portal reports and Oracle Portal forms. This is possible via the Oracle Portal framework which leverages *inter*Media's rich content services.

*inter*Media rich content includes objects such as graphics, audio, images, and video. These objects are stored in the Oracle8*i* database, thus eliminating the possibility of lost objects, as is the case when using the file system as the content repository.

Furthermore, you can store multimedia content anywhere on the database in any schema. You are not limited to storage in a single schema and existing content does not have to be moved; it can remain in a separate schema.

This chapter contains the following sections:

5.1 *inter*Media Object Types

The following *inter*Media-specific object types, defined in the ORDSYS schema, are contained in database tables which you can have displayed in your Oracle Portal reports and forms:

Table 5–1   interMedia object types

Object Type	Description
ORDAUDIO	Supports the storage and management of audio data such as MP3, AU, WAV, MPEG.
ORDIMAGE	Supports the storage, management, and manipulation of image data such as GIF, JPEG, BMP.
ORDVIDEO	Supports the storage and management of video data such as REAL, QuickTime 3/4, AVI, MPEG.

For more information about these object types, refer to the "*Oracle8i interMedia Audio, Image, and Video User's Guide and Reference*" provided with your Oracle database documentation set.

5.2 Rich Content in Oracle Portal Reports

You can build reports with *inter*Media rich content by using either of the following wizards:

Table 5–2   Oracle Portal Report wizards

Report	Description
Reports From Query Wizard	This wizard guides you through all the steps for creating a report, including creating the SQL query that selects the data displayed in the report. If you are unfamiliar with SQL or are new to Oracle Portal, you may want to create your report using this wizard.
Query By Example Report (QBE)	This wizard lets you create a report for querying, inserting, updating, and deleting data from the table or view on which the report is based. In the QBE report build wizard, you choose which data to display in the report. Or, you can allow end users to make their own queries in the QBE report's customization form.

When creating an Oracle Portal report with the Report Wizard, you can choose from the following three layouts: Tabular (default), Form, and Custom.

Important:

Before building a Oracle Portal report or form on *inter*Media-based tables, make sure that you have a table with columns of type ORDIMAGE, ORDAUDIO, or ORDVIDEO that you can use to upload your rich content. This is done outside of Oracle Portal. Consult your DBA if necessary to create such a table in your database.

5.2.1 Object attribute display

In addition to having these *inter*Media object type columns displayed in the Oracle Portal report or form, you can also have the object attributes displayed for selection in join conditions, formatting, column conditions, and so on. For example, you can display a video clip's size or duration in an Oracle Portal report and set a condition that only objects modified after a certain date display in the report.

5.2.2 Display options

These audio, image, and video object types can be rendered in the Oracle Portal report in the following ways:

- Embedded in the report (inline).
- As icons with links pointing to the content (default). When the user clicks the link, the content is displayed on a new Web page or handled by the associated source application; for example, RealPlayer, in a separate window.

Notes:

- These display options apply to all columns containing *inter*Media content in the Oracle Portal report and can be selected by clicking the "Display Options" tab in the Oracle Portal report wizard.

- Although *inter*Media supports a variety of content types and formats, the browser you are using must natively support the MIME type or have a plugin installed to display rich content that is typically not supported on the Web. For example, most browsers can natively display GIF and JPEG images, but TIFF images will *not* display without an installed plugin.

5.2.3 Building the report

Follow these steps to build an Oracle Portal report that contains rich content:

1. On the Oracle Portal Home page, click ⬚ on the shortcut bar.

2. Click the **Applications** tab in the Oracle Portal Navigator.

3. In the **Name** column, the names of all applications in which you have privileges are listed.

   Click the name of the application for which you want to build the new component.

4. Beside **Create New**, click the component type you want to build. In this case, click the **Report** link.

Figure 5–1   Application component links on the Navigator

Browse the application components available to you and perform authorized actions.

Create New...   Form, Report, Chart, Calendar, Dynamic Page, Hierarchy, Menu, Frame Driver, Link, List of Values

5. Choose the type of report you want to create from these choices: Query By Example (QBE) Reports or Reports From Query Wizard.

6. In the report wizard, enter the appropriate information requested on each page.

   Click **Next** to proceed to the next wizard page.

   If you need assistance with any field, click ⑦ on the title bar to display the field-level Help topic.

7. When building your report with the Oracle Portal report wizards, by default, the *inter*Media rich content is represented by icons that the user can click to view the actual content. However, if you want to embed the content in the Oracle Report page, make sure that you select the "Embed *inter*Media Rich Content In The Report" check box.

   This option is located below the **Display Options** section in the Report Wizard, Step 6 of 9.

Figure 5–2   Oracle Portal Reports Wizard - common options

Common Options

Choose common options that affect the appearance of the QBE

☐ Show Total Row Count   Show NULL Values as

☐ Enable update link in the report output

☑ Embed *inter*Media rich content in the report

8. Click **Finish** when you are done.

Figure 5–3   Oracle Portal Reports example with interMedia rich content

When the user clicks the icon representing the audio, video, or photo object, the actual rich content is displayed.

9. If you want to make any Oracle Portal report, including reports containing *inter*Media rich content, available to Oracle Portal so that other application providers can use it, make sure that you select the **Publish To Portal** check box which appears on the report wizard's **Access** tab. This tab is displayed after you have entered all the required information in the report wizard.

Figure 5–4   Portal Access tab - Publish to Portal

> **Note:**   If you don't see the Publish to Portal option, make sure that the application is exposed as a provider which is set from the application's Access tab. For more information, see the "Making an application a portlet provider" topic from the Oracle Portal Online Help content area.

5.2.4 QBE Reports - Parameter Entry Form

Different users can specialize the same QBE report after it is created by using the report's parameter entry form. However, with reports on tables that contain *inter*Media-based columns, you will *not* be able to perform insert, update, or delete operations on the table from QBE reports nor will the object type attributes display in the report. Attempting to provide a value for an *inter*Media-based column in the parameter form will result in an error. In short, you cannot specialize the report using the object type columns.

5.3 Rich Content in Oracle Portal Forms

With Oracle Portal, you can also upload images, audio and video clips from your desktop directly into any table in your database via an Oracle Portal form.

The advantage of uploading rich content into *inter*Media-based columns over uploading content into BLOB columns is that the data is automatically parsed to extract several attributes such as MIME-type, length, and any user-defined meta data that might be included in the original media file.

For example, a QuickTime file might contain close captioning or a RealVideo file might have copyright information that can be automatically extracted and stored in the *inter*Media object for indexing and querying.

Creating a form on a table with *inter*Media-based columns is the same as creating a form on any other table. Content that is uploaded into tables in the database can be easily downloaded or made available in the portal framework by building a form on the above tables.

*inter*Media also provides plugins to allow streaming servers to access content from the database and deliver it to thin clients, and several thick and thin utilities to make uploading and downloading of rich content easy.

5.3.1 Building the form

Follow these steps to build an Oracle Portal form that contains rich content:

1. On the Oracle Portal Home page, click [icon] on the shortcut bar.

2. Click the **Applications** tab in the Oracle Portal Navigator.

3. In the **Name** column, the names of all applications in which you have privileges are listed.

   Click the name of the application for which you want to build the new component.

4. Beside **Create New**, click the component type you want to build. In this case, click the **Form** link.

5. Choose the type of report you want to create from these choices: Form based on table or view or Master-detail form.

6. In the form wizard, enter the appropriate information requested on each page.

   Click **Next** to proceed to the next wizard page.

   If you need assistance with any field, click [icon] on the title bar to display the field-level Help topic.

7. On Step 4 of 7, click the name of the *inter*Media-based column from the left frame.

8. In the right frame for the **Item Type** list, choose the File Upload (*inter*Media) option.

Figure 5–5   Oracle Portal Form - Item Level option

9. Click **Finish** when you are done.

Figure 5–6 Oracle Portal Form example with interMedia rich content

10. If you want to make any Oracle Portal form, including forms containing *inter*Media rich content, available to Oracle Portal so that other application providers can use it, make sure that you select the **Publish To Portal** check box which appears on the form wizard's **Access** tab. This tab is displayed after you have entered all the required information in the form wizard.

> **Note:** If you don't see the Publish to Portal option, make sure that the application is exposed as a provider which is set from the application's Access tab. For more information, see the "Making an application a portlet provider" topic from the Oracle Portal Online Help content area.

> **See also:**   For more details on *inter*Media, and for useful scripts
> and tips on using Oracle Portal with *inter*Media, please refer to the
> Oracle Technology Network at the following URL:
> `http://technet.oracle.com/products/intermedia/`

5.4 Using the Navigator to Browse

You can use the Navigator to browse tables that contain *inter*Media content.
However, you cannot upload rich content from the Navigator.

The following is a list of issues you should be aware of when using the Navigator to
access Oracle Portal reports and forms containing rich content:

- For columns containing *inter*Media rich content, the Navigator displays icons
  with links; it does not embed the content on the same page.

- You cannot perform insert, update, or delete operations from the Navigator for
  reports or forms that contain *inter*Media-based columns nor will object type
  attributes display.

- You can download or view images from object columns.

- Do not enter text in the text fields for *inter*Media-based columns.

- Since updates are not supported on the Navigator and QBE forms, you can use
  Oracle Portal forms instead.

5.5 Known Issues

The following lists the known issues for support of rich content in *inter*Media-based tables in Oracle Portal reports and forms:

- You may not be able to display *inter*Media rich content in Oracle Portal reports on certain views. This occurs for reports on multi-table views that do not have an implicit ROWID column. This note applies only to views on tables where at least one of the tables contains *inter*Media-based columns and is not a general restriction of Oracle Portal reports. The following error message displays in this case:

  ```
  ORA-01445 cannot select ROWID from a join view without a key-preserved
  table.
  ```

  Cause: A SELECT statement tried to select ROWIDs from a view derived from a join operation. Because the rows selected in the view do not correspond to underlying physical records, no ROWIDs can be returned.

  Workaround:

  - You can try to access media content directly from the underlying tables using the Reports Wizard and joining relevant tables.

- Currently, *inter*Media rich content support includes *inter*Media images, audio, and video. It does not apply to *inter*Media Locator or *inter*Media Text.

- This integration does not apply to text columns (usually VARCHAR, CLOB, BLOB, or spatial data).

> **See also:**   For more information about *inter*Media Text and *inter*Media Locator, see the *inter*Media documentation set provided with Oracle8*i*.

6

Distributed Oracle Portal Installations

A distributed environment refers to several installations of Oracle Portal to create a multi-node environment. There are many benefits to such an environment, including the ability to share portlet provider information across all nodes as well as increased scalability, availability, and system throughput.

Specific topics covered include:

- What is a node? on page 6-3
- Benefits of a Distributed Oracle Portal Environment on page 6-3
- Node requirements on page 6-5
- Setting up a Distributed Oracle Portal Environment on page 6-8

The following diagram illustrates a distributed Oracle Portal environment showing the communication channels that exist between the nodes themselves, between each of the nodes and the Oracle HTTP Server *powered by Apache,* with the Login Server.

Figure 6–1   Distributed Oracle Portal installations typology
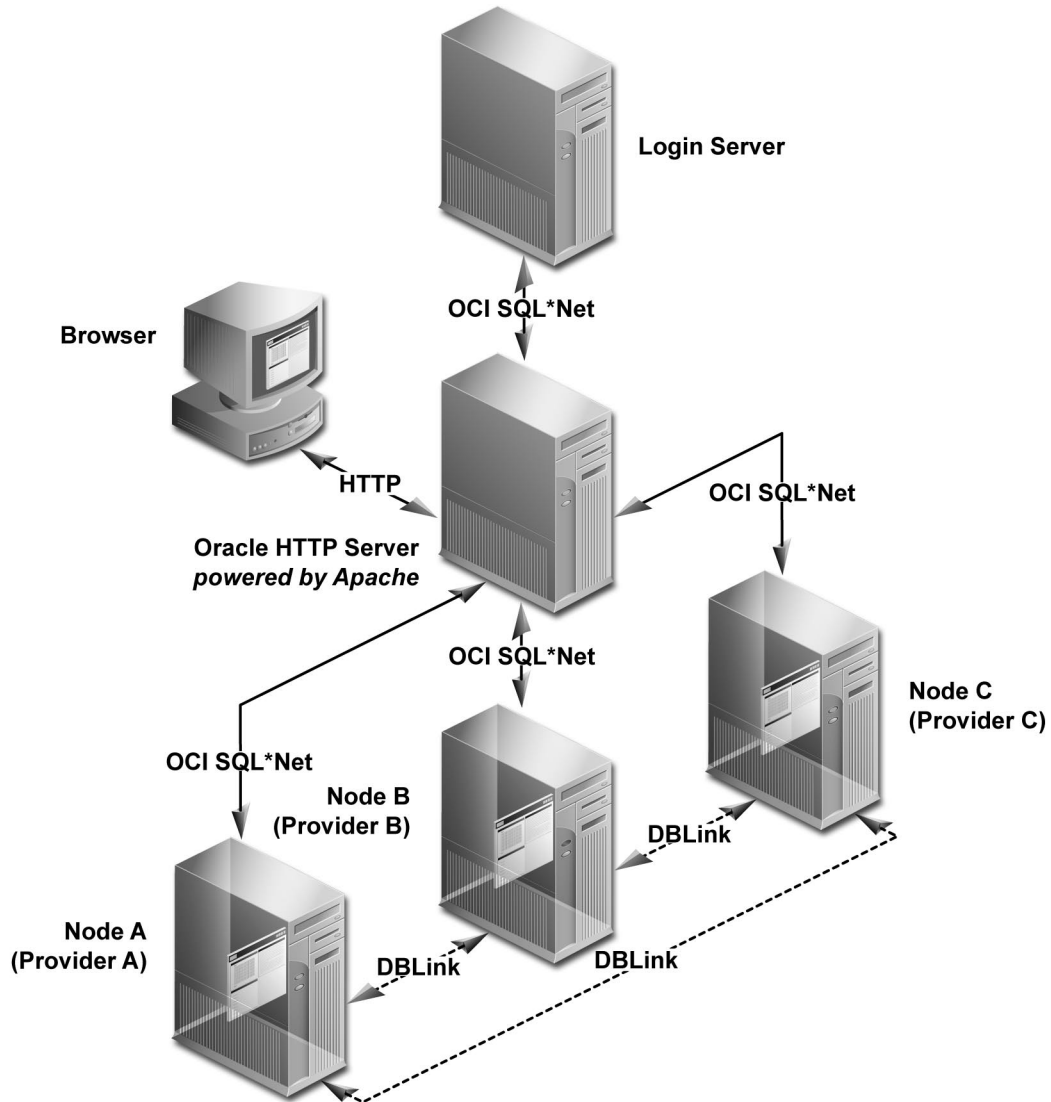
6.1 What is a node?

In a distributed Oracle Portal environment, each node is a complete Oracle Portal installation which resides in a separate database instance and is configured appropriately to operate in a distributed manner. Each node in the system may operate either independently of the other nodes or in conjunction with the other nodes.

The node containing the page that you are currently viewing is considered the *local* node. All other installations are considered *remote* nodes. However, a page in Oracle Portal can contain portlets that were created on either the local or remote nodes.

Node registration refers to associating nodes to each other so that they may be able to share information. Node registration is done by completing a set of configuration steps which will be discussed later in this chapter.

6.2 Benefits of a Distributed Oracle Portal Environment

A distributed or multi-node Oracle Portal environment provides the following benefits over a single node environment.

6.2.1 Portlet provider information shared across nodes

In a distributed Oracle Portal environment, provider information can be shared across nodes. During node registration, provider registration also occurs. When a provider is registered on a remote node, the portlets for that provider are populated in the node's portlet repository which allows you to build pages with portlets residing on remote nodes. In addition to sharing provider information, the distributed environment also lets you group providers accordingly.

6.2.2 Scalable solutions

When provider registration occurs, the provider registry information is replicated on the remote node. Only the provider registry information is replicated, not the actual provider implementation. The provider implementation package resides only on the host node of that provider.

A page may consist of portlets from any number of nodes that participate in the distributed environment. When such a page is rendered, the portlets are executed on the host node of each of the portlet providers (the node where the provider implementation package reside).

For example, consider the following scenario which can be implemented in scalable environments:

A page consists of portlet 1 which resides on node a and portlet 2 which resides on node b. When the page is rendered, portlet 1 is executed on node a and portlet 2 is executed on node b.

Figure 6–2   Displaying portlets created on different nodes on a single page
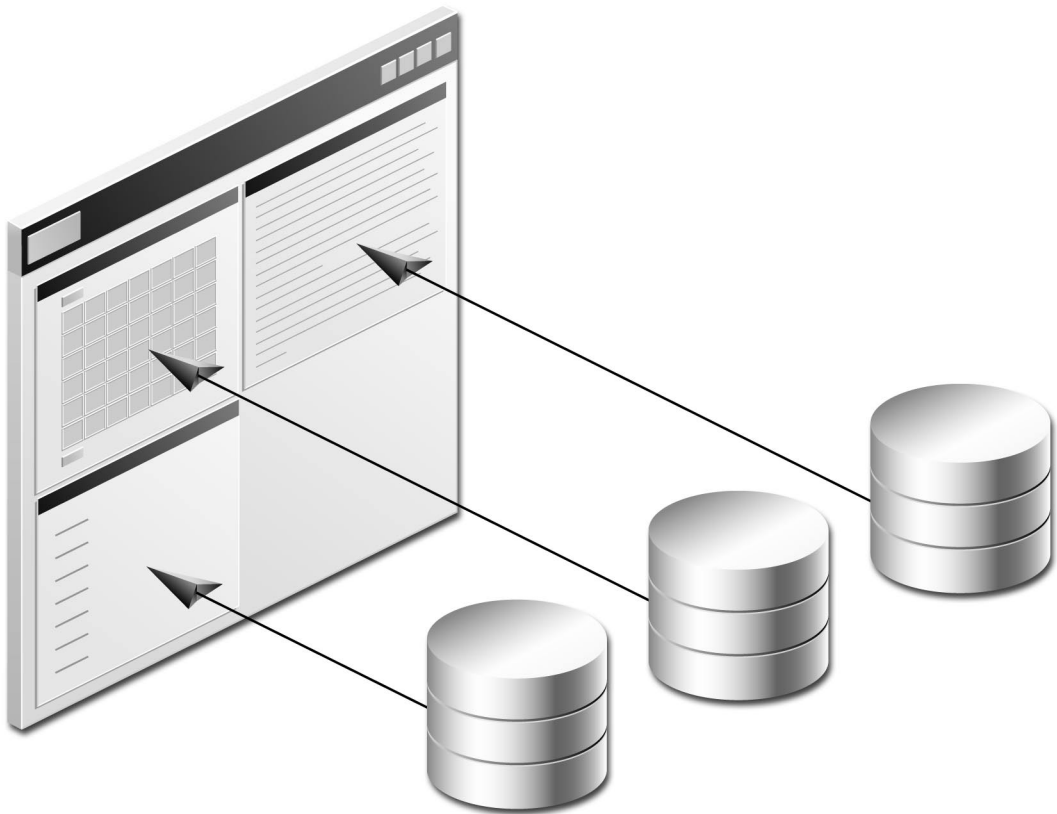
Such a scenario enables you to access multiple machines with significantly increased performance and increased system throughput since the rendering of a page is distributed among several database instances. The execution of the portlets on the different databases is done in parallel.

The distributed environment provides high availability. If one node fails, the other nodes would continue to process with full access except on portlets residing on the failed node.

6.3 Node requirements

You must meet the following node requirements for a configuring a distributed Oracle Portal architecture:

- Common cookie domain on page 6-5
- Oracle HTTP Server powered by Apache configuration on page 6-6
- Common cookie name on page 6-6
- Common Login Server on page 6-7
- Symmetric node registration on page 6-7
- URLs in Portlets on page 6-7

6.3.1 Common cookie domain

The cookie domain for the Oracle Portal session cookie must be common for all nodes that participate in the distributed Oracle Portal environment. If the cookie domain is changed on one node, it must be changed on all other nodes. Otherwise, the Oracle Portal nodes in your environment will not function in a distributed manner.

See: Section 6.4.1, "Step 1: Create Oracle Portal nodes" on page 6-9

6.3.2 Oracle HTTP Server *powered by Apache* configuration

A portlet provider that resides on a node may be accessed by any other node that exists in the network and for which a communication path has been established. The Oracle HTTP server *powered by Apache* is responsible for establishing a communication path and for displaying portlets for each node.

You can choose either of the following scenarios in your distributed environment:

- Have multiple Oracle HTTP Servers *powered by Apache* running, one for each node

- Have a single Oracle HTTP Servers *powered by Apache* running and accessible by all nodes

When communicating between browsers, the Oracle Portal session cookie is sent to each portlet execution request. Also, the cookie domain consists of the `<host.domain:port>`.

When using multiple Oracle HTTP Servers, this results in a different `<host.domain:port>`. Only one node will have the same cookie domain as the Login Server. Thus, in this case, when the user tries to access a node by clicking a portlet's URL, the Oracle Portal session cookie will *not* be sent by the browser.

To resolve this situation, a common cookie domain name is required. To do this, you *must* run the `ctxckupd.sql` script on all nodes in your distributed environment.

> **See:** Section 6.4.2, "Step 2: Create same cookie domain" on page 6-9

6.3.3 Common cookie name

In an Oracle Portal distributed environment, each Oracle HTTP Server *powered by Apache* must have a Database Access Descriptor (DAD) configuration for each of the portal nodes that participate in the distributed system. Also, the **Session Cookie Name** field in the DAD configuration must be the same across nodes.

> **See:** Section 6.4.3, "Step 3: Edit Oracle Portal DADs" on page 6-10

6.3.4 Common Login Server

All the nodes that participate in the distributed Oracle Portal environment must use the same Login Server. Otherwise, you may encounter a runtime error if a node that is registered to participate in the distributed Oracle Portal environment is not using the same Login Server as the other nodes. In this case, you would fail to log onto the Oracle Portal node via Single Sign-On (SSO) and not have access to the portlets on that node.

> **See:** Section 6.4.4, "Step 4: Associate nodes with the same Login Server" on page 6-12

6.3.5 Symmetric node registration

All nodes included in the distributed architecture must be symmetrically registered between them. For example, if the distributed Oracle Portal environment consists of three nodes (a, b, and c), make sure that the following registrations exist.

- Node a is registered on b and c

- Node b is registered on a and c

- Node c is registered on a and b

> **See:** Section 6.4.7, "Step 7: Register nodes between themselves" on page 6-18

6.3.6 URLs in Portlets

If you are creating your own custom portlets using the Oracle Portal Development Kit (PDK), you must use absolute URLs (not relative URLs) for portlets destined to be run in a distributed Oracle Portal environment.

> **See:** Oracle Portal Development Kit on the Oracle Technology Network at `http://technet.oracle.com/`.

6.4 Setting up a Distributed Oracle Portal Environment

Ensure that you have the required privileges on the node and on the Login Server before performing the following steps:

- You must have Full Administrator privileges on the Login Server to change any of its settings.

- You must be an Oracle Portal Administrator to access the Administer tab of the Oracle Portal home page.

See: The Oracle Portal Online Help Content Area Help topics:

- What is the Login Server and Single Sign-On?

- How does security work?

This section describes the process for setting up a distributed Oracle Portal environment. For the purpose of the following example, the environment will consist of two nodes: node a and node b.

The steps include the following:

- Step 1: Create Oracle Portal nodes on page 6-9

- Step 2: Create same cookie domain on page 6-9

- Step 3: Edit Oracle Portal DADs on page 6-10

- Step 4: Associate nodes with the same Login Server on page 6-12

- Step 5: Create a user on the Login Server with administrator privileges on page 6-17

- Step 6: Discover the name of each node on page 6-18

- Step 7: Register nodes between themselves on page 6-18

- Step 8: Refresh the portlet repository for each node on page 6-20

- Step 9: Create additional nodes on page 6-21

6.4.1 Step 1: Create Oracle Portal nodes

As stated earlier, a node is an Oracle Portal installation. To participate in a distributed Oracle Portal environment, you must have at least two Oracle Portal installations, one for node a and the other for node b.

To create a node, install Oracle Portal as instructed in the *"Oracle9i Application Server Installation Guide for Sun Sparc Solaris."*

You will need to perform an installation of Oracle Portal for each node you want to have in your distributed environment.

> **Note:** Be sure that the two nodes are created on two different databases since the distributed Oracle Portal functionality is not supported on nodes that exist on the same database.

6.4.2 Step 2: Create same cookie domain

> **Note:** This step applies only if your distributed Oracle Portal environment is running multiple Oracle HTTP Servers *powered by Apache.* If you are running only one Oracle HTTP Server, you can skip this step.

To resolve the issue of a different `<host.domain:port>` configuration for each node, the same cookie domain *must* exist across nodes in a distributed Oracle Portal environment in order for the Oracle Portal session cookie to be sent successfully by the browser. The solution is to run the `ctxckupd.sql` script on all the nodes in your distributed Oracle Portal environment.

To create the same cookie domain on all nodes:

1. If you have an Oracle HTTP Server *powered by Apache* running on the computer on which your node is located, stop the server by entering the following command from a command prompt:

   ```
   <ORACLE_HOME>/Apache/Apache/bin/apachectl stop
   ```

> **Note:** On Windows NT, you can stop the HTTP Server from the System Control Panel. For more information, see *"Using the PL/SQL Gateway"* guide included with the Oracle9*i* Application Server documentation set.

2. On the database where your node is installed, log on to SQL*Plus with the appropriate username and password: For example:

   ```
   sqlplus nodea/nodea
   ```

3. Enter the following command:

   ```
   @ctxckupd.sql
   ```

4. When prompted, enter the domain name for the session cookie as required.

   > **Note:** Note this name as you will need to enter the same cookie domain name for all remote nodes.

5. Repeat the above steps for all other remote nodes in your distributed Oracle Portal environment.

6.4.3 Step 3: Edit Oracle Portal DADs

A distributed Oracle Portal environment requires that each node has a separate Database Access Descriptor (DAD) for each Oracle HTTP Server *powered by Apache.* Also, the **Session Cookie Name** field in the DAD configuration must be the *same* across nodes.

Upon installation, a DAD is created for each node. This step requires you to edit the DAD on each node and specify a common cookie name across nodes.

> **Note:** In a distributed Oracle Portal environment, there should be only one installation of the Login Server.

6.4.3.1 Access DAD configuration page

DADs are created from the Database Access Descriptor configuration page in Oracle Portal which you can access in the following ways:

- In the **Services** portlet, click **Listener Gateway Settings**. By default, the Services portlet is located on the Oracle Portal home page's **Administer** tab.

    a. Click **Gateway Database Access Descriptor Settings**.

    b. In the **Edit/Delete Database Access Descriptors** section, click 📝 next to the node's DAD entry. The DAD configuration page is displayed.

- In your browser, enter the following:

    a. `http://<hostname.domain>:<port>/pls/admin_`
       `/dadentries.htm`

    b. In the **Edit/Delete Database Access Descriptors** section, click 📝 next to the node's DAD entry. The DAD configuration page is displayed.

6.4.3.2 Configuration

To provide the *same* cookie name for Oracle Portal nodes in your distributed environment:

1. From the appropriate node's Database Access Descriptor configuration page, edit the DAD for node a.

    a. In the **Session Cookie Name** field, enter a name.

       Example:

       ```
       dist_portal_session_cookie
       ```

2. From the appropriate node's Database Access Descriptor configuration page, edit the DAD for node b.

    a. In the **Session Cookie Name** field, enter the *same* cookie name you entered for node b.

       Example:

       ```
       dist_portal_session_cookie
       ```

> **Note:** It is very important that the **Session Cookie** is the *same* for both (all) DADs in your distributed environment, except for the Login Server. The cookie is used by the Oracle Portal security subsystem to perform session establishment and authentication during Single Sign-on.

3. From the Login Server's Database Access Descriptor configuration page, edit the DAD for the Login Server of node a. A Login Server DAD is appended with _SSO in its name.

   a. In the **Session Cookie Name** field, enter a cookie name that is *different* from the name given for node a and node b.

   Example:

   ```
   dist_portal_sso_session_cookie
   ```

   > **Note:** It is very important to use a *different* name for the Session Cookie because the Login Server uses its own cookie. If the same name was used as that of Oracle Portal, the Oracle Portal session cookie would be overwritten by the Login Server resulting in Oracle Portal authentication failures.

6.4.4 Step 4: Associate nodes with the same Login Server

> **Important:** This step must be performed to ensure that all nodes in your distributed Oracle Portal environment share the same Login Server. When installing Oracle Portal with the Oracle Universal Installer (OUI), each node is installed with its own Login Server. Therefore, when installing multiple nodes, they do not, by default, share the same Login Server.

For the purpose of our example, we must make node a and node b share the same Login Server.

Otherwise, any node that is not sharing the same Login Server as the other nodes in the distributed environment will fail when performing any type of distributed functionality.

1. Associate node a with the Login Server of node a.

> **Note:** By default, the OUI installs the first node and associates it to the appropriate Login Server. It is safe to skip this step unless you intend on editing the default Login Server association.

   a. Start a command line prompt.

   b. Change to the `/src` directory in which Oracle Portal for node a is installed.

   c. Enter the following command to associate a node to the Login Server:

```
ssodatan <-w portal_url> <-l login_server_url> <-s portal_schema> <-p
portal_password> <-o sso_schema> <-d sso_password> <-c portal_connect_
string>
```

   Example

```
ssodatan -w http://server.oracle.com:3000/pls/portal/ -l
http://server.oracle.com:3000/pls/portal_sso/ -s portal30 -p portal30 -o
portal30_sso -c orcl
```

   where

Table 6–1   ssodatan parameters

Parameter	Description
-w portal_url	URL that points to the Oracle Portal node DAD. Include the full domain name with the host, http:// prefix in your URL, and end the URL with a forward slash (/).
	Note: If you are not using the default port number (for example, 80), you must specify it in the Oracle Portal URL.
-l login_server_url	URL that points to the Login Server host and DAD. Include the full domain name with the host, http:// prefix in your URL, and end the URL with a forward slash (/).
	Note: If you are not using the default port number (for example, 443), you must specify it in the Login Server URL.
-s portal_schema	Oracle database schema containing the Oracle Portal installation (database objects).
	Default = portal30

Table 6–1   ssodatan parameters

Parameter	Description
`-p portal_password`	Oracle database password for the Oracle Portal schema.
	Default = <portal_schema>
`-o sso_schema`	Oracle database schema for Login Server objects.
	Default = <portal_schema>_SSO
`-d sso_password`	Oracle database password for Login Server schema.
	Default = <sso_schema>
`<-c portal_connect_ string>`	Connect string for the database in which the Oracle Portal schema is installed. You need to provide the connect string only if the Oracle Portal schema is located on a remote database.
	Default = null

    d. Enter the script parameters as you would if node a were to function in a single node environment.

2. Register node b as a Partner Application to the Login Server of node a.

    a. In the **Services** portlet, click **Login Server Administration**. By default, the Services portlet is located on the Oracle Portal home page's **Administer** tab.

    b. Click **Administer Partner Applications**.

    c. Click **Add Partner Application**.

    d. Enter the following information on the Partner Application page:

Table 6–2   Partner Application Configuration Example

Field	Example Entry
Name	`Oracle Portal`
	Note: This registers node b as a Partner Application.
Home URL	`http://OraclePortalsvr.us.oracle.com:<port>/pls/<node b>/<node b>.home`
Success URL	`http://OraclePortalsvr.us.oracle.com:<port>/pls/<node b>/<node b>.wwsec_app_priv.process_signon`

> **Note:** The DAD name <node b> must be specified in lowercase characters.

3. Click **Apply**.

   The Edit Partner Application page displays.

4. On the page that appears, you'll need to copy *exactly* (cut and paste) the displayed information which you will require to run the script in the next step. For example:

   - ID: 1323

   - Token: G06U7W36

   - Encryption Key: a21255e6b139ca34

5. Associate node b with the Login Server of node a.

   a. Start a command line prompt.

   b. Change to the /src directory in which Oracle Portal for node a is installed.

   c. Enter the following command to associate a node to a specific Login Server:

   ```
   ssodatax <-i portal_site_id> <-t portal_site_token> <-k encryption_key>
   <-w portal_url> <-l login_server_url> <-s portal_schema> <-p portal_
   password> <-v cookie_version> <-o sso_schema> <-c connect_string>
   ```

   Example

   ```
   ssodatax -i 1234 -t A1B2C3 -k X9Y8Z7 -w
   http://server.oracle.com:3000/pls/portal30/ -l
   http://server.oracle.com:3000/pls/portal30_sso/ -s portal30 -v v1.0 -o
   portal30_sso -c orcl
   ```

   where

Table 6–3   ssodatax script parameters

Parameter	Description
-i portal_site_id	The ID is automatically set when a Partner Application (in this case, Oracle Portal installation) is added. It is used by the Login Server to identify the Partner Application to this node.

Table 6–3   ssodatax script parameters

Parameter	Description
-t portal_site_token	The token is automatically set when a Partner Application (in this case, Oracle Portal installation) is added. It is used by the Login Server to identify the Partner Application. The Partner Application must use the application token to identify itself to the Login Server to this node when requesting authentication.
-k encryption_key	When a user tries to log into this Oracle Portal node using Single Sign-On, the Login Server generates a cookie that indicates a user's identity and whether the user has been authenticated. This key is used to encrypt the login cookie.
-w portal_url	URL prefix to this Oracle Portal node and the DAD being accessed. Include the full domain name with the host, http:// prefix in your URL, and end the URL with a forward slash (/).
-l login_server_url	URL prefix to the Login Server host and DAD. Include the full domain name with the host, http:// prefix in your URL, and end the URL with a forward slash (/).
-s portal_schema	Oracle database schema containing the Oracle Portal installation (database objects). **Default** = portal30
-p portal_password	Oracle database password for the Oracle Portal schema. **Default** = <portal_schema>
-v cookie_version	Cookie version being used by the Login Server." Default = v1.0
-o sso_schema	Oracle database schema for Login Server objects. **Default** = <portal_schema>_SSO
-c connect_string	Connect string for the database in which the Oracle Portal schema is installed. You need to provide the connect string only if the Oracle Portal schema is located on a remote database. Default = null

d.   Enter the script parameters as required. For example, let's use the information generated by the example for registering a Partner Application to the Login Server of node a described above in step 4. This example also assumes that node b is installed on the database named "w816dev5" and node a is installed on the database named "w816dev6".

```
ssodatax -i 1323 -t G06U7W36 -k a21255e6b139ca34 -w
http://OraclePortalsvr.us.oracle.com:5000/pls/<node b>/ -l
http://OraclePortalsvr.us.oracle.com:5000/pls/<node_A_SSO>/ -s node_B -v
v1.0 -o node_A_SSO -c w816dev5
```

You have completed this step. Node a and node b are associated to the same Login Server.

6.4.5 Step 5: Create a user on the Login Server with administrator privileges

In this step, you need to create a user on the Login Server with full administrator privileges on node b. This user must be the schema owner of node b.

   a. In the **Services** portlet, click **Login Server Administration**. By default, the Services portlet is located on the Oracle Portal home page's **Administer** tab.

   b. Click **Administer Users**.

   c. Click **Create New Users**.

   d. Enter the configuration information as required.

Table 6–4 Login Server Create New User Example

Field	Sample Entry
User Name	<schema_of_node_b>
Password	<schema_of_node_b>
Confirm Password	<schema_of_node_b>

   e. Click **Create**.

A new user for the Login Server is created.

See: Oracle Portal Online Help content area topics:

- "What is a Login Server administrator?"
- Assigning a Login Server administrator"

6.4.6 Step 6: Discover the name of each node

You require the name of each node for node registration.

1. In Oracle Portal, log onto node a as required by entering the username and password.

2. In the **Node** portlet, click **Edit the Local Node**. By default, the Node portlet is located on the Oracle Portal home page's **Administer** tab.

3. Write down the name of the **Local Node**.

4. Close all open browser windows.

> **Note:** You must close all browser windows before accessing node b in order for the Oracle Portal session cookie that was created by node a to expire and perform authentication on the appropriate node (node b).

5. Open a new browser window and repeat the above steps for node a by logging onto node b.

6.4.7 Step 7: Register nodes between themselves

1. While on node b, register node a to node b.

   a. In the Nodes portlet, click **Add a Remote Node**. By default, the Nodes portlet is located on the Oracle Portal home page's **Administer** tab.

   b. Enter the configuration information for node a as required on the configuration page.

Table 6–5   Node a to node b registration information

Field	Example Entry
Remote Node Name	Name of the remote node (node a) obtained in the Section 6.4.6, "Step 6: Discover the name of each node".
Oracle Portal Database User	The schema owner for node a.
Oracle Portal Database Password	The schema password for node a.

Table 6–5   Node a to node b registration information

Field	Example Entry
Database Link Name	Oracle recommends that you leave this field blank.
	The default name will be used when the database link is created on this page. Note that the default name is not displayed on this page.
TNS Name	The TNS Names alias (connect string) for the database on which node a is installed.
	Example: w816dev6
Remote Oracle Portal DAD	The DAD for node a created in Section 6.4.3, "Step 3: Edit Oracle Portal DADs".
Remote Listener URL	The machine name on which the Oracle HTTP Server *powered by Apache* is installed.
	Example: OraclePortalsvr.company.com
Remote Listener Port	The port on which the Oracle HTTP Server *powered by Apache* is running for that node.
	Example: 5000

2. Click **OK**.

3. Quit all the browser windows.

> **Note:**   You must close all browser windows before accessing node a in order for the Oracle Portal session cookie that was created by node b to expire and perform authentication on the appropriate node (node a).

4. Repeat the above steps to register node b to node a.

When this step is completed successfully, the Oracle Portal nodes are fully configured to operate in the distributed environment.

6.4.8 Step 8: Refresh the portlet repository for each node

The providers for each node that is configured for a distributed Oracle Portal environment, can be used by the other node. However, the Portlet Repository needs to be refreshed on each node to see the providers and portlets created on remote nodes.

To refresh the portlet repository:

1. From the Oracle Portal home page, click ![icon] from the shortcut bar to access the Navigator.

2. In the Navigator, click the **Content Areas** tab.

3. In the Name column, click **Portlet Repository**.

   The Portlet Repository Content Area is displayed.

4. Click **Refresh** in the upper right corner of the page.

> **Note:** This operation may take a few minutes to complete since the Portlet Repository is refreshed for all the providers that are registered on the node.

Once this step is completed, the distributed portlets appear in the Portlet Repository. The providers that are not local (i.e. remote) are easily identifiable by their names which are is prefixed with the name of the node to which they belong.

The distributed portlets are now displayed on the **Add Portlets** page and can be used when creating a page.

5. Repeat the above steps for each node in your distributed Oracle Portal environment.

6.4.9 Step 9: Create additional nodes

You can always create additional nodes to participate in the distributed Oracle Portal environment. For example, to register node c, complete the following steps in the order presented:

Table 6–6   Creating additional nodes for distributed environment

Step	For more information, see...
1. Create node c on a different database from that of node a and node b.	Section 6.4.1, "Step 1: Create Oracle Portal nodes" on page 6-9
2. Create a DAD for node c.	Section 6.4.3, "Step 3: Edit Oracle Portal DADs" on page 6-10
3. Associate node c with the Login Server used by node a and node b.	Section 6.4.4, "Step 4: Associate nodes with the same Login Server" on page 6-12
4. Create a user for node c on the Login Server.	Section 6.4.5, "Step 5: Create a user on the Login Server with administrator privileges" on page 6-17
5. Register node c on node a.	Section 6.4.7, "Step 7: Register nodes between themselves" on page 6-18
6. Register node c on node b.	Section 6.4.7, "Step 7: Register nodes between themselves" on page 6-18
7. Register node a on node c.	Section 6.4.7, "Step 7: Register nodes between themselves"
8. Register node b on node c.	Section 6.4.7, "Step 7: Register nodes between themselves"
9. Refresh the portlet repository on node a, b, and c.	Section 6.4.8, "Step 8: Refresh the portlet repository for each node" on page 6-20

The registration of nodes must be symmetric. In addition, it is important to register the new node, in this case node c, on an existing node, either node a or node b, before registering an existing node on the new node. This is required to maintain the cookie encryption key used by the other nodes of the distributed environment.

7

Troubleshooting

This chapter lists possible solutions to errors that you may encounter while installing or using Oracle Portal.

7.1 What to do first?

If you are having any problems installing Oracle Portal, you can first ensure that your system has met the system requirements documented on page 1-3. You must have at least 100 MB in both the Default and SYSTEM tablespaces.

7.1.1 Check Installation Log

You should always check the installation session log that describes the actions performed and the components created upon installation. You can check the log file for ORA and PLS errors that may have occurred during installation.

The log file is located in the following location:

```
<ORACLE_HOME>/assistants/opca/install.log
```

7.2 Troubleshooting List

The following is a list of errors and page references to their solutions:

- Error: You cannot login because there is no configuration information stored in the enabler configuration table (WWC-41439) on page 7-3

- ORA-04031: unable to allocate 4032 bytes of shared memory ("shared pool","java/lang/ObjectSYS","joxlod: in ehe","ioc_allocate_pal") on page 7-6

- Error: A post check on the Portal installation has determined that the SSOHash class has not been loaded into the database on page 7-6

- Error: Not Found. The requested URL /servlet/page was not found on this server. on page 7-6

- Error: TNS could not resolve service name or Database Log In Failed on page 7-7

- Error: wdblsnr.exe - DLL Initialization Failed (Initialization of the dynamic link library x:\<ORACLE_HOME>\bin\oranro8.dll failed on page 7-8

- Error: missing string (login link text) language(e) domain(wwc) sub_domain(sec) Missing string(pages) language(e) domain(wwc) sub_domain(pob) on page 7-9

- Error: PLS-00306: wrong number or types of arguments on page 7-9

- Unable to create interMedia Text Indexes on page 7-10

Error: You cannot login because there is no configuration information stored in the enabler configuration table (WWC-41439)

This error displays because the Single Sign-On (SSO) Partner Enabler API cannot find the appropriate entry in the enabler configuration table, `WWSEC_ENABLER_CONFIG_INFO$`. This configuration information is required to successfully log onto Oracle Portal via SSO.

There are several reasons for such an error. Refer to the appropriate section below:

- Reason 1: The enabler table is empty.

- Reason 2: You've installed Oracle Portal over a previous installation of Oracle9i Application Server or the default Oracle HTTP Server powered by Apache ports are being used by some other process.

- Reason 3: The URL for the login link is not using the same host:port as the entry in the enabler table. This is usually due to one of the following:

- Reason 4: Insufficient tablespace, shared pool size, or Java Pool size to install Oracle Portal.

Reason 1: The enabler table is empty.

It is possible that loadjava is failing to load the SSOHash class early in the installation process. If this class is not loaded, then much of the Login Server and Partner Application seed data is unable to load and the table is not populated.

Solution: Make sure the Java Option is installed on the database and correct the Java environment variables such as CLASSPATH, and try to reinstall Oracle Portal.

If the problem is still not resolved, check that the SSOHash class is loaded.

1. Log onto SQL*Plus as the SYS user with the appropriate password.

2. Enter the following commands:

```
SQL> select object_name from user_objects
2  where object_type = 'JAVA CLASS'
3  and object_name like '%SSO%';
```

Reason 2: You've installed Oracle Portal over a previous installation of Oracle9*i* Application Server or the default Oracle HTTP Server *powered by Apache* ports are being used by some other process.

Both Oracle Portal and Oracle9*i* Application Server default to port 80 on Windows NT and port 7777 on Solaris upon installation.

In the future, to avoid this situation, make sure that you stop any service running on either of these ports (depending on your operating system) before installing either Oracle9*i* Application Server or Oracle Portal.

Solution: Change the Oracle HTTP Server powered by Apache port number.

You will need to make changes to the Oracle HTTP Server's configuration file, `httpd.conf`.

1. With a text editor, open the Oracle HTTP Server's configuration file, `httpd.conf`, which is located in the following location by default:

   `<ORACLE_HOME>/Apache/Apache/conf/httpd.conf`

   a. For the HTTP port, edit the port number to 7777.

   b. Save the `httpd.conf` file.

   c. Repeat the above steps for the `jserv.properties` file.

2. With a text editor, open the Apache Jserv configuration file, `jserv.conf`, which is located in the following location by default:

   `<ORACLE_HOME>/Apache/Jserv/conf/jserv.conf`

   a. For the default port that Apache JServ is listening to, edit the port number if you have another JServ installation using the same port (8007).

   b. Remove any alias defined in the Apache configuration which makes Apache translate "host.domain.com" to "host" only. You must define the default domain as well.

   c. Save the `jserv.conf`.

Reason 3: The URL for the login link is not using the same host:port as the entry in the enabler table. This is usually due to one of the following:

- The URL was mistyped when invoking the `ssodatan` script. Re-run `ssodatan` with the correct data.

- The `ssodatan` script was run correctly with a full URL: `host.domain:port`. However, the Login link shows only `host:port` (dropping the domain). This is typically because there is an alias defined in the Oracle HTTP Server *powered by Apache* configuration (`httpd.conf`) resulting in the translation of `host.domain.com` to `host`.

- The default domain is not set in the Oracle HTTP Server *powered by Apache* configuration. When this is the case, only the hostname is produced, without the domain.

- The ssodatan script was run with the default port number 80. As a result, the Oracle HTTP Server and your browser drops the :80. Thus, the URL no longer matches the entry in the `WWSEC_ENABLER_CONFIG_INFO$` table.

Solution: Install the Login Server by running the `ssodatan` script, which is located in the following location by default:

`<ORACLE_HOME>\webdb30\admin\plsql`

where <ORACLE_HOME> is where your Oracle Portal installation is located.

   a. Start a command line prompt.

   b. Enter the following command to associate a node to the Login Server:

```
ssodatan <-w portal_url> <-l login_server_url> <-s portal_schema> <-p
portal_password> <-o sso_schema> <-d sso_password> <-c portal_connect_
string>
```

   Example

```
ssodatan -w http://server.oracle.com:7777/pls/portal/ -l
http://server.oracle.com:3000/pls/portal_sso/ -s portal30 -p portal30 -o
portal30_sso -c orcl
```

   See: Table 6–1, "ssodatan parameters" on page 6-13 for parameter descriptions.

   c. Specify to use port number 7777 in the script's URL parameter.

   Important: If you are using the default port 80, do not specify this port number when running the `ssodatan` script.

Reason 4: Insufficient tablespace, shared pool size, or Java Pool size to install Oracle Portal.

Solution: You will have to correct the appropriate configuration setting before reinstalling Oracle Portal.

> **See also:** Oracle8*i* documentation set.

ORA-04031: unable to allocate 4032 bytes of shared memory ("shared pool","java/lang/ObjectSYS","joxlod: in ehe","ioc_allocate_pal")

This error displays as a result of a parameter setting in the Oracle8*i* init.ora file. For some reason, the java_pool_size parameter may be set to 0. By default, the Oracle8*i* installation sets this parameter to approximately 20 MB.

Solution: You must drop the Oracle Portal objects from the database, set the java_pool_size **initialization parameter to 20 MB or above and then reinstall Oracle Portal.**

> **See also:** "init.ora settings" on page 1-4.

Error: A post check on the Portal installation has determined that the SSOHash class has not been loaded into the database

This error displays for any of the following reasons:

- the Java option was not installed with your Oracle8*i* database
- the Java environment variables such as CLASSPATH is incorrect
- the ORACLE_HOME is not set and the loadjava command cannot be found

Solution: Install the Java Option with the Database Assistant and rerun the Oracle Portal installation.

Error: Not Found. The requested URL /servlet/page was not found on this server.

This may be due to conflicts in the ports used by different Jserv installations on the same computer.

See Step 2 for Error: You cannot login because there is no configuration information stored in the enabler configuration table (WWC-41439) on page 7-3 for a solution.

Error: TNS could not resolve service name or Database Log In Failed

Verify that the TNS name in the connectstring entry of the DAD for this URL is valid.

These errors occur because the connectivity information (connect string/TNS names alias) in your Gateway Database Access Descriptor (DAD) or in your database network configuration is incorrect. First make sure that the Oracle8*i* database and TNS listener is up and running. If they are and you still get this error, follow the solution below.

Solution: Edit the database network file and the Gateway DAD configuration file accordingly.

1. With a text editor, open the database network file, `tnsnames.ora`, which is located in the following location by default:

   ```
   <ORACLE_HOME>/network/admin
   ```

   where `<ORACLE_HOME>` is the location where Oracle Portal is installed.

   a. Verify that the following parameters are pointing to your Oracle Portal installation.

   ```
   HOST=<hostname.domain>
   PORT=<portnumber>
   ```

   b. Save the `tnsnames.ora` file.

2. With a text editor, open the Gateway DAD configuration file, `gateway.htm`, which is located in the following location by default:

   ```
   http://<hostname>:<port>/pls/DAD/<admin_path>/gateway.htm
   ```

   a. Verify that the following parameters are correct for your Oracle Portal installation.

   ```
   Oracle User Name
   Oracle Password
   Oracle Connect String
   ```

   b. Make sure that **EnableSSO=Yes**.

   c. Click **OK** to save your settings.

> **See:** Chapter 3, "Configuring the PL/SQL Gateway"

Error: wdblsnr.exe - DLL Initialization Failed (Initialization of the dynamic link library x:\<ORACLE_HOME>\bin\oranro8.dll failed

This error may occur during Oracle Portal installation in cases where an existing Oracle 8.1.5 database has been upgraded to Oracle 8.1.6 before installing Oracle Portal. However, the required `.dll` files are still missing.

Solution: Copy the missing .dll files to the location where Oracle Portal is installed.

1. Locate a machine with a clean installation of Oracle8*i* (8.1.6 or above).

2. Copy the `OCI.DLL` and `ORANRO8.DLL` files from this machine to the machine where your Oracle Portal product (or Oracle9*i* Application Server Home) is installed in the following location:

   `<ORACLE_HOME>\bin`

3. Try to access Oracle Portal again.

> **See:** Section 2.4, "Accessing Oracle Portal in your Browser" on page 2-5.

If this error still occurs, use the Oracle Home Selector tool to switch the Oracle Home to the Oracle Home in which Oracle Portal is installed or start the Oracle HTTP Listener *powered by Apache*. The ORACLE_HOME and PATH environment variables must also be set correctly.

Error: missing string (login link text) language(e) domain(wwc) sub_ domain(sec) Missing string(pages) language(e) domain(wwc) sub_ domain(pob)

This error may display when you try to access the Oracle Portal home page and National Language Support (NLS) files are missing.

Solutions:

- Check to make sure your browser language preference is set to the language you've installed with Oracle Portal. Oracle Portal is supported on 24 different languages with English as the default language. See "Installing language support in Oracle Portal" on page 2-6.

- Make sure that your browser is set to accept Java and Javascript.

- Check the installation log file to see if `wwvcbus.ctl` and `wwcus.ctl` were loaded into Oracle Portal's NLS table, `wwnls_strings$`.

Error: PLS-00306: wrong number or types of arguments

This error occurs when you are installing Oracle Portal on a machine with an existing Oracle WebDB 2.2. The installed Oracle Portal synonym (webdb30.wwv_ utl_api_types) causes the WebDB 2.2 components to become invalid and you'll experience problems with your pre-existing components and creating new components in WebDB 2.2.

You'll need to drop the WebDB 2.2 synonyms as follows:

1. Log onto SQL*Plus as the SYS user with the appropriate password.

2. Enter the following commands:

```
drop public synonym wwv_utl_api_types;
create public synonym wwv_utl_api_types for <webdb22schema>.wwv_utl_api_types
```

Unable to create *inter*Media Text Indexes

If you are unable to create an *inter*Media Text index, check that your system has met all the requirements. You must have an Oracle8*i* database with the *inter*Media Text option installed.

Also, *inter*Media Text should be installed in the same Oracle Home as the database. It is not installed if you choose to perform a Typical or default Custom installation of the Oracle8*i* database.

> **See:** Chapter 4, "Using interMedia Text in Oracle Portal".

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