Oracle® Applications

Maintenance Procedures

Release 11*i* (11.5.10.2)

Part No. B19299-01

July 2005

ORACLE®

Oracle Applications Maintenance Procedures, Release 11*i* (11.5.10.2)

Part No. B19299-01

Contents

3 Patching

4   Working with File Systems and Databases

5   Reporting and Tracking

6   Troubleshooting

Index

Send Us Your Comments

Oracle Applications Maintenance Procedures, Release 11*i* (11.5.10.2)

Part No. B19299-01

Oracle welcomes your comments and suggestions on the quality and usefulness of this publication. Your input is an important part of the information used for revision.

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

If you find any errors or have any other suggestions for improvement, please indicate the title and part number of the documentation and the chapter, section, and page number (if available). You can send comments to us at apps_relgrp_us@oracle.com.

If you have problems with the software, please contact your local Oracle Support Services.

Preface

Oracle Applications Maintenance Utilities and *Oracle Applications Maintenance Procedures* make up the *Maintaining Oracle Applications Documentation Set*. This manual describes how to maintain the Oracle Applications file system and the database. Its companion, *Oracle Applications Maintenance Utilities*, provides information about the utilities used for installing, upgrading, and maintaining Oracle Applications products.

> **Note:** Much of the information in both these books was contained in the *AD Utilities Guide* in earlier releases.

Intended Audience

This book is intended for database administrators and system administrators who are responsible for performing Oracle Applications maintenance tasks.

Documentation Accessibility

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

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

Accessibility of Code Examples in Documentation   JAWS, a Windows screen reader, may not always correctly read the code examples in this document. The conventions for writing code require that closing braces should appear on an otherwise empty line; however, JAWS may not always read a line of text that consists solely of a bracket or brace.

Accessibility of Links to External Web Sites in Documentation   This documentation may contain links to Web sites of other companies or organizations that Oracle does not own or control. Oracle neither evaluates nor makes any representations regarding the accessibility of these Web sites.

Structure

This book contains the following chapters:

Chapter 1

Describes procedures for changing the configuration of Oracle Applications after the initial installation.

Chapter 2

Contains general procedures for maintaining Oracle Applications.

Chapter 3

Focuses on procedures for patching Oracle Applications.

Chapter 4

Describes procedures associated with migrating an Oracle Applications file system or an Oracle database.

Chapter 5

Contains information on various reports, such as analyzing patch history.

Chapter 6

Lists various troubleshooting procedures for managing the AD utilities parallel processes.

Related Documents

This book was current as of the time it was initially published. It is included in the *Oracle Applications Document Library*, which is supplied in the Release 11*i* software bundle. Later versions of this and other documents that have changed sufficiently between releases to warrant re-publishing are made available at the following URL:

`http://www.oracle.com/technology/documentation/applications.html`

You can also purchase hard-copy documentation from the Oracle Store at `http://oraclestore.oracle.com`.

In addition to this book, we suggest you have the following additional references on hand.

If you are looking for...	See these documents...
Additional information	*Oracle Applications Concepts*
	Upgrading Oracle Applications
	Installing Oracle Applications
	Maintaining Oracle Applications Documentation Set:
	Oracle Applications Maintenance Utilities
	Oracle Applications Installation Update Notes*
	Oracle Applications Release Notes*
	Oracle Applications NLS Release Notes*
	Oracle Applications System Administrator's Guide: Configuration
	Oracle Applications System Administrator's Guide: Maintenance
	Oracle Applications System Administrator's Guide: Security
	Oracle Self-Service Web Applications Implementation Manual
	Oracle Workflow Administrator's Guide
	Oracle Workflow Developer's Guide
	Oracle Application Object Library/Workflow Technical Reference Manual

If you are looking for...	See these documents...
Information on new features in this release	*About AD.I** *Release Content Documents and Features Summary Matrices** *Oracle Applications DBA 11i+ Features Matrix** *Oracle Applications Product Update Notes* *Electronic Technical Reference Manual (eTRM)**
Application-specific features	Oracle Applications user's guides Oracle Applications implementation manuals *Multiple Organizations in Oracle Applications* *Multiple Reporting Currencies in Oracle Applications*
Information about custom development	*Oracle Applications User Interface Standards for Forms-based Products* *Oracle Applications Developers' Guide*
Database information	Oracle9*i* Documentation Set
*Available only on Oracle*MetaLink*	

Patch readme files may also contain information about new documentation that you can download.

Training and Support

Oracle offers a complete set of training courses and multi-level support services.

Training

You can attend training courses at any Oracle Education Center, arrange for trainers to teach at your facility, or use Oracle Learning Network (OLN) — Oracle University's online education utility. Oracle training professionals can also develop custom courses using your organization structure, terminology, and data as examples.

Support

The Oracle support team includes your Technical Representative and Account Manager. It also includes Oracle consultants and support specialists who have expertise in your business area, and in managing an Oracle RDBMS server and your hardware and software environment.

Oracle*MetaLink* is a self-service, web-based support connection, which is maintained by Oracle Support Services 24 hours a day, 7 days a week. Use it to obtain information and advice from technical libraries and forums, download patches, look at bug details, and create or update TARs. Register at http://metalink.oracle.com, and check for updates and information before you install or upgrade your Oracle Applications. The *Start Here* CD also contains links to the various resources on Oracle*MetaLink*.

Conventions

The following conventions are used in this book:

Convention	Meaning
UNIX: **Windows**:	Indicates platform-specific information. This guide contains information for both UNIX and Windows platforms. All instructions for UNIX platforms also apply to Linux platforms, unless otherwise noted.
$ or C:\>	Represents the platform-specific command prompt. Your prompt may differ.
Monospace text	Represents command line text. Type this text exactly as shown.

Convention	Meaning
< >	Text enclosed in angle brackets represents a variable. Substitute a value for the variable text. Do not type the brackets
[ ]	Encloses optional items or indicate a function key. Do not type the brackets.
|	Represents an OR option among several options. You must enter only one of the options. Do not type the vertical bar.
\	In examples of commands you type online, a backslash at the end of a line signifies that you must type the entire command on one line. *Do not type the backslash*.
Special notes	Additional Information, Note, and Caution boxes alert you to particular information within the body of the book.

1

System Configuration

This chapter contains information about modifying an Oracle Applications system configuration. It includes the following sections:

- Managing Configuration Parameters
- Sharing the Application Tier File System
- Registering Additional Applications Components
- Adding Database Functionality

Managing Configuration Parameters

AutoConfig is a tool that simplifies and standardizes configuration management tasks in an Oracle Applications system. While individual configuration files are still used in an AutoConfig-enabled system, they play a secondary role to an XML-based repository of Applications environment information call the context file.

When your system was created or upgraded, AutoConfig gathered configuration parameters for all nodes in the system into two context files — one for the database tier and one for the application tier. By centralizing the configuration information, AutoConfig makes it possible to update system parameters and generate new configuration files from a single location.

> **Additional Information:**   See AutoConfig in Chapter 3 of *Oracle Applications Maintenance Utilities*. See also AutoConfig in *Oracle Applications Concepts*.

The Oracle Applications Manager (OAM) provides the interface for viewing the context files and recording changes to the parameters they contain. Then, to propagate the changes to the system configuration files, you run a command line script. This section also describes procedures for rolling back changes or restoring an older configuration.

Modifying Configuration Parameters

Business Requirement
How do I make changes to my system configuration parameters?

Discussion
You can update the existing configuration parameters by using the Edit Parameters page of the Oracle Applications Manager (OAM) AutoConfig utility. When you save

the new values, they are stored in the OAM schema and the context is automatically updated (synchronized).

When you run the AutoConfig script (adautocfg.sh), it reads the context file and uses the parameters it finds there to generate updated configuration files and database profiles.

> **Additional Information:** See AutoConfig in *Oracle Applications Maintenance Utilities*.

Action

Complete the following steps:

1. Access the Oracle Applications Manager.

   Follow the instructions in OAM Web-based Utilities in *Oracle Applications Maintenance Utilities*. It describes the login procedure, the Applications Dashboard, and the Site Map. All the procedures in this section begin with the Site Map.
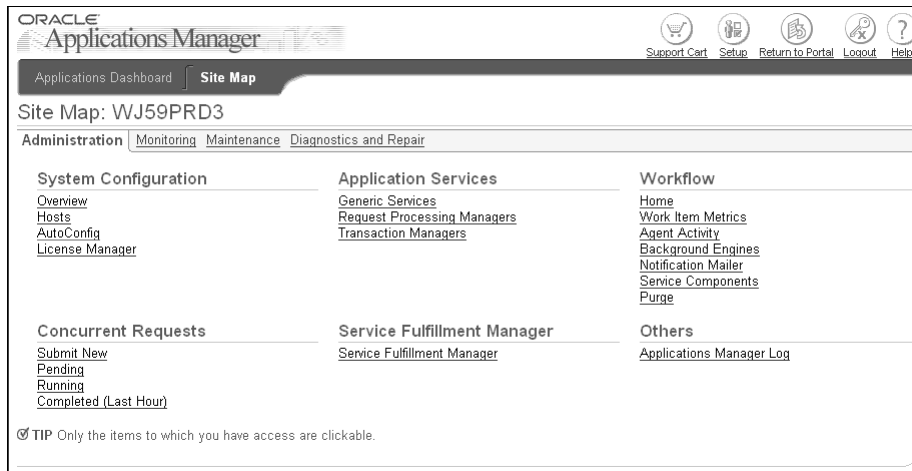
2. Access OAM AutoConfig.

   From the Site Map (Administration tab), click AutoConfig under the System Configuration heading.

   OAM displays the main AutoConfig page.
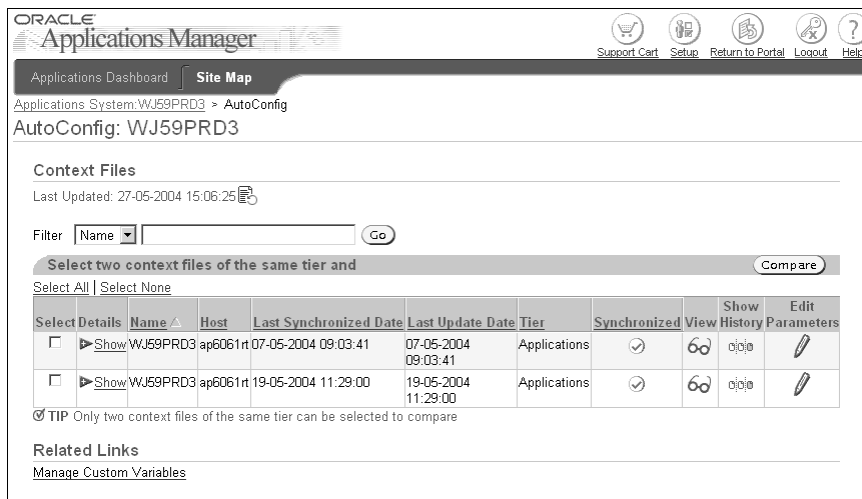
The Filter field appears at the top of the page. You can use it to limit the number of context files shown by querying for files with a specific context name or ones that belong to a specific host.

In the Filter field, Name refers to the name of the context on the application tier. On the database tier, it refers to the system name. Host is the name of the node on which the database or application tier resides. If there is more than one APPL_TOP on the application tier, each APPL_TOP has a unique name. The default is to list the names of all the context files.

In the bottom half of the page, the context files are listed. The Tier column indicates whether the file is an Applications context file (for the application tier) or a Database context file (for the database tier). To see the details of a context file, expand it by clicking the Show/Hide (blue) triangle in the Details column.

The Details view shows information about the version, creation date, and the name of the person who last made updates. The Status information corresponds to the Synchronized column value. Write Succeeded (check mark) or Write Failed (x) in the Synchronized column indicates whether the synchronization between the OAM database and the Applications context file was successful.

3. Review configuration parameters.

   Select a context file and click the Edit Parameters pen icon to see the existing configuration parameters. They are grouped into categories: Global, System, Local, Install, Environment, Processes, and Custom. Clicking a category link displays an Edit Parameters page that lists the parameters associated with that category. For example, click Install to see the parameters associated with Rapid Install.

All Edit Parameters pages include the following information in column format: title, internal variable name associated with the title (OA_VAR), change status indicator, value, and a short description.

From the Edit Parameters page, you can refine your search by entering information about a specific parameter. Enter its title (name), OA_VAR (internal name), value, or description in the Search field. Click Go to see details about that parameter.

> **Additional Information:** Oracle*MetaLink* document 270519.1 provides information about the parameters on the Custom tab.

4. Revise parameters.

   To change a parameter, enter its new value in the Value field. Fields that are greyed are not editable. Click Save after making changes.

   If other parameters are dependent on the value you changed, AutoConfig displays a list of all dependent parameters and prompts, "The following parameters depend on the parameter you just changed. Do you also want to update them?" Make any changes that are necessary, and click Save.

5. Submit changes.

   Each time you click Save, AutoConfig displays a confirmation screen and provides a space for comments about the changes. It also displays the entire contents of the context file, including the changed values. Notice that values are displayed in groups of 25. Click the arrows to move forward and back through the pages, or click the Next 25 link.
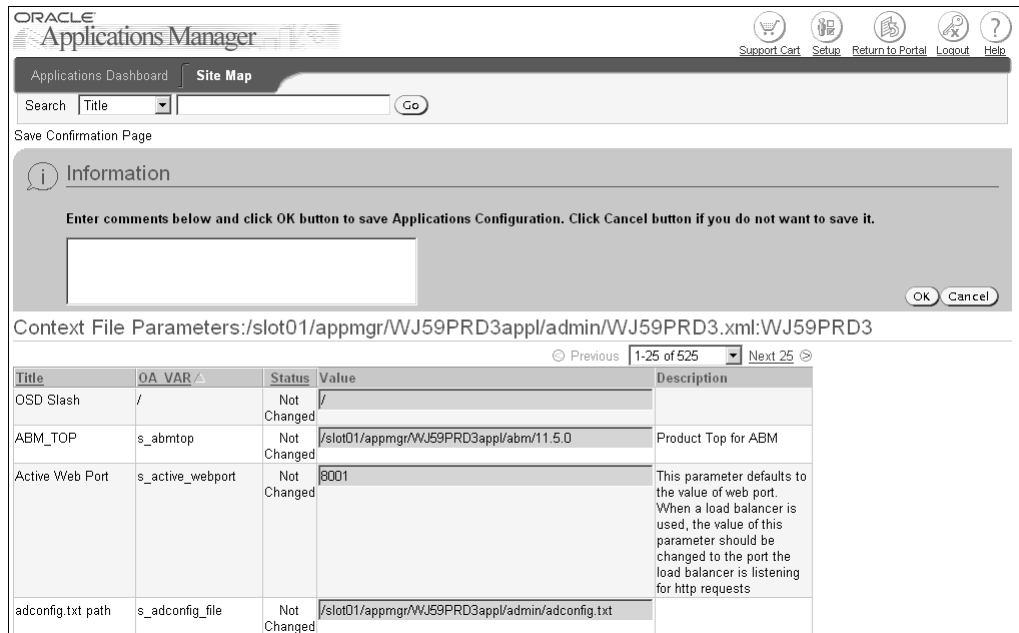
Click OK to save the modified context file. The Oracle Applications Manager automatically stores the new values in the OAM database.

6. Determine impact of context file updates.

Running the AutoConfig script (adautocfg.sh or adautocfg.cmd) updates the configuration files, and in the process may overwrite customized configuration files. To determine the impact of running the AutoConfig script on your existing configuration files, run the AutoConfig test mode script. It produces a configuration report that shows the changes the AutoConfig script will make when you run it.

> **Additional Information:** See AutoConfig Test Mode in *Oracle Applications Maintenance Utilities*.

To run the script on the application tier, do the following. The script prompts for the location of the Applications context file and the APPS password.

UNIX:

```
$ <AD_TOP>/bin/adchkcfg.sh
```

Windows:

```
C:\> <AD_TOP>\bin\adchkcfg.cmd
```

To run the script on the database tier, do the following. The script prompts for the location of the database context file and the APPS password.

UNIX:

```
$ <RDBMS ORACLE_HOME>/appsutil/bin/adchkcfg.sh
```

Windows:

```
C:\> <RDBMS ORACLE_HOME>\appsutil\bin\adchkcfg.cmd
```

The AutoConfig test mode script produces a configuration report that shows the changes the AutoConfig script would have made.

7. Generate updated configuration files.

Run adautocfg.sh to propagate changes made in the context files to the configuration files. This script overwrites your existing configuration files with the newly instantiated files, which contain the revised values. See Generating Updated Configuration Files in the next business requirement for instructions.

Generating Updated Configuration Files

Business Requirement

I have made changes to the context files in my system. How do I propagate those changes to my configuration files?

Discussion

After you have made changes using the Edit Parameters feature of OAM AutoConfig, you generate new configuration files by running the AutoConfig adautocfg.sh script. The instructions in this section also apply to running adautocfg.sh at any time you are instructed to use this script.

Action

Determine whether you are propagating the configuration changes on the application tier, the database tier, or both. Then, follow these steps:

1. Set the environment.

On the database tier, log in as the *oracle* user and set the environment. On the application tier, log in as *applmgr* and set the environment.

> **Additional Information:** See Setting the Environment under the Running AD Utilities section in *Oracle Applications Maintenance Utilities*.

2. Stop server processes.

Stop all server processes except the database service and database listener. They must remain up.

> **Additional Information:** See Managing Server Processes in Chapter 2.

3. Run adautocfg.sh.

To run the script on the application tier, do the following. It prompts for the APPS password.

UNIX:

```
$ <COMMON_TOP>/admin/scripts/<CONTEXT_NAME>/adautocfg.sh
```

Windows:

```
C:\> <COMMON_TOP>\admin\scripts\<CONTEXT_NAME>\adautocfg.cmd
```

To run the script on the database tier, do the following. It prompts for the APPS password.

UNIX:

```
$ <RDBMS ORACLE_HOME>/appsutil/scripts/<CONTEXT_NAME>/adautocfg.sh
```

Windows:

```
C:\> <RDBMS ORACLE_HOME>\appsutil\scripts\<CONTEXT_NAME>\adautocfg.cmd
```

4. Start server processes.

   Use the newly generated server process script to start all server processes.

5. Review log files.

   Review the log files for errors or warnings. There is only one log file per AutoConfig script session. It contains detailed information for every action performed.

Rolling Back to a Previous Configuration

Business Requirement
Can I roll back my system parameters to a previous configuration?

Discussion
Each time you run the AutoConfig adautocfg.sh script, it creates a rollback script named restore.sh (UNIX) or restore.cmd (Windows). You can use this script to reinstate the configuration *immediately prior* to your current one. For example, for configuration files generated on March 1, 2004, May 15, 2004, May 31, 2004, and July 7, 2004, with the July 7 file being the current one, running the rollback script will restore your system to the configuration you created on May 31.

> **Note:** Configurations older than the prior one must be restored by editing the context files and regenerating the configuration. See Restoring a Configuration in this chapter for details.

The script and all backup configuration files are stored in <APPL_TOP>/admin/<CONTEXT_NAME>/out/<MMDDhhmm> for the application tier, and in <RDBMS_ORACLE_HOME>/appsutil/out/<CONTEXT_NAME>/<MMDDhhmm> for the database tier. MMDDhhmm stands for the month, day, hour, and minute of the AutoConfig script session.

Action
Complete the following steps:

1. Shut down all services.

   ```
   $ cd $COMMON_TOP/admin/scripts/<context_name>
   $ adstpall.sh APPS/<APPS password>
   ```

2. Restore the session.

   ```
   $ cd $APPL_TOP/admin/<CONTEXT_NAME>/out/<MMDDhhmm>
   $ restore.sh
   ```

3. Restart all services.

   ```
   $ cd $COMMON_TOP/admin/scripts/<context_name>
   $ adstrtal.sh APPS/<APPS password>
   ```

4. Restore the context file.

If you updated the context file in OAM AutoConfig, restore it to match the system configuration. See Restoring a Configuration in this chapter.

Restoring a Configuration

Business Requirement

How do I restore older configurations?

Discussion

The rollback script described in the Rolling Back to a Previous Configuration restores your system to the configuration created immediately prior to the current one. If you want to restore a configuration that is older, you must do so by using the Edit Parameters feature of OAM AutoConfig to replace individual values in your current configuration with the corresponding value in the older configuration, and then run the AutoConfig script to generate new configuration files.

From the Edit Parameters page in AutoConfig, you can view all the configurations that have been stored in the Oracle Applications Manager database. To restore an older configuration, request a comparison between your previous configuration and the one you want to restore. Then, for each individual difference, restore the older value and save the changes to reinstate that value in your current configuration. When you run the AutoConfig adautocfg.sh script, it generates updated configuration files using the new values.

Action

Complete these steps:

1. Access the Oracle Applications Manager.

Follow the instructions in OAM Web-based Utilities in *Oracle Applications Maintenance Utilities*. It describes the login procedure, the Applications Dashboard, and the Site Map. All procedures in this section begin with the Site Map.

2. Access OAM AutoConfig.

From the Site Map (Administration tab), click AutoConfig under the System Configuration heading. The AutoConfig home page appears.
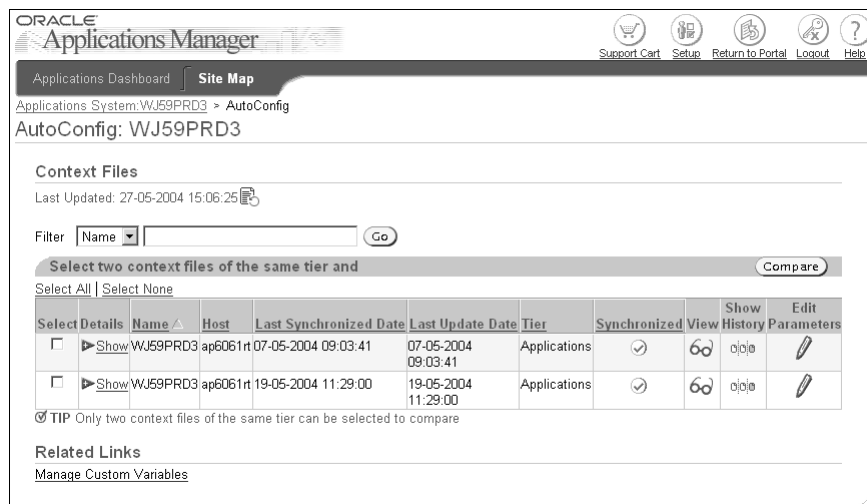
Select a context file and click the Show History icon.

The Context File History page lists previous configurations of the selected context file. It shows the version number, last synchronized date, last update date, the user who last updated the configuration, and any comments for the configuration.

3. Compare a current and an older configuration.

In order to determine if you can substitute configuration parameters from an older configuration for those in your current configuration, you must compare the two configurations.

Select a previous version from the list and click Show Differences from Current Configuration to view the comparison page.

This page lists only the parameters in the context file that differ between the older configuration and the current one. Choose any older value you want to restore, and click Restore Previous Value. This action replaces the value in the context file. Click Save to submit the changes. On the next page, you can enter comments about the change. Click OK to save the modified context file.

4. Generate updated configuration files.

After saving the modified context file, run the AutoConfig script (adautocfg.sh) to generate updated configuration files. See Generating Updated Configuration Files for details about running the script.

Sharing the Application Tier File System

A traditional multi-node installation requires that the Applications file system reside on each node in the system. In a shared application tier file system installation, the APPL_TOP and the COMMON_TOP file systems, as well as the application tier technology stack file system (8.0.6 and iAS Oracle homes) are installed on a shared

disk resource mounted to each node in the system. These nodes can be used to provide standard application tier services, such as forms, Web, and concurrent processing.

> **Note:** Windows platforms do not support a shared application tier file system.

Changes made in the shared application tier file system are immediately visible on all nodes. There are several important benefits of using a shared application tier file system configuration:

- Perform administration and patching tasks only once, on a single node.

- Distribute processing tasks to run in parallel (Distributed AD) to reduce downtime.

- Reduce overall disk requirements.

- Make adding additional nodes easier.

> **Additional Information:** See Shared Application Tier File System in *Oracle Applications Concepts*.

> **Note:** All procedures in this section apply *only* to new installations using the latest Rapid Install. If your system was installed using an earlier version, or was upgraded using the Release 11.5.10.2 maintenance pack, follow the steps in *Sharing the Application Tier File System in Oracle Applications 11i* in Oracle*MetaLink* document 233428.1.

Creating a Shared Application Tier File System for a New Installation

Business Requirement

How do I create a shared application tier file system for a new installation?

Discussion

In a multi-node system, you install servers on two or more nodes. In a shared application tier file system, the application tier file system is installed on only one node. The other nodes, providing standard services such as forms, Web, and concurrent processing, can be set up to share the same file system. In this configuration, any changes made in the shared file system are immediately visible on all nodes.

Action

Use Rapid Install to create a shared application tier file system during your initial installation. As you complete the Rapid Install wizard screens, you:

- Prepare the shared file system mount point so that Rapid Install can access the file system from the same mount point on all application tier nodes.

- Specify mount points for the APPL_TOP, COMMON_TOP, 8.0.6 Oracle home, and iAS Oracle home so that each path is the same for each node in the system.

> **Additional Information:** See Multi-Node Installations in *Installing Oracle Applications*.

If you did not use Rapid Install during your installation to create a shared application tier file system, and later decide to implement the configuration, follow the instructions in the next procedure to share an existing application tier file system.

Sharing an Existing Application Tier File System

Business Requirement

How can I configure an existing file system for use in a shared application tier file system configuration?

Discussion

If you did not configure the Oracle Applications system to use a shared application tier file system during the initial installation, you can configure the existing file system for use in a shared application tier file system configuration.

Note: The prerequisite software for this procedure is installed during a fresh installation of Oracle Applications using the Release 11.5.10.2 Rapid Install.

Action

Complete the following steps. Note that you must have Zip 2.3 software installed before you begin. You can download it from InfoZip.

1. Shut down application tier services.

   ```
   $ cd <COOMON_TOP>/admin/script/<context_name>
   $ adstpall.sh APPS/<APPS password>
   ```

2. Merge existing APPL_TOPs.

   Omit this step if the Oracle Applications system is single-node or one of the APPL_TOPs in the multi-node system contains all server types.

   If none of the existing APPL_TOPs in a multi-node system contains all server types, that is, administration, forms, Web and concurrent processing servers, merge the existing APPL_TOPs to create a single consolidated APPL_TOP.

   Additional Information: See Merging Existing APPL_TOPs in this chapter.

3. Run AutoConfig to enable shared file system.

   As *applmgr*, perform the following commands on the primary node where you are enabling shared file system support. The primary node APPL_TOP must contain all application tier server types.

   ```
   $ cd <FND_TOP>/patch/115/bin
   $ perl -I <AU_TOP>/perl txkSOHM.pl
   ```

   The txkSOHM.pl script prompts for the following information:

Prompt	Response	Description
Absolute path of Applications context file	<APPL_TOP>/admin/<context_name>.xml	Name and path of the Applications context file.

Prompt	Response	Description
Type of instance	primary	Node where the 8.0.6 and iAS Oracle homes are installed.
Absolute path of the 8.0.6 shared Oracle home	<8.0.6 ORACLE_HOME location>	Path of the 8.0.6 Oracle home
Absolute path of the iAS shared Oracle home	<iAS ORACLE_HOME location>	Path of the iAS Oracle home
Absolute path of config top	<Configuration top>	Path to the iAS and 8.0.6 instance-specific configuration files. Specify a secure location for these files.
Oracle Applications APPS schema password	<APPS password>	Password for the APPS user.

4. Make the application tier file system accessible.

   Mount the shared disk to all application tier nodes.

   > **Note:** You must retain the same absolute path for the mount points of the shared APPL_TOP, COMMON_TOP, 8.0.6 Oracle home, and iAS Oracle home on each node.

Merging Existing APPL_TOPs

Business Requirement

I need to reconfigure my multi-node system to one that uses a shared application tier file system. How can I create an APPL_TOP that contains all server types?

Discussion

If your system contains multiple nodes, and you did not configure it to use a shared application tier file system in the initial installation, you can change the configuration to one that allows sharing of the application tier file system. The shared APPL_TOP in this configuration must contain all server types, that is, administration, forms, Web and concurrent processing servers. If none of the existing APPL_TOPs contains all server types, merge them to create a single consolidated APPL_TOP.

Merging the application tier Oracle homes is not necessary. Use the 8.0.6 and iAS Oracle homes located on the same node as the single consolidated APPL_TOP for the shared application tier file system.

Merging existing APPL_TOPs employs the capabilities of the Rapid Clone utility. For more information, see Cloning in Chapter 4 of this book.

   > **Note:** The prerequisite software for this procedure is installed during a fresh installation of Oracle Applications using the Release 11.5.10.2 Rapid Install.

Action

Complete the following steps. Note that you must have Zip 2.3 software installed before you begin. You can download it from InfoZip.

1. Maintain snapshot information.

Log in as *applmgr* to each node that contains an APPL_TOP. Run the Maintain snapshot information option from the Maintain Applications Files menu in AD Administration to update the current view snapshot.

> **Additional Information:** See AD Administration in *Oracle Applications Maintenance Utilities*.

2. Prepare primary node.

    Choose one of the nodes to be primary (for example, Node A). Log in to that node as *applmgr* and run the following script:

    ```
    $ cd <COMMON_TOP>/admin/scripts/<CONTEXT_NAME>
    $ perl adpreclone.pl appsTier merge
    ```

3. Prepare remaining nodes.

    On each of the other nodes to be merged, log in as *applmgr* and run the following script:

    ```
    $ cd <COMMON_TOP>/admin/scripts/<CONTEXT_NAME>
    $ perl adpreclone.pl appltop merge
    ```

4. Create a copy of the primary node (recommended).

    If you want to place the merged APPL_TOPs in a new location instead of merging them in an existing APPL_TOP, create a copy of the primary node (the other nodes need not be copied). Copy the following directories from the primary node to the new location.

    -   <APPL_TOP>
    -   <OA_HTML>
    -   <OA_JAVA>
    -   <COMMON_TOP/util>
    -   <COMMON_TOP/clone>
    -   <COMMON_TOP/_pages> (when this directory exists)
    -   <806 ORACLE_HOME>
    -   <iAS ORACLE_HOME>

    > **Additional Information:** See Cloning in Chapter 4.

5. Copy the required files for merging.

    Log in as *applmgr* to each non-primary node and recursively copy the <COMMON_TOP>/clone/appl directory on that node to the primary node (or to the copy you created). Do not copy any other directories from these nodes.

6. Configure the nodes that contain the application tier servers.

    Log in to the primary node (merged node) as *applmgr* and type the following commands:

    ```
    $ cd <COMMON_TOP>/clone/bin
    $ perl adcfgclone.pl appsTier
    ```

7. Generate message files and JAR files for all products.

On the primary (merged) node, run the "Generate message files" and "Generate product JAR files" options from the Generate Applications Files menu in AD Administration.

8. Remove files.

    You can remove the <COMMON_TOP>/clone/appl directory to free up disk space.

Adding a Node

Business Requirement

I have a multi-node system with a shared application tier file system. How do I add another node?

Discussion

One of the advantages of a shared application tier file system is that it is easier to extend the system architecture by adding an additional node. You mount the shared APPL_TOP, COMMON_TOP, and Oracle homes system disk to the additional application tier node.

> **Note:** The prerequisite software for this procedure is installed during a fresh installation of Oracle Applications using the Release 11.5.10.2 Rapid Install.

Action

Complete the following steps. Note that you must have Zip 2.3 software installed before you begin. You can download it from InfoZip.

1. Prepare the existing shared node for cloning.

    Log in as *applmgr* to a node that is already sharing the application tier file system and run the following commands:

    ```
    $ cd <COMMON_TOP>/admin/scripts/<CONTEXT_NAME>
    $ perl adpreclone.pl appsTier
    ```

2. Make the files accessible.

    Mount the shared file system disk to the application tier node that you want to add. You must retain the same absolute path for the mount points of the shared file system on each node.

3. Copy the Java signature database.

    Oracle Applications Java and JAR files are signed using digital keys stored in the Java key storage database. If the file <HOME>/identitydb.obj exists, copy it from the source node to the new target node.

    > **Note:** Skip this step if the AD utilities use JDK 1.4 or lower. Type "ADJVAPRG - version" at the system command prompt to determine the JDK version.

4. Configure the node you want to add.

Log in as *applmgr* to the node that you want to add and execute the following commands:

```
$ cd <AD_TOP>/bin
$ perl adclonectx.pl sharedappltop \
  contextfile=<Applications context file of the existing node>

$ cd <FND_TOP>/patch/115/bin
$ perl -I <AU_TOP>/perl txkSOHM.pl
```

The txkSOHM.pl script prompts for the following information:

Prompt	Response	Description
Absolute path of Applications context file	<APPL_TOP>/admin/<context_name>.xml	Name and path of the Applications context file.
Type of instance	secondary	For all additional nodes mounting up a shared file system, use secondary.
Absolute path of the 8.0.6 shared Oracle home	<8.0.6 ORACLE_HOME location>	Path of the 8.0.6 Oracle home
Absolute path of the iAS shared Oracle home	<iAS ORACLE_HOME location>	Path of the iAS Oracle home
Absolute path of config top	<Configuration top>	Path to the iAS and 8.0.6 instance-specific configuration files. Specify a secure location for these files.
Oracle Applications APPS schema password	<APPS password>	Password for the APPS user.

5. Authorize the new node for database access.

    In Release 11.5.10, SQL*Net security is enabled by default. Use OAM to authorize the new node to access the database through SQL*Net. See *Managed SQL*Net Access for Hosts* in Oracle*MetaLink* document 281758.1 for details.

Registering Additional Applications Components

At various times throughout the life cycle of an Oracle Applications release, you may decide to license additional products, or begin using additional country-specific functionalities (localized products) or languages. If you do, you can record the status of newly active products and components by registering them in your system. Registration ensures that utilities (like AutoPatch) recognize them as active during patching or other maintenance processes.

You register active products, country-specific functionalities, or languages with the OAM License Manager.

> **Note:** Registering a product does not constitute a license agreement with Oracle Corporation.

> **Additional Information:** See License Manager in *Oracle Applications Maintenance Utilities*.

Registering Products

Business Requirement

How do I register additional products for the E-Business Suite or for Component Applications?

Discussion

Even though all products are installed when you run Rapid Install, your license agreement is set up for either E-Business Suite pricing or Component Application pricing. Only the products you indicate as being included in the license agreement are flagged as active by Rapid Install in the initial installation or an upgrade. Products must be active to be included by the utilities that run patching or maintenance tasks.

You may change your license agreement or begin using additional products at any time after the initial installation or upgrade. If you do, you register the active status of these products by using the OAM License Manager.

■ Register the entire Oracle Applications E-Business Suite. This option registers all products in the E-Business Suite price bundle in a single operation.

■ Register Component Applications. This option registers products by component applications and individually. You register Applications Components, for example Financials, TeleSales, or Self-Service HR.

> **Note:** You can also register individual products. See Registering Individual Products in this chapter.

Action

Complete the following steps:

1. Access the Oracle Applications Manager.

   Follow the instructions in OAM Web-based Utilities in *Oracle Applications Maintenance Utilities*. It describes the login procedure, the Applications Dashboard, and the Site Map. All the procedures in this section begin with the Site Map.

2. Access the License Manager Home page.

   From the Site Map (Administration tab), click License Manager under the System Configuration heading.
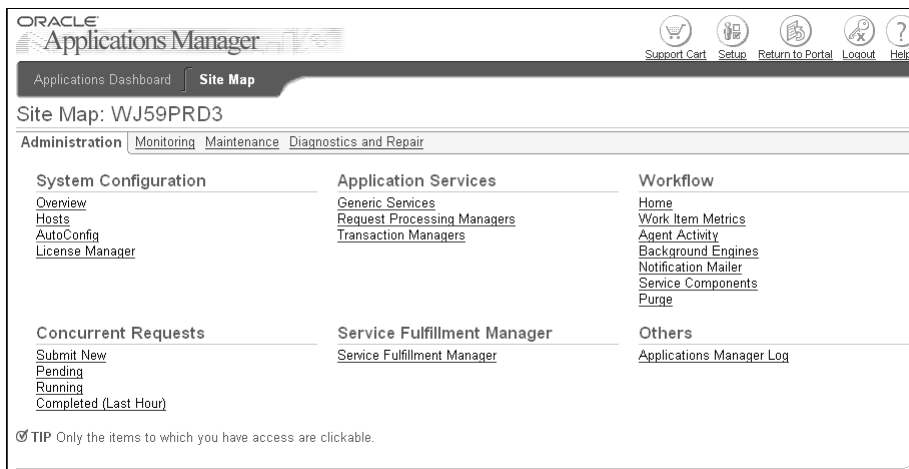
The License Manager Home page appears. It is divided into two sections: License and Reports.
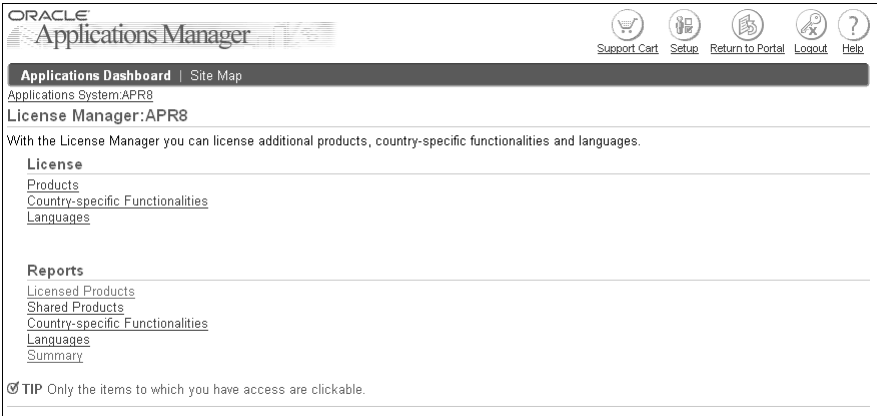
3. Register products

All the registration options are listed in the License portion of the page: Products, Country-specific Functionalities, Languages. Click Products to begin.
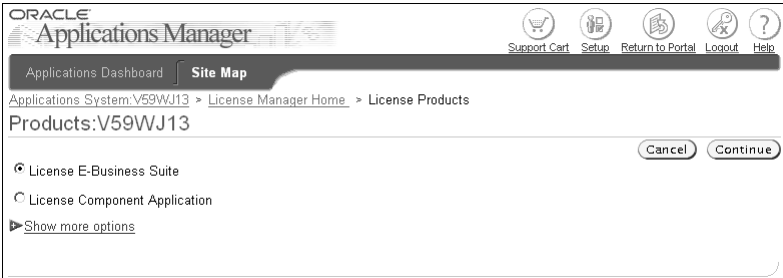
On the License Products page, you can register products by selecting License E-Business Suite or License Component Applications.

To register the entire Oracle Applications E-Business Suite:

Select License E-Business Suite and click Continue. The Suite Licensing page appears.
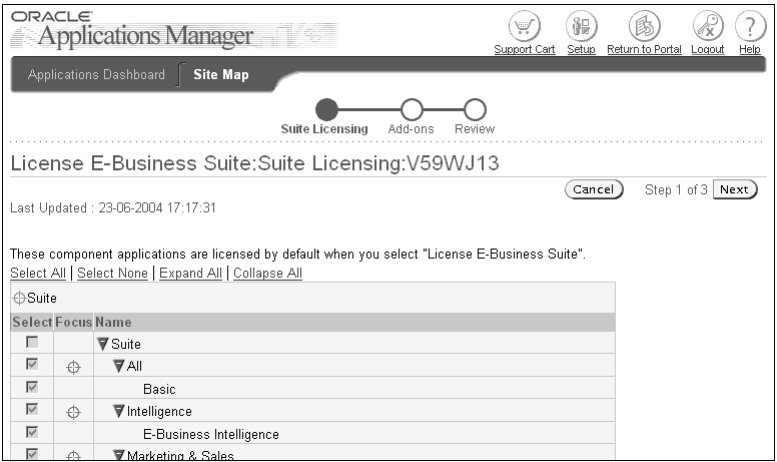
In the Select column there is a grey box with a check mark for each product that is registered in the E-Business Suite. Once the E-Business Suite is registered, individual products cannot be unregistered.

> **Additional Information:** See the Help system for further details about the License Manager pages.

Click Next to continue.
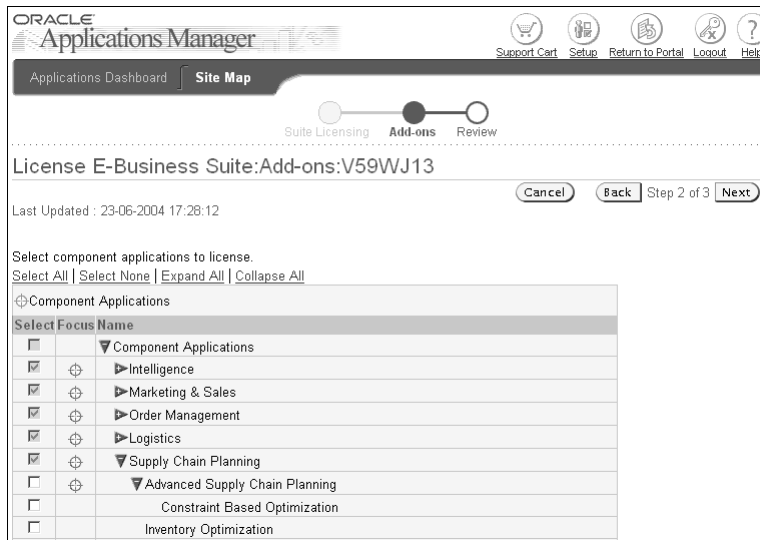
The Add-on page displays products that are not in the E-Business Suite pricing bundle. For example, the Advanced Supply Chain Planning box in the Select column is not greyed or checked. It is not yet registered in your system.

To register this product, place a check next to Advanced Supply Chain Planning, and click Next to continue.
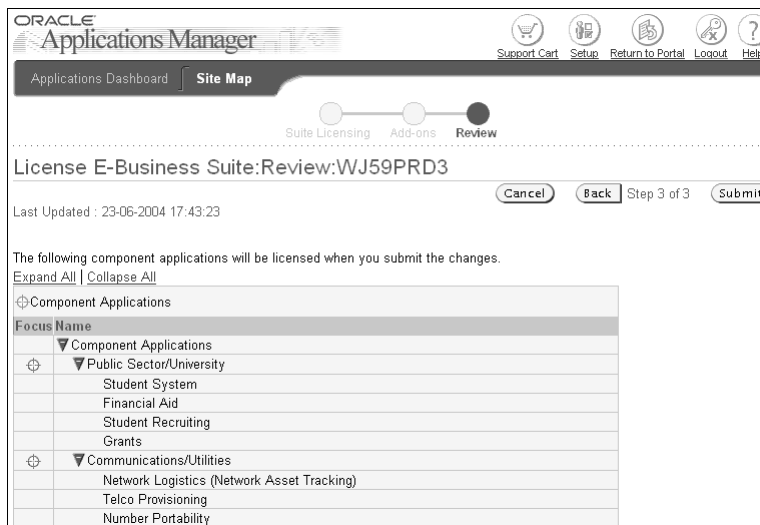
The Review page indicates which products you have selected to register, in addition to the products in the E-Business Suite price bundle. Click Submit to save your changes.

To register Component Applications:

The product families that make up Component Applications are also registered from the License Products page. Select License Component Applications and click Continue. The License Component Application page appears.

ORACLE
Applications Manager

Support Cart Setup Return to Portal Logout Help

Applications Dashboard **Site Map**

Applications System:WJ59PRD3 > License Manager Home > License Products > License Component Application
License Component Application:WJ59PRD3

Cancel Next

Last Updated : 23-06-2004 17:47:02

Select component applications to license.
Select All | Select None | Expand All | Collapse All

⊕ Component Applications

Select	Focus	Name
☐		▽ Component Applications
☐	⊕	▽ All
☐		Basic
☑	⊕	▽ Intelligence
☑		E-Business Intelligence
☐		Balanced Scorecard
☐		Financials and Sales Analyzers
☑	⊕	▽ Marketing & Sales

The page displays all Applications modules expanded to show individual components. Those that are already registered are greyed and checked. Boxes that are greyed without a check are for display formatting only and cannot be selected.

Collapse all components that you do not want to register. Click the blue triangle or use the Collapse All link. Then, expand only the module you want to register and select the components by clicking the check box. If you choose Select All, only components in expanded modules will be selected. Click Next to continue.

ORACLE
Applications Manager

Support Cart Setup Return to Portal Logout Help

Applications Dashboard **Site Map**

Applications System:WJ59PRD3 > License Manager Home > License Products > License Component Application
License Component Application:WJ59PRD3

Cancel Back Submit

Last Updated : 23-06-2004 17:49:43

The following component applications will be licensed when you submit the changes.
Expand All | Collapse All

⊕ Component Applications

Focus	Name
	▽ Component Applications
⊕	▽ Other
	Customer Model
⊕	▽ Interaction Center Technology
	Advanced Inbound Telephony
	Advanced Outbound Telephony
	Scripting
	eMail Center

The Review screen shows the components you selected. Click Submit to save your changes.

4. Apply product patches

In order to determine if there are product-specific patches or minipacks to apply, use the OAM Patch Wizard. Then, apply the updates using AutoPatch.

> **Additional Information:** See Patch Wizard and AutoPatch in *Oracle Applications Maintenance Utilities*.

5. Generate files.

You must generate files for all newly licensed products.

> **Additional Information:** See Generating Product Files in Chapter 2.

6. Perform product-specific implementation tasks.

Setup or implementation tasks may be required for the new products. See the product-specific documentation for details.

Registering Individual Products

Business Requirement

How do I register individual products?

Discussion

You can use License Manager to register products individually — not as part of the E-Business Suite or Component Application pricing.

Action

Complete the following steps:

1. Access the Oracle Applications Manager.

    Follow the instructions in OAM Web-based Utilities in *Oracle Applications Maintenance Utilities*. It describes the login procedure, the Applications Dashboard, and the Site Map. All the procedures in this section begin with the Site Map.

2. Navigate to the License Applications Products page.

    From the Site Map (Administration tab), click License Manager under the System Configuration heading. Click Products from the License Manager Home page.

    Expand the blue triangle next to Show More Options to make the License Applications Product option active. Select this option and click Continue. The License Individual Products page appears.
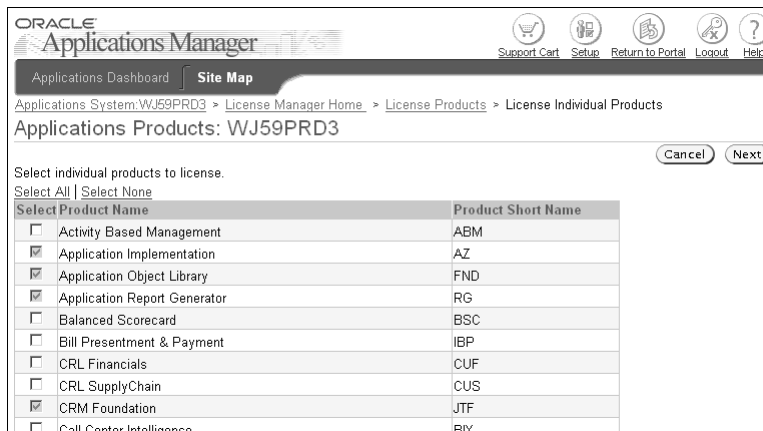
3. Choose individual products.

    This page lists all products including Add-on products from the E-Business Suite pricing bundle and individual products included in Component Applications pricing. Boxes next to products that are already registered (and shared and dependent products) are greyed and checked. Click the check box next to the product(s) you want to register and click Next.

4. Submit changes.

    Review the products you have selected and click Submit.

5. Determine if there are product-specific tasks to perform.

See Steps 4 – 6 in Registering Products in this chapter.

Registering Country-specific Functionalities

Business Requirement

My business now operates in a country that requires country-specific functionalities (localized products). How do I register these localized products?

Discussion

When you installed Oracle Applications products, you also installed the country-specific functionalities associated with the products. However, you may not have registered these localized products on the product licensing screens in the Rapid Install wizard.

If you begin to use localized products after the initial installation or upgrade, you should register their status as active so that they will be included in patching or other maintenance tasks that apply to your system. You can use the OAM License Manager to register country-specific functionalities at any time after your initial installation.

Action

Follow the instructions in Registering Products in this chapter to access the License Manager Home page. Then, complete the following steps:

1. From the License Manager Home page, click Country-specific Functionalities.

   The License Country-specific Functionality page appears.

   Use this page to select additional functionalities. Boxes next to functionalities that are already registered are checked and greyed. Once registered, you cannot use License Manager to delete the functionality.

   Make selections and click Next when finished.

2. Submit changes.

   License Manager displays your choices. Click Submit to save the changes.

3. Complete implementation tasks.

   See the country-specific *Oracle Global Financials User Guide* on the *Oracle Applications Documentation Library* for any required implementation tasks.

Registering Languages

Business Requirement

How do I register new languages?

Discussion

Oracle Applications products are supported in American English, and in numerous other languages. American English is registered automatically by default. If you use languages other than American English, you can register them during the initial installation.

If you want to register languages after the initial installation, you can do so using the OAM License Manager. This flags them as active in your system. Before you begin using additional languages, you must order the translation software or download the files. Use AutoPatch to install the translated software.

> **Additional Information:** See *Oracle Applications NLS Release Notes* for installation instructions.

> **Note:** The language you add must be supported by the current character set. If you need to change the current character set, see *Migrating an Applications Installation to a New Character Set* (Oracle*MetaLink* Doc ID: 124721.1.)

Action

Follow the instructions in Registering Products in this chapter to access the License Manager home page. Then, complete the following steps:

1. Access the Languages page.

   From the License Manager home page, click Languages under the License heading. The License Languages page appears. It displays the list of languages and indicates your current database character set.

Languages that are already registered are checked and greyed. Languages that are greyed without a check are not compatible with your current character set. You must change the character set before you can select one of these languages

2. Select a language.

To register a new language(s), click the check box next to the language name. For example, to register Canadian French, place a check mark next to that language. Click Next to continue.

3. Review the addition.

License Manager displays the requested change and the currently selected base language.

Click Next. License Manager displays the selections. If they are final, click Submit.

4. Install translated software.

To complete the licensing process, you must install the appropriate translated software. See the *Oracle Applications NLS Release Notes* for instructions.

Selecting a New Base language

Business Requirement

How do I change my base language?

Discussion

Oracle Applications products are supported in numerous languages. You can choose any language registered in your system as the base language for your transactions. Use the OAM License Manager to designate one of the registered languages as the base language.

Action

Follow the instructions in Registering Products in this chapter to access the License Manager Home page. Then, complete the following steps:

1. Access the Languages page.

From the License Manager home page, click Languages under the License heading. The License Languages page appears. It displays the list of languages and indicates your current database character set.
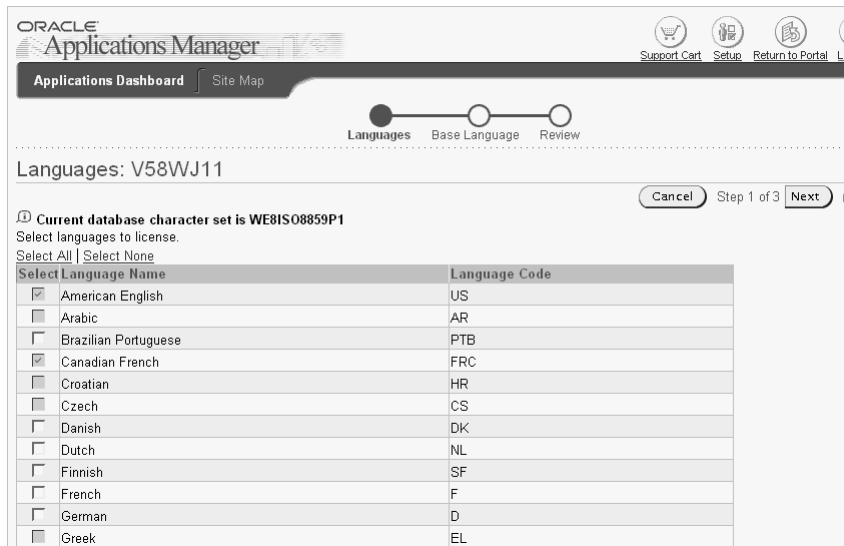
Languages that are already registered are checked and greyed. Languages that are greyed without a check are not compatible with your current character set. You must change the character set before you can select one of these languages

2. Select a base language.

Click Next. License Manager displays the currently selected base language and list of languages that you can choose as the base language.

Choose a language from the list under Select New Base Language. For example, click Canadian French. Click Next to continue.

3. Review and confirm changes.

License Manager displays the new base language.

Verify the information on the Review page. Click Submit to save the changes. License Manager displays a confirmation message. Click OK to confirm the change and return to the License Manager Home page.

Adding New Off-cycle Products

Business Requirement

I want to add a product that was released after the last maintenance pack.

Discussion

Products that are released in between maintenance releases are sometimes referred to as *off-cycle* products. Since these new products do not appear in License Manager, you must add them to your product list by using AD Splicer. This utility "splices" the product into the list of existing products that are "known" to your system. This process makes the product available, so that you can register it as active, and thus, make it available to the AD maintenance utilities, such as AutoPatch.

Once you splice the product, you use AutoPatch to install all product-related files.

> **Additional Information:** See AD Splicer in *Oracle Applications Maintenance Utilities* for more information.

Action

Perform the following steps:

1. Download the initial product patch from Oracle*MetaLink*.

   This patch contains information about the new product, AD Splicer control files required to add the product, and the associated product files.

2. Review the readme file.

   Unzip the patch in the patch top directory. The patch readme file contains information on how to install the product. It may include manual steps to perform as part of this process.

3. Apply prerequisite patches (if any).

   Follow the instructions about prerequisite patches in the patch readme file.

4. Create tablespaces (conditional).

   If you initially installed your system with Rapid Install 11.5.10 or later, omit this step.

   If your system was upgraded to Release 11.5.10 from a previous version of Release 11i, you may have chosen to continue using the OFA tablespace model. If so, create two tablespaces for each product, one for the product tables and another for the product indexes.

   > **Additional Information:** See Tablespace Management in *Oracle Applications Concepts*.

5. Edit the product configuration file (conditional).

   If you use the new consolidated tablespace model, AD Splicer ignores the main_tspace, index_tspace, and default_tspace parameters. Therefore, it is not necessary to edit the product configuration file (newprods.txt).

   If you use the OFA tablespace model, you must edit the file. Note that the *APPL_TOP* entry for base_product_top points to the location defined by the APPL_TOP environment variable. Edit the last four parameters according to the tablespace names used to create the product tablespaces. For example:

   ```
   product=zsa
   base_product_top=*APPL_TOP*
   oracle_schema=zsa
   sizing_factor=100
   main_tspace=ZSAD
   index_tspace=ZSAX
   temp_tspace=TEMP
   default_tspace=ZSAD
   ```

   > **Additional Information:** See AD Splicer in *Oracle Applications Maintenance Utilities* for more information about this file.

6. Copy AD Splicer control files and product configuration file.

   Copy <prod>prod.txt and <prod>terr.txt files and newprods.txt to APPL_TOP/admin.

   > **Note:** If a newprods.txt already exists from a previous AD Splicer session, rename the existing file before copying the new newprods.txt file.

7. Add the off-cycle product to the list of products.

   Log on as *applmgr*, set the environment, and run AD Splicer. It modifies the APPL_TOP and database, then performs the same registration function as OAM License Manager.

   UNIX:

   ```
   $ cd $APPL_TOP/admin
   $ adsplice
   ```

   Windows:

   ```
   C:\> cd %APPL_TOP%\admin
   C:\> adsplice
   ```

Run AD Splicer for each APPL_TOP and database combination so that the Applications utilities recognize the off-cycle products as active and valid.

8. Run the AD Configuration report (adutconf.sql). Review the list of registered products to verify that the product was spliced properly into the database.

> **Additional Information:** See AD Configuration Report in *Oracle Applications Maintenance Utilities*.

9. Log out and log back in so that the new environment file (UNIX) or environment subkey in the registry (Windows) is used to set up the environment.

> **Additional Information:** See Setting the Environment in *Oracle Applications Maintenance Utilities*.

10. Verify that <PROD>_TOP registry and environment variables are set for the newly spliced off-cycle products.

11. Run AutoPatch to apply any product-specific patches for the new product.

The patch readme file lists the driver files that you need to run.

> **Additional Information:** See Interactive Patching in Chapter 3.

Adding Database Functionality

After the initial installation, you can convert the database to use Multi-Org architecture or Multiple Reporting Currencies (MRC).

Converting to Multi-Org

Business Requirement

I want to convert my database to use multiple organizations.

Discussion

To convert a standard product group to a Multi-Org product group, you must create a default operating unit that is defined at the site level and run AD Administration to perform the conversion.

> **Additional Information:** See *Multiple Organizations in Oracle Applications*. See also Maintain Applications Database Entities Tasks in *Oracle Applications Maintenance Utilities*.

Action

Complete the following steps:

1. Define operating unit and set profile option.

Define at least one operating unit and set the site-level AOL profile option MO:Operating Unit to use this unit. This setting tells AD Administration what operating unit it should use when converting your existing data. This site-level profile option must remain set at all times.

> **Caution:** To avoid the possibility of data corruption, you must shut down all concurrent managers and ensure all users are logged off the system prior to and during this step.

2. Start AD Administration task.

   Type *adadmin* at the command line. Then, from the main menu, choose the Maintain Applications Database Entities menu.

   > **Additional Information:** See AD Administration in the *Oracle Applications Maintenance Utilities*.

3. Convert to Multi-Org.

   Run the Convert to Multi-Org task to perform the conversion to Multiple Organization architecture.

   > **Note:** The conversion may take a few minutes for a newly implemented installation database, or much longer for an existing production database with a large amount of data.

Converting to Multiple Reporting Currencies (MRC)

Business Requirement
I want to begin to use multiple currencies in my system.

Discussion
If you have not previously installed the MRC functionality needed to use more than one currency for your transactions and reports, you can run AD Administration to convert your database to use the Multiple Reporting Currency feature.

> **Additional Information:** See *Multiple Reporting Currencies in Oracle Applications*. See also Maintain [or Convert to] Multiple Reporting Currencies in *Oracle Applications Maintenance Utilities*.

Action
Complete the following steps:

1. Set up your environment and database.

   Perform the steps in the Set Up Your Environment and Database section in *Multiple Reporting Currencies in Oracle Applications*.

   > **Note:** Shut down the concurrent managers before converting to or maintaining MRC.

2. Start AD Administration task.

   Type *adadmin* at the command line. Then, from the main menu, choose the Maintain Applications Database Entities menu.

> **Additional Information:** See AD Administration in the *Oracle Applications Maintenance Utilities*.

3. Convert to Multiple Reporting Currencies.

   Run the Convert to Multiple Reporting Currencies task to perform the conversion to Multiple Reporting Currencies architecture.

   > **Additional Information:** See Maintain [or Convert to] Multiple Reporting Currencies in the *Oracle Applications Maintenance Utilities*.

4. Configure Multiple Reporting Currencies.

   Perform the steps in the Setting Up MRC section in *Multiple Reporting Currencies in Oracle Applications*.

2

Maintaining Your System

This chapter contains general procedures for proper maintenance of the Oracle Applications files and database. It includes the following sections:

- Managing Files
- Maintaining the Database
- Performing Maintenance Tasks Non-interactively
- Distributing Processing Tasks
- Managing Server Processes

Managing Files

This section contains information about maintenance tasks associated with Oracle Applications files.

Generating Product Files

Business Requirement

How do I generate missing product files?

Discussion

Every Oracle Applications product contains generated files, such as forms, reports, graphics, message, and JAR (Java archive) files. Run AD Administration when you suspect generated files are missing. For example, if users are not able to use a certain General Ledger form, regenerating the form file may resolve the issue. You may also need to generate files after you license additional products.

Note: You do not have to shut down your system to generate files. However, users that access the files being generated (for example, for Human Resources forms) must log off.

Action

Complete the following steps:

1. Determine the file types that require generation.

2. Start AD Administration.

   Set the environment and type *adadmin* on the command line.

> **Additional Information:** See Setting the Environment in *Oracle Applications Maintenance Utilities*.

3. From the AD Administration Main menu, go to the Generate Applications Files menu. Select the task for the type of files you want to generate.

   - When you choose one of the options for generating forms files, reports files or graphics files, you can select an individual file, a set of files, or all files of the selected type.

   - The "Generate product JAR files" option allows you to generate all JAR files for all products, or only JAR files that are out of date.

   - The "Generate message files" option generates all message files for all products.

     > **Additional Information:** See Generating Applications Files Tasks in *Oracle Applications Maintenance Utilities*.

4. Repeat the generation task on each APPL_TOP that contains the files (if the system contains multiple APPL_TOPs).

5. Review the AD Administration log file for warnings or errors.

Maintaining Snapshot Information

Business Requirement

What is a snapshot, and how do I update it?

Discussion

Both Patch Wizard and AutoPatch use information contained in a "snapshot" — a view of your system at a specific point in time — to determine information needed for patching. Patch Wizard uses a *global* snapshot to determine which patches have already been applied. AutoPatch uses an *APPL_TOP snapshot* to determine if prerequisite patches have been applied to a particular APPL_TOP. Both snapshots are current views — they are created once, and then updated (when appropriate) to maintain a consistent view.

> **Additional Information:** See Maintain Snapshot Information in *Oracle Applications Maintenance Utilities*.

During a new installation, Rapid Install automatically creates a current snapshot as a baseline. Then, each time you run AutoPatch, it automatically creates a new (updated) snapshot so that the information is current as of the application of the patch.

However, after a system upgrade, you must update the current snapshot by running an AD Administration task. Perform this task along with the other finishing tasks as documented in *Upgrading Oracle Applications*, Chapter 7.

> **Note:** You can update snapshot information using the AD Administration task any time you think it is necessary. However, the process can be long-running.

Action

To update a current view snapshot, follow these steps:

1. Start AD Administration.

    Set the environment and type *adadmin* on the command line.

    > **Additional Information:** See Setting the Environment in *Oracle Applications Maintenance Utilities*.

2. Access the Maintain Snapshot Information menu.

    From the AD Administration Main menu, go to the Maintain Applications Files menu. Select the "Maintain snapshot information" task.

3. Update snapshot.

    From the Maintain Snapshot Information menu, select "Update current view snapshot." When you update the APPL_TOP current view, the global current view snapshot is updated at the same time.

4. Repeat this step for each APPL_TOP in your system.

Relinking Product Executables

Business Requirement

How do I relink product executables?

Discussion

Relinking executable programs with the Oracle server product libraries keeps them functioning properly. When you need to relink programs, run the AD Administration "Relink Applications Programs" task.

> **Additional Information:** See Relinking Applications Programs in *Oracle Applications Maintenance Utilities*.

Action

Perform the following steps:

1. Start AD Administration.

    Set the environment and type *adadmin* on the command line.

    > **Additional Information:** See Setting the Environment in *Oracle Applications Maintenance Utilities*.

2. Shut down servers.

    When relinking files on a concurrent processing server, shut down the concurrent managers. When relinking files on a forms server, shut down the forms server.

    > **Additional Information:** See Stopping or Starting Application Tier Services in this chapter.

3. Relink programs.

From the AD Administration Main menu, go to the Maintain Applications Files menu. Then, choose the "Relink Applications programs" task. For each product, choose whether to link all executables or only specific ones.

Relinking AD Executables

Business Requirement

How do I relink AD executables?

Discussion

You cannot use AD Administration to relink AD executables. Instead, you run AD Relink. With this command line utility, you can relink several AD utilities with a single command.

AD Relink requires the *force=* parameter. There is no default for this parameter. You must specify either "n" to relink the executable program only if the dependent libraries or object files are more recent than the current executable program, or "y" to relink regardless of the status of the libraries or object files.

An optional command line argument is *backup_mode*. Use it to indicate whether you want to back up executables. There are three values for *backup_mode*.

Value	Result
backup_mode=none	Do not back up any executables
backup_mode=all	Back up all executables
backup_mode=file	Back up files according to instructions in adlinkbk.txt (the default)

> **Additional Information:** See AD Relink in *Oracle Applications Maintenance Utilities*.

Action

Perform the following steps:

1. Log on as applmgr and set the environment.

   > **Additional Information:** See Setting the Environment in *Oracle Applications Maintenance Utilities*.

   Windows users must run %<APPL_TOP>%\relinkenv.cmd, using either Windows Explorer or the Run command from the Start menu. In the command window that results, change directory to %APPL_TOP% and run apps.sh to set up all required environment variables. (Note there is a space between the dots in this command.)

   ```
   C:\> . ./apps.sh
   ```

2. Relink files.

   Run AD Relink with this command:

   UNIX:

   ```
   $ adrelink.sh force={y | n} [<optional arguments>] <ad program name>
   ```

   Windows:

Change directory to %APPL_TOP%\bin and relink the desired file using the following syntax:

```
C:\> sh adrelink.sh force={y | n} [<optional arguments>] <ad program name>
```

If you want to relink several AD utilities, list the programs on the command line, separating each with a space and enclosing it in quotations. For example, to relink both AD Controller (adctrl) and AD Administration (adadmin), type:

UNIX:

```
$ adrelink.sh force=y "ad adctrl" "ad adadmin"
```

Windows:

```
C:\> sh adrelink.sh force=y "ad adctrl.exe" "ad adadmin.exe"
```

To create a backup file (for all executables), use the following syntax:

UNIX:

```
$ adrelink.sh force=y backup_mode=all
```

Compressing, Archiving, and Deleting Files

Business Requirement

I am running short of disk space. Which files can be safely compressed, archived, or deleted?

Discussion

There are several types of files that can be compressed, archived, or deleted: log and output files, upgrade files, and AutoPatch backup files. However, Oracle recommends this action only if there is no other way to increase available disk space.

> **Caution:**   We strongly recommend creating a backup before you delete any files and keeping the backup readily available in case you need to restore files.

Action

To complete these tasks, use the procedures and commands specific to your operating system.

- Log and output files.

    You can compress, archive, or delete log and output files created by AD utilities. They are located in the following directories, where <SID> is the name of the database instance for the current Applications system: $APPL_TOP/admin/<SID>/log and $APPL_TOP/admin/<SID>/out (UNIX) or %APPL_TOP%\ admin\<SID>\log and %APPL_TOP%\admin\<SID>\out (Windows).

    > **Caution:**   Log files may contain passwords. Back up these files to a secure location. *Do not* delete the directories.

- Upgrade files

After you complete and verify an upgrade, you can compress, archive, or delete the upgrade files located in $APPL_TOP/admin/preupg (UNIX) or in %APPL_TOP%\admin\preupg (Windows).

> **Caution:** Do *not* remove any files under <PROD>_TOP/admin. They are used by AD utilities such as AutoPatch and AD Administration.

■ AutoPatch backup files

After you run AutoPatch, you can compress, archive, or delete old files that have been backed up in the patch top subdirectory.

> **Caution:** Verify that the patch was applied successfully and the patched functionalities are fully tested before you delete backup files.

Maintaining the Database

This section contains information you can use to maintain your database and effectively manage system resources.

Using System Resources Efficiently

Business Requirement
How do I keep cost-based optimization (CBO) statistics up to date?

Discussion
Oracle Applications Release 11*i* processes data using cost-based optimization (CBO). This means it dynamically determines the most efficient access paths and join methods for executing SQL commands and queries by taking into account schema statistics such as size of each table and the selectivity of each query condition. By analyzing the "cost" of using each resource, you can keep your system tuned for optimum performance.

In order to keep cost statistics up to date, run the Gather Schema Statistics concurrent program. While each system may be different, it is a good idea to gather the statistics after you have accumulated a significant amount of transaction data and/or as a part of your regular system maintenance (at least once a month).

> **Note:** Based on usage, identify the frequency for gathering *all* statistics, and the frequency that works best for gathering statistics only for specific products.

Action
Complete the following steps:

1. Log in to Oracle Applications with the System Administrator responsibility.

2. Navigate to the Submit Request window (Request > Run).

3. Submit the Gather Schema Statistics program.

   Set the schema name to ALL to gather statistics for all Oracle Applications schemas (having an entry in the FND_PRODUCT_INSTALLATIONS table). In

addition to gathering index and table-level statistics, the procedure also gathers column-level histogram statistics for all columns listed in the FND_HISTOGRAM_ COLS table.

> **Additional Information:** See Cost-Based Optimization in Oracle Applications in the *Oracle Applications System Administrator's Guide - Configuration*.

Validating the APPS Schema

Business Requirement
How do I verify the integrity of my APPS schema?

Discussion
AD Administration can run a SQL script (advrfapp.sql) against the APPS schema that checks for certain conditions that are undesirable, but will not produce fatal problems. The Validate APPS Schema task executes this script.

You can run this task at any time, but it is most effective if run:

- Immediately after an upgrade

- Before converting to Multi-Org

- After performing an export/import (migration)

- As a part of custom development in the APPS schema

Action
Complete the following steps:

1. Start AD Administration.

   Set the environment and type *adadmin* on the command line.

   > **Additional Information:** See Setting the Environment in *Oracle Applications Maintenance Utilities*.

2. Validate APPS schema.

   Select the "Validate APPS schema" task from the Maintain Applications Database Entities menu. Review the output file (<APPS schema name>.lst) for invalid database objects. It is located in $APPL_TOP/admin/<SID>/out (UNIX) or in %APPL_TOP%\admin\<SID>\out (Windows)

   > **Additional Information:** See Validate APPS Schema in *Oracle Applications Maintenance Utilities*.

   You can also run this task with SQL*Plus:

   UNIX:

   ```
   $ cd $APPL_TOP/admin/<SID>/out
   $ sqlplus <SYSTEM username>/<SYSTEM password> @$AD_TOP/admin/sql/advrfapp.sql \
   <APPS schema name> <AOL schema name>
   ```

   Windows:

Change directory to %APPL_TOP%\bin and relink the desired file using the following syntax:

```
C:\> cd %APPL_TOP%\admin\<SID>\out
C:\> sqlplus <SYSTEM username>/<SYSTEM password> \
@%AD_TOP%\admin\sql\advrfapp.sql <APPS schema name> <AOL schema name>
```

3. Resolve issues.

The <APPS schema name>.lst file is divided into three sections:

- Problems you MUST fix that are not specific to this APPS schema

- Problems you MUST fix that are specific to the APPS schema (<APPS schema name>)

- Issues you may want to address that are specific to the APPS schema (<APPs schema name>)

Each section of the file contains instructions for resolving the issues that are listed.

Creating Grants and Synonyms

Business Requirement
How do I recreate grants and synonyms in the APPS schema?

Discussion
In order to maintain database objects, you should check the APPS schema for missing grants and synonyms. Using the AD Administration menu, you can run tasks to validate the APPS schema and then recreate any missing grants and synonyms.

Action
Complete the following steps:

1. Start AD Administration.

Set the environment and type *adadmin* on the command line.

> **Additional Information:** See Setting the Environment in *Oracle Applications Maintenance Utilities*.

2. Recreate grants and synonyms.

From the Main AD Administration menu, go to the Maintain Applications Database Entities menu. Select the "Recreate grants and synonyms for APPS schema" task.

Compiling Invalid Objects

Business Requirement
When should I compile invalid objects?

Discussion
The Oracle database automatically compiles invalid database objects the first time an object is used. This action can take some time, so in order to plan for the required downtime, you may want to compile objects before the first use — at a time when you know the system usage is low.

You compile invalid objects with AD Administration. This task is most effective under the following circumstances:

- After custom packages are moved to the APPS schema and need to be compiled

- After applying patches that alter packages in the APPS schema

- After validating the APPS schema and identifying invalid objects

Action

Complete the following steps:

1. Start AD Administration.

Set the environment and type *adadmin* on the command line.

> **Additional Information:** See Setting the Environment in *Oracle Applications Maintenance Utilities*.

2. Compile Applications schema.

From the Main AD Administration menu, go to the Compile/Reload Database Entities menu. Choose the "Compile APPS schema" task.

Pre-allocating Space for Packages and Functions

Business Requirement

How do I ensure that there is enough space in the System Global Area (SGA) for packages and functions?

Discussion

If SGA space is fragmented, there may not be enough for certain packages or functions. You can pre-allocate space in the SGA shared pool by "pinning" packages, functions, and sequences. The scripts described in this procedure work well as templates and can be used to create your own custom pinning scripts.

> **Attention:** Run these scripts when packages or sequences are patched (and the patch readme file tells you to do so), or any time after objects are invalidated, either because of patching or customizations.

The ADXGNPIN.sql script pins packages and functions in the APPS schema, while ADXGNPNS.sql pins sequences in the base product schemas. Both scripts take the name of a schema as an argument, or % for all schemas. ADXGNPIN.sql generates and invokes another SQL file, ADXSPPIN.sql. ADXGNPNS.sql generates and runs ADXSPPNS.sql.

Action

Complete the following steps:

1. Create the appsutil/admin directory in the ORACLE_HOME of the database server, if it doesn't already exist.

2. Copy ADXGNPIN.sql and ADXGNPNS.sql from the AD_TOP/sql directory of the administration server to this directory.

3. Set the environment to point to the ORACLE_HOME for the database server. Access the database server directly.

4. Go to the directory created in Step 1 and run ADXGNPIN.sql and ADXGNPNS.sql from SQL*Plus:

```
sqlplus <SYS username>/<SYS password> @ADXGNPIN.sql <APPS schema name>

sqlplus <SYS username>/<SYS password> @ADXGNPNS.sql <Base product schema name>
```

Listing Objects in the Shared Pool

Business Requirement

I would like to see a list of objects stored in the SGA shared pool.

Discussion

You can run the ADXCKPIN.sql script to query for objects stored in the SGA shared pool. It shows the objects known to the SGA and the size that they consume. The output file is ADXCKPIN.lst.

Action

Run the following script:

UNIX:

```
$ cd $APPL_TOP/admin/<SID>/out
$ sqlplus <SYSTEM username>/<SYSTEM password> @$AD_TOP/sql/ADXCKPIN.sql
```

Windows:

```
C:\> cd %APPL_TOP%\admin\<SID>\out
C:\> sqlplus <SYSTEM username>/<SYSTEM password> @%AD_TOP%\sql\ADXCKPIN.sql
```

Performing Maintenance Tasks Non-interactively

Unless otherwise noted, maintenance tasks described in this book are performed *interactively* — they require user intervention, primarily in the form of responding to prompts. However, you can schedule certain AD Administration and AD Controller tasks to run with little or no user intervention by running these utilities *non-interactively*. Instead of responding to prompts each time you run the task, you specify a defaults file, which contains the information necessary to complete the task without user intervention — there is no need to monitor the process in order to respond to prompts.

Scheduling Non-interactive Maintenance

Business Requirement

How do I schedule and run maintenance tasks non-interactively.

Discussion

To set up a non-interactive task, you first create and save a *defaults file* by running the selected task interactively from the AD Administration menu and adding the *defaultsfile=<defaults file name>* argument. This causes the information you provide at

the prompts, and other information pertinent to that task, to be captured in a file and stored in APPL_TOP/admin/<SID>/<path>.

> **Note:** AutoConfig automatically creates a defaults file (adalldefaults.txt) each time it runs. This file can be used as a template to create a customized defaults file. However, we recommend that you create the defaults file as described in this procedure.

Once the defaults file is created, you start the utility from the command line, and specify the name of the defaults file, a log file name, and the number of parallel workers.

The same defaults file can be used to run different AD Administration commands — a single file can contain all your choices for the different menu options. In order to choose which task the defaults file will run, you also add *menu_option*= <menu choice> to the utility start command. This overrides any menu-specific key stroke information stored in the defaults file initially, and allows you to use the defaults file for any of the AD Administration menu items. It also ensures that the menu option you intended for the defaults file is always valid, even if the menu items are renumbered or relocated in subsequent releases

> **Additional Information:** See Specifying a Menu Option in the Defaults File in Chapter 4 and Running AD Controller Non-interactively in Chapter 1 of *Oracle Applications Maintenance Utilities* for a list of the *menu_option*= values.

Action

Complete the following steps:

1. Create the defaults file.

   Start AD Administration, using the *defaultsfile*= argument, and specifying the file name and the path to the defaults file. This creates a defaults file for the current environment.

   UNIX:

   The file must be under the $APPL_TOP/admin/<SID> directory, where <SID> is the database name (ORACLE_SID/TWO_TASK). For example:

   ```
   $ adadmin defaultsfile=$APPL_TOP/admin/testdb1/adadmindef.txt
   ```

   Windows:

   The file must be under the %APPL_TOP%\admin\<SID> directory, where <SID> is the database name (LOCAL). For example:

   ```
   C:\> adadmin defaultsfile=%APPL_TOP%\admin\testdb1\adadmindef.txt
   ```

2. Interactively run the maintenance task to populate the defaults file.

   From the AD Administration Main menu, go the appropriate menu and select a maintenance task. As the task runs, respond to all the prompts. You must create a separate defaults file for each task you want to run non-interactively.

   > **Note:** If you omit any information, AD Administration may not be able to complete the session when you run it non-interactively.

3. Verify that the defaults file exists.

4. Run the AD Administration task non-interactively.

   On the command line, start the utility and specify non-interactive processing and the defaults file name. In addition, supply the name of the log file, the number of parallel workers, and the name of the menu choice.

   For example, to run the "Check DUAL table" task non-interactively, using a defaults file named adadmindef.txt, a log file named adadmin_noninteractive.log, with 5 workers, you would type:

   UNIX:

   ```
   $ adadmin interactive=n defaultsfile=$APPL_TOP/admin/testdb1/adadmindef.txt \
     logfile=adadmin_noninteractive.log workers=5 menu_option=CHECK_DUAL
   ```

   Windows:

   ```
   C:\> adadmin defaultsfile=%APPL_TOP%\admin\testdb1\adadmindef.txt \
       logfile=adadmin_noninteractive.log workers=5 interactive=n \
       menu_option=CHECK_DUAL
   ```

Restarting a Failed Session

Business Requirement

My non-interactive AD Administration session failed. How do I restart it?

Discussion

To restart a failed non-interactive session, you run AD Administration using the *restart=yes* parameter.

Action

Complete the following steps:

1. Determine the reason the session failed and fix the issue.

2. Run AD Administration from the command line.

   Use the same parameters that you used to start the original non-interactive session, plus the *restart=yes* parameter. For example:

   UNIX:

   ```
   $ adadmin defaultsfile=$APPL_TOP/admin/testdb1/adadmindef.txt \
     logfile=adadmin_noninteractive.log workers=5 interactive=n restart=y \
     menu_option=CHECK_DUAL
   ```

   Windows:

   ```
   C:\> adadmin defaultsfile=%APPL_TOP%\admin\testdb1\adadmindef.txt \
       logfile=adadmin_noninteractive.log workers=5 interactive=n \
       restart=y menu_option=CHECK_DUAL
   ```

3. AD Administration runs the task. It does not prompt you to continue the previous (failed) session.

Distributing Processing Tasks

Business Requirement

How can I run processes concurrently on my multi-node system?

Discussion

Distributed AD is a parallel processing feature that can further reduce task time by utilizing all available resources in systems that have a shared application tier file system. With Distributed AD, AD Administration and AutoPatch run on one node and direct workers running both on that node and on other nodes in the system.

> **Note:** You must have a shared application tier file system to use Distributed AD. See Creating a Shared Application Tier File System for a New Installation in Chapter 1 of this book.

Action

To take advantage of this processing operation, you run AD Administration or AutoPatch on the primary node with the following command line options:

```
workers=<total number of workers> localworkers=<number of workers on primary node>
```

For example, to run an AutoPatch session with a total of eight workers and three workers on the primary node, use this command:

```
adpatch workers=8 localworkers=3
```

You then start an AD Controller session on each of the other nodes with the following command:

```
adctrl distributed=y
```

On each node, AD Controller prompts for the range workers to start. For example, to start workers 4 through 8 on a second node, you type "4-8" in response to the "Enter the worker range" prompt:

```
Enter the worker range: 4-8
```

> **Note:** Workers must be in contiguous groups. For example, you cannot start workers 4, 6, 8 on one node, and 5, 7, 9 on another.

This is an example of running a three-node session with a total of 12 workers. Run AutoPatch on the primary node, specifying 12 as the total number of workers with four of those workers (1–4) running on this node:

```
adpatch workers=12 localworkers=4
```

To run the next four workers (5–8) on the second node, start AD Controller on that node, and indicate which workers should run:

```
adctrl distributed=y
Enter the worker range: 5-8
```

To run the last four workers (9–12) on the third node, start AD Controller on that node and indicate the workers:

```
adctrl distributed=y
```

```
Enter the worker range: 9-12
```

Managing Server Processes

When running certain scripts or utilities, you may be directed to stop server processes manually. This section contains information about stopping and starting these processes.

> **Note:** Scripts in this section may contain system-specific information. If you change the Rapid Install defaults, you may need to edit the scripts before rerunning them.

Stopping or Starting Application Tier Services

Business Requirement

How do I stop (and start) services manually on the application tier?

Discussion

When Rapid Install sets up and configures the server processes, it stores a control script for each process in the COMMON_TOP/admin/scripts/<CONTEXT_NAME> directory, where <CONTEXT_NAME> is the name of the database instance.

> **Note:** The <CONTEXT_NAME> variable defaults to <SID>_<hostname>.

Certain maintenance procedures require that you stop one or more servers manually, and, after you complete the procedure, restart them. By running the appropriate script on the command line, along with a *stop* or *start* argument, you can stop (or start) a single server process, several processes, or all processes. The following table lists the scripts. The application tier logon is *applmgr*.

Server Process	UNIX Script	Windows Script
Forms Server Listener	adfrmctl.sh	adfrmctl.cmd
Defines the Oracle Forms Cartridge parameters.		
Forms Metrics Server	adfmsctl.sh	adfmsctl.cmd
Keeps track of all forms servers in a given pool of forms servers and directs each form execution request to the least loaded server that is able to service requests in the given pool.		
Forms Metrics Client	adfmcctl.sh	adfmcctl.cmd
Sends load information, such as the number of forms processes that are currently running on that machine, to the Metrics Server. The Metrics Client runs on each machine with a forms server.		
Report Review Agent	adalnctl.sh	adalnctl.cmd
Used to view concurrent processing files online. This utility uses Net Services to communicate with the forms server. Rapid Install names the listener APPS_<CONTEXT_NAME>, configures network files, and verifies file permissions.		

Server Process	UNIX Script	Windows Script
Reports Server	adrepctl.sh	adrepctl.cmd
Processes requests to execute a report and returns the output of the report. The script sets the DISPLAY variable to the default value defined when Rapid Install was run.		
Note: The listener should always be the APPS listener name or the script may terminate another listener.		
Concurrent Managers	adcmctl.sh	adcmctl.cmd
Read requests for programs and start the appropriate concurrent programs. See Concurrent Managers in the *Oracle Applications System Administrators Guide - Configuration*.		
Note: These scripts require the APPS username and password.		
HTTP (Web) Server	adapcctl.sh	adapcctl.cmd
Processes URL requests to execute forms-based Applications and Self-Service Web Applications.		
HTTP (Web) Server - Restricted Mode	adaprstctl.sh	adaprstctl.cmd
Allows access to limited OAM functionality to track the progress of a patch session when the Oracle Applications system is in maintenance mode.		
Discoverer Server	addisctl.sh	Start and stop from the Windows Control Panel.
Complements the Reports Server by enabling ad hoc queries and analysis of the resulting output.		
Fulfillment Server	jtffmctl.sh	jtffmctl.cmd
Java process that services one-to-one fulfillment requests for distributing collateral to customers for Marketing Online and other E-Business Suite products.		
Start all server processes	adstrtal.sh	adstrtal.cmd
Run this script to start all application tier server processes.		
Note: These scripts require the APPS username and password.		
Stop all server processes	adstpall.sh	adstpall.cmd
Run this script to stop all application tier server processes.		
Note: These scripts require the APPS username and password.		

Action

Choose the procedure that fits your needs.

To stop/start a single server process:

On the command line, type the following:

UNIX:

```
<process script name> [stop | start]
```

For example, to stop the Reports Server process, type:

```
adrepctl.sh stop
```

Windows:

There are two ways to stop or start processes on Windows platforms: using the Windows server process script, or from the Services Control Panel. To use the script, type the following:

```
<process script name> [stop | start]
```

For example, to stop the Reports Server process, type:

```
adrepctl.cmd stop
```

To use the Services Control Panel:

1. Go to the Windows Control Panel (NT) or Administrative Tools (2000) and click Services.

2. Select a service from the Services window.

3. Click Start or Stop, as required.

To stop all server processes:

On the command line, type the following:

UNIX:

```
adstpall.sh <APPS username>/<APPS password>
```

Windows:

```
adstpall.cmd <APPS username>/<APPS password>
```

To start all server processes:

On the command line, type the following:

UNIX:

```
adstrtal.sh <APPS username>/<APPS password>
```

Windows:

```
adstrtal.cmd <APPS username>/<APPS password>
```

Stopping or Starting the Database or Database Tier Services

Business Requirement

How do I stop or start the Oracle Net Services listener manually?

Discussion

When Rapid Install sets up and configures the server processes during installation, it stores a script for the Net Services listener process in the database server 9.2.0 RDBMS ORACLE_HOME/appsutil/scripts/<CONTEXT_NAME> directory. You use this script to start or stop the Net Services listener process for the database.

Action

Complete these steps:

1. Log in as the oracle user on the database server.

2. Type the following command:

    UNIX:

```
$ addlnctl.sh [start|stop] <listener_name>
```

Windows:

```
C:\> addlnctl.cmd [start|stop] <listener_name>
```

For example, to start a listener for the PROD listener, type:

UNIX:

```
$ addlnctl.sh start PROD
```

Windows:

```
C:\> addlnctl.cmd start PROD
```

> **Additional Information:**   See the *Oracle Net Services Administrator's Guide*.

Business Requirement

How do I stop or start the Oracle database manually?

Discussion

When Rapid Install sets up and configures the server processes during installation, it stores a script for the database process in the database server RDBMS ORACLE_HOME/appsutil/scripts/<CONTEXT_NAME> directory. You use this script to start or stop the database on your database tier.

Action

Perform the following steps:

1. Log in as the oracle user on the database server.

2. Type the following command:

   UNIX:

   ```
   $ addbctl.sh [start|stop] {immediate|abort|normal}
   ```

   Windows:

   ```
   C:\> addbctl.cmd [start|stop] {immediate|abort|normal}
   ```
   For example, to stop the database using the normal option on a Unix system, you would type:

   ```
   $ addbctl.sh stop normal
   ```

3

Patching

This chapter contains information about applying patches to an Oracle Applications system. It includes the following sections:

- Interactive Patching

- Applying Patches to a Multi-node System

- Performing Patching Tasks Non-interactively

- Keeping Patches Current

- Reducing Downtime

- Patching NLS Systems

- Backing Out Patches

Interactive Patching

Patches and updates to the Oracle Applications file system or database are applied using AutoPatch, which identifies the servers set up during your installation and performs the actions required by the patch on each APPL_TOP. In a shared application tier file system, changes made during patching sessions on one node are immediately available on all nodes.

You can apply a patch interactively or non-interactively. *Interactive* patching — the "normal" patching method — means that you supply all the information that AutoPatch needs by responding to a series of prompts. You can also apply a patch *non-interactively* to avoid having to respond to some of the AutoPatch prompts and to accommodate special types of patches.

> **Additional Information:** See AutoPatch in *Oracle Applications Maintenance Utilitie*s. See also Performing Patching Tasks Non-interactively in this chapter.

To ensure optimal performance and reduce downtime during patching sessions, AutoPatch now requires that maintenance mode (new in 11.5.10) be enabled when you apply a patch. Enabling the maintenance mode feature shuts down the Workflow Business Events System and sets up function security so that Oracle Applications functions are unavailable to users. This provides a clear separation between normal runtime operation and system downtime for patching.

Once the patching session is complete, maintenance mode can be disabled, allowing users full access to the newly updated system.

> **Caution:** When maintenance mode is disabled, you can run AutoPatch by using *options=hotpatch* on the command line, if necessary. However, doing so can cause a significant degradation of performance.

> **Additional Information:** See Preparing your System for Patching in *Oracle Applications Maintenance Utilities*.

Applying a Patch Interactively

Business Requirement
How do I apply a patch?

Discussion
Once you have determined that you need to apply a patch, you download the patch and use AutoPatch to apply it to your system. Some patches contain multiple patch driver files that split the actions of the patch. The *copy* (c) driver changes Oracle Applications files, the *database* (d) driver changes Oracle Applications database objects, and the *generate* (g) driver generates forms, reports, graphics, or message files.

Some patches can combine the actions of the driver files into a single driver called a *unified* driver (u). A unified driver performs all the functions of the copy, database, and generate drivers. You apply the unified driver to all APPL_TOPS, and AutoPatch sorts out which actions are required for the current APPL_TOP.

Patches may require prerequisite patches and/or manual steps. The patch readme file describes all the required steps. You should also be familiar with the information in the Patching chapter in *Oracle Applications Maintenance Utilities* before you apply a patch to your system.

> **Note:** Some patch readme files may specify pre-install mode. If so, carefully follow the instructions in the readme. See AutoPatch Modes in *Oracle Applications Maintenance Utilities* for information.

> **Caution:** It is very important that you back up the file system and database before you apply large patches (like minipacks, family packs, or maintenance packs).

Action
This procedure describes the basic (sometimes referred to as "normal") steps for applying a patch. Subsequent procedures describe command line options that change the basic behavior of AutoPatch.

1. Log in as applmgr and set the environment.

    If you are running on a Windows platform, ensure that all necessary tools are installed properly. In addition, all %JAVA_TOP% and %JAVA_TOP%\loadjava.zip files are included in the set CLASSPATH statement of %APPL_TOP%\admin\adovars.cmd.

> **Additional Information:** See Setting the Environment in *Oracle Applications Maintenance Utilities*. See also Release Maintenance Tools in *Oracle Applications Installation Update Notes*.

2. Unzip the patch in a designated patch top directory.

   Create a patch top directory, if it doesn't already exist. Download the patch into that directory and unzip it. Do not use the patch subdirectory under the <PROD>_TOP directories as your patch top directory. See Patch Structure in *Oracle Applications Maintenance Utilities* for information about patch directories.

3. Complete prerequisite or manual steps.

   Review the readme file (README.txt or README.html), located in the directory created by the patch unzipping process. It contains instructions for applying the patch, including prerequisite patches and/or manual steps.

4. Shut down services.

   When applying a patch that updates or relinks files, shut down services as follows:

If the files are on...	...shut down these services
a node that contains the concurrent processing server	concurrent managers
a node that contains a Web server	Web server listeners
a node that contains a forms server	forms server listeners

> **Caution:** You must complete all tasks associated with applying a patch before you access Oracle Applications.

5. Enable Maintenance Mode.

   Use the Change Maintenance Mode menu of AD Administration to enable maintenance mode. See Change Maintenance Mode in *Oracle Applications Maintenance Utilities*.

6. Start AutoPatch.

   Use the *adpatch* command to start AutoPatch from the patch top directory (the directory where you unloaded the patch files). You can customize the way AutoPatch runs by adding arguments to the command line. See Command Line Arguments in *Oracle Applications Maintenance Utilities*.

7. Respond to the AutoPatch prompts.

   When you run AutoPatch interactively, it prompts you for information it needs to apply the patch. See Running AutoPatch Interactively in *Oracle Applications Maintenance Utilities* for more information.

8. Apply driver.

   When AutoPatch prompts for the driver name, specify the copy (c) driver. AutoPatch applies the copy driver, then exits. If the patch contains a unified (u) driver, specify that driver.

   If the patch does not contain a unified driver, you may need to apply the database driver or the generate driver. If so, start AutoPatch again. When the driver name prompt appears, enter the database (d) driver (if appropriate). Repeat this process as necessary to apply a generate (g) driver.

9. Review log files.

   Review the AutoPatch log file after the application of each driver file for warnings or errors. It is located in APPL_TOP/admin/<SID>/log (default name adpatch.log). In addition, some patch tasks may create separate log files in the same directory. If the patching process used multiple workers, each worker creates its own log file.

10. Review customizations.

    Customized files must be registered in the applcust.txt file in the APPL_TOP/admin directory. If AutoPatch displays a message indicating that previously registered, customized files will be replaced by the patch, review those files to determine if customizations need to be re-applied or merged.

11. Pre-allocate space for packages, functions, and sequences (optional).

    If AutoPatch has modified Oracle Applications database objects, you may want to run ADXGNPIN.sql and ADXGNPNS.sql to allocate space ("pin") for new packages and sequences in the Oracle System Global Area. These scripts are located in AD_TOP/sql.

    > **Additional Information:** See Pre-allocating Space for Packages and Functions in Chapter 2.

12. Disable Maintenance Mode.

    Use the Change Maintenance Mode menu of AD Administration to disable maintenance mode. See Change Maintenance Mode in *Oracle Applications Maintenance Utilities*.

13. Restart server processes.

    After verifying that the patch was applied successfully, start all server processes and allow users to access the system.

    > **Additional Information:** See Stopping or Starting Application Tier Services in Chapter 2.

14. Delete or archive AutoPatch backup files

    Once you have tested the patched system, you can delete the backup copies of files from the patch top directories to recover disk space, as necessary. We recommend archiving these files if you have space available.

    > **Additional Information:** See Compressing, Archiving, and Deleting Files in Chapter 2.

Applying Unified Drivers

Business Requirement

I received a patch that contains a unified driver, however, the instructions state that I run only the database portion of the patch.

Discussion

Certain procedures, such as patching with a staged APPL_TOP, may require you to apply only the database portion of a unified driver. In these cases, you use command line options to tell AutoPatch which portions of the patch to omit. *AutoPatch will apply all portions of the patch except the ones that you specifically omit on the command line.*

Action

Perform the following steps:

1. Follow the instructions in Steps 1 – 5 in the Applying a Patch Interactively section.

2. Type the *adpatch* command as indicated in Step 6, adding the following options on the command line: nocopyportion,nogenerateportion. The command line syntax should look like this:

   ```
   $ adpatch options=nocopyportion,nogenerateportion
   ```

   > **Additional Information:** See Command Line Arguments in the AutoPatch chapter of *Oracle Applications Maintenance Utilities*.

3. At the prompt for the driver name, specify the unified (u) driver. AutoPatch runs the driver, applying only the database portion of the patch.

4. Respond to the AutoPatch prompts. See the AutoPatch chapter in *Oracle Applications Maintenance Utilities* for more information.

5. Finish applying the patch as directed in Steps 9 – 14 in the Applying a Patch Interactively section.

Testing a Patch Before Applying It

Business Requirement

Can I test the effects of a patch on my system before I apply it?

Discussion

The best way to see how applying a patch will affect your system is to apply it first on a test system.

If you do not, or cannot, use a test system, you can apply the patch on your production system using the AutoPatch test mode (*apply=no*) to see all the actions AutoPatch will take if you apply it in interactive (or non-interactive) mode. In general, running AutoPatch in test mode lists each file it will copy, generate, relink, or execute, but it doesn't actually perform these actions.

In test mode, AutoPatch reads and validates the patch driver file, reads product file driver files, extracts object modules from product libraries (for version checking), performs version checking, and runs AutoConfig (in test mode). It does not, however, archive object modules to product libraries, run SQL or exec commands, update the applied patches database, or update the release version in the database.

> **Additional Information:** See AutoConfig Test Mode in *Oracle Applications Maintenance Utilities*.

To determine how a patch will effect the files in your system, use the Patch Impact Analysis Report in Patch Wizard.

> **Additional Information:** See Determining Patch Impact on System Files in this chapter.

Action

Complete the following steps:

1. Follow the steps in the Applying a Patch Interactively section of this chapter.

2. When directed to run AutoPatch, add the test mode argument to the command line:

```
adpatch apply=no
```

3. Complete steps 9 and 10 in the Applying a Patch Interactively section. You must also complete steps 12 and 13 if you shut down your servers and enabled maintenance mode before you applied the patch.

Enabling Password Validation

Business Requirement
How can I validate passwords before I apply a patch?

Discussion
In order to reduce the time it takes to apply a patch, AutoPatch (by default) does not validate passwords. If you need to enable password validation, you can do so by supplying the validate option (*options=validate*) on the command line when you run AutoPatch.

If you are applying multiple patches, we recommend you use AD Merge Patch to combine the updates (where compatible) so that you apply them in a single AutoPatch session. In this case, you would have to validate passwords only once.

> **Additional Information:** See Creating a Merged Patch in this chapter.

If you have several patches that cannot be merged, you can save time by turning on the validate option only for the application of the first patch, and then leaving it off for the subsequent patches.

Action
1. Follow the instructions in the Applying a Patch Interactively section of this chapter.

2. When directed to run AutoPatch, use the validate command. It should look like this:

```
adpatch options=validate
```

3. Complete the remaining steps in the Applying a Patch Interactively section.

Applying Emergency Patches

Business Requirement
Can I apply a patch without shutting down system services?

Discussion
If an emergency patch can be applied without shutting down services, the patch readme will explicitly say so. If the patch readme doesn't explicitly state this, you should assume that you need to shut down services and enable maintenance mode before applying the patch.

> **Note:** You can always apply documentation patches (help files) without shutting down servers.

Action

Complete the following steps:

1. Apply the patch on a test version of your production database. Be sure the test copy is recent so that it closely approximates your production system.

2. Run AutoPatch using *options=hotpatch* and apply the patch. You may not have to shut down the server processes.

> **Additional Information:** See AutoPatch Options in *Oracle Applications Maintenance Utilities*.

Applying Patches to a Multi-node System

In a multi-node system, servers are installed on more than one node. The core technology directories (admin, ad, au, and fnd) and all product directories are installed under the APPL_TOP on all nodes, except for any node that contains only a RDBMS. You can maintain the APPL_TOPs separately, or you can configure your system to share an APPL_TOP.

In a shared application tier file system, the APPL_TOP, COMMON_TOP, 8.0.6 Oracle home, and iAS Oracle home file systems are installed on a shared disk resource mounted to each node in the system. Any changes made to a shared file system are immediately available on all nodes.

> **Additional Information:** See Multi-node Systems in *Installing Oracle Applications*. See also Shared Application Tier File System in *Oracle Applications Concepts* and Patching the APPL_TOP in a Shared Application Tier File System in this chapter.

Patching Multiple APPL_TOPs

Business Requirement

How do I patch all the APPL_TOPs in my multi-node system? I have not implemented a shared application tier file system configuration.

Discussion

The configuration of Oracle Applications is multi-node if one or more servers is installed on a separate node (machine) or under a separate APPL_TOP (in a single-node system). In a multi-node system, run AutoPatch on each APPL_TOP to patch the necessary files.

In general, you:

- Run the copy driver (c<patchnum>.drv) on every node containing one or more of the files being replaced by the patch. If in doubt, run the copy driver on all APPL_TOPs.

- Run the database driver (d<patchnum>.drv) only once, and only from the APPL_TOP that implements the administration server.

- Run the generate driver (g<patchnum>.drv) on every APPL_TOP containing one or more of the files to be generated. If in doubt, apply the generate driver on all APPL_TOPs.

Action

Complete the following steps. The example assumes a system with two nodes, one with an administration server and a concurrent processing server, and the other with a forms server and a Web server.

1. Complete Steps 1 – 7 in the Applying a Patch Interactively section on page 3-2.

2. Apply the copy and database drivers to the APPL_TOP on node 1 (administration and concurrent processing).

3. Start the concurrent managers.

4. Apply the copy driver to the APPL_TOP on node 2 (forms and Web servers).

5. Apply the generate driver to the APPL_TOP on node 1.

6. Apply the generate driver to the APPL_TOP on node 2.

7. Disable Maintenance Mode.

   Use the Change Maintenance Mode menu of AD Administration to disable maintenance mode. See Change Maintenance Mode in *Oracle Applications Maintenance Utilities*.

8. Start services and restart the Web server, if necessary.

   > **Additional Information:** See Stopping or Starting Application Tier Services in Chapter 2.

   > **Note:** Do not run multiple sessions of AutoPatch on the same Applications system at the same time.

Running a Unified Driver on Multiple Nodes

Business Requirement

How do I run a unified driver patch on a multi-node system?

Discussion

Some patches combine the actions of the driver files into a single driver called a *unified* driver (u). A unified driver contains commands that perform all the functions of the copy, database, and generate drivers. You apply a unified driver to all APPL_TOPS, and AutoPatch sorts out which actions in the unified driver are required for the current APPL_TOP.

When applying updates on a multi-node system, the copy and generate portions of the driver must be applied on all application tier nodes. The database portion is applied only on the node that hosts the administration server.

Action

Apply the unified driver as follows:

1. Complete Steps 1 – 7 in the Applying a Patch Interactively section on page 3-2.

2. Apply the unified driver on the node where the administration server is located.

AutoPatch automatically runs all driver portions (copy, database, and generate).

3. Apply the unified driver on the node where the concurrent processing server is located.

   AutoPatch selectively runs only the copy and generate driver portions.

4. Start concurrent managers.

5. Apply the unified driver on the remaining nodes in the application tier.

   AutoPatch selectively runs only the copy and generate driver portions.

6. Disable Maintenance Mode.

   Use the Change Maintenance Mode menu of AD Administration to disable maintenance mode. See Change Maintenance Mode in *Oracle Applications Maintenance Utilities*.

7. Start other services and restart Web server, if necessary.

Patching the APPL_TOP in a Shared Application Tier File System

Business Requirement

How do I apply patches to a system with a shared application tier file system configuration?

Discussion

A traditional multi-node system requires the application tier file system on each node. In a shared application tier file system, the APPL_TOP, COMMON_TOP, 8.0.6 Oracle home, and iAS Oracle home file systems are installed on a shared disk resource mounted to each node in the system. These nodes can be used to provide standard application tier services, such as forms, Web, and concurrent processing. Any changes, including patching, made to a shared file system are immediately visible on all nodes.

Although it is possible to apply patches from any node, we recommend you choose one node as primary and apply all patches from this node. When you choose a primary node, AutoPatch and AutoConfig log files are consistently written to the same location.

You can further reduce patching downtime by employing more than one node when applying patches. See Distributing the Processing Tasks in this chapter.

Action

For the APPL_TOP of a shared application tier file system, apply the patch once — as outlined in the Applying a Patch Interactively section of this chapter.

Performing Patching Tasks Non-interactively

You can apply patches interactively or non-interactively. *Interactive* patching means that you supply basic information that AutoPatch needs by responding to a series of prompts. See Interactive Patching in this chapter for more information.

Applying a patch *non-interactively* substantially reduces the need for user intervention when AutoPatch processes patching tasks. You create a defaults file that contains much of the information you would have supplied at the AutoPatch prompts. Then, when you run AutoPatch, you specify the name of the defaults file, the location of the patch top directory, the name of a driver file, and other parameters on the command line.

> **Caution:** Back up the file system and the database before you apply large patches such as minipacks, family packs, or maintenance packs.

> **Additional Information:** See Patching in *Oracle Applications Maintenance Utilities*.

Applying a Patch Non-interactively

Business Requirement
How do I apply a patch non-interactively?

Discussion
Instead of responding to AutoPatch prompts each time you initiate a patching session, you store the responses once in a defaults file. Then, you specify the name of the defaults file when you run patches non-interactively. As it runs, AutoPatch uses the responses to complete the information for the associated prompts, and completes patch processing with little or no user intervention.

To set up a non-interactive patching session, you first create and save a *defaults file* by using the *defaultsfile=<defaults file name>* argument when you run AutoPatch. This causes the information you provide at the prompts, and other pertinent information, to be captured and saved.

> **Note:** AutoConfig automatically creates a defaults file (adalldefaults.txt) each time it runs. This file can be used as a template to create a customized defaults file. However, we recommend that you create the defaults file as described in this procedure.

Action
Complete the following steps:

1. Create the defaults file.

   Start AutoPatch, using the *defaultsfile=* argument, and specifying the file name and the path to the defaults file. This creates a defaults file for the current environment.

   UNIX:

   The file must be under the $APPL_TOP/admin/<SID> directory, where <SID> is the database name (ORACLE_SID/TWO_TASK). For example:

   ```
   $ adpatch defaultsfile=$APPL_TOP/admin/testdb1/adpatchdef.txt
   ```

   Windows:

   The file must be under the %APPL_TOP%\admin\<SID> directory, where <SID> is the database name (LOCAL). For example:

   ```
   C:\> adpatch defaultsfile=%APPL_TOP%\admin\testdb1\adpatchdef.txt
   ```

2. Run AutoPatch to the point where it asks for the directory where the Oracle Applications patch has been unloaded. Type *abort* at this prompt.

3. Verify that the defaults file exists.

4. Run AutoPatch non-interactively to apply a single patch driver, all drivers, or any of the other procedures in this section.

Applying a Single Patch Driver

Business Requirement

How do I apply a single patch driver non-interactively?

Discussion

If you have created a defaults file, run AutoPatch to run non-interactively and specify the location and name of the defaults file and the driver.

Action

Complete these steps:

1. Create the defaults file as described in this section.

2. Follow the steps 1 – 5 in the Applying a Patch Interactively section of this chapter.

3. Run the AutoPatch command, adding the following parameters: location of the defaults file (*defaultsfile=*), a name for the log file (*logfile=*), location of the patch top directory (*patchtop=*), name of the driver file (*driver=*), number of workers to use for applying the patch (*workers=*), and *interactive=no*.

   For example, if the defaults file is APPL_TOP/admin/testdb1/def.txt, the driver file is c123456.drv for patch 123456 (located in APPL_TOP/patch/123456), you will use three parallel workers, and the AutoPatch log file name is 123456.log, you would type the following.

   UNIX:

   ```
   $ adpatch defaultsfile=$APPL_TOP/admin/testdb1/def.txt logfile=123456.log \
     patchtop=$APPL_TOP/patch/123456 driver=c123456.drv workers=3 \
     interactive=no
   ```

   Windows:

   ```
   C:\> adpatch defaultsfile=%APPL_TOP%\admin\testdb1\def.txt \
       logfile=123456.log patchtop=%APPL_TOP%\patch\123456 \
       driver=c123456.drv workers=3 interactive=no
   ```

4. Perform the remaining steps in the Applying a Patch Interactively section (as necessary).

Applying all Drivers in a Standard Patch

Business Requirement

I want to apply all the drivers for a standard patch non-interactively.

Discussion

A *standard* patch is one that uses the format that AutoPatch expects — a patch top directory that is named using a 6- to 8-digit number, and drivers that follow the standard naming conventions (*c* to designate the copy driver, *d* to designate the database driver, and *g* to designate the generate driver, or *u* to designate the unified driver).

If you have created a defaults file, and the patch top name and the driver file names are in standard format, you can apply all the drivers without naming them individually. For split drivers, AutoPatch looks in the patch top directory you specify for c<patchnum>.drv, d<patchnum>.drv, and g<patchnum>.drv and runs the driver files without prompting for the file names. For unified drivers, it looks in the patch top directory for the u<patchnum>.drv file.

> **Additional Information:** See Patch Structure in *Oracle Applications Maintenance Utilities*.

Action

Complete the following steps:

1. Create the defaults file as described previously in this section.

2. Follow the steps 1 – 5 in the Applying a Patch Interactively section of this chapter.

3. Run the AutoPatch command as described in the Applying a Single Patch Driver section. Specify the location of the defaults file and the patch top directory. Do not specify the "driver" argument.

   UNIX:

   ```
   $ adpatch defaultsfile=$APPL_TOP/admin/testdb1/def.txt \
     logfile=patch123456.log patchtop=$APPL_TOP/patch/123456 workers=3 \
     interactive=no
   ```

   Windows:

   ```
   C:\> adpatch defaultsfile=%APPL_TOP%\admin\testdb1\def.txt \
        logfile=patch123456.log patchtop=%APPL_TOP%\patch\123456 \
         workers=3 interactive=no
   ```

4. Perform the remaining steps in the Applying a Patch Interactively section of this chapter (as necessary).

Applying a Non-standard Patch

Business Requirement

I need to apply a patch that was not created with the standard patch naming convention. I would like to apply it non-interactively.

Discussion

A *non-standard* patch is one where the structure is standard, but the naming convention is not. That is, the last component of the patch directory is not a 6- to 8-digit number, or the patch driver files are not named *<patchnum>.drv, or both. Most merged patches are non-standard because of the way they are named.

Action

Complete the following steps:

1. Create the defaults file as described previously in this section.

2. Follow the steps 1 – 5 in the Applying a Patch Interactively section of this chapter.

3. Run the AutoPatch command as described in the Applying a Single Patch Driver section. For the *driver=<values>* argument, use a comma-separated list of the patch

driver names. Append the letter *c* for copy driver, *d* for database driver, and *g* for generate driver at the end of each driver file name.

For example, to apply the following patch driver files:

- my_drv1.drv (copy driver)
- my_drv3.drv (database driver)
- my_drv2.drv (generate driver)

The driver=command would look like this:

```
adpatch driver=my_drv1.drvc,my_drv3.drvd,my_drv2.drvg
```

> **Note:** In this example, AutoPatch interprets my_drv1.drvc as being a copy driver with the name my_drv1.drv. However, if a patch driver file with some extension other than drvc, drvd, or drvg is specified, AutoPatch assumes that you intend it to run the file with exactly that extension — it does not try to re-map the extension to drv.

4. Perform the remaining steps in the Applying a Patch Interactively section of this chapter (as necessary).

> **Note:** If you are applying all drivers for a patch non-interactively on a multi-node system, you *must* apply the patch on the administration server before you apply it on other servers.

Restarting a Non-interactive AutoPatch Session

Business Requirement

AutoPatch errored out while I was applying patches non-interactively. I have resolved the issue that caused the error and want to restart the failed session.

Discussion

When AutoPatch is running non-interactively and encounters an error, it exits to the operating system and reports a failure. The Restart argument is intended specifically for this circumstance. When AutoPatch sees the *restart=yes* argument, it assumes that there is an old session, and expects to find one. If it cannot, it will fail. *Do not* indicate *restart=yes* to start a new AutoPatch session.

Action

Complete the following steps:

1. Look through the log files, diagnose the error, and fix it.

2. Use the same command line options that you used initially, but add *restart=yes*. As an example, here is the command to restart the Applying a Single Patch Driver example:

UNIX:

```
$ adpatch defaultsfile=$APPL_TOP/admin/testdb1/def.txt logfile=123456.log \
  patchtop=$APPL_TOP/patch/123456 driver=c123456.drv workers=3 \
  interactive=no restart=yes
```

Windows:

```
C:\> adpatch defaultsfile=%APPL_TOP%\admin\testdb1\def.txt \
     logfile=123456.log patchtop=%APPL_TOP%\patch\123456 \
     driver=c123456.drv workers=3 interactive=no restart=yes
```

> **Note:** Do not omit any of the original command line arguments, as this could change AutoPatch's behavior and cause unpredictable results.

Abandoning a Non-interactive AutoPatch Session

Business Requirement

AutoPatch errored out while I was applying patches non-interactively. I do not want to restart the failed session, but would rather apply another patch non-interactively.

Discussion

When you specify *interactive=no* on the AutoPatch command line, AutoPatch expects that there is no existing failed session. AutoPatch aborts if it finds restart files from a failed session. Running AutoPatch with the *interactive=no* and *restart=yes* command line arguments restarts the previously incomplete session.

To start a completely new AutoPatch session when there is an existing failed session, specify *interactive=no* and *abandon=yes* on the AutoPatch command line. With this command, AutoPatch deletes the restart files and any leftover database information from the failed session.

> **Note:** If you use the *abandon=yes* argument, you can not subsequently restart the failed session as the restart files are no longer available. Do not specify *abandon=yes* if you may later want to restart the session

Action

Complete the following steps:

1. Verify that you do not want to restart the previous failed session.

2. Start AutoPatch with the *abandon=yes* option:

   UNIX:

   ```
   $ adpatch defaultsfile=$APPL_TOP/admin/testdb1/def.txt logfile=654321.log \
     patchtop=$APPL_TOP/patch/654321 driver=c654321.drv workers=3 \
     interactive=no abandon=yes
   ```

   Windows:

   ```
   C:/> adpatch defaultsfile=%APPL_TOP%\admin\testdb1\def.txt \
        logfile=654321.log patchtop=%APPL_TOP%\patch\654321 \
        driver=c654321.drv workers=3 interactive=no abandon=yes
   ```

Keeping Patches Current

Each time you apply a patch, AutoPatch stores the associated information in the Oracle Applications Manager (OAM) applied patches database. The OAM Patch

Wizard and Applied Patches tools provide GUI interfaces that you can use to query the database for a complete history of patches applied to your system, to search for the patches you have already applied, and to determine existing patches that should be applied to keep your system current.

Patch Wizard determines which recommended patches you should apply to your system, and the impact of applying these patches. Before running Patch Wizard, you set up Oracle*MetaLink* credentials and download a patch information bundle. This bundle is updated daily and contains the list of recommended patches, as well as associated metadata.

You must also set up preferences and filters that govern the way you download patches. To see how to complete these one-time tasks, as well as learn about navigating the Patch Wizard pages and submitting requests, see Patch Wizard in Chapter 5 of *Oracle Applications Maintenance Utilities*.

Creating a List of Recommended Patches

Business Requirement

How do I determine if there are patches that I have not yet applied?

Discussion

Patch Wizard creates a list of patches by comparing the patches in the applied patches database against a list of recommended patches in a *patch information bundle* that you download from Oracle*MetaLink* before you run Patch Wizard.

Patch Wizard determines which of the recommended patches you should apply to your system. It reports the contents of the patch and the files that it will update when applied. It does not report on all available patches, but only patches at the current code level, such as high-priority patches, and those that update your system to a new code level (maintenance packs, family packs, and minipacks).

> **Note:** To use the Patch Wizard, you need to define filters and set up preferences. See Patch Wizard in *Oracle Applications Maintenance Utilities* for instructions.

Action

To see a list of patches recommended for your system, follow these steps:

1. Access Oracle Applications Manager.

    Follow the instructions in OAM Web-based Utilities in *Oracle Applications Maintenance Utilities*. It describes the login procedure, the Applications Dashboard, and the Site Map. All procedures in this section begin with the Site Map.

2. Access the Patch Wizard home page.

    From the Site Map (Maintenance tab), click Patch Wizard under the Patching and Utilities heading.
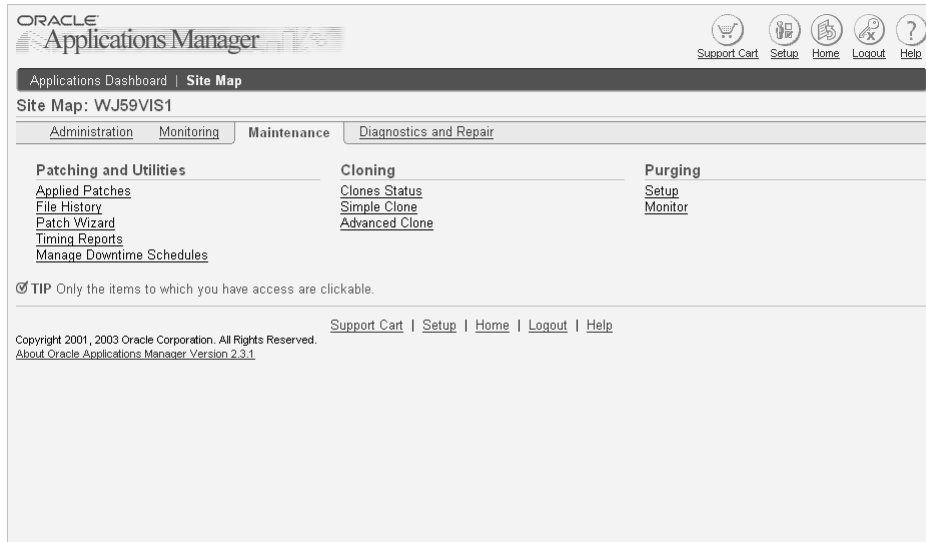
The Patch Wizard home page appears.

3. Download the patch information bundle.

The Patch Wizard home page contains three sections: Tasks, Filter Criteria, and Results.
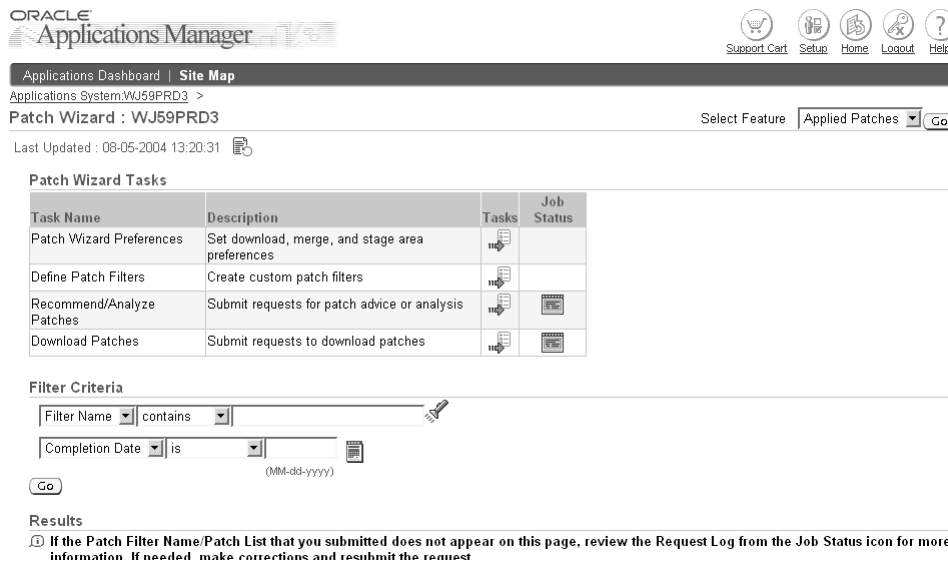
Using the preferences you have previously set up, and the filters you have defined, download the most current patch information bundle, from the Tasks section, click the Tasks icon for Recommend/Analyze Patches.

Additional Information: See Patch Wizard in *Oracle Applications Maintenance Utilities* for information about preferences and filters.

4. Submit a request for recommended patches.

From the Recommended Patches page, select a patch filter. Use the flashlight icon to see a list of available patch filters.

Once you have entered the request information, click OK. The results of your request are shown in the Results section of the Patch Wizard main page. You can also schedule the request for a future date.

5. Track status of your request.

From the main page, you can track the status of your recommended patch request. Click the Job Status icon for Recommend/Analyze Patches.

The search results are displayed. If you click the Show/Hide triangle, the page displays more details. See Patch Wizard in *Oracle Applications Maintenance Utilities* or the OAM help system for more information about the fields and functions on this page.

Downloading Recommended Patches

Business Requirement
How do I use Patch Wizard to download patches?

Discussion

Patch Wizard can download patches based on either the list created by the "recommend patches" request or any list of patches entered in the Download Patches page.

The Download Patches page prompts you for information about the patches to download, then downloads them directly from Oracle*MetaLink*. The Merge Options section of this page defines how patches should be merged after they are downloaded.

Action

To download patches using Patch Wizard, follow these steps:

1. Access Oracle Applications Manager.

   Follow the instructions in OAM Web-based Utilities in *Oracle Applications Utilities*. It describes the login procedure, the Applications Dashboard, and the Site Map. All procedures in this section begin with the Site Map.

2. Access the Patch Wizard home page.

   From the Site Map (Maintenance tab), click Patch Wizard under the Patching and Utilities heading.

The Patch Wizard home page appears.

3. Submit a request to download patches.

From the Patch Wizard home page, click the Tasks icon for Download Patches. The Download Patches page appears.

On this page, you list the patches you want to download in the Patch List field.

Another option is to click the Details icon for a recommended patch request in the Results section of the Patch Wizard home page.

The Recommended Patches Results page for the recommended patch request appears.

Select any number of recommended patches on this page and click the Download button. This populates the Patch List filed in the Download Patches page with the selected patch numbers.

4. Set download options.

On the Download Patches page, set Merge options and indicate information about languages and platforms. If you choose to automatically merge patches while downloading, specify the merged patch name and the merging strategy. You can select the languages and platform of the patches to download. When you provide information in this section of the page, Patch Wizard only downloads patches that match the selected languages and platform. You can also schedule the download for a future date.

5. Submit request.

Once you have entered the patch information, click OK. The results of your request are shown in the Results section of the Patch Wizard main page.

6. Track status of your request.

From the main page, you can track the status of your patch request. Click the Job Status icon for Download Patches.

The search results are displayed. If you click the Show/Hide triangle, the page displays more details. See Patch Wizard in *Oracle Applications Maintenance Utilities* or the OAM help system for more information about the fields and functions on this page.

Determining Patch Impact on System Files

Business Requirement
Before I apply a patch, can I see which system files will be affected?

Discussion
The OAM Patch Wizard provides a Patch Impact Summary page that shows the impact of a specific patch if applied to your system. It contains the following information: Patch Impact Analysis, Direct Impact Summary, and Indirect Impact Summary. By reviewing these results, you can see detailed information about files included in a patch, as well as the effect a specific patch will have on your existing system files. For example, you can see information about total files in the patch, the number and type of files that will be installed, and which existing files will be changed.

> **Additional Information:** See Patch Wizard in *Oracle Applications Maintenance Utilities*.

Action
To view the information on the Patch Impact Summary page in the Patch Wizard, follow these steps:

1. Access Oracle Applications Manager.

   Follow the instructions in OAM Web-based Utilities in *Oracle Applications Utilities*. It describes the login procedure, the Applications Dashboard, and the Site Map. All procedures in this section begin with the Site Map.

2. Access the Patch Wizard home page.

   From the Site Map (Maintenance tab), click Patch Wizard under the Patching and Utilities heading.

3. View recommended patches results.

From the home page, click the Details icon for an item in the Results section.

The Recommended Patches Results page for the recommended patch request appears.

4. Access the Patch Impact Analysis page.

Clicking the Impact icon in the Recommended Patches Results page opens the Patch Impact Analysis page for the selected patch.

Many of the line items on this page are links to detailed information about the impact of the patch on the system. For example, the File Types Installed value is a link to a page that lists the file types and the number of unchanged, changed, and new files in the file system as a result of applying the selected patch.

Reducing Downtime

This section contains procedures designed to help reduce the time it takes to apply patches, and consequently reduce the time your system is offline and unavailable to users.

Creating a Merged Patch

Business Requirement

I need to apply several patches. Is there a way to reduce the time it takes to apply them?

Discussion

You can merge multiple patches into a single patch by using AD Merge Patch. This AD command line utility merges multiple AutoPatch-compatible patches into a single, integrated patch. Once the merged patch is created, you use AutoPatch to apply it in a single operation. Applying a merged patch reduces the time it takes to complete the patching process.

> **Additional Information:** See AD Merge Patch in *Oracle Applications Maintenance Utilities*.

In general, you can safely merge any Oracle Applications patch with any other Oracle Applications patch. Older split driver patches can be merged with newer unified driver patches. Patches can and should be merged with their listed prerequisite patches to make patch application easier.

> **Note:** AD Merge Patch cannot merge patches of different releases, different parallel modes, or different platforms. However, it can merge patches for a specific platform with a generic patch, or patches with different source character sets. AD Merge Patch notifies you if you try to merge incompatible patches.

However, patches that affect the Applications DBA (AD) product must be handled separately. AD patches can be merged with other AD patches, but AD patches and non-AD patches cannot be merged because AD patches may change the AutoPatch utility itself. Merged AD patches must be created separately and applied before you apply non-AD patches.

When merging patches on systems that use languages other than American English, different considerations apply. For information about merging and applying NLS patches, see Applying Multiple Patches to an NLS Installation on page 3-31.

Action

Complete these steps:

1. Create directories.

AD Merge Patch merges the set of files in individual patches under a source directory according to file revision and copies them to a destination directory. You should run AD Merge Patch from the parent directory of the source directory. The destination directory should be located in the same parent directory.

In the patch top area, create a source directory and a destination directory. Choose any name for these directories.

> **Additional Information:** See Source and Destination Directories in *Oracle Applications Maintenance Utilities* for information on setting up the directories.

2. Download patches.

Download all the patches you want to merge to the source directory.

3. Review the patch readme files.

Some patches require special attention and additional steps if the patch is to be merged. Carefully review the readme file and follow the instructions.

4. Run AD Merge Patch.

The merged patch is created in the destination directory. Run AD Merge Patch and supply the arguments for the destination directory name, and the source directory name. Specify the merged patch name, or accept the default.

```
admrgpch -s <source directory> -d <destination directory>
```

You can merge patches before you unzip them by running AD Merge Patch with the *-manifest* command line argument. You must initially create a manifest file, which lists only the zip files. AD Merge Patch unzips these files into the source directory and includes them, along with any existing files in the source directory, in the merged patch. To use a manifest file, add the *-manifest* argument to the command line.

```
admrgpch -s <source directory> -d <destination directory> \
-merge_name <name> [-manifest <manifest filename>]
```

> **Note:** If you don't want to create a manifest file, unzip all the patches to be merged into the source directory. Omit the manifest file argument.

> **Additional Information:** See Merging Zipped Patches in *Oracle Applications Maintenance Utilities* for information on creating a manifest file.

5. Check AD Merge Patch log files.

   After AD Merge Patch runs, check the admrgpch.log file for errors. The file is located in the current working directory (where AD Merge Patch was run).

6. Apply the patch.

   Once a merged patch is created, apply it just like a single patch, either interactively or non-interactively. If you apply it non-interactively, follow the instructions for Applying a Non-standard Patch on page 3-12.

Deferring the Upload of Patch Information

Business Requirement

Is there any task in the AutoPatch process that I can defer until after the system downtime?

Discussion

AutoPatch uploads patch information to the database automatically each time it successfully applies a patch. The time required for the upload may be substantial depending on the size of the patch. You can defer this task during the AutoPatch session and upload the information while the Oracle Applications system is in use.

When you defer the uploading of patch information to the database, AutoPatch writes it to the patch information files:

- javaupdates<YYYYMMDDhhmiss>.txt, which contains information about changes to Java files

- adpsv<YYYYMMDDhhmiss>.txt, which contains information about changes to all files except Java files

Both files are located in the APPL_TOP/admin/<SID> directory. After the AutoPatch session is complete and the Oracle Applications system is back online, you run AutoPatch with the patch information upload command to upload the contents of the patch information files to the database.

Action

Complete these steps:

1. Perform preparatory patch steps.

   > **Additional Information:** See Applying a Patch Interactively in this chapter.

2. Apply the patch by running AutoPatch with the defer patch information upload command.

   ```
   adpatch options=phtofile
   ```

3. Once the patch session is complete, disable maintenance mode, start all services and allow users to access the system.

4. Run AutoPatch with the upload patch information command.

```
adpatch uploadph=y
```

AutoPatch uploads the patch information and exits.

Distributing the Processing Tasks

Business Requirement

How can I use the processing capacity on the other nodes in my system when I apply a patch?

Discussion

Creating a multi-node system with a shared application tier file system saves patching time because you apply patches only once, on the primary node. However, when applying a patch that includes a large number of processes that affect the database, you can reduce the downtime even further by distributing the worker processes across multiple servers on multiple nodes.

This Distributed AD feature of AutoPatch and AD Controller allows you to assign workers to run not only on the primary node but also on the secondary nodes that share the application tier file system.

> **Additional Information:** See Distributing Processing Tasks Across Nodes in Chapter 1 of *Oracle Applications Maintenance Utilities*.

Action

Complete the following steps:

1. Start AutoPatch on the primary node with the following command options:

   ```
   adpatch workers=<total number of workers> localworkers=<number of workers on
   primary node>
   ```

   For example, this command runs an AutoPatch session with three workers on the primary node and five workers on a remote note:

   ```
   adpatch workers=8 localworkers=3
   ```

2. Start an interactive AD Controller session on each of the secondary nodes that will run workers by using the *distributed=y* option.

   ```
   adctrl distributed=y
   ```

3. On each secondary node, AD Controller prompts for the range of workers to start. For example, to start workers 5 through 8 on a node, type "5-8" in response to the "Enter the worker range" prompt.

   ```
   Enter the worker range: 5-8
   ```

   > **Note:** Workers must be in contiguous groups. For example, you cannot start workers 4, 6, 8 on one node, and 5, 7, 9 on another.

Using a Staged Applications System

Business Requirement

How can I reduce the time my system is down when I apply large patches?

Discussion

A staged Applications system represents an exact copy (clone) of your production system, including all APPL_TOPs as well as a copy of the production database. You can apply patches to a staged system while the production system remains in operation. Then, you connect the staged system to the production system, update the database, and synchronize the APPL_TOP.

The downtime for the production system begins only after all patches have been successfully applied to the staged system, and you have tested the newly patched environment.

> **Caution:** The AD minipack level of the staged system and the production system must be identical. You cannot use a staged system to apply AD minipacks or new product patches associated with a maintenance pack.

Once the patches are applied to the staged system, and the production system is updated, you must export applied patches information from the staged system and import it to the production system. This ensures that the OAM applied patches database in the production system is up to date and that you can continue to use patch-related features.

Action

There are several phases to creating a staged system, patching it, and updating the production system.

Complete prerequisite tasks:

A staged system must be an exact duplicate of the production system. Each physical APPL_TOP in the production system must exist in the staged system. Note the following conditions:

- The APPL_TOPs in the staged system must have the same name as the APPL_TOPs in the production system to ensure consistency of the patching history in the production system. When patch history data is imported from the staged system to the production system, it must have the same APPL_TOP names.

- The database in the staged system should have a different <SID> to avoid accidental connections to the production system. Passwords, ports, and any process or service-related parameters can be changed as well to further reduce risks.

- You must have different Applications system names for the staged and the production systems. AutoPatch will correct the historical information.

Complete the following tasks:

1. Update production system snapshot.

   Verify that your system current view snapshot is up-to-date by running the Maintain Current Snapshot task in AD Administration. Run the task on all APPL_TOPs in your system. See Maintain Applications Files Tasks in Chapter 4 of *Oracle Applications Maintenance Utilities*.

2. Create the staged system.

   Create a clone of the production database, the application tier components, and each APPL_TOP to use as the staged system. See Cloning in Chapter 4.

Apply patches to the staged system:

You patch the staged system in the same way that you patch any other system by using AutoPatch to apply the patch drivers. See AutoPatch in *Oracle Applications Maintenance Utilities* and Interactive Patching in Chapter 3 of this book for details. If you need to apply more than one patch, consider merging the patches to further reduce downtime.

While you are completing this phase, do not apply any other patches to the production system. If you do, you will have to recreate the staged system.

Update the production database:

Once the patching is complete on the staged system, you are ready to update the production system. You must be able to connect to the production database from the staged system. If necessary, use the s_ifile AutoConfig variable to create a tnsnames file in the staged system with entries for the production system. See Using AutoConfig to Manage System Configurations with Oracle Applications 11*i* (Oracle*MetaLink* document 165195.1).

Then, complete the following tasks:

1. Set the environment, shut down all services on the production system, and enable maintenance mode.

2. Run AutoPatch.

   Apply the database driver for the patch you wish to apply. For patches with a unified driver, add the argument *options=nocopyportion,nogenerateportion* to the AutoPatch start command (*adpatch*). Make sure the database name in the AutoPatch prompt is correct.

   If you applied multiple patches to the staged system, merge the database drivers for each patch before applying it to the production system.

Update the production APPL_TOP:

The production APPL_TOP must be synchronized with the staged APPL_TOP. To minimize downtime, you can complete this task while the production database is being updated. You can use a simple copy or a utility such as rdist.

Note these conditions:

- If your system contains multiple APPL_TOPs, you must copy each one to the production system.

- If you share a single APPL_TOP, you need to synchronize only one system.

- The COMMON_TOP directory, which may reside outside the APPL_TOP, must be updated for each APPL_TOP.

Certain configuration files, log directories, and environment scripts are specific to an APPL_TOP. Do not copy the following files and directories when you copy the APPL_TOP:

$COMMON_TOP/util/apache
$COMMON_TOP/admin/scripts
$APPL_TOP/admin/<SID>
$FND_TOP/out
$FND_TOP/log
$COMMON_TOP/html/bin/appsweb.cfg
$COMMON_TOP/html/US/ICXINDEX.htm
$COMMON_TOP/html/_pages

$APPL_TOP/log/
$APPL_TOP/patches/
$COMMON_TOP/html/iby_debug.log
$COMMON_TOP/html/iby_error.log

If you use the rdist utility, you can use a distfile to exclude these files.

Create a complete production patch history:

At this point, the copy and generate portions of the patch history for patches applied to the staged system are stored in the staged system database, and the database portion of the patch history is stored in both the staged system database and the production system database. To create a complete copy of the patch history on the production system, use the adphmigr.pl utility to load the applied patches information from the copy and generate portions of all patches into the production database.

For each patch applied to the staged system, you must export patch history for each APPL_TOP in the staged system and import if for the corresponding APPL_TOP in the production system. Users do not have to log off the production system while you perform the import and export tasks. Finish consolidating the production system patch history before you apply any additional patches to it, or before you use any patch-related Oracle Applications Manager (OAM) features.

Complete these tasks:

1. Export applied patches information.

    Run adphmigr.pl (located in AD_TOP/bin). Type *adphmigr.pl -help* to see all valid options for running the utility. We recommend you export patch history separately for each APPL_TOP, as you will need to import it separately.

    Specify *nodatabaseportion=Y* on the command line to ensure that the patch history data for the database portion of the patches applied is not exported. For example:

    ```
    perl $AD_TOP/bin/adphmigr.pl userid=apps/apps \
    startdate='2003/10/10 00:00:00' enddate='2003/14/10 00:00:00' \
    appsystemname=stage appltopname=tafnwl nodatabaseportion=Y
    ```

2. Verify export data.

    The script generates two data files for each run of AutoPatch on the staged APPL_TOP, one for java updates and one for all other patch actions. Check adphmigr.log to ensure the data files represent the patch runs you wish to export, and that the start and end times specified did not include any unwanted AutoPatch runs.

3. Import applied patches information.

    For each APPL_TOP in the production system, copy the data files extracted for the corresponding APPL_TOP in the staged system to the $APPL_TOP/admin/<SID> directory. The next time you run AutoPatch in this APPL_TOP, it will automatically upload these files.

    To load the files immediately, run AutoPatch interactively, answer the prompts until you are prompted for the name of the patch driver file. At that point, exit AutoPatch by typing *abort* at the patch driver file prompt.

    > **Note:** The FNDLOAD method of transferring patch history is no longer recommended. The adphmigr.pl method is more efficient and easier to use.

Patching NLS Systems

These patching procedures apply regardless of whether you are running American English and one additional language, or American English and several additional languages. If your system uses multiple languages, you can use AD Merge Patch to create merged patches in one of three ways:

- A single, merged patch that contains all languages (including US)

- One merged patch for US and a second merged patch for all other languages

- A separate merged patch for each language

Option one is easiest because there is only one patch to apply, however, it has the longest system downtime of the three options, as the patch can be large. Option two is relatively easy to apply and allows you to bring US users back on the system while you apply the patch for non-US languages. Option three is the most difficult to apply but allows you to bring users for various non-US languages back on line in a phased approach, which could be useful for multi-national corporations in some situations. Oracle generally recommends the second option because it provides the best compromise between easy application and minimum downtime.

When merging multiple language patches, AD Merge Patch converts the character set according to the NLS_LANG variable in the Applications environment file. If you changed your character set since the initial installation, you may need to update the NLS_LANG variable. If this variable is not set properly, run OAM AutoConfig to update the Applications context with the correct character set information, then run the AutoConfig script to recreate the Applications environment file. Reset the environment using the new environment file before merging patches.

> **Additional Information:** See AD Merge Patch in *Oracle Applications Maintenance Utilities*. See also Managing Configuration Parameters in *Oracle Applications Maintenance Utilities*.

Applying a Single Patch to an NLS Installation

Business Requirement

I need to apply a single patch to an Oracle Applications NLS installation.

Discussion

If an Oracle Applications system contains languages other than American English (US), the recommended method is to apply the US patch first and then apply the translation patch for each installed language. If you have installed more than one additional language, you can merge all the translation patches and apply them as a single, merged NLS patch.

You can also merge US patches with the additional language patches. However, depending on your downtime window and your system topology, it may be necessary to keep the US and non-US patches separate. (See Applying an Emergency NLS Patch in this chapter).

Action

This procedure assumes that you will apply US and language patches separately.

1. Use AutoPatch to apply the patch drivers of the US patch.

2. Use AutoPatch to apply the patch drivers of each NLS patch. If you have merged the individual NLS patches for a system that runs multiple languages, apply all drivers for the merged NLS patch.

> **Additional Information:** See Applying a Patch Interactively in this chapter.

Applying Multiple Patches to an NLS Installation

Business Requirement

I need to apply several patches to an Oracle Applications NLS installation.

Discussion

If an Oracle Applications system contains multiple languages other than American English (US) and you are applying multiple patches for each language, the recommended method is to merge all US patches into a single patch and all patches for every non-US language into a single patch. Then, apply the merged US patch followed by the merged language patch.

You can also merge US patches with the additional language patches or merge each language in separate language-specific patches. Depending on your downtime window and your system topology, it may be necessary to keep the US and non-US patches separate. (See Applying an Emergency NLS Patch in this chapter). This procedure assumes that you will apply US and language patches separately.

> **Additional Information:**

Action

Perform the following steps. The example assumes the system has American English, French, and German installed.

1. Use AD Merge Patch to merge the US (American English) patches into a single patch.

2. Use AD Merge Patch to merge the French and German patches into a single NLS patch.

3. Use AutoPatch to apply all drivers of the merged US patch.

4. Use AutoPatch to apply all drivers of the merged NLS patch.

Applying an Emergency NLS Patch

Business Requirement

I don't want to shut down my system to apply all the translation patches.

Discussion

When applying a patch that requires a language translation, you can defer the application of the translation database driver until after you have applied the other drivers. This allows the system to be available to all users during the time the language translation is being applied. Remember that you can merge NLS patches if you have several to apply.

> **Additional Information:** See Creating a Merged Patch in this chapter.

Action

Complete the following steps:

1. Shut down the system (all services) and log users off.

2. Enable Maintenance Mode.

3. Apply the US copy driver to all servers.

4. Apply the US database driver to the administration server.

5. Apply the US generate driver to all servers.

6. Disable Maintenance Mode.

7. Bring the system back up and allow US users to log on.

8. Apply the translation copy driver to all servers.

9. Apply the translation generate driver to all servers.

10. Allow translation users to log on

11. Apply the translation database driver to the administration server.

Backing Out Patches

Although you can back out patches that you have applied to your Oracle Applications system and restore it to its pre-patched state, this course of action should be undertaken *only* if you have no other choice.

> **Caution:** There is no automated method of backing out patches.

Restoring from a Failed Copy Driver

Business Requirement

A copy driver failed during a patching procedure. I need to restore my system.

Discussion

You should always test the application of a patch several times on a test system, particularly if the patch is a minipack, family pack, or maintenance pack. Once the test application is successful, apply the patch on the production system.

Before applying a large number of patches, a series of minipacks, family packs, or a maintenance pack, back up the Oracle Applications file system and database.

Action

Complete the following steps:

1. Determine the cause of the failure.

   In many cases, the issue can be resolved and the patching process restarted at the point of failure.

2. Determine the copy driver actions.

   If there is no feasible method of resolving the issue, review the log files and the copy driver to determine the files copied by the patch and the update actions performed.

3. Restore files.

If a file in the patch top directory is a more recent version than the product's current file, AutoPatch backs up the current file into a subdirectory of the patch top directory. If <patch_dir> is the patch top directory, <system_name> is the Applications system name, <APPL_TOP_name> is the APPL_TOP name, and <prod> is the name of the product being patched, AutoPatch backs up:

```
<PROD>_TOP/<subdir(s)>/<old_file_name>
```

to

```
<patch_dir>/backup/<system_name>/<appl_top_name>/<prod>/<subdir(s)>/ \
<old_file_name>
```

> **Note:** The Applications system name and the APPL_TOP name are determined during the Rapid Install process.

Use these backup files to restore the files on the Oracle Applications system. If the patch is large and you copied many files, restore the entire file system with the backup you created before you applied the patch. If you restore the entire file system you do not have to perform Steps 4-7.

4. Relink files.

If the copy driver includes actions to relink files, determine the files affected and relink them using AD Administration or, for AD programs, use AD Relink.

> **Additional Information:** See *Oracle Applications Maintenance Utilities* for more information.

5. Restore Java files.

If the patch included Java updates, restore the Oracle Applications Java files by running the following command from the <patch_dir>/backup/ <system_name>/<appl_top_name> directory.

```
adjava -mx256m oracle.apps.ad.jri.adjcopy @undoScript.cmd
```

6. Generate JAR files.

If Java files are included in the patch, generate JAR files using AD Administration.

> **Additional Information:** See AD Administration in *Oracle Applications Maintenance Utilities*.

7. Generate other files.

If there are forms, reports, graphics, or message files included in the patch, generate these files using AD Administration.

> **Additional Information:** See Managing Files in Chapter 2.

Restoring from a Failed Database Driver

Business Requirement

Can I restore my system after a failed database driver?

Discussion

There is no general method of backing out changes a patch makes to the Oracle Applications database. To help avoid the need to restore a database, you should always test the application of a patch several times on a test system, particularly if the patch is a minipack, family pack, or maintenance pack. Once the test application is successful, apply the patch on the production system.

Action

Complete the following steps:

1. Back up the file system and database.

    Before applying a large number of patches, a series of minipacks, family packs, or a maintenance pack, back up the Oracle Applications file system and database.

2. Review worker log files to determine the problem.

3. Fix the issues that caused the failure.

4. Restart the database driver.

If you cannot resolve the failed driver in this way, you must restore the database from backup.

4

Working with File Systems and Databases

This chapter contains information about copying file systems, creating a cloned Applications system, importing and exporting databases, and other like procedures. It includes the following sections:

- Relocating Files

- Cloning

- Re-creating (Migrating) an Existing Database

Relocating Files

You can relocate selected product top directories or the entire APPL_TOP to another location on the same node.

Moving a Product Top

Business Requirement

I want to move a product top directory from one location to another location on the same node.

Discussion

When you move a product top directory (for example, GL_TOP) to another location, you create a *distributed* installation. The basic tasks include copying or moving the product directory, updating the context file and reconfiguring the system (using AutoConfig).

Action

Complete the following steps:

1. Make sure all users log off Oracle Applications, then shut down all processes (except the Web server) on the application tier.

   For example, on a concurrent processing server, shut down all concurrent managers. Or, on a forms server, shut down the forms server listeners.

2. Copy product files.

   Copy or move the product directory tree to the new file system location. For example, to copy the GL_TOP files:

   ```
   $ cp -r /d02/appl/gl /d05/appl2/gl
   ```

Repeat this command for any other product directories that you want to relocate. Do not delete the old files until the migration is successful.

> **Caution:** Do not relocate the AD, FND, or admin directories. They must always be located directly under the original APPL_TOP.

3. Rename the directory.

   Rename the product directory in the original location and preserve it until the system is verified. For example, to rename the GL_TOP directory:

   ```
   $ mv /d02/appl/gl /d02/appl/gl_old
   ```

   Repeat this command for any other product directories that you copied.

   > **Note:** Omit this step if you moved, instead of copied, the directory.

4. Update the context file.

   Use the Edit Parameters feature of OAM AutoConfig to update the context file with the new location of the product directory.

   > **Note:** In order to access OAM, you must have an active Web server.

   > **Additional Information:** See Modifying Configuration Parameters in Chapter 1.

5. Generate configuration files.

   Run the AutoConfig command line script (adautocfg.sh) to generate new configuration files with the updated product directory information.

   > **Additional Information:** See Generating Updated Configuration Files in Chapter 1.

6. Reset the environment and restart processes.

   Set the environment and restart any server processes that were shut down. Log on to Oracle Applications to test the new file system arrangement. Once everything is working properly, allow users to access the system. Then, remove the files from the old directory to free up disk space.

Moving an APPL_TOP

Business Requirement

I need to move the entire APPL_TOP, not just product top directory files.

Discussion

When moving the entire APPL_TOP to another location, you clone the APPL_TOP and COMMON_TOP directories from the original location to the new location using Rapid Clone.

Action

Use the cloning process to clone just the APPL_TOP and COMMON_TOP of the Oracle Applications system.

> **Additional Information:**   See Cloning an Oracle Applications System in this chapter.

Complete the following steps:

1. Follow the instructions under the Perform Prerequisite Tasks in the Cloning an Oracle Applications System section on page 4-5.

2. Prepare the source system APPL_TOP.

   Log on to the source system as the *applmgr* user and run the following commands on each node that contains an APPL_TOP:

   ```
   cd <COMMON_TOP>/admin/scripts/<CONTEXT_NAME>
   perl adpreclone.pl appltop
   ```

   If you plan to move the application tier Oracle homes with the APPL_TOP, use the adpreclone.pl appsTier command. See information in Prepare the source system on page 4-5.

3. Copy the APPL_TOP and COMMON_TOP directories.

   Log on to the source system application tier node as the *applmgr* user. Then, do the following:

   ■ Shut down the application tier server processes.

   ■ Copy the following application tier directories from the source node to the target application tier node, retaining the original directory structure:

      – <APPL_TOP>

      – <OA_HTML>

      – <OA_JAVA>

      – <COMMON_TOP/util>

      – <COMMON_TOP/clone>

      If you plan to move the application tier Oracle homes with the APPL_TOP, copy the following application tier directories as well:

      – <806 ORACLE_HOME>

      – <iAS ORACLE_HOME>

4. Configure the target system APPL_TOP.

   Log on to the target system as the *applmgr* user and type the following commands:

   ```
   cd <COMMON_TOP>/clone/bin
   perl ./adcfgclone.pl appltop
   ```

> **Note:** For Windows users only: add <806 ORACLE_HOME>\bin to the system path before performing this step.

If you moved the application tier Oracle homes with the APPL_TOP, use the adcfgclone.pl appsTier command. See the information in Configure the target system on page 4-6.

5. Verify the APPLCSF variable setting.

Set the Applications environment and ensure that the variable APPLCSF (identifying the top-level directory for concurrent manager log and output files) points to an acceptable directory. To modify it, change the value of s_applcsf in the context file and run AutoConfig.

> **Additional Information:** See Modifying Configuration Parameters in Chapter 1.

Cloning

Cloning is the act of creating an identical copy of an existing Oracle Applications system. The new system, including component versions, operating system, and platform type, is identical to the existing system.

> **Note:** Cloning from one operating system to another is supported only if the target operating system is binary-compatible with the source operating system.

Here are some terms used to describe the procedures for cloning.

Term/Convention	Description
Source system	Applications system being cloned.
Target system	Applications system being created as a copy of the source.
applmgr	User that owns the Applications file system (APPL_TOP and application tier technology stack).
oracle	User that owns the database file system (RDBMS ORACLE_HOME and database files).
CONTEXT_NAME	A variable that refers to the Applications context file. The default value is <SID>_<HOSTNAME>.

Rapid Clone is a utility that leverages installation and configuration technology used by Rapid Install to create template files for cloning on the source system. After the source system is copied to the target, Rapid Clone updates these templates to contain the new target system configuration settings. It does not change the source system configuration.

> **Note:** All procedures in this section apply *only* to fresh installations using Rapid Install 11.5.10 or later. If your system was installed using an earlier version, or was upgraded using the Release 11.5.10 maintenance pack, follow the steps in *Cloning Oracle Applications 11i with Rapid Clone* (Oracle*MetaLink* document 230672.1).

> **Additional Information:** See Cloning in *Oracle Applications Concepts*.

Cloning an Oracle Applications System

Business Requirement

How do I use Rapid Clone to copy my Applications system?

Discussion

Simply copying all the Oracle Applications components will not provide a working duplicate Oracle Applications system. Many configuration files in the system and configuration information in the database must be modified based on the system configuration. Typically, you create a clone of an Oracle Applications system because you want to:

- Create a copy of a production system for testing updates
- Create a staged system to reduce patching downtime

The Oracle Applications cloning methodology uses AutoConfig with Rapid Clone to configure the duplicate system. There are prerequisite steps before running Rapid Clone, and some finishing steps after running Rapid Clone to complete the process. The complete list of steps is included in this section.

Perform Prerequisite Tasks

Prepare the source system by applying patches and running AutoConfig.

1. Verify source and target node software versions.

   In addition to the software requirements listed in *Installing Oracle Applications*, the following software component versions must exist on the source nodes. The location column indicates the node where the software component must be present.

Software	Minimum Version	Location	Details
JRE (Windows)	1.3.1	Source database node	Install JRE 1.3.1 into the <RDBMS ORACLE_HOME>/jre/1.3.1 directory. See Appendix A in *Cloning Oracle Applications Release 11i with Rapid Clone* on Oracle*MetaLink*.
Zip	2.3	All source nodes	Download from InfoZip. Zip must be in your PATH for cloning.

2. Run AutoConfig on the application tier server nodes.

   See Generating Updated Configuration Files in Chapter 1 for details.

3. Run AutoConfig on the database tier.

   See Generating Updated Configuration Files in Chapter 1 for details.

Clone Oracle Applications 11i

In this action you will prepare the source system for cloning, copy the source system to the target system, and configure the target system.

Prepare the source system

Complete these steps to prepare the source system for cloning.

1. Prepare the source system database tier.

   Log on to the source system as the *oracle* user and run the following commands:

```
cd <RDBMS ORACLE_HOME>/appsutil/scripts/<CONTEXT_NAME>
perl adpreclone.pl dbTier
```

2. Prepare the source system application tier.

   Log on to the source system as the *applmgr* user and run the following commands on each node that contains an APPL_TOP:

```
cd <COMMON_TOP>/admin/scripts/<CONTEXT_NAME>
perl adpreclone.pl appsTier
```

Copy the source system to the target system

Copy the application tier file system from the source Applications system to the target node by completing the following steps *in the order listed*. Be sure the application tier files copied to the target system are owned by the target *applmgr* user, and that the database tier files are owned by the *oracle* user.

1. Copy the application tier file system.

   Log on to the source system application tier node as the *applmgr* user. Then, do the following:

   - Shut down the application tier server processes

   - Copy the following application tier directories from the source node to the target application tier node, retaining the original directory structure:

     – <APPL_TOP>

     – <OA_HTML>

     – <OA_JAVA>

     – <COMMON_TOP/util>

     – <COMMON_TOP/clone>

     – <COMMON_TOP/_pages> (when the directory exists)

     – <806 ORACLE_HOME>

     – <iAS ORACLE_HOME>

2. Copy the database tier file system.

   Log on to the source system database tier node as the *oracle* user. Then, do the following:

   - Perform a normal shutdown of the source system database

   - Copy the database (DBF) files from the source system to the target system

   - Copy the source database ORACLE_HOME to the target system

   - Start the source Applications system database and application tier processes

Configure the target system

Run the following commands to configure the target system:

1. Configure the target system database server.

   Log on to the target system as the *oracle* user and type the following commands to configure and start the database:

```
cd <RDBMS ORACLE_HOME>/appsutil/clone/bin
perl ./adcfgclone.pl dbTier
```

2. Configure the target system application tier server nodes.

Log on to the target system as the *applmgr* user and type the following commands:

```
cd <COMMON_TOP>/clone/bin
perl ./adcfgclone.pl appsTier
```

> **Note:** For Windows users only: add <806 ORACLE_HOME>\bin to the system path before performing this step.

Finish the Cloning Process

Complete the steps in this section if they apply to your implementation or to the way you intend to use the cloned system.

1. Update profile options.

   Rapid Clone updates only site level profile options. If any other profile options are set to instance-specific values, you must update them manually.

2. Update printer settings.

   If the new cloned system will use different printers from the source system, update the new system with the new printer settings.

3. Update Workflow configuration settings.

   Cloning an Oracle Applications instance does not update the host and instance-specific information used by Oracle Workflow. Review the following tables and columns to verify there is no instance-specific data in the Workflow configuration on the target system.

Table Name	Column Name	Column Value Details
WF_NOTIFICATION_ATTRIBUTES	TEXT_VALUE	Value starts with "http://<old web host>:". Update to new web host.
WF_ITEM_ATTRIBUTE_VALUES	TEXT_VALUE	Value starts with "http://<old web host>:". Update to new web host.
WF_SYSTEMS	GUID	Create a new system defined as the new global database name using the Workflow Administrator Web Applications responsibility.
WF_SYSTEMS	NAME	Replace value with the new database global name.
WF_AGENTS	ADDRESS	Update database link with the new database global name.
FND_FORM_FUNCTIONS	WEB_HOST_NAME	Update with the new web host name.
FND_FORM_FUNCTIONS	WEB_AGENT_NAME	Update to point at the new PLSQL listener name.
FND_CONCURRENT_REQUESTS	LOGFILE_NAME	Update with the correct path to the log file directory.
FND_CONCURRENT_REQUESTS	OUTFILE_NAME	Update with the new directory path on the target system.

4. Verify the APPLCSF variable setting.

   Set the Applications environment and ensure that the variable APPLCSF (identifying the top-level directory for concurrent manager log and output files) points to an acceptable directory. To modify it, change the value of s_applcsf in the context file and run AutoConfig.

   > **Additional Information:** See Modifying Configuration Parameters in Chapter 1.

5. Update the SESSION_COOKIE_DOMAIN value in ICX_PARAMETERS.

If the target system is in a different domain name than the source system and SESSION_COOKIE_DOMAIN was not null in the source system, update the value to reflect the new domain name.

6. Reboot the target machine (Windows only).

Refreshing a Cloned System

Business Requirement

I want to refresh a cloned (target) system periodically to synchronize it with changes made to the source system.

Discussion

After you have cloned a system, you may want to keep the cloned (target) system synchronized with the original (source) system. This means applying all the changes you have made to the source system to the target system.

You can synchronize the target system with the source system by repeating some of the same steps outlined in the basic cloning procedure discussed previously in this chapter. You can also synchronize just one tier, such as the database tier or the application tier.

Action

Perform the following steps (from the basic cloning procedure) to refresh your target system.

1. Prepare the source system.

   Complete all the steps in the Prepare the source system section on page 4-5.

2. Copy the source system to the target system.

   Go to the Copy the source system to the target system section on page 4-6. Follow the steps based on your requirements.

   - Copy the application tier file system if the APPL_TOP, 806 ORACLE_HOME, or iAS ORACLE_HOME needs to be refreshed. Copy only the portion of the application tier file system that has been updated.

   - Copy the database tier file system if the RDBMS ORACLE_HOME or the database needs to be refreshed. If you are refreshing the database, refresh the ORACLE_HOME at the same time.

3. Configure the target system.

   Specify the existing target system context file when running adcfgclone.pl commands, where the database context file is <RDBMS ORACLE_HOME/appsutil/<Target CONTEXT_NAME>.xml:

   ```
   perl ./adcfgclone.pl dbTier <Database target context file>
   ```

   and, where the Applications context file is <APPL_TOP>/admin/<Target CONTEXT_NAME>.xml:

   ```
   perl ./adcfgclone.pl appsTier <Appltop target context file>
   ```

4. Finish the cloning process.

   Complete all the steps in the Finish the Cloning Process section on page 4-7.

Cloning a Single-node System to a Multi-node System

Business Requirement

My system currently runs on a single node. How do I create a multi-node system?

Discussion

To create a multi-node system, you will place the servers from the single node on individual nodes by performing the basic cloning steps on each of the new target nodes. An Oracle Applications system consists of five server types:

- Database server (database tier)

- Forms server (application tier)

- Web server (application tier)

- Concurrent Processing server (application tier)

- Administration server (application tier)

> **Note:** A recommended alternative for a multi-node system is to configure a shared application tier file system. See Sharing the Application Tier File System in *Oracle Applications Concepts*. See also Sharing the Application Tier File System in Chapter 1.

Action

Perform the following steps (from the basic cloning procedure) to clone your single-node system to a multi-node system.

1. Perform prerequisite tasks.

    Complete all the steps in the Perform Prerequisite Tasks section on page 4-5 on the source node and on all the target nodes.

2. Clone Oracle Applications 11*i*.

    Complete all the steps in the Prepare the source system section on page 4-5, in the Copy the source system to the target system section on page 4-6, and the Configure the target system section on page 4-6.

    When creating more than one application tier node from a single-node system, perform the copy and configure steps on each target node. Copy the database ORACLE_HOME and the database only to the node where the database will run.

3. Finish the cloning process.

    Complete all the steps in the Finish the Cloning Process section on page 4-7.

Cloning a Multi-node System to a Multi-node System

Business Requirement

My system currently runs on multiple nodes. How do I create a cloned multi-node system?

Discussion

You can clone a multiple-node system to another multi-node system and maintain the same number of nodes. For example, you can clone a system that contains three nodes

to a target system that also has three nodes, each node having with the same servers that you have on the source node.

You can also clone two or more servers that are currently on separate nodes to one node. For example, in a system that has the Web server and forms servers on different nodes, you can clone these two servers and place them on a single node.

Action

Perform all the steps in the basic cloning process on page 4-5 on each node. For example, if the source system contains three nodes, you would perform the cloning process three times.

- Clone source system node 1 to target system node 1

- Clone source system node 2 to target system node 2

- Clone source system node 3 to target system node 3

> **Note:** Clone the database server node first.

You can also clone system node 1 and 2 to target node 1, or other permutations of the cloning process to suit your needs.

Re-creating (Migrating) an Existing Database

There are several ways to re-create (migrate) a database. Oracle recommends the Export/Import process discussed in this section if you need to transfer a database to improve scalability, or to change the block size. Other types of migration rely on different instructions, including the following:

If you are migrating your database...	Refer to...
To prepare for a Release 11*i* upgrade	*Upgrading Oracle Applications*.
To prepare for applying a maintenance pack	The Maintenance Pack Release Notes.
To a different version of the Oracle server used with Oracle Applications	http://metalink.oracle.com/metalink/plsql/ certify. welcome, and *Oracle9i: Database Migration*.

> **Attention:** You must migrate the entire database. Do not migrate individual schemas or parts of an Oracle Applications database.

Exporting/Importing a Database

Business Requirement

I want to migrate my database to a different platform so I can improve scalability (or change the database block size). The target node and the source node are different machines.

Discussion

With the Oracle Export and Import utilities, you can move existing data in Oracle format to and from Oracle databases. For example, using export files you can archive

database data or move data among different Oracle databases that run on the same operating system (or on different operating systems). You should be familiar with both these utilities before you begin to transfer database objects.

> **Additional Information:** Refer to *Oracle9i Database Utilities* for more information.

Action

For complete and up-to-date instructions on migrating an existing database instance using the Export/Import process, see Oracle*MetaLink* document 230627.1, *Export/Import Process for Oracle Applications Release 11i Database Instances Using Oracle9i Enterprise Edition*.

Preserving Custom Links

Business Requirement

I have custom database links in the source database instance that point to the source database instance. I need to preserve these links.

Discussion

In the process of exporting/importing your database, custom links created in the source database must be re-created in the target database. When you re-create these links, the <custom database link>, <user>, and <password> parameters should be the same as they were in the source database.

In the target database, the <host name> is the host name of the target database server node, <port number> is the port number of the Net Services TNS listener for the target database instance, and <SID> is the ORACLE_SID of the target database instance

Action

From the node on the target system that contains the database, connect to the target database as APPS and run the following commands.

```
$ sqlplus APPS/<APPS password>
SQL> drop database link <custom database link>;

SQL> create database link <custom database link> connect to <user> identified by
<password> using '(DESCRIPTION=(ADDRESS=(PROTOCOL=TCP)(HOST=<host name>)
(PORT=<port number>))(CONNECT_DATA=(SID=<ORACLE_SID>)))';
```

5

Reporting and Tracking

This chapter describes how to use the reporting and tracking features in Oracle Applications. It contains the following sections:

- Analyzing Applied Patches
- Tracking Registered Products
- General System Reporting

Analyzing Applied Patches

As you apply patches, AutoPatch records the actions in the Oracle Applications applied patches database. You can query this database using the Oracle Applications Manager (OAM) Applied Patches feature, which provides easy access to reports based on your search criteria.

> **Note:** Information about applied patches is not stored in the database if the patch is run in pre-install or test mode. And, if the patch does not run successfully to completion, the associated information is not uploaded to the applied patches database, nor is it available in the Applied Patches feature.

You enter search criteria on a search patches page — either Simple Search or Advanced Search. A summary report is displayed at the bottom of the search page. In addition, detailed reports are available including: Timing Details, Files Copied, Bug Fixes, Action Summary, and Action Details.

Most detail reports have a standard layout. The top portion displays the criteria you used for the search. The bottom portion displays the results of the search.

> **Additional Information:** See Applied Patches Information in *Oracle Applications Maintenance Utilities*. See also Applied Patches in the OAM Help system.

Determining If a Patch Was Applied

Business Requirement

Can I determine if a specific patch has been applied to my Oracle Applications system?

Discussion

To determine which patches were applied, enter the patch search criteria on the Applied Patches search page. You can perform a simple search by entering patch ID, date ranges, or language. You can also perform an advanced search by using additional search criteria, such as APPL_TOP name or product short name.

Action

Complete the following steps:

1. Access the Oracle Applications Manager.

   Follow the instructions in OAM Web-based Utilities in *Oracle Applications Maintenance Utilities*. It describes the login procedure, the Applications Dashboard, and the Site Map. All the procedures in this section begin with the Site Map.

2. Access the Simple Search page.

   From the Site Map (Maintenance tab), click Applied Patches under the Patching and Utilities heading. The Simple Search page appears.


3. Enter criteria for a simple search.

   Enter a specific patch number in the Patch field, or enter search dates to expand the search. For example, to determine patches applied between April 15, 2004 and May 27, 2004, enter those dates in the Applied From Date and the To Date fields.

You can also use the calendar icon next to the date fields to select the dates. Search for all patches up to (and including) a specific date by completing only the To Date field, or for all patches applied on a given date, by entering the same date for both the Applied From Date and the To Date. Click Go.

4. Review the Patch Summary report.

The Patch Summary report appears at the bottom of the search page. If you entered a specific patch, and it is not listed, it has not been applied.

For each patch in the Patch Name column, the report shows: any merged patches included, the APPL_TOP name, language of the patch, and when the patch was applied (Completion Date).

Click the Details icon to display the Patch Details report.

This report contains information about the patch drivers and allows you to select criteria for other detailed reports, such as Timing Details, Files Copied, and Bug Fixes.

> **Additional Information:** See Searching for Patch Details in this
> chapter.

5. Enter criteria for an advanced search.

If you need more details than the simple search offers, click the Advanced Search
button on the Simple Search page.

From this page, you search for patches by: Applications system name, APPL_TOP,
product short name, patch ID, date criteria, or languages. The results of the query
are displayed at the bottom of the search page.

Searching for Patch Details

Business Requirement

What information is available on the Patch Details report? How do I create the report?

Discussion

From any Patch Summary report, you can click the Details icon for a selected row to
open the Patch Details report. It displays summary information carried over from the
Results portion of the either the Simple Search or Advanced Search page. It also
contains more specific information about the patch including:

- Name of the driver file and the date and time it was applied

- Command line options used to run the file

- Platform of the driver file

- Location where the driver was run

From the Patch Details page, you can also access additional information about a patch,
including timing details, files copied, bug fixes, and a summary of actions performed.

> **Additional Information:** See Applied Patches in *Oracle Applications
> Maintenance Utilities*. See also Applied Patches in OAM Help.

Action

Complete the following steps:

1. Access the Oracle Applications Manager.

   Follow the instructions in OAM Web-based Utilities in *Oracle Applications Maintenance Utilities*. It describes the login procedure, the Applications Dashboard, and the Site Map. All the procedures in this section begin at the Site Map.

2. Create a Patch Summary report.

   From the Site Map (Maintenance tab), click Applied Patches under the Patching and Utilities heading. From either the Simple Search or Advanced Search page, enter a patch number or a date range to create a Patch Summary report. Click Go.

3. Select the patch.

   Click the Details icon in any selected row of the Patch Summary report. The Patch Details report appears.

   The report displays patch details such as driver files, start dates, platform, and so on. It also provides access to other patch details related to the driver files, such as files copied and bug fixes. You can select a driver from the list, and click one of the additional detail buttons to see other reports.

4. View additional details.

   As an example of the details that are available for a selected driver, click Files Copied.

For each file, the Files Copied report shows the product short name, the directory where the file was copied, the name of the file, and the version number. To view other information associated with the driver file, click the Patch Details link at the top of the page to return to the previous page.

As another example, click the Bug Fixes button on the Patch Details report.

The Bug Fixes report lists all bug fixes included in the selected driver file. It contains the bug number, the associated product, and whether the bug fix was applied. If the fix was not applied, the Reason Not Applied column explains why.

5. View the Action Summary report.

You can create a report that summarizes the actions of a selected driver file. Click the Patch Details link at the top of the page to return to the Patch Details page. (You can also access the Action Summary report by clicking the bug fix number on the Bug Fixes report.)

From the Patch Details page, select a driver and click the Action Summary button.

The Action Summary report shows more information about the driver and its actions. For definitions of the column headings, click Help and expand the Applied Patches branch of the OAM help directory tree.

If the driver selected is a database driver, the Patch Summary report shows the driver actions, such as sql and exec. If the driver performed actions on the database, the Details icon is active. Click it to see the Action Details report.

Searching for Translation Patches

Business Requirement

My Oracle Applications system operates in multiple languages. I want to make sure translation patches have been applied successfully.

Discussion

Each US patch has an associated translation patch, which you apply separately based on the languages that are active in your system. AutoPatch stores information in the applied patches database about all translation patches you apply.

Action

Complete the following steps:

1. Access the Oracle Applications Manager.

Follow the instructions in OAM Web-based Utilities in *Oracle Applications Maintenance Utilities*. It describes the login procedure, the Applications Dashboard, and the Site Map. All the procedures in this section begin with the Site Map.

2. Access the Simple Search page.

From the Site Map (Maintenance tab), click Applied Patches under the Patching and Utilities heading. The Simple Search page appears.

Enter the search criteria. See Determining If a Patch Was Applied for details about using the Simple Searches screen, or click the OAM Help button.

3. Specify the patch.

On the Simple Search page, enter the number of the translation patch in the Patch field. Click Go.

4. Review the Patch Summary report.

All applications of the patch are displayed. If multiple translations were applied, there will be multiple rows. The Language column shows the languages applied.
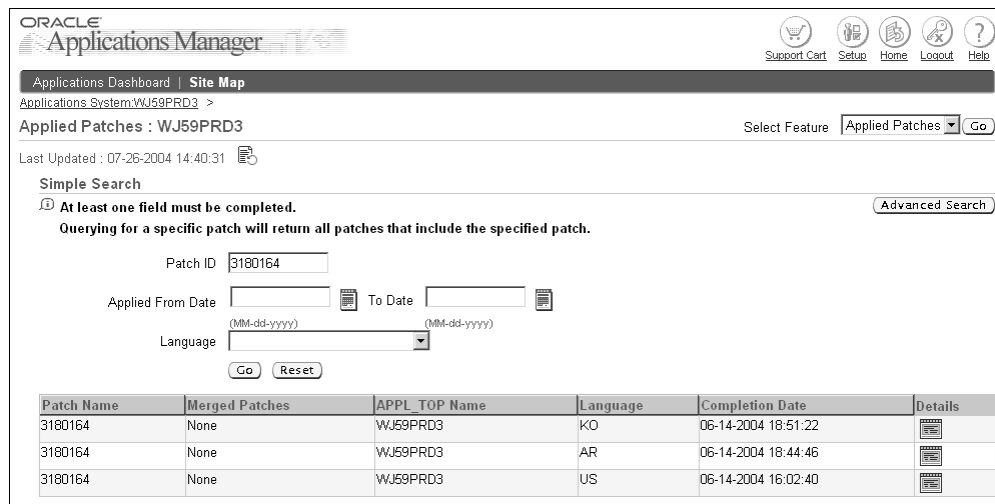
Viewing Applied Patches in a Report Format

Business Requirement

Can I review applied patches information without the OAM screens?

Discussion

There may be times when you want to view applied patch history without running the Oracle Applications Manager. For example, you may need to view large amounts of data, or you may just need a list of patches without the detail provided in the OAM Patch History reports. In these cases, you can run command line scripts that list all patches applied in each AutoPatch session, all files affected by a patch, or all patches applied within a certain date range. The scripts, and a description of the reports they produce, are listed in the following table.

Script Name	Report Content	Output Format
adphrept.sql	Lists patches applied in individual AutoPatch sessions, and includes details	XML
adfhrept.sql	Displays information about files changed by patches	XML
adpchlst.sql	Lists patches applied in a given date range	text

The XML reports produced by adphrept.sql and adfhrept.sql can either be processed as XML or viewed as HTML.

Action

To run a report that provides a listing of applied patches, follow the appropriate instructions in this section.

To see a list of all completed AutoPatch sessions with patch details:

Run adphrept.sql (located in $AD_TOP/patch/115/sql). This script produces an XML report showing individual AutoPatch sessions. If a patch was applied more than once, this report lists each application of the patch. If a merged patch was applied, it lists the merged patch by patch name. It does not list the individual patches within the merged patch.

To run adphrept.sql, use the following parameters:

```
<query_depth> <bug_number or ALL> <bug_product or ALL> \
<start_date_from (mm/dd/rr or ALL)> <end_date_to (mm/dd/yyyy or ALL)> \
<patchname/ALL> <patchtype/ALL> <level/ALL> <language/ALL> \
<appltop/ALL> <limit to forms server? (Y/N)> \
<limit to web server? (Y/N)> \
<limit to node server? (Y/N)> \
<limit to admin server? (Y/N)> \
<only patches that change DB? (Y/N)> <report_name>.xml
```

For <query_depth>, specify 1 (details of patches only), 2 (details of patches and their bug fixes only), or 3 (details of patches, bug fixes, and bug actions).

At the command prompt, type the report command and enter values for the parameters and prompts. For example, to see complete patch details for AutoPatch sessions that were run during December 2003, type the following, using the mm/dd/yyyy date format:

UNIX:

```
$ cd $AD_TOP/patch/115/sql
$ sqlplus <APPS username>/<APPS password> @adphrept.sql 3 ALL ALL 12/01/2003 \
  12/31/2003 ALL ALL ALL ALL ALL N N N N N dec03.xml
```

Windows:

```
C:>\ cd %AD_TOP%\patch\115\sql
C:>\ sqlplus <APPS username>/<APPS password> @adphrept.sql 3 ALL ALL \
    12/01/2003 12/31/2003 ALL ALL ALL ALL ALL N N N N N dec03.xml
```

The AD_TOP/html directory contains the adpchrep.xsl style sheet for displaying the XML output file in HTML format. To view the XML file as HTML, copy both the adpchrep.xsl style sheet and XML output report to a directory accessible by a browser. Open the directory in your browser and click the XML filename.

To display information about files changed by patches:

Run adfhrept.sql (located in $AD_TOP/patch/115/sql) to produce an XML report named adfilerep.xml. Use the following parameters:

```
<filename> <latest file version only? (Y/N) \
<start_date (mm/dd/rr or ALL)> <end_date (mm/dd/yyyy or ALL)> \
<patchtype/ALL> <language/ALL> \
<appltop/ALL> <limit to forms server? (Y/N)> \
<limit to web server? (Y/N)> \
<limit to node server? (Y/N)> \
<limit to admin server? (Y/N)> \
<only patches that change DB? (Y/N)>
```

At the command prompt, type the report command and enter values for the parameters and prompts. For example, to see the complete file version history for admorgb.pls considering only patches applied in December 2003, type the following, using mm/dd/yyyy format:

UNIX:

```
$ cd $AD_TOP/patch/115/sql
$ sqlplus <APPS username>/<APPS password> @adfhrept.sql admorgb.pls \
  N 12/01/2003 12/31/2003 ALL ALL ALL N N N N N
```

Windows:

```
C:>\ cd %AD_TOP%\patch\115\sql
C:>\ sqlplus <APPS username>/<APPS password> @adfhrept.sql admorgb.pls \
    N 12/01/2003 12/31/2003 ALL ALL ALL N N N N N
```

The AD_TOP/html directory contains the adfilerep.xsl style sheet for displaying the XML output file in HTML format. To view the XML file as HTML, copy both the adfilerep.xsl style sheet and XML output report to a directory accessible by a browser. Open the directory in your browser and click on the XML filename.

To see a list of all patches in a given date range:

The adpchlst.sql report (located in $AD_TOP/patch/115/sql) produces a list (adpchlst.lst) of all patches in a date range, without patch detail. It differs from adphrept.sql in two ways: it lists a patch only once regardless of how many times it was applied, and it lists individual patches included within a merged patch. For example, if you combine patches 123, 124, and 125 in a merged patch called merged1, the report lists patches 123, 124, and 125, but not merged1.

At the command prompt, type the report command and enter the date parameters in mm/dd/yyyy format. For example, to see a list of patches applied in December 2003, type the following:

UNIX:

```
$ cd $AD_TOP/patch/115/sql
$ sqlplus <APPS username>/<APPS password> @adpchlst.sql 12/01/2003 04/30/2003
```

Windows:

```
C:>\ cd %AD_TOP%\patch\115\sql
C:>\ sqlplus <APPS username>/<APPS password> @adpchlst.sql 12/01/2003 04/30/2003
```

Monitoring Patches in Progress

Business Requirement

Can I monitor the progress of a patch while it's being applied?

Discussion

Depending on the size and complexity of a patch, it may take from several minutes to several hours to completely apply it to your system. It is useful to know what a patch is currently doing and how long individual steps are taking.

When applying patches, the Oracle Applications system is in maintenance mode and the application tier services, including the Web server are shut down. This prevents access to Oracle Applications and the Oracle Applications Manager. In order to access the OAM Timing Reports to track an in-progress patching session, the Web server must be started in restricted mode and OAM accessed through a restricted mode URL.

Action

Complete the following steps:

1. Set up the ad_monitor user account. ad_monitor is the user account used to log in to OAM in restricted mode.

    ■   Log in to SQL*Plus as SYSTEM.

    ■   Unlock the ad_monitor user.

        SQL> alter user ad_monitor account unlock;

    ■   Log in to SQL*Plus as the ad_monitor user and reset the password. Default password is lizard.

2. Shut down all application tier services.

3. Enable maintenance mode.

4. Start the Web server in restricted mode. The script to start and stop this service is in the COMMON_TOP/admin/scripts/<CONTEXT_NAME> directory.

    UNIX:

        $ adaprstctl.sh start

    Windows:

        C:\> adaprstctl.cmd start

5. Run AutoPatch to start the patch session.

6. Access OAM through restricted mode URL:
    <host>:<port>/servlets/weboamLocal/oam/oamLogin

7. Log in to OAM as the ad_monitor user.

8. Navigate to the Timing Reports (Navigation: Sitemap=>Maintenance=>Patching and utilities=>Timing Reports).

9. Once the patching session completes, shut down the restricted mode Web server.

    UNIX:

        $ adaprstctl.sh stop

    Windows:

```
C:\> adaprstctl.cmd stop
```

10. Disable maintenance mode.

11. Restart all services.

> **Additional Information:** See OAM Timing Reports in *Oracle Applications Maintenance Utilities*.

You can also monitor the progress of the patching process by reviewing:

- AutoPatch messages

  As AutoPatch runs, it displays messages on the screen about the status and progress of the patching process.

- Patch log files

  AutoPatch creates log files in the current directory. Each log file contains information about completed patching actions.

  > **Additional Information:** See Log and Restart Files in *Oracle Applications Maintenance Utilities*.

- Worker status

  For jobs run in parallel, use AD Controller to view the status of the concurrent manager and workers assigned to process jobs.

  > **Additional Information:** See Reviewing Worker Status in Chapter 6. See also AD Controller in *Oracle Applications Maintenance Utilities*.

Tracking Registered Products

Business Requirement

I want to see a list of the products, country-specific functionalities, and languages that are registered in my system.

Discussion

With OAM License Manager, you can view reports about registered products. Using the OAM License Manager, you can produce reports about products, country-specific functionalities (localized products), and languages registered as active in your system.

Registering products and other components as active alerts the Applications maintenance utilities, such as AD Administration and AutoPatch, that the products should be included, along with existing components, in all maintenance processes.

> **Additional Information:** See License Manager in *Oracle Applications Maintenance Utilities*.
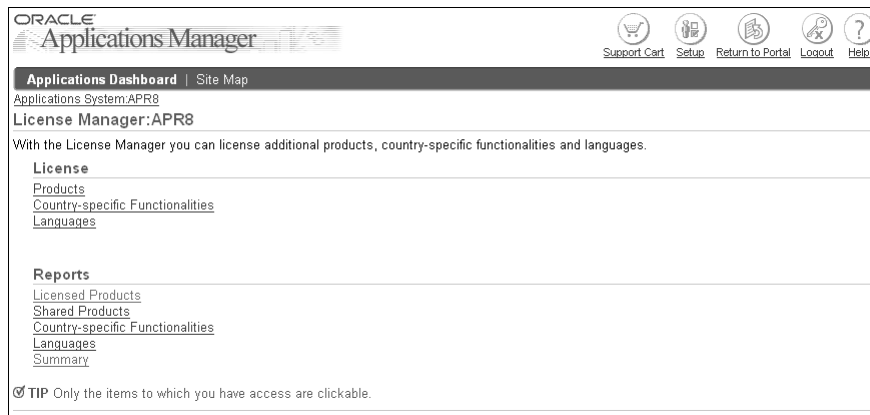
Action

To create reports, complete the following steps:

1. Access the Oracle Applications Manager.

Follow the instructions in OAM Web-based Utilities in *Oracle Applications Maintenance Utilities*. It describes the login procedure, the Applications Dashboard, and the Site Map. All the procedures in this section begin with the Site Map.

2. Access the License Manager Home Page.

From the Site Map (Administration tab), click License Manager under the System Configuration heading. The License Manager Home page appears.

It is divided into two sections: License and Reports.

The links under the Reports heading access reports about licensed products, shared products, country-specific functionalities (localized products), and languages. In addition, you can select the Summary option to see all the report information on one screen.

Click Licensed Products. The Licensed Products Summary report appears.

The Summary section of this screen contains two columns: Status and Count. A product status can be installed, inactive, or shared. The Count column shows the number of products of each status type. All products that are licensed and registered in your system are listed as installed. Products that are not licensed (registered) are listed as inactive. Shared products have dependencies on installed products, and are installed and registered automatically during the installation or upgrade.

In the List of Products section, use the Filter field to refine the list. Use the first drop-down box to find a specific Short Name, Applications Name, or Status. Use

the second drop-down to set the search criteria to be equal to (is), "contains," "begins with," or "ends with." Type a key word in the third portion of the Filter field. Click Go.

For example, if you select Status, "is," and type in "Installed," the report lists all the products installed in the system. If you choose Short Name, "contains," and type in "B,", the report shows all products (regardless of status) whose short name contains the letter "B."

> **Note:** You can also see a list of all shared products by clicking the Shared Products link on the License Manager Home page.

If the report retrieves multiple pages of information, use the Previous and Next links or the drop down list to navigate from page to page. The information is arranged in increments of 25 line items per page.

Click on the heading for a column to sort the report information based on the content in that column. Each time you click the heading, the sort alternates between ascending and descending order.

3. View summary information.

To see all current registration information for your system, click Summary from the License Manager Home page.

The Licensed Product Summary report includes information about licensed products, shared products, country-specific functionalities (localized products), languages, and base language.

You can quickly jump to each of these sections by clicking the associated link at the top of the page. For example, if you click Country-specific Functionalities, the page jumps to that section of the report. Click OK to return to the License Manager Home page.

General System Reporting

Use the reports in this section to gather general system statistics and status information.

AD Administration and AutoPatch Timing Information

Business Requirement

Can I monitor the time it takes to complete individual system patching or maintenance sessions?

Discussion

AutoPatch and AD Administration capture information about processing sessions that run parallel tasks. Previously, this information was stored in the file system in the AD Job Timing Report (adt<session_id>.lst. The OAM Timing Reports feature moves the content of this file to database tables.

> **Note:** AutoUpgrade timing statistics are recorded in the AD Job Timing Report (adt<session_id>.lst). They are not available in OAM.

With the Timing Report feature, you can view:

- Jobs run successfully on the first try

- Failed jobs that were restarted and then run successfully

- Failed jobs that were skipped

- Time-consuming jobs

- Job timing information

- Summary information about each parallel phase

- Overall timings for each session

- Status of an in-progress patching session

> **Additional Information:** See Timing Reports in *Oracle Applications Maintenance Utilities*.

Action

Complete the following steps:

1. Access the Oracle Applications Manager.

   Follow the instructions in OAM Web-based Utilities in *Oracle Applications Maintenance Utilities*. It describes the login procedure, the Applications Dashboard, and the Site Map. All the procedures in this section begin with the Site Map.

2. Access the Timing Reports page.

   From the Site Map (Maintenance tab), click Timing Reports under the Patching and Utilities heading.

The Timing Reports main page appears.

From this page, you can view a list of in-progress, stopped, aborted, and completed maintenance sessions and access timing details for the sessions in the list.

> **Additional Information:** See Timing Reports in *Oracle Applications Maintenance Utilities*.

3. Review maintenance sessions.

The main page contains a list of maintenance tasks. Each task is marked with a Status flag as being in-progress, stopped, abandoned, or completed. In addition, for each session you can see its name, start date and run time, and the last time the timing information was updated.

Use the drop-down Filter menu to refine the results.

For example, to see a list of only the sessions with a status of Completed, highlight that option and click Go.

4. View AutoPatch Timing Details report.

Clicking the Details link of a selected row opens the associated Timing Details report. There are separate reports for AD Administration sessions and for AutoPatch sessions. Click Details for an AutoPatch session to access the AutoPatch Timing Details report.

The AutoPatch Timing Details report is divided into two sections: Details and Run Information. The Details section lists every task performed in the maintenance session. Use the Focus button to expand or collapse the sub-tasks lists. Click the blue triangle to expand the Run Information section at the bottom of the AutoPatch Timing Details report.

The Run Information section contains general information about the AutoPatch session, including the APPL_TOP path, the name of the database, path for linking executables, session date, time required for session, and other information. The Help system for Timing Reports contains more complete information.

5. View AD Administration Timing Details report.

Click Details for an AD Administration session to access the AD Administration Timing Details report. This report is formatted in the same way as the AutoPatch Timing Details report, including a Details section and a Run Information section. Here is an example.

Navigation in this report is the same as in the AutoPatch Timing Details report.

6. View Job Timing report.

Some tasks listed on the Timing Details report are linked to a Job Timing report, which provides timing information for each job within the selected task. The reports are available for any task that is underlined. Click the underlined task to see the report. Here is an example.

The Summary section includes statistics about the jobs, such as number that were successful, number that were not successful, and number of workers. All unsuccessful jobs (marked as Exceptions) are hyperlinked to an Exception report.

The Job Timing Details section lists every job performed within the task. The OAM Help for this report contains a detailed list.

> **Additional Information:**   See Timing Reports in *Oracle Applications Maintenance Utilities*.

7.   View information about phases.

From the Job Timing report page, you can access the Phase Information report to view timing information by phase. Click the Phase Info button. Here is an example.

This page collects the statistics for each job in a phase and displays the information as a summary in a single line for that phase. For example, the 5 jobs listed in the first row of this Phase Information report are summarized for the first phase, showing a total elapsed time of 11 seconds.

When you are finished viewing Timing reports, use the Site Map link to return to the Site Map.

AutoUpgrade Timing Information

Business Requirement

How do I track job timing information when running AutoUpgrade?

Discussion

AutoUpgrade, AutoPatch, and AD Administration automatically produce an AD Job Timing report each time they run parallel processing tasks. For AutoPatch and AD Administration, this information is available in both the command line report (adt<session_id>.lst and in the Oracle Applications Manager (OAM) Job Timing report.

However, timing information for AutoUpgrade is available only in the AD Job Timing report (adt<session_id>.lst) that you run from the command line. It is located in $APPL_TOP/admin/<SID>/out. You can also produce this report during or after an upgrade to view timing statistics from a prior session.

> **Note:** The AD Job Timing report contains information only about *parallel* processing tasks. The OAM Timing Reports contain information about all processing sessions.

Action

To view information stored in the AD Job Timing report, type the following:

UNIX:

```
$ cd $APPL_TOP/admin/<SID>/out
$ sqlplus <APPS username>/<APPS password> @$AD_TOP/admin/sql/adtimrpt.sql \
  <session id> <output file>
```

Windows:

```
C:\> cd %APPL_TOP%\admin\<SID>\out
C:\> sqlplus <APPS username>/<APPS password> @%AD_TOP%\admin\sql\adtimrpt.sql \
    <session id> <output file>
```

Do not include an extension for the <output file> in these commands. The adtimrpt.sql script creates two files: an .lst file, which is the timing report, and a .csv file, which is currently not used.

Installed Configuration Information

Business Requirement

How can I view information such as rollback segment information, list of operating units, or NLS init.ora settings?

Discussion

You can run the AD Configuration script (adutconf.sql) to produce a report (adutconf.lst) containing configuration information.

> **Additional Information:** See AD Configuration in *Oracle Applications Maintenance Utilities*.

Action

Log in as applmgr and set the environment as described in Setting the Environment in Chapter 1 of *Oracle Applications Maintenance Utilities*. Use the following command to run this script. The output file is written to adutconf.lst in the current working directory.

UNIX:

```
$ cd $APPL_TOP/admin/<SID>/out
$ sqlplus <APPS schema username>/<APPS schema password> \
  @$AD_TOP/sql/adutconf.sql
```

Windows:

```
C:\> cd %APPL_TOP%\admin\<SID>\out
C:\> sqlplus <APPS schema username>/<APPS schema password> \
    @%AD_TOP%\sql\adutconf.sql
```

Identifying File Versions and Translation Levels

Business Requirement

I want to collect information about file versions.

Discussion

When collecting information about your system for Oracle Support, you may need to determine the version level of your files. You can do this by running AD File Identification (adident). For more information, see AD File Identification in *Oracle Applications Maintenance Utilities*.

6

Troubleshooting

This chapter contains information about resolving issues that may arise when using the AD utilities. It includes the following sections:

- Managing Worker Processes
- Restarting Processes
- Shutting Down and Restarting the Manager

Managing Worker Processes

AutoPatch, AutoUpgrade, and AD Administration can perform processing jobs in parallel to speed the time it takes to complete them. This section describes the procedures for reviewing these processes and handling situations where processing has been interrupted.

> **Additional Information:** See Parallel Processing in *Oracle Applications Maintenance Utilities*.

Reviewing Worker Status

Business Requirement

How can I monitor the progress of parallel processing jobs?

Discussion

When AutoPatch, AutoUpgrade, and AD Administration process jobs in *parallel*, they assign jobs to workers for completion. There may be situations that cause a worker to stop processing. AD Controller is a utility that you can use to determine the status of workers and manage worker tasks. You use it to monitor the actions or workers and the status of the processing jobs they have been assigned.

> **Additional Information:** See AD Controller in *Oracle Applications Maintenance Utilities*.

Action

To review worker status, perform these steps:

1. Start AD Controller.

   Set the environment and type *adctrl* on the command line.

> **Additional Information:** See Setting the Environment in *Oracle Applications Maintenance Utilities*.

2. Review worker status.

Select "Show worker status" from the AD Controller main menu. AD Controller displays a summary of current worker activity. The summary columns are:

- Control Worker is the worker number

- Code is the last instruction from the manager to this worker

- Context is the general action the manager is executing

- Filename is the file the worker is running (if any)

Here is an example:

```
Control
Worker   Code       Context                        Filename     Status
-------  --------   --------------------------     --------     ------
      1  Run        Installing at R115             afasdfa.dat  Running
      2  Run        Installing at R115             aftxt.drv    Failed
      3  Run        Installing at R115             afatsaf2.sql Running
      4  Run        Installing at R115                          Wait
      5  Run        Installing at R115                          Wait
```

The following table describes the types of status that may be assigned to a worker and reported in the Status column.

Status	Meaning
Assigned	The manager assigned a job to the worker, and the worker has not started.
Completed	The worker completed the job, and the manager has not yet assigned it a new job.
Failed	The worker encountered a problem.
Fixed, Restart	You fixed the problem, and the worker should retry whatever failed.
Restarted	The worker is retrying a job or has successfully restarted a job (Note that the status does not change to Running).
Running	The worker is running a job.
Wait	The worker is idle.

If the worker status shows Failed, the problem may need to be fixed before the AD utility can complete its processing.

Determining Why a Worker Failed

Business Requirement

One of the workers has failed. How do I determine the cause of the failure?

Discussion

When a worker fails its job, you do not have to wait until the other workers and the manager stop. Use the worker log files (adworkxxx.log) to determine what caused the failure. These log files are written to APPL_TOP/admin/<SID>/log. Find the

appropriate file and copy it to a temporary area so that you can review it. If the job was deferred after the worker failed, there may be no action required on your part.

> **Additional Information:** See Log and Restart Files in *Oracle Applications Maintenance Utilities*.

Action

Complete the following steps:

1. Start AD Controller.

   Set the environment and type *adctrl* on the command line.

   > **Additional Information:** See Setting the Environment in *Oracle Applications Maintenance Utilities*.

2. Determine which worker has encountered a problem.

   Workers that have encountered problems stop processing jobs and show a status of Failed. Follow the steps in the Reviewing Worker Status section in this chapter to determine which workers have a status of Failed.

3. Copy the worker log file.

   Open a new window and set the environment. Navigate to the location of the worker log files (adwork*xxx*.log) in the $APPL_TOP/admin/<SID>/log directory.

   Copy the log file of the failed worker to a different file name to prevent errors that may occur if the worker tries to write to its log file while you are reviewing it. For example, to copy and rename the adwork002.log file to edit002.log, type:

   UNIX:

   ```
   $ cp adwork002.log edit002.log
   ```

   > **Note:** Use the *tail* command in UNIX to limit the view to only the last part of a very large file.

   Windows:

   ```
   C:\> copy adwork002.log edit002.log
   ```

4. Review the copied log file to find out why the worker failed.

   The following is an example of a worker failure message:

   ```
   AD Worker error:
   The following ORACLE error:

   ORA-01630: max # extents (50) reached in temp segment in tablespace TSTEMP
   occurred while executing the SQL statement:

   CREATE INDEX AP.AP_INVOICES_N11 ON AP.AP_INVOICES_ALL (PROJECT_ID, TASK_ID)
   NOLOGGING STORAGE (INITIAL 4K NEXT 512K MINEXTENTS 1 MAXEXTENTS 50
   PCTINCREASE 0 FREELISTS 4) PCTFREE 10 MAXTRANS 255 TABLESPACE APX

   AD Worker error:
   Unable to compare or correct tables or indexes or keys because of the error
   above
   ```

In the example, the worker could not create the index AP_INVOICES_N11 because it reached the maximum number of extents in the temporary tablespace.

5. Determine how to fix the problem that caused the failure.

Handling a Failed Job

Business Requirement

I have reviewed the log file for the failed worker and determined the problem. What do I do next?

Discussion

A worker usually runs continuously in the background and when it fails to complete the job it was assigned, it reports a status of Failed. When the manager displays an error message, confirm the failed status of a worker by using AD Controller to review worker status. If the job was deferred after the worker failed, there may be no action required on your part.

> **Additional Information:** See Parallel Processing in *Oracle Applications Maintenance Utilities.*

Action

Complete the following steps:

1. Start AD Controller.

   Set the environment and type *adctrl* on the command line.

   > **Additional Information:** See Setting the Environment in *Oracle Applications Maintenance Utilities*.

2. Determine the failed file.

   The Worker and Filename columns in the AD Controller worker status screen show the numbers of the workers that failed and list the name of the files that failed to run.

3. Review the worker log file.

   Each worker logs the status of tasks assigned to it in adwork*xxx*.log, where *xxx* is the worker number. These files are in the $APPL_TOP/admin/<SID>/log directory. For example, adwork001.log for worker 1 and adwork002.log for worker 2. Review adwork*xxx*.log for the failed worker to determine the source of the error.

4. Resolve the error.

   Resolve the error using the information provided in the log files. Contact Oracle Support Services if you do not understand how to resolve the issue.

5. Restart the failed job.

   Choose Option 2 from the AD Controller main menu to tell the worker to restart a failed job.

6. Verify worker status.

   Choose Option 1 again. The Status column for the worker that failed should now say Restarted or Fixed, Restart.

> **Note:** When all workers are in either Failed or Wait status, the manager becomes idle. At this point, you must take action to get the failed workers running again.

Terminating a Hanging Worker Process

Business Requirement

A worker process has been running for a long time. What should I do?

Discussion

When running the AD utilities, there may be situations when a worker process appears to hang, or stop processing. If this occurs, it may be necessary to terminate the process manually. Once you do, you must also restart that process manually.

> **Caution:** A process that appears to be hanging could be a long-running job. Be careful when terminating processes.

To terminate a process, you start AD Controller, obtain the ID of the worker, and then stop any hanging processes. Once you make the necessary changes, you can restart the job or worker.

> **Additional Information:** See Restarting a Failed Worker in this chapter. See also AD Command Line Utilities in *Oracle Applications Maintenance Utilities*.

Action

1. Start AD Controller.

   Set the environment and type *adctrl* on the command line.

   > **Additional Information:** See Setting the Environment in *Oracle Applications Maintenance Utilities*.

2. Determine what the worker process is doing.

   Use the AD Controller worker status screen to determine the file being processed and check the worker log file to see what it is doing:

   - Verify whether the process is consuming CPU.

   - Review the file to see what actions are being taken.

   - Check for correct indexes on the tables (if the problem appears to be performance-related).

   - Check for an entry for this process in the V$SESSION table. This may provide clues to what the process is doing in the database.

3. Get the worker's process ID.

   If the job is identified as "hanging," determine the worker's process ID.

   UNIX:

   ```
   $  ps -a | grep adworker
   ```

Windows:

Invoke the Task Manager (Ctrl-Alt-Delete) to view processes.

4. Determine what processes the worker has started, if any. If there are child processes, get their process IDs. Examples of child processes include SQL*Plus and FNDLOAD.

5. Stop the hanging process, using the command that is appropriate for your operating system.

6. Make necessary changes.

   Fix the issue that caused the worker to hang. Contact Oracle Support Services if you do not understand how to proceed.

7. Restart the job or the worker.

   See Restarting a Failed Worker in this chapter for more information.

Restarting Processes

This section describes some situations where you may need to choose the restart option in AD Controller.

Restarting a Failed Worker

Business Requirement
I need to restart a failed worker.

Discussion
If a worker has failed, or if you have terminated a hanging worker process, you need to manually restart the worker.

Some worker processes spawn other processes called *child processes*. If you terminate a child process (that is hanging), the worker that spawned the process shows *Failed* as the status. After you fix the problem, choose to restart the failed job. Once the worker is restarted, the associated child processes are started as well.

Action
Complete these steps:

1. Start AD Controller.

   Set the environment and type *adctrl* on the command line.

   > **Additional Information:** See Setting the Environment in *Oracle Applications Maintenance Utilities*.

2. Choose Option 1 to review worker status.

3. Take the appropriate action for each worker status:

   If the worker shows *Failed*, choose Option 2 to restart the failed job. When prompted, enter the number of the worker that failed.

   If the worker shows *Running* or *Restarted* status, but the process is not really running, select the following options:

- Option 4: Tell manager that a worker has failed its job. When prompted, enter the number of the hanging worker.

- Option 6: Tell manager to start a worker that has shut down on the current machine. When prompted, enter the number of the worker that failed.

Note: Do not choose Option 6 if the worker process is running. Doing so will create duplicate worker processes with the same worker ID and will cause incorrect results.

The worker will restart its assigned jobs and spawn the necessary child processes.

Restarting an AD Utility After a Machine Crash

Business Requirement

While I was running an AD utility, I experienced a machine crash. What's the best way to the restart the utility?

Discussion

Because the manager cannot automatically detect a machine crash, you must manually notify it that all jobs have failed and manually restart the workers. If you restart the utility without doing this, the utility status and the system status will not be synchronized.

> **Additional Information:** See Monitoring and Controlling Parallel Processes in *Oracle Applications Maintenance Utilities.*

Action

1. Start AD Controller.

   Set the environment and type *adctrl* on the command line.

   > **Additional Information:** See Setting the Environment in *Oracle Applications Maintenance Utilities*.

2. Select the following options:

   - Option 4: Tell manager that a worker has failed its job (specify *all* workers)

   - Option 2: Tell worker to restart a failed job (specify *all* workers)

3. Restart the AD utility that was running when the machine crashed.

Shutting Down and Restarting the Manager

This section discusses some reasons for shutting down or reactivating a manager.

Shutting Down the Manager

Business Requirement

How do I stop an AD utility while it's running?

Discussion

There may be situations when you need to shut down an AD utility while it is running. For example, you may need to shut down the database during an AutoPatch, AutoUpgrade, or AD Administration session.

You should perform this shutdown in an orderly fashion so that it doesn't affect your data. The best way to do this is to shut down the workers manually so that the AD utility quits in an orderly fashion.

Action

1. Start AD Controller.

    Set the environment and type *adctrl* on the command line.

    > **Additional Information:**   See Setting the Environment in *Oracle Applications Maintenance Utilities*.

2. Select Option 3 and enter *all* for the worker number. Each worker stops once it completes or fails its current job.

3. Verify that no worker processes are running. Use a command similar to the one in the following example. The command arguments may vary on different platforms.

    UNIX:

    ```
    $ ps -a | grep adworker
    ```

    Windows:

    Invoke the Task Manager (Ctrl-Alt-Delete) to view processes.

4. When all workers have shut down, the manager and the AD utility quits.

Reactivating the Manager

Business Requirement

No workers are running jobs. What's the problem?

Discussion

A restarted worker resumes the failed job immediately as long as the worker process is running. The other workers change to a *Waiting* status if they cannot run any jobs because of dependencies on the failed job, or because there are no jobs left in the phase. When no workers are able to run, the manager becomes idle. Messages like the following will appear on the screen:

```
ATTENTION: All workers either have failed or are waiting:

FAILED: file cedropcb.sql on worker  1.
FAILED: file adgrnctx.sql on worker  2.
FAILED: file aftwf01.sql  on worker  3.

ATTENTION: Please fix the above failed worker(s) so the manager can continue.
```

Action

Complete the following steps for each failed worker:

1. Start AD Controller.

Set the environment and type *adctrl* on the command line.

> **Additional Information:**   See Setting the Environment in *Oracle Applications Maintenance Utilities*.

2. Determine the cause of the error.

    Choose Option 1 to view the status. Review the worker log file for the failed worker to determine the source of the error.

3. Resolve the error.

    Use the information provided in the log files. Contact Oracle Support Services if you do not understand how to resolve the issue.

4. Restart the failed job.

    Choose Option 2 on the AD Controller menu to tell the worker to restart a failed job. The worker process restarts, causing the AD utility to become active again.

    > **Additional Information:**   See Monitoring and Controlling Parallel Processes in *Oracle Applications Maintenance Utilities.*

Index

applcust.txt, 3-4
application tier file system
   shared, 1-10
Applications Context
   synchronizing, 1-2
Applied Patches
   about, 5-1
   Action Summary report, 5-6
   Advanced Search, 5-4
   Bug Fixes report, 5-6
   Files Copied report, 5-5
   Patch Details report, 5-4
   Patch Summary report, 5-3
   Simple Search, 5-2
apply=no, 3-5
APPS schema
   compiling, 2-9
   grants and synonyms, 2-8
   validating, 2-7
AutoConfig
   adautocfg.sh, 1-6
   Edit Parameters page, 1-3
   running, 1-6
   test mode, 1-5, 3-5
AutoPatch
   backup files
      compressing or deleting, 2-6
   log files, 3-4
   non-interactive patching, 3-9
   responding to prompts, 3-3

B

backing out patches, 3-32
   copy driver, 3-32
   database driver, 3-34
backup files
   deleting after patching, 3-4
base language
   changing, 1-23
   definition of, 1-23
block size
   changing, 4-10
Bug Fixes report, 5-6

C

character set
   changing, 1-22
child processes
   about, 6-6
   of AD workers, 6-6
cloning
   about, 4-4
   configure the target system, 4-6
   Oracle Applications system, 4-4
   prepare the source system, 4-5
   prerequisite tasks, 4-5
   Rapid Clone, 4-4
   refresh a cloned system, 4-8
   source system, 4-4
   target system, 4-4
column-level statistics
   gathering, 2-7
Component Applications
   definition of, 1-16
   individual products, 1-20
   registering, 1-18
components
   registering, 1-15
concurrent managers
   starting and stopping, 2-15
configuration files
   generating, 1-6
configuration parameters
   editing, 1-1
configurations
   restoring, 1-8
copy driver
   applying on multi-node systems, 3-7
   definition of, 3-2
   failed, 3-32
cost-based optimization (CBO)
   about, 2-6
country-specific functionalities
   registering, 1-21
   reviewing, 5-12
custom links
   preserving in migration, 4-11
customizations
   patching, 3-4

D

database
   analyzing, 2-6
   custom links, 4-11
   migration paths, 4-10
   statistics, 2-6
   stopping and starting processes, 2-16
database driver
   applying on multi-node systems, 3-7
   definition of, 3-2
   failed, 3-34
defaults file
   for non-standard patches, 3-12
Discoverer Server
   starting and stopping, 2-15
Distributed AD
   definition of, 2-13
   running
      AD Controller, 2-13
      AutoPatch, 2-13
   using, 3-26
distributed installation
   about, 4-1
documentation library
   contents, x
driver file actions
   searching for, 5-4