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Upgrade and Compatibility Guide

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Oracle Application Server Upgrade and Compatibility Guide, 10g Release 2 (10.1.2) for Microsoft Windows

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Preface

This preface contains the following sections:

- [Audience](#)
- [Documentation Accessibility](#)
- [Structure](#)
- [Changes in This Revision](#)
- [Related Documents](#)
- [Conventions](#)

Audience

This manual is intended for Oracle Application Server system administrators who are responsible for installing, maintaining, and upgrading Oracle Application Server instances. It is assumed that the readers of this manual have knowledge of the following:

- Oracle Application Server system administration and configuration
- The configuration and expected behavior of the system being upgraded

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Structure

The *Oracle Application Server Upgrade and Compatibility Guide* contains the following chapters and appendixes:

Chapter 1, "Things You Should Know Before Upgrading"

This chapter identifies terminology used in the guide and describes the upgrade processes for middle tier and Infrastructure installation types, including valid upgrade paths.

Chapter 2, "Understanding Version Compatibility"

This chapter describes scenarios where you must run multiple versions of Oracle Application Server simultaneously. The goal of this chapter is to help you understand how to support your systems while you are in the process of upgrading to 10g Release 2 (10.1.2)

Chapter 3, "Backup Strategies and System Availability During an Upgrade"

This chapter provides guidelines for planning an upgrade. It discusses devising an upgrade strategy, upgrade tasks, system downtime, and system availability during upgrade.

Chapter 4, "Upgrading the Middle Tier"

This chapter contains instructions for starting and using the Oracle Application Server Upgrade Assistant, and instructions on completing the upgrade.

Chapter 5, "Upgrading Identity Management Services"

This chapter contains instructions on upgrading common OracleAS Identity Management configurations, such as those installed in a colocated Infrastructure, non-colocated Infrastructure, and distributed OracleAS Identity Management environments.

Chapter 6, "Additional OracleAS Identity Management Upgrade Procedures"

This chapter contains additional upgrade procedures of interest to customers with more advanced OracleAS Identity Management environments or who are interested in the data migration method of OracleAS Identity Management upgrade.

Chapter 7, "Upgrading the OracleAS Metadata Repository"

This chapter contains instructions for upgrading the component schemas in the OracleAS Metadata Repository, as well as the database that hosts the OracleAS Metadata Repository.

Chapter 8, "Upgrading Standalone and Separately Installed Components"

This chapter describes how to upgrade Oracle Application Server standalone components and Oracle Application Server components that are installed separately from the other Oracle Application Server components.

Chapter 9, "Upgrading High Availability Configurations"

This chapter describes information about upgrading Oracle Application Server high availability configurations, including OracleAS Cold Failover Cluster configurations.

Appendix A, "Component Upgrade Process Reference"

This appendix describes the processing performed by the OracleAS Upgrade Assistant and, if applicable, component schemas. It lists the upgrade items (files or schemas) involved in each process.

Appendix B, "Files Reference"

This appendix lists all of the files affected by the Oracle Application Server upgrade. It provides the path to the file from the Oracle home and indicates whether the file is processed manually or by the OracleAS Upgrade Assistant. It also provides a brief description of each file.

Appendix C, "Upgrade and Compatibility Error Messages"

This appendix provides information about the error messages you may encounter when upgrading your Oracle Application Server installations or when running multiple versions Oracle Application Server.

Appendix D, "Troubleshooting Upgrade"

This appendix describes common problems that you might encounter when upgrading to Oracle Application Server Release 2 (10.1.2) and explains how to solve them.

Changes in This Revision

This revision of the *Oracle Application Server Upgrade and Compatibility Guide* provides updates, fixes, and clarifications to the Oracle Application Server 10g Release 2 (10.1.2) upgrade procedures documented in the initial release of the guide.

The following sections describe the changes introduced in the subsequent revisions.

Changes in Revision 2

Revision 2 of this guide (identified by the -02 part number on the title page) included minor updates, fixes, and clarifications, including new high availability upgrade procedures that were not finalized in time for the initial release of the guide.

Changes in Revision 3

Revision 3 of this guide (identified by the -03 part number on the title page) was introduced with Oracle Application Server 10g Release 2 (10.1.2.0.2) and included the following new information:

- [Chapter 1, "Things You Should Know Before Upgrading"](#) now provides an introduction to the Oracle Application Server 10g Release 2 (10.1.2) releases, as well as considerations and restrictions when upgrading to these releases.
- [Chapter 4, "Upgrading the Middle Tier"](#) now contains a checklist to help you make sure the 10g Release 2 (10.1.2) destination Oracle home is installed correctly in preparation for a middle tier upgrade.

- [Chapter 4, "Upgrading the Middle Tier"](#) also contains new information about completing the upgrade of your OracleAS Forms Services and OracleAS Reports Services components, which are now available in the 10g Release 2 (10.1.2.0.2) release.
- A new [Chapter 6, "Additional OracleAS Identity Management Upgrade Procedures"](#), provides a new, alternative data migration method of upgrading your OracleAS Identity Management environment.
- [Chapter 7, "Upgrading the OracleAS Metadata Repository"](#) contains updated requirements and guidelines when upgrading the database that hosts your OracleAS Metadata Repository.
- [Chapter 9, "Upgrading High Availability Configurations"](#) contains new and updated procedures for upgrading 10g (9.0.4) OracleAS Cold Failover Cluster and Rack-Mounted High Availability environments.
- [Appendix D, "Troubleshooting Upgrade"](#) contains some new troubleshooting tips that can help you solve common problems with the upgrade process.

Changes in Revision 4

Revision 4 of this guide (identified by the -04 part number on the title page) includes minor bug fixes and improvements, as well as the following significant changes:

- [Chapter 1, "Things You Should Know Before Upgrading"](#) includes more detailed information about Oracle Application Server 10g Release 2 (10.1.2.0.0) and 10g Release 2 (10.1.2.0.2).
- [Chapter 2, "Understanding Version Compatibility"](#) includes a revised compatibility matrix, which now includes references to the compatibility between 10g Release 2 (10.1.2.0.0) and 10g Release 2 (10.1.2.0.2).
- High-level tasks for upgrading the middle tier, OracleAS Identity Management, and the OracleAS Metadata Repository are now called out in the heading titles of the appropriate chapter. Each high-level task is called out with a prefix, such as Task 1, Task 2, and so on.
- [Chapter 4, "Upgrading the Middle Tier"](#) includes updates to the section on completing the OracleAS Reports Services upgrade, which was introduced in Revision 3, and a new section on verifying the location of OracleAS Web Cache wallets after the middle tier upgrade is complete.
- [Chapter 5, "Upgrading Identity Management Services"](#) includes a new section on modifying access control policies after the Oracle Internet Directory upgrade.
- [Chapter 7, "Upgrading the OracleAS Metadata Repository"](#) now contains a summary of the OracleAS Metadata Repository database version requirements in the section on upgrading the database that hosts the OracleAS Metadata Repository.
- [Appendix C, "Upgrade and Compatibility Error Messages"](#) now contains error messages specific to the upgrade of OracleAS Forms Services.
- [Appendix D, "Troubleshooting Upgrade"](#) includes two new troubleshooting items that users might encounter while upgrading to 10g Release 2 (10.1.2).

Changes in Revision 5

Revision 5 of this guide includes bug fixes and improvements, as well as the following significant changes:

- [Chapter 1, "Things You Should Know Before Upgrading"](#) now includes a fourth rule in [Section 1.4, "Upgrade Rules to Follow"](#).
- [Chapter 5, "Upgrading Identity Management Services"](#) now includes two additional OracleAS Identity Management post-upgrade operations, which are described in the following new sections:
 - [Section 5.6.4.9, "Modifying DSA Configuration Entries After Upgrade"](#) and
 - [Section 5.6.4.10, "Recreating Oracle Internet Directory Indexes After Upgrade"](#)
- [Chapter 5, "Upgrading Identity Management Services"](#) also includes a new OracleAS Single Sign-On post-upgrade task in [Section 5.6.5.13, "Removing Obsolete OracleAS Single Sign-On Partner Applications"](#)
- [Chapter 8, "Upgrading Standalone and Separately Installed Components"](#) includes a new procedure for upgrading to Oracle Application Server InterConnect 10g Release 2 (10.1.2.0.2).

Related Documents

The following Oracle publications are referenced in this guide. They contain information that may be useful when performing an upgrade:

- *Oracle Application Server Administrator's Guide*
- *Oracle Application Server Installation Guide*
- *Oracle Application Server Wireless Developer's Guide*
- *Oracle Application Server Single Sign-On Administrator's Guide*
- *Oracle Internet Directory Administrator's Guide*
- *Distributed Configuration Management Administrator's Guide*
- *Oracle Database Administrator's Guide*
- *Oracle Application Server Portal Error Messages Guide*
- *Oracle Application Server Portal Configuration Guide*
- *Oracle Application Server Portal User's Guide*
- *Oracle Application Server Web Cache Administrator's Guide*

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.
<i>monospace italic text</i>	Variables in text or code.

Convention	Meaning
<i>SOURCE_ORACLE_HOME</i>	The full path to the Release 2 (9.0.2), Release 2 (9.0.3), or 10g (9.0.4) Oracle home that you plan to upgrade.
<i>DESTINATION_ORACLE_HOME</i>	The full path to the 10g Release 2 (10.1.2) Oracle home.
10g Release 2 (10.1.2.0.0)	Refers to Oracle Application Server 10g Release 2 (10.1.2.0.0) only.
10g Release 2 (10.1.2.0.2)	Refers to Oracle Application Server Oracle Application Server 10g Release 2 (10.1.2.0.2) only.
10g Release 2 (10.1.2)	Refers to both the 10g Release 2 (10.1.2.0.0) and 10g Release 2 (10.1.2.0.2) versions of the Oracle Application Server software. For more information, see Section 1.2, "Summary of the New Oracle Application Server 10g Release 2 (10.1.2) Releases" .

Things You Should Know Before Upgrading

This chapter describes basic concepts you should understand before you upgrade from Oracle Application Server Release 2 (9.0.2), Release 2 (9.0.3), or 10g (9.0.4) to Oracle Application Server 10g Release 2 (10.1.2).

This chapter contains the following sections:

- [Reviewing Your Current Oracle Application Server Installations](#)
- [Summary of the New Oracle Application Server 10g Release 2 \(10.1.2\) Releases](#)
- [Introduction to the Upgrade Tools](#)
- [Upgrade Rules to Follow](#)
- [Typical Upgrade Scenarios](#)
- [Upgrade Paths Organized by Installation Type](#)
- [Understanding Transitional, Stable, and Unsupported Configurations](#)
- [Additional Upgrade Scenarios](#)
- [Verifying Support for Third-Party Products](#)

1.1 Reviewing Your Current Oracle Application Server Installations

The following sections provide some guidelines for analyzing your current Oracle Application Server configurations so you can select the best possible upgrade process:

- [Identifying the Oracle Homes to Upgrade](#)
- [Reviewing Your Current OracleAS Infrastructure Configuration](#)
- [Determining Whether Your Database is a Seed Database or OracleAS Metadata Repository Creation Assistant Database](#)

1.1.1 Identifying the Oracle Homes to Upgrade

Oracle Application Server is made up of:

- Oracle Application Server middle-tier installations
- Oracle Application Server Metadata Repository installations
- Oracle Application Server Identity Management installations

You deploy and run your applications on Oracle Application Server middle tiers. The OracleAS Metadata Repository and OracleAS Identity Management installations provide the infrastructure services that are used by the middle tiers. Infrastructure services can be shared by one or more middle tiers.

In most cases, your Oracle Application Server environment consists of multiple middle-tier installations and one or more OracleAS Metadata Repository installations and one OracleAS Identity Management installation. The middle-tier, OracleAS Metadata Repository, and OracleAS Identity Management installations exist in multiple Oracle homes and across multiple hosts.

As a result, when you upgrade to a new version of Oracle Application Server, you must upgrade multiple Oracle homes, including the middle-tier Oracle homes, as well as any Infrastructure Oracle homes you have installed.

1.1.2 Reviewing Your Current OracleAS Infrastructure Configuration

Most importantly, the process you use to upgrade your Oracle Application Server installations varies depending on how you installed and configured your OracleAS Infrastructure services. Specifically, the OracleAS Metadata Repository and OracleAS Identity Management can be in a single Oracle home or in separate Oracle homes.

For the purposes of upgrade, the following list describes the typical OracleAS Infrastructure configurations:

- [Figure 1–1](#) illustrates a configuration where the OracleAS Metadata Repository and OracleAS Identity Management are in the same Oracle home.

This configuration is the result of selecting the **Identity Management and OracleAS Metadata Repository** installation type during the Oracle Application Server installation procedure. This configuration was the only OracleAS Infrastructure installation type available for Release 2 (9.0.2) and one of three OracleAS Infrastructure installation types available in Oracle Application Server 10g (9.0.4).

This configuration is referred to as a **colocated Infrastructure** because both the OracleAS Metadata Repository and OracleAS Identity Management are located in the same Oracle home.

- [Figure 1–2](#) illustrates a configuration where the OracleAS Metadata Repository and OracleAS Identity Management are installed in separate Oracle homes.

This configuration is the direct result of installing the OracleAS Metadata Repository installation type in one Oracle home and OracleAS Identity Management in a different Oracle home. This configuration was added as an option to the Oracle Application Server 10g (9.0.4) installation procedure.

This configuration is referred to as a **non-colocated Infrastructure** because the OracleAS Metadata Repository and the OracleAS Identity Management are not in the same Oracle home.

Figure 1–1 Colocated Infrastructure - OracleAS Metadata Repository and OracleAS Identity Management in the Same Oracle Home -

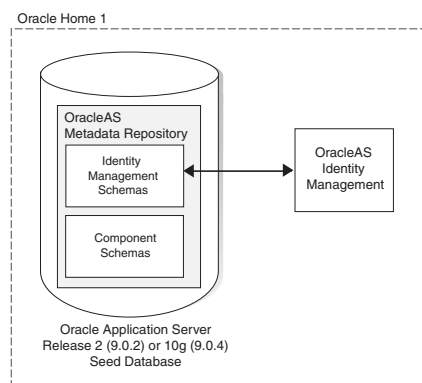
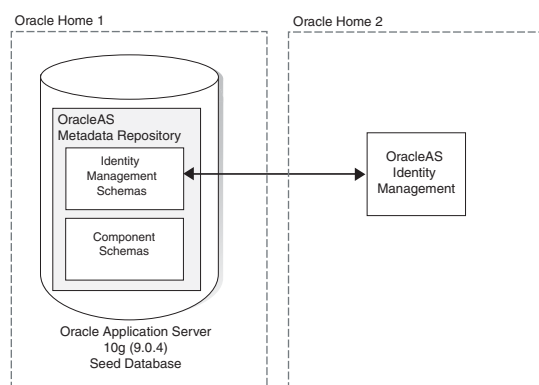


Figure 1–2 Non-Colocated Infrastructure - OracleAS Metadata Repository and OracleAS Identity Management in Separate Oracle Homes



1.1.3 Determining Whether Your Database is a Seed Database or OracleAS Metadata Repository Creation Assistant Database

As you begin the upgrade process, it is important to know how your OracleAS Metadata Repository was installed into your database. Specifically, consider the following to determine the type of OracleAS Metadata Repository database you will be upgrading. Each type of OracleAS Metadata Repository database is upgraded differently:

- If you used the Oracle Application Server installation procedure to create a new database for the OracleAS Metadata Repository, you can use Oracle Universal Installer to install Oracle Application Server 10g Release 2 (10.1.2) and upgrade the database automatically.

This type of OracleAS Metadata Repository database is referred to as a **seed database**, because the database was created automatically by the Oracle Application Server installation procedure specifically for hosting the OracleAS Metadata Repository.

- If you used OracleAS Metadata Repository Creation Assistant to install the OracleAS Metadata Repository in an existing database, you must upgrade the database yourself.

This type of OracleAS Metadata Repository database is referred to as an **OracleAS Metadata Repository Creation Assistant database**, because you used OracleAS

Metadata Repository Creation Assistant to install the repository in an existing database that you installed and configured yourself.

Note: This document also describes how to upgrade schemas that are outside of the OracleAS Metadata Repository. These are referred to as schemas in a customer database. For more information, see [Section 8.5, "Upgrading Schemas in a Customer Database"](#).

1.2 Summary of the New Oracle Application Server 10g Release 2 (10.1.2) Releases

The following sections briefly describe the new Oracle Application Server 10g Release 2 (10.1.2) releases. Use this information to help you select the release that best meets the needs of your application server environment:

- [Oracle Application Server 10g Release 2 \(10.1.2.0.0\)](#)
- [Oracle Application Server 10g Release 2 \(10.1.2.0.2\)](#)
- [Oracle Application Server 10g Release 2 \(10.1.2.0.1\) Standard Edition One](#)
- [Oracle Application Server 10g Release 2 \(10.1.2.x\) Patchsets](#)

1.2.1 Oracle Application Server 10g Release 2 (10.1.2.0.0)

Oracle Application Server 10g Release 2 (10.1.2.0.0) was the initial release of Oracle Application Server 10g Release 2 (10.1.2). It was distributed to customers in late December, 2004 and provided customers with their first opportunity to install and deploy the new 10g Release 2 (10.1.2) features.

Oracle Application Server 10g Release 2 (10.1.2.0.0) did not include OracleAS Reports Services or OracleAS Forms Services. As a result, there was no upgrade path for the Release 2 (9.0.2) or 10g (9.0.4) OracleAS Reports Services or OracleAS Forms Services components.

For the purposes of upgrade, you should upgrade your Release 2 (9.0.2) and 10g (9.0.4) installations to 10g Release 2 (10.1.2.0.2) and not to 10g Release 2 (10.1.2.0.0).

1.2.2 Oracle Application Server 10g Release 2 (10.1.2.0.2)

Oracle Application Server 10g Release 2 (10.1.2.0.2) is the follow-on release to 10g Release 2 (10.1.2.0.0). It includes all the features and installation types available in 10g Release 2 (10.1.2.0.0), but also includes OracleAS Reports Services, OracleAS Forms Services, and OracleAS Personalization.

If you are using Release 2 (9.0.2) or 10g (9.0.4) OracleAS Reports Services or OracleAS Forms Services you should upgrade your installations to 10g Release 2 (10.1.2.0.2).

Oracle Application Server 10g Release 2 (10.1.2.0.2) provides no new functionality for the components delivered with 10g Release 2 (10.1.2.0.0). As a result, there is no upgrade path from 10g Release 2 (10.1.2.0.0) to 10g Release 2 (10.1.2.0.2).

Note, however, that 10g Release 2 (10.1.2.0.2) does include bug fixes and updates to those components. If you installed 10g Release 2 (10.1.2.0.0), you can obtain those same bug fixes and updates from announced 10g Release 2 (10.1.2.x) patchsets, when they are available from *OracleMetaLink*.

See Also: [Section 1.2.4, "Oracle Application Server 10g Release 2 \(10.1.2.x\) Patchsets"](#)

1.2.3 Oracle Application Server 10g Release 2 (10.1.2.0.1) Standard Edition One

Oracle Application Server Standard Edition One is designed for first-time Oracle Application Server customers who want to take advantage of the features and capabilities of Oracle Application Server in a small-to-medium sized business environment.

The simplified installation procedure provides all the components you need, including an OracleAS Infrastructure, on one host.

Because Standard Edition One is designed for first-time Oracle Application Server customers, there is no upgrade path to Standard Edition One.

In addition, Standard Edition One includes the new Oracle Instant Portal, which provides instant portals for secure publishing and content sharing, right out of the box.

1.2.4 Oracle Application Server 10g Release 2 (10.1.2.x) Patchsets

If you have installed Oracle Application Server 10g Release 2 (10.1.2.0.0) or Oracle Application Server Standard Edition One, monitor *OracleMetaLink* for patchsets that provide the latest bug fixes and updates.

Patches to the Oracle Application Server releases are available from *OracleMetaLink*:

<http://metalink.oracle.com/>

1.2.5 Summary of the Components Available with Each 10g Release 2 (10.1.2) Release

[Table 1–1](#) identifies the components available with each of the Oracle Application Server 10g Release 2 (10.1.2) releases.

Note that the 10g Release 2 (10.1.2.x) patchset is not included in the table because no additional components are added to the Oracle home when you apply the patch. The patchset is applied only to components that are already installed in the Oracle home.

Table 1–1 Components Available in Each Oracle Application Server 10g Release 2 (10.1.2) Release

	10.1.2.0.0	10.1.2.0.2	Standard Edition One
Oracle HTTP Server	Yes	Yes	Yes
Oracle Application Server Containers for J2EE	Yes	Yes	Yes
OracleAS Web Cache	Yes	Yes	Yes
OracleAS Portal	Yes	Yes	Yes
Oracle Instant Portal	No	Yes	Yes
OracleAS Wireless	Yes	Yes	No
OracleAS Forms Services	No	Yes	No
OracleAS Reports Services	No	Yes	No
OracleBI Discoverer	No	Yes	No

Table 1–1 (Cont.) Components Available in Each Oracle Application Server 10g Release 2 (10.1.2) Release

	10.1.2.0.0	10.1.2.0.2	Standard Edition One
Oracle Workflow	Yes	Yes	No
OracleAS Personalization	No	Yes	No
OracleAS Integration B2B	Yes	Yes	No
Oracle BPEL Process Analytics	No	Yes	No
Oracle BPEL Process Manager	No	Yes	No

1.3 Introduction to the Upgrade Tools

Oracle Application Server 10g Release 2 (10.1.2) provides several tools to help you upgrade your Oracle Application Server installations to the latest version. Each tool has a specialized role in upgrading a component or in accomplishing a key step in the upgrade process.

[Table 1–2](#) introduces the Upgrade tools you will use to upgrade your Oracle Application Server installations.

Table 1–2 Summary of the Oracle Application Server Upgrade Tools

Upgrade Tool	Description
OracleAS Upgrade Assistant	<p>Use the OracleAS Upgrade Assistant to upgrade your middle tier installations.</p> <p>The OracleAS Upgrade Assistant is installed with every middle tier installation. After you install a new middle tier Oracle home, you can use the OracleAS Upgrade Assistant in the new Oracle home to upgrade your data and configuration files from the original, source Oracle home.</p>
Oracle Universal Installer	<p>Oracle Universal Installer is the application you use to install Oracle Application Server, as well as most other Oracle software products.</p> <p>When you install an Oracle Application Server 10g Release 2 (10.1.2) Infrastructure component, the installation procedure checks to see if you have installed a previous version of the OracleAS Infrastructure. If a previous version is found, Oracle Universal Installer prompts you to upgrade the OracleAS Infrastructure installation.</p>
Metadata Repository Upgrade Assistant (MRUA)	<p>MRUA is the tool you use to upgrade the Oracle Application Server component schemas in the OracleAS Metadata Repository, except the OracleAS Identity Management schemas.</p> <p>MRUA is distributed on the separate OracleAS Metadata Repository Upgrade Assistant and Utilities CD-ROM, which is part of the Oracle Application Server 10g Release 2 (10.1.2) CD Pack. You run MRUA directly from the OracleAS Metadata Repository Upgrade Assistant and Utilities CD-ROM.</p>

Table 1–2 (Cont.) Summary of the Oracle Application Server Upgrade Tools

Upgrade Tool	Description
Oracle Application Server Backup and Recovery Tool or other backup utilities	<p>For middle tiers and seed databases, you can use the Oracle Application Server Backup and Recovery Tool to perform backups. The Backup and Recovery Tool is described in the <i>Oracle Application Server Administrator's Guide</i>.</p> <p>For OracleAS Metadata Repository Creation Assistant databases, see the Oracle Database documentation for the platform and version of the database that hosts your OracleAS Metadata Repository.</p> <p>For example, if you are using a Oracle9i (9.0.1.3) database, see <i>Oracle9i Backup and Recovery Concepts</i> in the Oracle9i Documentation Library, which is available on the Oracle Technology Network (OTN):</p> <p>http://www.oracle.com/technology/documentation/</p>

1.4 Upgrade Rules to Follow

The following sections describe the basic rules you must follow as you determine a plan for upgrading each of your Oracle Application Server components:

- [You Cannot Upgrade or Expand from Oracle Application Server 10g Release 2 \(10.1.2.0.0\) to 10g Release 2 \(10.1.2.0.2\)](#)
- [Upgrade All Components to the Same Version](#)
- [Middle Tiers Must Be Upgraded Before the OracleAS Metadata Repository](#)
- [Upgrade Cannot Be Performed Across Hosts or Platforms](#)

1.4.1 You Cannot Upgrade or Expand from Oracle Application Server 10g Release 2 (10.1.2.0.0) to 10g Release 2 (10.1.2.0.2)

If you have already installed or upgraded to Oracle Application Server 10g Release 2 (10.1.2.0.0), you cannot upgrade your 10g Release 2 (10.1.2.0.0) Oracle homes to 10g Release 2 (10.1.2.0.2).

See Also: [Section 1.2, "Summary of the New Oracle Application Server 10g Release 2 \(10.1.2\) Releases"](#) for a complete roadmap to the Oracle Application Server 10g Release 2 (10.1.2) releases

Similarly, you cannot expand a 10g Release 2 (10.1.2.0.0) Oracle home to a larger 10g Release 2 (10.1.2.0.2) Oracle home. For example, if you installed a 10g Release 2 (10.1.2.0.0) Portal and Wireless Oracle home, you cannot expand that Oracle home to 10g Release 2 (10.1.2.0.2) Business Intelligence and Forms.

Note, however, that while you cannot upgrade or expand your existing 10g Release 2 (10.1.2.0.0) installations to 10g Release 2 (10.1.2.0.2), you can install 10g Release 2 (10.1.2.0.2) middle tiers against an existing 10g Release 2 (10.1.2.0.0) Infrastructure. For more information, see [Chapter 2, "Understanding Version Compatibility"](#).

1.4.2 Upgrade All Components to the Same Version

Your ultimate goal should be to upgrade all of your Oracle Application Server installations to the same version—in this case, Oracle Application Server 10g Release 2 (10.1.2). Running all your Oracle Application Server instances at the same version level

is not mandatory; however, doing so will make it easier to manage, troubleshoot, and maintain your J2EE applications and your Oracle Application Server components.

If you choose to maintain previous versions of the Oracle Application Server, you must consider which combinations of versions are supported.

See Also: [Section 1.7, "Understanding Transitional, Stable, and Unsupported Configurations"](#)

1.4.3 Middle Tiers Must Be Upgraded Before the OracleAS Metadata Repository

As you begin the process of upgrading your Oracle Application Server environment to 10g Release 2 (10.1.2), you must upgrade your application server instances in the proper order. Specifically, you must start by upgrading your middle tier installations or, if you are using 10g (9.0.4), you can start by upgrading your OracleAS Identity Management installation. However, you cannot upgrade the OracleAS Metadata Repository until the middle tiers that depend upon the repository have been upgraded first.

If you upgrade your OracleAS Metadata Repository first, you will not be able to use your middle tier installations, which depend upon a compatible OracleAS Metadata Repository. In other words, your OracleAS Metadata Repository cannot be a higher version than your middle tier installations.

See Also: [Section 1.7, "Understanding Transitional, Stable, and Unsupported Configurations"](#)

1.4.4 Upgrade Cannot Be Performed Across Hosts or Platforms

The 10g Release 2 (10.1.2) upgrade procedure is designed to upgrade an existing Release 2 (9.0.2) or 10g (9.0.4) Oracle home to a new 10g Release 2 (10.1.2.0.2) Oracle home installed on the same host and on the same operating system platform.

You cannot upgrade an existing Release 2 (9.0.2) or 10g (9.0.4) installation on one host computer to a 10g Release 2 (10.1.2) installation on another host computer.

Similarly, you cannot upgrade from one platform (for example, Microsoft Windows) to another platform (for example, Linux).

1.5 Typical Upgrade Scenarios

The following sections describe the Upgrade process for three typical middle tier and OracleAS Infrastructure configurations:

- [Upgrading a Standalone Middle Tier](#)
- [Upgrading Multiple Middle Tiers and a Colocated Infrastructure](#)
- [Upgrading Multiple Middle Tiers and a 10g \(9.0.4\) Non-Colocated Infrastructure](#)

1.5.1 Upgrading a Standalone Middle Tier

[Table 1–3](#) provides an overview of the tools and procedures you use to upgrade a J2EE and Web Cache installation that is not using any OracleAS Infrastructure services.

Table 1–3 Tools and Process for Upgrading a Standalone J2EE and Web Cache Oracle Home

Task	Task Description	Upgrade Tool
1	Back up the middle tier Oracle home before beginning the upgrade procedures.	Oracle Application Server Backup and Recovery Tool or other backup utilities For more information, see Section 3.1, "Backup Strategies Before Upgrade" .
2	Install a new Oracle Application Server 10g Release 2 (10.1.2) J2EE and Web Cache installation in a new Oracle home on the same host, using the same user account that was used to install the source Oracle home.	Oracle Universal Installer
3	Upgrade configuration data and applications from the Release 2 (9.0.2), Release 2 (9.0.3), or 10g (9.0.4) source Oracle home to the 10g Release 2 (10.1.2) destination Oracle home.	OracleAS Upgrade Assistant
4	Optionally, decommission and deinstall the source Oracle home.	Oracle Universal Installer

1.5.2 Upgrading Multiple Middle Tiers and a Colocated Infrastructure

This section describes the high-level steps required to upgrade multiple middle tier Oracle homes that use a single Oracle home for the OracleAS Metadata Repository and OracleAS Identity Management.

You can start the upgrade process by upgrading the middle tiers first, or, if you are upgrading from 10g (9.0.4), you can start by upgrading OracleAS Identity Management first.

For more information, see the following sections:

- [Starting with the Middle Tiers and a Colocated Infrastructure](#)
- [Starting with 10g \(9.0.4\) OracleAS Identity Management in a Colocated Infrastructure](#)

1.5.2.1 Starting with the Middle Tiers and a Colocated Infrastructure

[Table 1–4](#) provides an overview of the steps you must perform when upgrading your middle tiers and then your OracleAS Metadata Repository and OracleAS Identity Management.

Table 1–4 Tools and Process for Upgrading a Colocated Infrastructure - Middle Tiers First

Step	Step Description	Upgrade Tools
1	Back up the middle tier Oracle homes and the colocated Infrastructure Oracle home.	Oracle Application Server Backup and Recovery Tool or other backup utilities For more information, see Section 3.1, "Backup Strategies Before Upgrade" .
2	Upgrade Middle Tiers	See Section 1.5.1, "Upgrading a Standalone Middle Tier" for an overview of the middle-tier upgrade steps and tools.

Table 1–4 (Cont.) Tools and Process for Upgrading a Colocated Infrastructure - Middle Tiers First

Step	Step Description	Upgrade Tools
3	Upgrade the OracleAS Metadata Repository database and upgrade the OracleAS Identity Management schemas	Oracle Universal Installer After selecting the installation type, select the option to upgrade the selected OracleAS Metadata Repository and OracleAS Identity Management Oracle home.
4	Upgrade the OracleAS Metadata Repository Component Schemas	Metadata Repository Upgrade Assistant
5	Optionally, decommission and deinstall source Oracle homes	Oracle Universal Installer

1.5.2.2 Starting with 10g (9.0.4) OracleAS Identity Management in a Colocated Infrastructure

[Table 1–5](#) provides an overview of the steps you must perform when upgrading your OracleAS Identity Management, and then the middle tiers and the OracleAS Metadata Repository.

Note that this procedure of starting with OracleAS Identity Management is supported only when you are upgrading from 10g (9.0.4).

Table 1–5 Tools and Process for Upgrading a Colocated Infrastructure - OracleAS Identity Management First

Step	Step Description	Upgrade Tools
1	Back up the middle tier Oracle homes and the colocated Infrastructure Oracle home.	Oracle Application Server Backup and Recovery Tool or other backup utilities For more information, see Section 3.1, "Backup Strategies Before Upgrade" .
2	Upgrade the OracleAS Metadata Repository database and upgrade the OracleAS Identity Management schemas	Oracle Universal Installer After selecting the installation type, select the option to upgrade the selected OracleAS Metadata Repository and OracleAS Identity Management Oracle home.
3	Upgrade Middle Tiers	See Section 1.5.1, "Upgrading a Standalone Middle Tier" for an overview of the middle-tier upgrade steps and tools.
4	Upgrade the OracleAS Metadata Repository Component Schemas	MRUA
5	Optionally, decommission and deinstall source Oracle homes	Oracle Universal Installer

1.5.3 Upgrading Multiple Middle Tiers and a 10g (9.0.4) Non-Colocated Infrastructure

This section describes the high-level steps required to upgrade multiple middle tier Oracle homes that use separate Oracle homes for the OracleAS Metadata Repository and OracleAS Identity Management. Non-colocated infrastructure were introduced in 10g (9.0.4), so this procedure applies only to upgrades from 10g (9.0.4).

You can start the upgrade process by upgrading the middle tiers first, or you can start by upgrading OracleAS Identity Management first.

For more information, see the following sections:

- [Starting with the Middle Tiers and a 10g \(9.0.4\) Non-Colocated Infrastructure](#)
- [Starting with OracleAS Identity Management in a 10g \(9.0.4\) Non-Colocated Infrastructure](#)

1.5.3.1 Starting with the Middle Tiers and a 10g (9.0.4) Non-Colocated Infrastructure

[Table 1–6](#) provides an overview of the steps you must perform when upgrading your middle tiers and then your OracleAS Metadata Repository and OracleAS Identity Management.

Table 1–6 Tools and Process for Upgrading a Non-Colocated Infrastructure - Middle Tiers First

Step	Step Description	Upgrade Tools
1	Back up the middle tier Oracle homes, the OracleAS Identity Management Oracle home, and the OracleAS Metadata Repository Oracle home, including the OracleAS Metadata Repository database.	Oracle Application Server Backup and Recovery Tool or other backup utilities For more information, see Section 3.1, "Backup Strategies Before Upgrade" .
2	Upgrade Middle Tiers	See Section 1.5.1, "Upgrading a Standalone Middle Tier" for an overview of the middle-tier upgrade steps and tools.
3	Upgrade the database in the OracleAS Metadata Repository Oracle home.	Depends upon whether or not the database is a seed database or a OracleAS Metadata Repository Creation Assistant database: <ul style="list-style-type: none"> ■ If it is a seed database, use Oracle Universal Installer After selecting the OracleAS Metadata Repository installation type, select the option to upgrade the selected OracleAS Metadata Repository Oracle home. ■ If it is a OracleAS Metadata Repository Creation Assistant database, use the database installation procedure and Database Upgrade Assistant (DBUA)
4	Upgrade OracleAS Identity Management and the OracleAS Identity Management schemas.	Oracle Universal Installer After selecting the Identity Management installation type, select the option to upgrade the selected OracleAS Identity Management Oracle home.
5	Upgrade the OracleAS Metadata Repository Component Schemas	MRUA
6	Optionally, decommission and deinstall source Oracle homes	Oracle Universal Installer

1.5.3.2 Starting with OracleAS Identity Management in a 10g (9.0.4) Non-Colocated Infrastructure

[Table 1–7](#) provides an overview of the steps you must perform when upgrading your OracleAS Identity Management, and then the middle tiers and the OracleAS Metadata Repository.

Table 1–7 Tools and Process for Upgrading a Non-Colocated Infrastructure - OracleAS Identity Management First

Step	Step Description	Upgrade Tools
1	Back up the middle tier Oracle homes, the OracleAS Identity Management Oracle home, and the OracleAS Metadata Repository Oracle home, including the OracleAS Metadata Repository database.	Oracle Application Server Backup and Recovery Tool or other backup utilities For more information, see Section 3.1, "Backup Strategies Before Upgrade" .
2	Upgrade the database in the OracleAS Metadata Repository Oracle home.	Depends upon whether or not the database is a seed database or a OracleAS Metadata Repository Creation Assistant database: <ul style="list-style-type: none"> ■ If it is a seed database, use Oracle Universal Installer After selecting the installation type, select the option to upgrade the selected OracleAS Metadata Repository Oracle home. ■ If it is a OracleAS Metadata Repository Creation Assistant database, use the database installation procedure and Database Upgrade Assistant (DBUA). For more information, see Section 7.1.5, "Upgrading an OracleAS Metadata Repository Creation Assistant Database".
3	Upgrade OracleAS Identity Management and the OracleAS Identity Management schemas.	Oracle Universal Installer After selecting the OracleAS Identity Management installation type, select the option to upgrade the selected OracleAS Identity Management Oracle home.
4	Upgrade Middle Tiers	See Section 1.5.1, "Upgrading a Standalone Middle Tier" for an overview of the middle-tier upgrade steps and tools.
5	Upgrade the OracleAS Metadata Repository Component Schemas	MRUA
6	Optionally, decommission and deinstall source Oracle homes	Oracle Universal Installer

1.6 Upgrade Paths Organized by Installation Type

Each time you install or upgrade an instance of Oracle Application Server—regardless of whether you install a middle tier or an OracleAS Infrastructure—you select an installation type. When you upgrade your Oracle Application Server installations, you must be sure to upgrade each installation to a compatible 10g Release 2 (10.1.2) installation type.

The following sections describe the supported upgrade paths for each of the Release 2 (9.0.2), Release 2 (9.0.3), and 10g (9.0.4) installation types you might have installed. Use this information to select the correct installation type when you are installing Oracle Application Server 10g Release 2 (10.1.2) in preparation for an upgrade:

- [Middle Tier Upgrade Paths](#)
- [Infrastructure Upgrade Paths](#)
- [A Note About Expanding or Changing an Installation Type](#)

1.6.1 Middle Tier Upgrade Paths

The following sections describe the upgrade paths for middle-tier installations:

- [Upgrading From Release 2 \(9.0.2\) Middle-Tier Installation Types](#)
- [Upgrading From Release 2 \(9.0.3\) Middle-Tier Installation Types](#)
- [Upgrading From 10g \(9.0.4\) Middle-Tier Installation Types](#)

1.6.1.1 Upgrading From Release 2 (9.0.2) Middle-Tier Installation Types

[Table 1–8](#) shows the Release 2 (9.0.2) middle-tier installation types and the corresponding compatible 10g Release 2 (10.1.2) installation types.

Table 1–8 Compatible 10g Release 2 (10.1.2) Middle-Tier Installation Types for Release 2 (9.0.2) Upgrades

Release 2 (9.0.2) Installation Type	Compatible 10g Release 2 (10.1.2) Installation Types
J2EE and Web Cache	J2EE and Web Cache
Portal and Wireless	Portal and Wireless
Business Intelligence and Forms	Business Intelligence and Forms Forms and Reports Services ¹
Unified Messaging	Business Intelligence and Forms Forms and Reports Services ¹

¹ Installed from a separate Oracle Forms and Reports Services CD-ROM. Note that the Forms and Reports Services installation will not be associated with an OracleAS Infrastructure; however, you can later configure the resulting installation to use an OracleAS Infrastructure.

1.6.1.2 Upgrading From Release 2 (9.0.3) Middle-Tier Installation Types

Oracle Application Server Release 2 (9.0.3) supported only the J2EE and Web Cache installation type. As a result, you can upgrade Release 2 (9.0.3) Oracle homes to 10g Release 2 (10.1.2) J2EE and Web Cache installations only.

1.6.1.3 Upgrading From 10g (9.0.4) Middle-Tier Installation Types

[Table 1–9](#) shows the 10g (9.0.4) middle-tier installation types and the corresponding compatible 10g Release 2 (10.1.2) installation types.

Table 1–9 Compatible 10g Release 2 (10.1.2) Middle-Tier Installation Types for 10g (9.0.4) Upgrades

10g (9.0.4) Installation Type	Compatible 10g Release 2 (10.1.2) Installation Types
J2EE and Web Cache	J2EE and Web Cache
Portal and Wireless	Portal and Wireless

Table 1–9 (Cont.) Compatible 10g Release 2 (10.1.2) Middle-Tier Installation Types for 10g (9.0.4) Upgrades

10g (9.0.4) Installation Type	Compatible 10g Release 2 (10.1.2) Installation Types
Business Intelligence and Forms	Business Intelligence and Forms Forms and Reports Services ¹
Forms and Reports Services ¹	Forms and Reports Services ¹

¹ Installed from a separate Oracle Forms and Reports Services CD-ROM. Note that the Forms and Reports Services installation will not be associated with an OracleAS Infrastructure; however, you can later configure the resulting installation to use an OracleAS Infrastructure.

1.6.2 Infrastructure Upgrade Paths

As described in the following sections, the OracleAS Infrastructure installation types available for Oracle Application Server Release 2 (9.0.2) were different than those available for Oracle Application Server 10g (9.0.4):

- [Upgrading From Release 2 \(9.0.2\) Infrastructure Installation Types](#)
- [Upgrading From 10g \(9.0.4\) Infrastructure Installation Types](#)

1.6.2.1 Upgrading From Release 2 (9.0.2) Infrastructure Installation Types

The Release 2 (9.0.2) installation procedure offered only one OracleAS Infrastructure installation type, which installed the OracleAS Metadata Repository and the OracleAS Identity Management components (Oracle Internet Directory and OracleAS Single Sign-On).

As a result, when you use Oracle Universal Installer and the 10g Release 2 (10.1.2) installation procedure to upgrade your Release 2 (9.0.2) Infrastructure Oracle home, you must select the OracleAS Identity Management and OracleAS Metadata Repository installation type.

Oracle Universal Installer will then perform the necessary procedures to install the new 10g Release 2 (10.1.2) Infrastructure, upgrade your OracleAS Infrastructure database, and the OracleAS Infrastructure components.

You can then use the Metadata Repository Upgrade Assistant to upgrade the schemas in the upgraded OracleAS Metadata Repository database.

Note: After you run Oracle Universal Installer to upgrade the Release 2 (9.0.2) OracleAS Metadata Repository database and the Release 2 (9.0.2) OracleAS Identity Management components, you will be temporarily in an unsupported configuration. As a result, you must continue with the upgrade and run the Metadata Repository Upgrade Assistant before your upgraded Oracle Application Server environment is functional.

For more information, see [Section 1.7, "Understanding Transitional, Stable, and Unsupported Configurations"](#).

1.6.2.2 Upgrading From 10g (9.0.4) Infrastructure Installation Types

[Table 1–10](#) shows the 10g (9.0.4) infrastructure installation types and the corresponding compatible 10g Release 2 (10.1.2) installation types.

Selecting a compatible 10g Release 2 (10.1.2) installation type will cause Oracle Universal Installer to identify the existing 10g (9.0.4) installation and provide you with

the option of upgrading the existing Oracle home to the new 10g Release 2 (10.1.2) Oracle home.

Table 1–10 Compatible 10g Release 2 (10.1.2) Infrastructure Installation Types for 10g (9.0.4) Upgrades

10g (9.0.4) Installation Type	Compatible 10g Release 2 (10.1.2) Installation Types
Identity Management and OracleAS Metadata Repository	Identity Management and OracleAS Metadata Repository
Identity Management	Identity Management
OracleAS Metadata Repository	OracleAS Metadata Repository

1.6.3 A Note About Expanding or Changing an Installation Type

You can expand to a larger middle tier installation type. For example, you can expand a J2EE and Web Cache middle tier to a Portal and Wireless middle tier.

However, the act of expanding your installation type must be treated as a separate task from upgrading to a new version of Oracle Application Server.

Specifically, to expand a middle tier in conjunction with an upgrade:

1. Upgrade the existing middle tier to a compatible installation type.
2. Verify that the upgrade was successful.
3. Use the instructions in "Expanding a Middle Tier" in the *Oracle Application Server Installation Guide* to expand the middle tier.

Note: You cannot expand a 10g Release 2 (10.1.2.0.0) Oracle home to a larger 10g Release 2 (10.1.2.0.2) middle tier. For example, if you installed a 10g Release 2 (10.1.2.0.0) Portal and Wireless Oracle home, you cannot expand that Oracle home to a 10g Release 2 (10.1.2.0.2) Business Intelligence and Forms Oracle home.

1.7 Understanding Transitional, Stable, and Unsupported Configurations

As you begin to upgrade your Oracle Application Server installations, you will temporarily transition to configurations that consist of multiple versions of the Oracle Application Server. For example, at some point during the upgrade of your Oracle Application Server installations:

- Your middle tier installations might be running Oracle Application Server 10g Release 2 (10.1.2) while your OracleAS Metadata Repository is running 10g (9.0.4) and your OracleAS Identity Management installation is running 10g (9.0.4).
- Your OracleAS Identity Management installation might be running Oracle Application Server 10g Release 2 (10.1.2) while your middle tiers and OracleAS Metadata Repository are still running 10g (9.0.4).
- Your middle tiers and OracleAS Metadata Repository might be running Oracle Application Server 10g Release 2 (10.1.2) while your OracleAS Identity Management installation is running Oracle Application Server Release 2 (9.0.2).

During the upgrade process, it is important to understand that each configuration you encounter falls into one of several configuration types. Those configuration types are described in [Table 1–11](#).

Table 1–11 Summary of Transitional, Stable, and Unsupported Upgrade Configurations

Configuration	Purpose and Expectations	Definition and Examples
Transitional	<p>Transitional configurations are functional and can be used by your application server clients.</p> <p>However, transitional configurations are supported only as short-term configurations. Transitional configurations should be maintained only while you are performing the overall upgrade process.</p>	<p>A configuration is transitional when at least one of the middle tiers has been upgraded and is now running a version of Oracle Application Server that is different than the one used by the OracleAS Metadata Repository.</p> <p>For example, a typical transitional configuration includes multiple middle tiers that have been upgraded to Oracle Application Server 10g Release 2 (10.1.2), but the OracleAS Metadata Repository is running Oracle Application Server 10g (9.0.4).</p>
Stable	<p>Stable configurations can be maintained in a production environment for a period of time without any serious performance or management issues.</p> <p>However, your ultimate goal—in order to implement an environment that is easier to manage and to maintain—should be to continue the upgrade process until you have implemented a Final configuration.</p>	<p>A configuration is stable when the middle tier and OracleAS Metadata Repository are at the same version.</p> <p>For example, a typical stable configuration might include an OracleAS Identity Management installation that has been upgraded to Oracle Application Server 10g Release 2 (10.1.2). However, the middle tier instances and the OracleAS Metadata Repository are still running 10g (9.0.4).</p>
Unsupported	<p>Unsupported configurations are not expected to be functional. Users cannot connect to the middle tiers; if they can connect, the middle tiers will likely generate errors when connecting to the OracleAS Metadata Repository.</p>	<p>Typically, a configuration is unsupported when the OracleAS Metadata Repository is upgraded before the middle tiers that depend upon it.</p> <p>For example, in a typical unsupported configuration, the OracleAS Metadata Repository is running Oracle Application Server 10g Release 2 (10.1.2) and the middle tiers that use the OracleAS Metadata Repository are still running Release 2 (9.0.2), Release 2 (9.0.3), or 10g (9.0.4).</p>

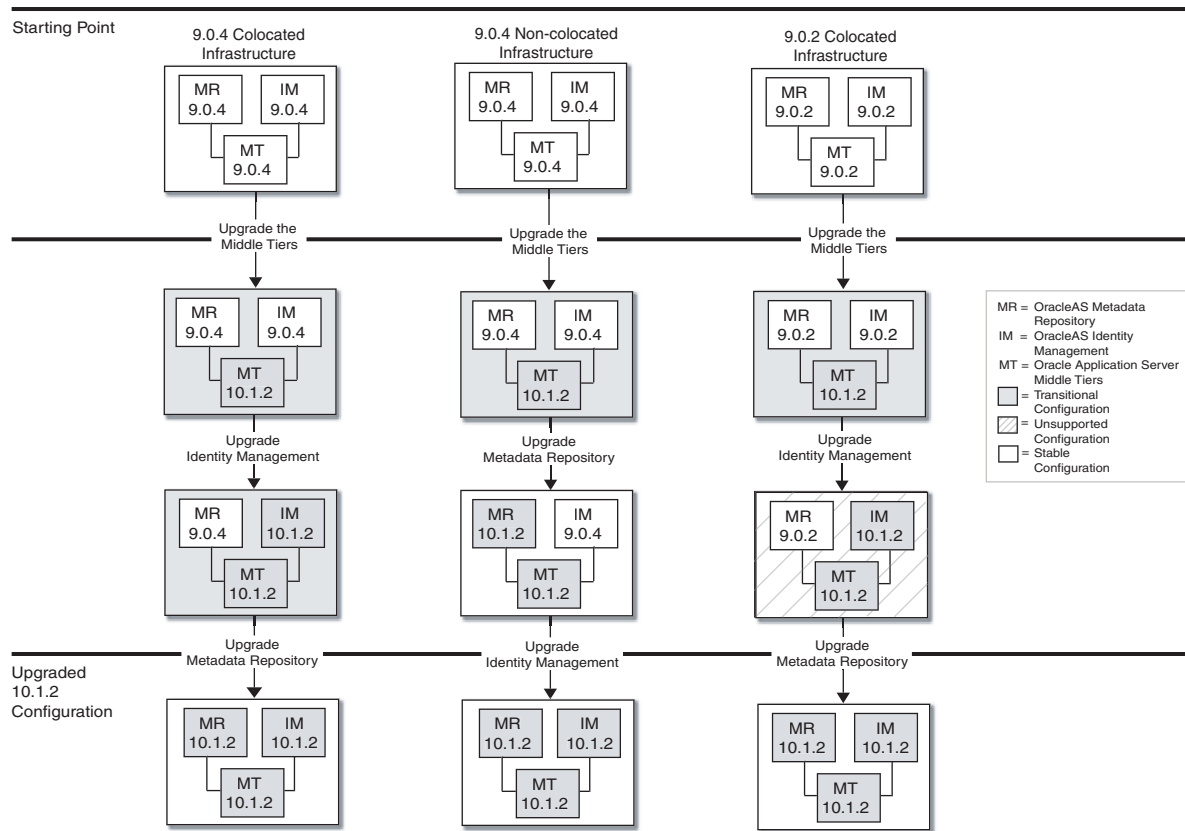
Figure 1–3 shows the typical upgrade paths you can use to:

- Upgrade from Oracle Application Server 10g (9.0.4) using a colocated Infrastructure to a final 10g Release 2 (10.1.2) configuration
- Upgrade from Oracle Application Server 10g (9.0.4) using a non-colocated Infrastructure
- Upgrade from Oracle Application Server Release 2 (9.0.2) colocated Infrastructure to a final 10g Release 2 (10.1.2) configuration

The figure shows how you can encounter transitional, stable, and unsupported configurations during the upgrade process. Your ultimate goal is to upgrade all the Oracle Application Server components so they represent a final configuration where all components are running Oracle Application Server 10g Release 2 (10.1.2).

Note: Figure 1–3 is not meant to show all the possible upgrade paths for a particular configuration. Instead, it shows three common upgrade paths and the interim configurations you will encounter as you upgrade all the Oracle Application Server components that you support.

Figure 1–3 Typical Stable, Transitional, and Unsupported Configurations When Upgrading to 10g Release 2 (10.1.2)



Note that the only unsupported configuration shown in Figure 1–3 occurs while upgrading a Release 2 (9.0.2) colocated Infrastructure. This unsupported configuration occurs because Oracle Universal Installer automatically upgrades the database to Oracle Database 10g.

Because the Release 2 (9.0.2) OracleAS Metadata Repository is not compatible with the Oracle Database 10g database, the configuration is unsupported. However, after you use the Metadata Repository Upgrade Assistant to upgrade the OracleAS Metadata Repository and its component schemas to 10g Release 2 (10.1.2), the resulting configuration is supported and stable.

See Also: [Section 2.6.12, "Release 2 \(9.0.2\) OracleAS Metadata Repository Cannot Operate Within an Oracle Database 10g Instance"](#)

1.8 Additional Upgrade Scenarios

If you have applications or configuration elements whose upgrade requirements are not addressed by the 10g Release 2 (10.1.2) installation procedure, OracleAS Upgrade Assistant, or by MRUA, you may use one of the following alternative upgrade paths:

- If there are applications deployed in Oracle Application Server Containers for J2EE (OC4J) instances of the "standalone" type—that is, the OC4J that is available for download from Oracle Technology Network in zip format—you must manually redeploy and reconfigure them.

See Also: [Section 8.1, "Upgrading a Standalone OC4J Instance"](#)

- To upgrade a standalone instance of OracleAS Web Cache Release 2 (9.0.2), Release 2 (9.0.3), or 10g (9.0.4) to Oracle Application Server 10g Release 2 (10.1.2), perform the steps described in [Section 8.2, "Upgrading a Standalone OracleAS Web Cache Instance"](#).
- To upgrade from Release 1 (1.0.2.2) to 10g Release 2 (10.1.2), you must first upgrade to Release 2 (9.0.2) or 10g (9.0.4), and then upgrade to 10g Release 2 (10.1.2).

Follow the instructions in *Oracle Application Server 10g Upgrading from Release 1 (1.0.2.2.x) to 10g (9.0.4)*, which is available on the Oracle Application Server documentation page on the Oracle Technology Network (OTN):

<http://www.oracle.com/technology/documentation/appserver10g.html>

- To upgrade Oracle Business Intelligence Discoverer from Release 1 (1.0.2.2), follow the instructions in the *Oracle Application Server Discoverer Configuration Guide* in the Oracle Application Server documentation library.
- Oracle Application Server Syndication Services is not upgraded as part of the 10g Release 2 (10.1.2) upgrade process, because that component is not supported by the 10g Release 2 (10.1.2) release.
- The upgrade of applications that use JServ is not discussed in this guide. The material in the section titled "Migrating JServ to OC4J" in *Migrating from Oracle9iAS Release 1 (1.0.2.2.x) to Release 2 (9.0.2)*, in the Oracle9iAS Release 2 (9.0.2) documentation library, may be of some help in adapting such applications to the Oracle Application Server Containers for J2EE servlet environment in Oracle Application Server 10g Release 2 (10.1.2).
- The OracleAS Portal Repository can be upgraded using the instructions in this guide from any 9.0.2.x or 9.0.4.x version.

See Also: [Section 8.5.2, "Upgrading the OracleAS Portal Repository in a Customer Database"](#)

For instructions on upgrading from other versions, see the PortalCenter upgrades page at:

<http://portalcenter.oracle.com/upgrades>

1.9 Verifying Support for Third-Party Products

Before you upgrade to Oracle Application Server 10g Release 2 (10.1.2), be sure to consider the implications of the upgrade on any third-party software you are using with the Oracle Application Server components.

Specifically, be sure to check with your third-party vendors to be sure the third-party software you are using is certified to work with Oracle Application Server 10g Release 2 (10.1.2) and its components.

Note, in particular, that Oracle Application Server 10g Release 2 (10.1.2) will likely require an upgrade of the Oracle database used to host your OracleAS Metadata Repository, and that Oracle Application Server 10g Release 2 (10.1.2) provides updated versions of many Oracle Application Server components.

Understanding Version Compatibility

This chapter provides information you need to understand how Oracle Application Server 10g Release 2 (10.1.2) operates with previous versions of Oracle Application Server.

This section provides a compatibility matrix you can use as a quick reference for identifying potential compatibility issues, as well as a comprehensive list of the compatibility problems and solutions you might have to consider.

This chapter contains the following sections:

- [Using the 10g Release 2 \(10.1.2.0.2\) Compatibility Matrix](#)
- [10g Release 2 \(10.1.2\) Middle Tier Compatibility Issues](#)
- [10g Release 2 \(10.1.2\) OracleAS Identity Management Compatibility Issues](#)
- [10g Release 2 \(10.1.2\) OracleAS Metadata Repository Compatibility Issues](#)
- [10g Release 2 \(10.1.2\) Database Version Compatibility Issues](#)
- [Complete List of the 10g Release 2 \(10.1.2\) Compatibility Issues](#)

2.1 Using the 10g Release 2 (10.1.2.0.2) Compatibility Matrix

The 10g Release 2 (10.1.2) compatibility matrix is shown in [Table 2-1](#). Before you use the compatibility matrix, you should be familiar with the Oracle Application Server installation types.

See Also: [Section 1.1.1, "Identifying the Oracle Homes to Upgrade"](#)

For example, if you want to upgrade a Release 2 (9.0.2) OracleAS Identity Management installation to 10g Release 2 (10.1.2.0.2), you can use the compatibility matrix as follows:

1. Locate the column in the table that represents 10g Release 2 (10.1.2.0.2) OracleAS Identity Management.
2. Locate the row that represents the type and the version of the Oracle homes you are currently running.

For example, if you are running Release 2 (9.0.2) or Release 2 (9.0.3) middle tiers, locate the **9.0.2 and 9.0.3 Middle Tier** row of the table.

The OracleAS Identity Management column of that row indicates that you can run Release 2 (9.0.2) or Release 2 (9.0.3) middle tiers with an upgraded 10g Release 2 (10.1.2) OracleAS Identity Management; however, there are potential problems and solutions you may have to consider before you can run this configuration.

3. If there are problems and solutions to consider, follow the reference in the intersecting table cell to learn more about which of the compatibility problems and solutions apply to the selected configuration.

Note: Some of the workarounds and issues described in this chapter are the result of incompatibilities with the version of the database used to host the OracleAS Metadata Repository. For more information, see [Section 2.5, "10g Release 2 \(10.1.2\) Database Version Compatibility Issues"](#).

Table 2–1 Oracle Application Server Compatibility Topics

	10.1.2.0.2 Middle Tier	10.1.2.0.2 OracleAS Identity Management	10.1.2.0.2 OracleAS Metadata Repository
9.0.2 and 9.0.3 Middle Tiers	Supported, with workarounds. See Section 2.2.1 .	Supported, with workarounds. See Section 2.3.1 .	Not Supported. See Section 1.4 .
9.0.2 OracleAS Identity Management	Supported, with workarounds. See Section 2.2.2 .	Not supported. See Section 2.6.15	Supported, with workarounds. See Section 2.4.2 .
9.0.2 OracleAS Metadata Repository	Supported.	Supported, with workarounds. See Section 2.3.2 .	Not Applicable.
9.0.4 Middle Tiers	Supported.	Supported, with workarounds. See Section 2.2.3	Not Supported. See Section 1.4 .
9.0.4 OracleAS Identity Management	Supported.	Not supported. See Section 2.6.15	Supported.
9.0.4 OracleAS Metadata Repository	Supported.	Supported, but only when upgrading OracleAS Identity Management from 9.0.4. See Section 2.3.3 .	Not Applicable.
10.1.2.0.0 Middle Tiers	Supported.	Supported. See Section 2.2.5	Supported. See Section 2.2.5
10.1.2.0.0 OracleAS Identity Management	Supported.	Supported	Supported.
10.1.2.0.0 OracleAS Metadata Repository	Supported.	Supported.	Not Applicable.

2.2 10g Release 2 (10.1.2) Middle Tier Compatibility Issues

The following sections list the compatibility issues you should be aware of when you are installing or upgrading 10g Release 2 (10.1.2) middle tiers in a mixed version environment:

- [Running 10.1.2 Middle Tiers with 9.0.2 or 9.0.3 Middle Tiers](#)
- [Running 10.1.2 Middle Tiers with a Release 2 \(9.0.2\) Infrastructure](#)

- [Running 10.1.2 Middle Tiers with a 9.0.4 Infrastructure](#)
- [Running 10.1.2.0.2 Middle Tiers with a 10.1.2.0.0 Infrastructure](#)

2.2.1 Running 10.1.2 Middle Tiers with 9.0.2 or 9.0.3 Middle Tiers

Multiple versions of the Oracle Application Server middle tier installations can share common infrastructure services.

For example, if you have three Release 2 (9.0.2) middle tier installations, then you can upgrade one of those middle tiers to 10g Release 2 (10.1.2). This mixed environment is a supported transitional configuration.

However, you must consider the following issues and workarounds when running 10g Release 2 (10.1.2) middle tiers with Release 2 (9.0.2), Release 2 (9.0.3), or 10g (9.0.4) middle tiers:

- [Section 2.6.2, "Assigning the Enterprise Manager Web Site Port When Installing Release 2 \(9.0.2\) or Release 2 \(9.0.3\) on a 10g \(9.0.4\) or 10g Release 2 \(10.1.2\) Host"](#)
- [Section 2.6.3, "Problems Accessing 10g Release 2 \(10.1.2\) Instances from the Release 2 \(9.0.2\) or Release 2 \(9.0.3\) Farm Page"](#)
- [Section 2.6.4, "Running the dcmctl getState Command from a 10g Release 2 \(10.1.2\) Instance"](#)
- [Section 2.6.13, "Middle Tiers Within an OracleAS Cluster Must Be the Same Version"](#)

2.2.2 Running 10.1.2 Middle Tiers with a Release 2 (9.0.2) Infrastructure

You can install 10g Release 2 (10.1.2) middle tiers against a Release 2 (9.0.2) OracleAS Infrastructure.

You can also upgrade your middle tiers to 10g Release 2 (10.1.2) before you upgrade your Release 2 (9.0.2) OracleAS Identity Management or OracleAS Metadata Repository.

However, you must consider the following issues and workarounds when Running 10g Release 2 (10.1.2) Middle Tiers with a Release 2 (9.0.2) OracleAS Infrastructure:

- [Section 2.6.5, "Updating an Entry in the Release 2 \(9.0.2\) Oracle Internet Directory Before Installing the 10g Release 2 \(10.1.2\) Middle Tier"](#)
- [Section 2.6.6, "Problems Logging In to OracleAS Portal"](#)
- [Section 2.6.8, "Oracle Delegated Administration Services: "Resource Access Information" Section Shows Incorrect User Resources"](#)
- [Section 2.6.9, "UDDI: Ping the Servlet Endpoint Returns "500 Internal Server Error"'"](#)
- [Section 2.6.10, "Using OracleAS Wireless 10g Release 2 \(10.1.2\) with a Release 2 \(9.0.2\) OracleAS Metadata Repository"](#)
- [Section 2.6.11, "Cannot Register Oracle Database 10g Against Release 2 \(9.0.2\) Identity Management"](#)

2.2.3 Running 10.1.2 Middle Tiers with 9.0.4 Middle Tiers

In general, you can run 10g Release 2 (10.1.2) middle tiers and Release 2 (9.0.2), Release 2 (9.0.3), or 10g (9.0.4) middle tiers in the same Oracle Application Server environment. However, you must keep in mind the following exceptions:

- [Section 2.6.6, "Problems Logging In to OracleAS Portal"](#)
- [Section 2.6.13, "Middle Tiers Within an OracleAS Cluster Must Be the Same Version"](#)

2.2.4 Running 10.1.2 Middle Tiers with a 9.0.4 Infrastructure

You can install 10g Release 2 (10.1.2) middle tiers against a 10g (9.0.4) OracleAS Infrastructure.

You can also upgrade your middle tiers to 10g Release 2 (10.1.2) before you upgrade your 10g (9.0.4) OracleAS Identity Management or OracleAS Metadata Repository.

However, you must consider the following issue when Running 10g Release 2 (10.1.2) Middle Tiers with a 10g (9.0.4) OracleAS Infrastructure:

- [Section 2.6.6, "Problems Logging In to OracleAS Portal"](#)

2.2.5 Running 10.1.2.0.2 Middle Tiers with a 10.1.2.0.0 Infrastructure

You can install 10g Release 2 (10.1.2.0.2) middle tiers against an existing 10g Release 2 (10.1.2.0.0) Infrastructure.

Specifically, during the 10g Release 2 (10.1.2.0.2) middle-tier installation procedure, specify the connection details for the existing 10g Release 2 (10.1.2.0.0) Identity Management and 10g Release 2 (10.1.2.0.0) OracleAS Metadata Repository.

See Also: "Installing Middle Tiers" in the *Oracle Application Server Installation Guide*

2.3 10g Release 2 (10.1.2) OracleAS Identity Management Compatibility Issues

The following sections list the compatibility issues you should be aware of when you are installing or upgrading 10g Release 2 (10.1.2) OracleAS Identity Management in a mixed version environment:

- [Running 10.1.2 Identity Management with 9.0.2 and 9.0.3 Middle Tiers](#)
- [Running 10.1.2 Identity Management with a 9.0.2 Metadata Repository](#)

2.3.1 Running 10.1.2 Identity Management with 9.0.2 and 9.0.3 Middle Tiers

You can install 10g Release 2 (10.1.2) OracleAS Identity Management services for use with Release 2 (9.0.2) and Release 2 (9.0.3) middle tiers.

You can also upgrade to OracleAS Identity Management to 10g Release 2 (10.1.2) before you upgrade your Release 2 (9.0.2) or Release 2 (9.0.3) middle tiers.

However, consider the following issues and workarounds when using this configuration:

- You must modify an entry in the 10g Release 2 (10.1.2) Oracle Internet Directory, as described in [Section 2.6.1, "Configuring Oracle Internet Directory 10g Release 2 \(10.1.2\) for Use With Release 2 \(9.0.2\) Middle Tiers"](#)
- If you are upgrading to 10g Release 2 (10.1.2) OracleAS Identity Management as part of a colocated Infrastructure, you should be aware of the limitations described in [Section 2.6.12, "Release 2 \(9.0.2\) OracleAS Metadata Repository Cannot Operate Within an Oracle Database 10g Instance"](#).

2.3.2 Running 10.1.2 Identity Management with a 9.0.2 Metadata Repository

You can run 10g Release 2 (10.1.2) OracleAS Identity Management with a Release 2 (9.0.2) OracleAS Metadata Repository; however, the Release 2 (9.0.2) OracleAS Metadata Repository schemas cannot operate within Oracle Database 10g (10.1.0.x).

For more information, see [Section 2.6.12, "Release 2 \(9.0.2\) OracleAS Metadata Repository Cannot Operate Within an Oracle Database 10g Instance"](#).

This restriction does not affect the following scenarios, which are supported:

- If the OracleAS Identity Management schemas are stored in a separate database from the OracleAS Metadata Repository, then the OracleAS Identity Management schemas can be installed in an Oracle 10g database, while the OracleAS Metadata Repository schemas remain in an Oracle9i database.
- If the 10g Release 2 (10.1.2) OracleAS Identity Management schemas and the Release 2 (9.0.2) OracleAS Metadata Repository schemas are stored in a common database, then the database must be Oracle9i Release 2 (9.2.0.6) and not a Oracle Database 10g.

Note the following additional facts about this scenario:

- You cannot install a new 10g Release 2 (10.1.2) OracleAS Identity Management installation against an existing Release 2 (9.0.2) or 10g (9.0.4) OracleAS Metadata Repository.

For more information, see [Section 2.6.14, "Cannot Install 10g Release 2 \(10.1.2\) OracleAS Identity Management Against a Release 2 \(9.0.2\) or 10g \(9.0.4\) OracleAS Metadata Repository"](#).

- You can install a new Release 2 (9.0.2) OracleAS Metadata Repository and register the database that hosts the OracleAS Metadata Repository with a 10g Release 2 (10.1.2) OracleAS Identity Management.

2.3.3 Running 10.1.2 OracleAS Identity Management with a 9.0.4 Metadata Repository

You cannot install a new 10g Release 2 (10.1.2) OracleAS Identity Management against an existing 10g (9.0.4) OracleAS Metadata Repository.

This is because the 10g (9.0.4) OracleAS Metadata Repository does not contain the required 10g Release 2 (10.1.2) OracleAS Identity Management schemas. The 10g Release 2 (10.1.2) OracleAS Identity Management installation does not install the required schemas; instead, you must point the OracleAS Identity Management installation to a valid 10g Release 2 (10.1.2) OracleAS Metadata Repository.

See Also: [Section 2.6.14, "Cannot Install 10g Release 2 \(10.1.2\) OracleAS Identity Management Against a Release 2 \(9.0.2\) or 10g \(9.0.4\) OracleAS Metadata Repository"](#)

However, when you upgrade OracleAS Identity Management to 10g Release 2 (10.1.2), the upgrade procedure automatically upgrades the OracleAS Identity Management schemas in the OracleAS Metadata Repository.

As a result, if you are running 10g Release 2 (10.1.2) OracleAS Identity Management against a 10g (9.0.4) OracleAS Metadata Repository, you can upgrade OracleAS Identity Management to 10g Release 2 (10.1.2) as long as the database that hosts the OracleAS Metadata Repository is a supported version.

Specifically, consider the following OracleAS Identity Management upgrade scenarios:

- If you are using a colocated Infrastructure, you can upgrade OracleAS Identity Management to 10g Release 2 (10.1.2) because in this scenario, the OracleAS Identity Management upgrade procedure automatically upgrades the database to a supported version and upgrades the OracleAS Identity Management schemas. The other component schemas, however, remain at 10g (9.0.4) until you run the Metadata Repository Upgrade Assistant.

See Also: [Section 7.4, "Task 4: Run the Metadata Repository Upgrade Assistant \(MRUA\)"](#)

- If you are using a non-colocated Infrastructure, you can upgrade OracleAS Identity Management to 10g Release 2 (10.1.2), but you must first ensure that the database that hosts the OracleAS Metadata Repository is a supported version. This means you will likely have to upgrade the database first, either by using Oracle Universal Installer (if it is a seed database) or by manually upgrading the database if it is a OracleAS Metadata Repository Creation Assistant database.

See Also: [Section 7.1, "Task 1: Upgrade the Database That Hosts the OracleAS Metadata Repository"](#)

2.4 10g Release 2 (10.1.2) OracleAS Metadata Repository Compatibility Issues

The following sections list the compatibility issues you should be aware of when you are installing or upgrading a 10g Release 2 (10.1.2) OracleAS Metadata Repository in a mixed version environment:

- [Running a 10.1.2 Metadata Repository with 9.0.2, 9.0.3, and 9.0.4 Middle Tiers](#)
- [Running a 10.1.2 Metadata Repository with 9.0.2 Identity Management](#)

2.4.1 Running a 10.1.2 Metadata Repository with 9.0.2, 9.0.3, and 9.0.4 Middle Tiers

You cannot run a 10g Release 2 (10.1.2) OracleAS Metadata Repository with previous versions of the Oracle Application Server middle tier. This is because the 10g (9.0.4) middle tiers are not compatible with the new 10g Release 2 (10.1.2) component schemas.

See Also: [Section 1.4, "Upgrade Rules to Follow"](#)

2.4.2 Running a 10.1.2 Metadata Repository with 9.0.2 Identity Management

You can run a 10g Release 2 (10.1.2) OracleAS Metadata Repository with Release 2 (9.0.2) OracleAS Identity Management; however, there are restrictions when registering the database that hosts the repository with Release 2 (9.0.2) OracleAS Identity Management.

For more information, see [Section 2.6.11, "Cannot Register Oracle Database 10g Against Release 2 \(9.0.2\) Identity Management"](#).

This restriction does not affect the following scenarios, which are supported:

- If you use OracleAS Metadata Repository Creation Assistant to install a new 10g Release 2 (10.1.2) OracleAS Metadata Repository in an Oracle9i Release 2 (9.2.0.6) database, then you can register the Oracle9i Release 2 (9.2.0.6) database against the Release 2 (9.0.2) OracleAS Identity Management.

- If you previously installed a 10g (9.0.4) OracleAS Metadata Repository in a Oracle9i (9.0.1.5) database, then you can upgrade the database to Oracle9i Release 2 (9.2.0.6) and run the Metadata Repository Upgrade Assistant (MRUA) to upgrade the OracleAS Metadata Repository schemas to 10g Release 2 (10.1.2).

See Also: [Chapter 7, "Upgrading the OracleAS Metadata Repository"](#)

2.5 10g Release 2 (10.1.2) Database Version Compatibility Issues

A discussion of version compatibility is not complete without mentioning the version of the database used for the OracleAS Infrastructure components.

For information on the supported database versions for 10g Release 2 (10.1.2), see [Section 7.1, "Task 1: Upgrade the Database That Hosts the OracleAS Metadata Repository"](#).

In addition, be aware of the following known compatibility issues with Oracle Database 10g:

- [Section 2.6.11, "Cannot Register Oracle Database 10g Against Release 2 \(9.0.2\) Identity Management"](#)
- [Section 2.6.12, "Release 2 \(9.0.2\) OracleAS Metadata Repository Cannot Operate Within an Oracle Database 10g Instance"](#)

2.6 Complete List of the 10g Release 2 (10.1.2) Compatibility Issues

The following sections describe the issues and workarounds you may encounter when running 10g Release 2 (10.1.2) with earlier versions of Oracle Application Server:

- [Section 2.6.1, "Configuring Oracle Internet Directory 10g Release 2 \(10.1.2\) for Use With Release 2 \(9.0.2\) Middle Tiers"](#)
- [Section 2.6.2, "Assigning the Enterprise Manager Web Site Port When Installing Release 2 \(9.0.2\) or Release 2 \(9.0.3\) on a 10g \(9.0.4\) or 10g Release 2 \(10.1.2\) Host"](#)
- [Section 2.6.3, "Problems Accessing 10g Release 2 \(10.1.2\) Instances from the Release 2 \(9.0.2\) or Release 2 \(9.0.3\) Farm Page"](#)
- [Section 2.6.4, "Running the dcmctl getState Command from a 10g Release 2 \(10.1.2\) Instance"](#)
- [Section 2.6.5, "Updating an Entry in the Release 2 \(9.0.2\) Oracle Internet Directory Before Installing the 10g Release 2 \(10.1.2\) Middle Tier"](#)
- [Section 2.6.6, "Problems Logging In to OracleAS Portal"](#)
- [Section 2.6.7, "Oracle Application Server Forms Services Gives Error FRM-92102"](#)
- [Section 2.6.8, "Oracle Delegated Administration Services: "Resource Access Information" Section Shows Incorrect User Resources"](#)
- [Section 2.6.9, "UDDI: Ping the Servlet Endpoint Returns "500 Internal Server Error"'"](#)
- [Section 2.6.10, "Using OracleAS Wireless 10g Release 2 \(10.1.2\) with a Release 2 \(9.0.2\) OracleAS Metadata Repository"](#)
- [Section 2.6.11, "Cannot Register Oracle Database 10g Against Release 2 \(9.0.2\) Identity Management"](#)

- [Section 2.6.12, "Release 2 \(9.0.2\) OracleAS Metadata Repository Cannot Operate Within an Oracle Database 10g Instance"](#)
- [Section 2.6.13, "Middle Tiers Within an OracleAS Cluster Must Be the Same Version"](#)
- [Section 2.6.15, "10g Release 2 \(10.1.2\) OracleAS Identity Management General Compatibility Requirements"](#)

2.6.1 Configuring Oracle Internet Directory 10g Release 2 (10.1.2) for Use With Release 2 (9.0.2) Middle Tiers

Before you can use a Release 2 (9.0.2) middle tier with an upgraded 10g Release 2 (10.1.2) OracleAS Identity Management Oracle home, you must perform the following procedure:

1. Ensure that the following requirements are met:
 - The ORACLE_HOME environment variable points to the Infrastructure Oracle home directory used by 10g Release 2 (10.1.2) Single Sign-On.
 - The Oracle Internet Directory server is running.
 - The 10g Release 2 (10.1.2) infrastructure database and listener used by the Single Sign-On are running.
2. Run the `imconfig.bat` script on the computer where the 10g Release 2 (10.1.2) Single Sign-On is installed. Use the following command:

```
imconfig.bat -10g -h ldapHost -p ldapPort -D ldapDN -w ldapPwd -oh oracleHome  
[-ssl ldap_ssl_port]
```

Run the script either by changing to the directory on the CD-ROM containing the script and then running it, or by providing the full path to the script on the CD-ROM. The script requires JAR files that are not in the Oracle Application Server Oracle home.

- **Method 1:** Change directory to the `utilities` directory on CD-ROM, then run the script. In this example, `E: \` is the CD-ROM drive:

```
cd E:\utilities\  
imconfig.bat parameters
```

- **Method 2:** Run the script by providing full path to the `utilities` directory on the CD-ROM

```
E:\utilities\imconfig.bat parameters
```

[Table 2–2](#) describes the parameters for the `imconfig` script.

Table 2–2 Summary of the `imconfig` Script Parameters

Parameter	Description
ldapHost	The name of the computer running the Oracle Internet Directory. For example: <code>dbmachine.mydomain.com</code> .
ldapPort	The port number on which the Oracle Internet Directory is listening. For example: <code>3060</code> .
ldapDN	The Distinguished name (DN) of the Oracle Internet Directory user. Example: <code>"cn=orcladmin"</code>
ldapPWD	The password for the Oracle Internet Directory user.

Table 2–2 (Cont.) Summary of the imconfig Script Parameters

Parameter	Description
oracleHome	The Oracle home directory for the Infrastructure database used by Single Sign-On.
ldap_ssl_port	If a secure port can be used to access the Oracle Internet Directory, specify the -ssl parameter and specify the Secure Sockets Layer (SSL) port. For example: -ssl 453

3. Perform the following in the OracleAS Single Sign-On Oracle home:
 - a. Locate the following configuration file in the OracleAS Single Sign-On Oracle home:

```
ORACLE_HOME\sso\conf\sso_apache.conf
```

- b. Use a text editor to open the sso_apache.conf file and locate the following entry in the file:

```
<Location "/pls/orasso/*[Ss][Ss][Oo][Pp][Ii][Nn][Gg]">
    Order deny,allow
    Deny from all
    # Allow from <your_domain_name>
</Location>
```

- c. Remove the comment character (#) and replace the string *your_domain_name* with the domain name used by your Release 2 (9.0.2) middle tier hosts.

For example:

```
<Location "/pls/orasso/*[Ss][Ss][Oo][Pp][Ii][Nn][Gg]">
    Order deny,allow
    Deny from all
    Allow from acme.com
</Location>
```

- d. Save and close the sso_apache.conf file.

2.6.2 Assigning the Enterprise Manager Web Site Port When Installing Release 2 (9.0.2) or Release 2 (9.0.3) on a 10g (9.0.4) or 10g Release 2 (10.1.2) Host

When you install a Release 2 (9.0.2) or Release 2 (9.0.3) Oracle Application Server instance, the installer assigns port 1810 to the Oracle Enterprise Manager Web Site, regardless of whether or not the port is already in use.

If the computer where you plan to install the Release 2 (9.0.2) or Release 2 (9.0.3) already has a 10g (9.0.4) or 10g Release 2 (10.1.2) instance, then the Oracle Enterprise Manager Application Server Control for the 10g (9.0.4) or 10g Release 2 (10.1.2) instance might already be using port 1810.

To prevent a port conflict, you can use the `staticports.ini` file to specify port numbers for each 10g Release 2 (10.1.2) component. If you plan to install Release 2 (9.0.2) or Release 2 (9.0.3) middle tiers, you can use this feature to specify a port other than 1810 for the 10g Release 2 (10.1.2) Application Server Control Console.

If you have already installed 10g Release 2 (10.1.2), you can change the Application Server Control Console ports before you install Release 2 (9.0.2) or Release 2 (9.0.3) on the same host.

See Also: "Changing Oracle Enterprise Manager Ports" in the *Oracle Application Server Administrator's Guide*

2.6.3 Problems Accessing 10g Release 2 (10.1.2) Instances from the Release 2 (9.0.2) or Release 2 (9.0.3) Farm Page

Although the Farm page in the Release 2 (9.0.2) and Release 2 (9.0.3) Enterprise Manager Web site contains links to any 10g (9.0.4) or 10g Release 2 (10.1.2) instances on the host, the links are not valid. You cannot use Oracle Enterprise Manager from Release 2 (9.0.2) or Release 2 (9.0.3) to manage 10g (9.0.4) or 10g Release 2 (10.1.2) instances.

To manage a 10g (9.0.4) or 10g Release 2 (10.1.2) instance, use the Oracle Enterprise Manager Application Server Control that was installed with the instance.

See Also: "Introduction to Administration Tools" in the *Oracle Application Server Administrator's Guide* for more information about the differences between the Release 2 (9.0.2) and Release 2 (9.0.3) Enterprise Manager Web site and the 10g (9.0.4) and 10g Release 2 (10.1.2) Application Server Control Console.

2.6.4 Running the `dcmctl getState` Command from a 10g Release 2 (10.1.2) Instance

If you run the `dcmctl getState` command from a 10g (9.0.4) or 10g Release 2 (10.1.2) instance to get information on a Release 2 (9.0.2) or Release 2 (9.0.3) instance, you might get an ADMN-604104 error:

```
prompt> dcmctl getState -i name_of_902_or_903_instance
ADMN-604104 Unable to connect to the OPMN process to obtain process status table
```

To avoid this error, use the `dcmctl` command from the Release 2 (9.0.2) or Release 2 (9.0.3) Oracle home.

2.6.5 Updating an Entry in the Release 2 (9.0.2) Oracle Internet Directory Before Installing the 10g Release 2 (10.1.2) Middle Tier

Before installing a 10g Release 2 (10.1.2) middle tier against a Release 2 (9.0.2) OracleAS Infrastructure, you must update an entry in the Release 2 (9.0.2) Oracle Internet Directory.

To update the entry, you use the `imconfig.bat` script. This script is located in the `utilities` directory of the OracleAS Metadata Repository Upgrade Assistant and Utilities CD-ROM.

The following instructions describe how to use the script:

1. Ensure that the following requirements are met:
 - The `ORACLE_HOME` environment variable points to the Release 2 (9.0.2) Infrastructure home directory used by Oracle9iAS Single Sign-On.
 - The Oracle Internet Directory server is running.
 - The Release 2 (9.0.2) Infrastructure database and listener used by Oracle9iAS Single Sign-On are running.
2. Run the `imconfig.bat` script on the computer where the 9.0.2 Oracle9iAS Single Sign-On is installed. Use the following command:

```
imconfig.bat -902 -h ldapHost -p ldapPort -D ldapDN -w ldapPwd -oh oracleHome
```

```
[-ssl ldap_ssl_port]
```

Run the script either by changing to the directory on the CD-ROM containing the script and then running it, or by providing the full path to the script on the CD-ROM. The script requires JAR files that are not in the Oracle Application Server Oracle home.

- **Method 1:** Change directory to the `utilities` directory on CD-ROM, then run the script. In this example, `E:\` is the CD-ROM drive:

```
cd E:\utilities\
imconfig.bat parameters
```

- **Method 2:** Run the script by providing full path to the `utilities` directory on the CD-ROM

```
E:\utilities\imconfig.bat parameters
```

Refer to [Table 2–2](#) for a description of the `imconfig` script parameters.

2.6.6 Problems Logging In to OracleAS Portal

If you install a 10g Release 2 (10.1.2) OracleAS Portal middle tier against a Release 2 (9.0.2) or 10g (9.0.4) OracleAS Metadata Repository, you must run the OracleAS Upgrade Assistant from the 10g Release 2 (10.1.2) middle tier before you can access the OracleAS Portal using the 10g Release 2 (10.1.2) middle tier URL.

If you do not run the Upgrade Assistant, you can only access Portal using the 9.0.x middle tier URL.

An exception to this case is if no 9.0.x middle tier was ever installed against the Release 2 (9.0.2) or 10g (9.0.4) OracleAS Metadata Repository. In this case, since the 10g Release 2 (10.1.2) middle tier is the first middle tier to be installed against the OracleAS Metadata Repository, you can access OracleAS Portal without running the Upgrade Assistant.

2.6.7 Oracle Application Server Forms Services Gives Error FRM-92102

This error occurs in configurations that meet ALL these conditions:

- You have a 10g Release 2 (10.1.2.0.2) Business Intelligence and Forms middle tier, including the Oracle Application Server Forms Services component and a Release 2 (9.0.2) infrastructure running on the same computer.
- You use the Microsoft Internet Explorer Web browser to access a form.
- The form needs to redirect to Oracle Delegated Administration Services to create a resource dynamically (because you entered a resource that does not yet exist).

If you meet all these conditions, the FRM-92102 error occurs when you access a form. The Forms Services application is unable to create a session after Oracle Delegated Administration Services created the resource.

If you access the same form again from a different browser, the resource now exists (the Oracle Delegated Administration Services component does not have to create it dynamically again), and you can now access the form successfully.

To avoid this error, you can install the instances on different computers, use Netscape Navigator instead of Microsoft Internet Explorer to access the form, or ensure that the resources already exist.

2.6.8 Oracle Delegated Administration Services: "Resource Access Information" Section Shows Incorrect User Resources

When you are using a 10g Release 2 (10.1.2) middle tier and a Release 2 (9.0.2) Infrastructure, you might see incorrect user resources listed in the Resource Access Information section in the Edit User page of Oracle Delegated Administration Services (URL: `http://host:port/oiddas`).

If you view the page for different users, the page might still show the resources for the first user you viewed.

To ensure the page is displaying the correct list of resources for a user, make sure that the user is the *first* user you view after logging into Oracle Delegated Administration Services. If you are unsure, log out of Oracle Delegated Administration Services and log in again. Then immediately view the user whose properties you want to edit (without viewing other users).

2.6.9 UDDI: Ping the Servlet Endpoint Returns "500 Internal Server Error"

When running 10g Release 2 (10.1.2) UDDI against a Release 2 (9.0.2) OracleAS Metadata Repository, you will get a "500 Internal Server Error" if you click the servlet link (inquiry, publishing, or replication endpoint) on the UDDI page:

`http://host:port/uddi`

OR

`http://host:port/uddirepl`

In addition, you will receive an error message stating that "something is wrong with JMS or MDB" if you click the JMS endpoint link on the following page:

`http://host:port/uddirepl`

This is because running UDDI from the 10g Release 2 (10.1.2) middle tier requires a 10g Release 2 (10.1.2) OracleAS Metadata Repository.

2.6.10 Using OracleAS Wireless 10g Release 2 (10.1.2) with a Release 2 (9.0.2) OracleAS Metadata Repository

If you are using Oracle Application Server Wireless, you must perform some prerequisite tasks before you can use your OracleAS Wireless components against the Release 2 (9.0.2) OracleAS Metadata Repository.

See Also: [Section 4.10.2, "Special Instructions When Upgrading an OracleAS Wireless Release 2 \(9.0.2\) Middle Tier"](#)

2.6.11 Cannot Register Oracle Database 10g Against Release 2 (9.0.2) Identity Management

You cannot register Oracle Database 10g (10.1.0.x) instances against Release 2 (9.0.2) OracleAS Identity Management.

This restriction affects Oracle Application Server users in the following scenario. When you use Oracle Universal Installer to install a new 10g Release 2 (10.1.2) OracleAS Metadata Repository, you are prompted to register the OracleAS Metadata Repository database with Oracle Internet Directory. When you are prompted to register the database, you cannot specify a Release 2 (9.0.2) Oracle Internet Directory that is part of a Release 2 (9.0.2) OracleAS Identity Management Oracle home.

To avoid this problem, upgrade the Release 2 (9.0.2) OracleAS Identity Management to 10g Release 2 (10.1.2) before attempting to register the 10g Release 2 (10.1.2) OracleAS Metadata Repository database with Oracle Internet Directory.

2.6.12 Release 2 (9.0.2) OracleAS Metadata Repository Cannot Operate Within an Oracle Database 10g Instance

The schemas in a Release 2 (9.0.2) OracleAS Metadata Repository cannot operate within an Oracle Database 10g (10.1.0.x) database.

This restriction affects Oracle Application Server users in the following scenario.

By default, the Release 2 (9.0.2) OracleAS Identity Management schemas and OracleAS Metadata Repository component schemas share a database in a common Oracle home. When you run Oracle Universal Installer to upgrade Release 2 (9.0.2) OracleAS Identity Management to 10g Release 2 (10.1.2), the installer not only upgrades OracleAS Identity Management to 10g Release 2 (10.1.2), but it also upgrades the colocated OracleAS Metadata Repository database to Oracle Database 10g (10.1.0.3.1). Because the Release 2 (9.0.2) OracleAS Metadata Repository is not compatible with the Oracle Database 10g (10.1.0.3.1) database, the resulting configuration is unsupported.

To work around this problem, run the Metadata Repository Upgrade Assistant (MRUA) immediately after the database upgrade. MRUA upgrades the OracleAS Metadata Repository schemas to 10g Release 2 (10.1.2). The upgraded 10g Release 2 (10.1.2) component schemas are compatible with Oracle Database 10g.

2.6.13 Middle Tiers Within an OracleAS Cluster Must Be the Same Version

If you create an OracleAS Cluster, the middle tiers that you add to the cluster must be the same version. For example, you cannot add a 10g Release 2 (10.1.2) middle tier and a Release 2 (9.0.2) middle tier to the same cluster.

If you plan to upgrade the middle tiers that are part of an OracleAS Cluster, you must follow the instructions described in [Section 4.10.1, "Special Instructions When Upgrading an Oracle Application Server Cluster"](#).

2.6.14 Cannot Install 10g Release 2 (10.1.2) OracleAS Identity Management Against a Release 2 (9.0.2) or 10g (9.0.4) OracleAS Metadata Repository

When you install 10g Release 2 (10.1.2) OracleAS Identity Management, you must identify a 10g Release 2 (10.1.2) OracleAS Metadata Repository database. This is because the 10g Release 2 (10.1.2) OracleAS Identity Management components require the 10g Release 2 (10.1.2) OracleAS Identity Management schemas.

As a result of this requirement, you cannot specify a Release 2 (9.0.2) or 10g (9.0.4) OracleAS Metadata Repository while installing the 10g Release 2 (10.1.2) OracleAS Identity Management.

2.6.15 10g Release 2 (10.1.2) OracleAS Identity Management General Compatibility Requirements

The following sections provide information about the requirements you must consider when running 10g Release 2 (10.1.2) OracleAS Identity Management in an environment with multiple versions of Oracle Application Server:

- [OracleAS Identity Management Components Must Be the Same Version as Their Required Schemas](#)

- [OracleAS Identity Management Components Must Use an Oracle Internet Directory Of the Same Version](#)

2.6.15.1 OracleAS Identity Management Components Must Be the Same Version as Their Required Schemas

The OracleAS Metadata Repository contains schemas that are required by OracleAS Identity Management.

If you use the Oracle Universal Installer to upgrade Identity Management to 10g Release 2 (10.1.2), then the upgraded Identity Management components can use a previous version of the OracleAS Metadata Repository for their Identity Management schemas. This is because the Identity Management schemas in the OracleAS Metadata Repository are updated as part of the Identity Management upgrade process.

However, if you install a new Identity Management 10g Release 2 (10.1.2) Oracle home, then you cannot select a previous version of the OracleAS Metadata Repository to store the Identity Management schemas. Instead, when the installation procedure prompts you for an existing OracleAS Metadata Repository, you must specify an existing 10g Release 2 (10.1.2) Metadata Repository. The 10g Release 2 (10.1.2) OracleAS Metadata Repository you specify can be a freshly installed 10g Release 2 (10.1.2) repository, or it can be a OracleAS Metadata Repository that was upgraded to 10g Release 2 (10.1.2).

2.6.15.2 OracleAS Identity Management Components Must Use an Oracle Internet Directory Of the Same Version

OracleAS Identity Management consists of multiple components, such as Oracle Delegated Administration Services, Oracle Application Server Single Sign-On, Oracle Application Server Certificate Authority, and Oracle Directory Integration and Provisioning. These components require Oracle Internet Directory.

If you decide to install these individual OracleAS Identity Management 10g Release 2 (10.1.2) components, you cannot install those components against a Release 2 (9.0.2) or 10g (9.0.4) Oracle Internet Directory.

Instead, you must first either upgrade the Oracle Internet Directory to 10g Release 2 (10.1.2) or install a new 10g Release 2 (10.1.2) Oracle Internet Directory.

Backup Strategies and System Availability During an Upgrade

This chapter provides guidelines for planning an upgrade. It consists of the following sections:

- [Backup Strategies Before Upgrade](#)
- [System Availability During Upgrade](#)
- [Planning for System Downtime](#)

3.1 Backup Strategies Before Upgrade

Before you start the upgrade process, you should have a clear understanding of the backup requirements. These requirements vary somewhat, depending upon whether you are upgrading a middle tier, an OracleAS Metadata Repository, or OracleAS Identity Management.

The following sections provide more information:

- [Backup Strategies for Middle Tier Upgrades](#)
- [Backup Strategies for OracleAS Metadata Repository Upgrades](#)
- [Backup Strategies for Identity Management Upgrades](#)

3.1.1 Backup Strategies for Middle Tier Upgrades

When you upgrade a middle tier installation, you install Oracle Application Server 10g Release 2 (10.1.2) into a new Oracle home directory and use the OracleAS Upgrade Assistant to copy your configuration data from the source Oracle home to the new, destination Oracle home. The upgrade process alters only the 10g Release 2 (10.1.2) destination Oracle home; the source instance is always left unchanged. As a result, there is no need to implement additional or new backup strategies for the source Oracle home, other than those you already use to protect your application server data.

Note: There is a scenario where installing a new 10g Release 2 (10.1.2) middle tier will alter the schemas in the OracleAS Metadata Repository. In that scenario, you should back up the OracleAS Metadata Repository database before upgrading the middle tier to 10g Release 2 (10.1.2).

For more information, see [Section 4.10.2, "Special Instructions When Upgrading an OracleAS Wireless Release 2 \(9.0.2\) Middle Tier"](#).

On the other hand, you may want to create a backup of the new 10g Release 2 (10.1.2), destination Oracle home before you run the OracleAS Upgrade Assistant. This backup will allow you to restore to a pre-upgrade (that is, newly installed) state. Restoring from backups is an efficient alternative to reinstalling the entire instance, in the event that upgrade results are unsatisfactory. A useful backup might include:

- Directories for specific components. See [Appendix B, "Files Reference"](#).
- The entire Oracle home. You can use the Oracle Application Server Backup and Recovery tool and documentation to do this.

See Also: *Oracle Application Server Administrator's Guide* for instructions on using the Backup and Recovery Tool, which is designed to help you back up and recover your Oracle Application Server installations

3.1.2 Backup Strategies for OracleAS Metadata Repository Upgrades

In most cases, when you upgrade a OracleAS Metadata Repository, you must first upgrade the database that hosts the repository to database version supported by 10g Release 2 (10.1.2).

See Also: [Section 7.1, "Task 1: Upgrade the Database That Hosts the OracleAS Metadata Repository"](#)

3.1.2.1 Backing Up the Database Before Upgrading the Database Version

As with any database upgrade, standard procedure dictates that you back up your source OracleAS Metadata Repository before you upgrade the database version. For more information, see the Oracle Database documentation for your platform and database version.

3.1.2.2 Backing Up the Database Before Running MRUA

After the database is upgraded, you must then run the Metadata Repository Upgrade Assistant (MRUA) to upgrade the component schemas so they are compatible with your 10g Release 2 (10.1.2) middle tier instances. This upgrade of the schemas is performed "in place," which means that MRUA alters the application server component schemas that exist in the database. It does not create a new copy of the schemas or the data they contain. The changes made by MRUA are irreversible.

As a result, before you run MRUA, you should perform a backup of the database that contains the schemas. This backup will allow you to restore your database to its original state before you run MRUA.

See Also: *Oracle Application Server Administrator's Guide* for information about the Oracle Application Server Backup and Recovery Tool, which is designed to help you back up and recover your Oracle Application Server installations

Oracle Database Backup and Recovery Basics in the Oracle Database 10g documentation library for information and guidelines for backing up your Oracle database

3.1.3 Backup Strategies for Identity Management Upgrades

The OracleAS Identity Management upgrade involves upgrading the configuration and data files in the Oracle home of the OracleAS Identity Management installation, as

well as upgrading the OracleAS Identity Management schemas stored in the OracleAS Metadata Repository database.

Consider the following backup strategies when upgrading your OracleAS Identity Management installations:

- When you upgrade OracleAS Identity Management, you use the Oracle Universal Installer and the Oracle Application Server 10g Release 2 (10.1.2) installation procedure. The installation procedure automatically installs a new 10g Release 2 (10.1.2) destination Oracle home and copies configuration data from the source Oracle home to the destination Oracle home.

As a result, the source Oracle home is not modified by the OracleAS Identity Management upgrade process and no additional or new backup strategies are required, other than those you already use to protect your application server data.

- The installation procedure also upgrades the OracleAS Identity Management schemas in the OracleAS Metadata Repository. These schemas include the Oracle Internet Directory and OracleAS Single Sign-On schemas.

The upgrade of the OracleAS Identity Management schemas is performed "in place," which means that the procedure alters the OracleAS Identity Management schemas that exist in the database. It does not create a new copy of the schemas or the data they contain. The schemas changes made by the OracleAS Identity Management upgrade are irreversible.

As a result, you should back up the OracleAS Metadata Repository database that contains the OracleAS Identity Management schemas before you upgrade.

3.1.4 Backup Strategies After Upgrading Your Oracle Application Server Instances

After you have completed and verified the upgrade of your Oracle Application Server environment, consider backing up your Oracle Application Server installations so you can easily restore your environment to the newly upgraded state.

In particular, consider backing up the newly upgraded OracleAS Metadata Repository database immediately after the upgrade process. After this initial post-upgrade backup, you can begin your regularly scheduled database backup routine. The initial backup after the upgrade will ensure that you can restore your environment to the newly upgraded 10g Release 2 (10.1.2) state without repeating the upgrade process.

In addition, after you have moved your development or deployment activities to the newly upgraded Oracle Application Server installations, be sure to modify your regular backup routine to include the new Oracle Application Server Oracle homes.

3.2 System Availability During Upgrade

To increase system availability during the upgrade process, you should carefully review [Chapter 2, "Understanding Version Compatibility"](#) and then plan your upgrade so you can:

- Avoid implementing any unsupported configurations.
- Reduce as much as possible the amount of time spent using transitional configurations.

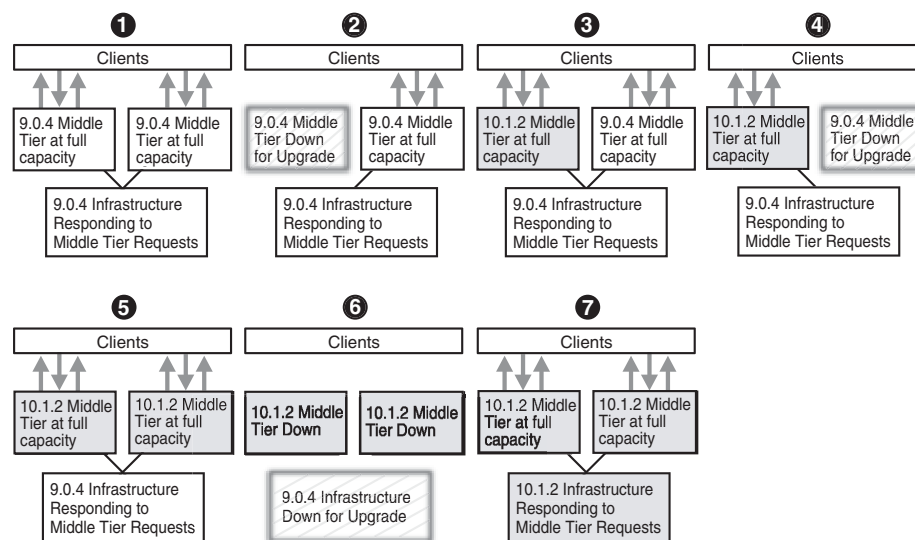
As an example of how you can plan for system availability, this section outlines the steps involved in the upgrade process when two Oracle Application Server 10g (9.0.4) middle tier instances use a single 10g (9.0.4) Infrastructure instance.

The colocated Infrastructure in this example consists of both an OracleAS Metadata Repository and OracleAS Identity Management. As shown in [Figure 3–1](#), full system downtime occurs only in step 6 of the process (if the system relies on an Infrastructure). Step 6 involves stopping the OracleAS Infrastructure so it can be upgraded.

For simplicity's sake, only two middle tiers are shown in the figure; however, in practice, there may be many more. The more middle tiers in service, the lower the system capacity loss in downtime during upgrade. For example, if there are two middle tiers, 50% capacity is lost when one is stopped for upgrade. If there are four middle tiers, only 25% capacity is lost when one is stopped for upgrade.

In the figure, "Clients" may refer to a load balancer. If a load balancer is in use, users need not be aware of middle tier downtime.

Figure 3–1 Example of System Availability During the Upgrade Process



The progression of system states during the upgrade process is detailed as follows:

1. The 10g (9.0.4) system is functioning at full capacity, with clients connecting through both middle tiers.
2. The first middle tier is stopped, in preparation for upgrade. Clients can no longer connect through the first middle tier, but continue to connect through the second middle tier.
3. The first middle tier is upgraded to 10g Release 2 (10.1.2). When the upgrade is complete and the middle tier is restarted, clients can then connect through both middle tiers.

This step in the process represents a transitional configuration.

4. The second middle tier is stopped, in preparation for upgrade. Clients can no longer connect through the second middle tier, but continue to connect through the first middle tier.
5. The second middle tier is upgraded to 10g Release 2 (10.1.2). After the second middle tier is upgraded and started, clients can then connect through both middle tiers.

This step in the process represents a transitional configuration.

6. The middle tiers are stopped in preparation for the Infrastructure upgrade. Applications that are dependent on the Infrastructure are unavailable now.
7. The Infrastructure is upgraded to 10g Release 2 (10.1.2). After the OracleAS Metadata Repository and OracleAS Identity Management are upgraded and all instances are started, clients can connect to the fully upgraded system.

This step in the process represents a final configuration.

3.3 Planning for System Downtime

This section contains information that will help you answer the following questions as you plan the Oracle Application Server upgrade:

- How much downtime should be allocated to upgrade and to troubleshooting the upgrade?
- What parts of the system are subject to downtime?
- When will the downtime occur?

The duration of upgrade preparation tasks and upgrade processing is of concern when considering downtime. This section provides estimates of the duration of the upgrade of a basic configuration.

For more information, see [Table 3–1, "Middle Tier Upgrade Duration Estimates"](#) and [Table 3–2, "Infrastructure Upgrade Duration Estimates"](#)

Table 3–1 Middle Tier Upgrade Duration Estimates

Operation	J2EE & Web Cache	Portal & Wireless
10g Release 2 (10.1.2) middle tier installation: A 10g Release 2 (10.1.2) middle tier must be installed on the same computer as the Release 2 (9.0.2), Release 2 (9.0.3), or 10g (9.0.4) middle tier.	30 minutes	60 minutes ¹
OracleAS Upgrade Assistant execution: Execution time depends on source configuration; for example, the number and size of J2EE applications deployed may affect the duration significantly. This estimate assumes a basic configuration.	20 minutes	30 minutes
Post-upgrade: This includes starting the upgraded instance and performing basic verification tests.	20 minutes	30 minutes
Total	1 hour, 10 minutes	2 hours

¹ The first 10g Release 2 (10.1.2) instance that configures Oracle Application Server Wireless against a Release 2 (9.0.2) Metadata Repository upgrades the schema in that repository. This may increase the length of this operation significantly. If Oracle Application Server Wireless is running on multiple middle tiers, Oracle Application Server Wireless must be stopped on all of those middle tiers before performing this operation. See [Appendix A.1.11, "The Oracle Application Server Wireless Upgrade Process"](#) for more information.

Table 3–2 Infrastructure Upgrade Duration Estimates

Operation	Metadata Repository	Identity Management	Colocated Infrastructure ¹
Database backup: The database should be backed up with the user's preferred procedure.	1 hour	Not applicable.	Not applicable
Oracle home backup: The Infrastructure Oracle home should be backed up.	Not applicable.	1 hour	1 hour
Database upgrade: If the Metadata Repository was created with OracleAS Metadata Repository Creation Assistant and the database is not a supported version, you must upgrade the database manually to a supported version.	Not applicable	Not applicable	Not applicable

Table 3–2 (Cont.) Infrastructure Upgrade Duration Estimates

Operation	Metadata Repository	Identity Management	Colocated Infrastructure ¹
Installation and upgrade with Oracle Universal Installer Depending upon the installation type you are upgrading, the Oracle Universal Installer installs new OracleAS Identity Management components and, if the Oracle home contains an OracleAS Metadata Repository, automatically upgrades the OracleAS Metadata Repository database to the supported version.	3 hours ²	30 minutes	3 hours, 30 minutes
Database backup before running MRUA	1 hour	Not applicable	1 hour
OracleAS Metadata Repository upgrade with MRUA: Component schemas in the Metadata Repository are upgraded.	1 hour	Not applicable	1 hour
Identity Management post-upgrade: Perform all post-upgrade tasks.	Not Applicable.	1 hour	1 hours
Total:	6 hours	2 hours, 30 minutes	7 hours, 30 minutes

¹ The upgrade duration of the Metadata Repository and Identity Management may be shorter than that of the sum of the durations required to upgrade each piece individually, since common tasks need only be executed once.

² Note that if the OracleAS Metadata Repository is being used only to support middle tiers that are part of a database-based Oracle Application Server Farm, the J2EE and Web Cache middle tiers that use the OracleAS Metadata Repository can continue operating during the OracleAS Metadata Repository upgrade.

Upgrading the Middle Tier

This chapter explains how to upgrade the middle tier of your Oracle Application Server installation. It includes instructions on how to prepare your system for a successful upgrade, and how to start and use the Oracle Application Server Upgrade Assistant.

This chapter also details any post-upgrade tasks you must perform on individual components after the OracleAS Upgrade Assistant has finished processing.

See Also: [Section 1.5, "Typical Upgrade Scenarios"](#) for a general overview of the middle tier upgrade process.

The chapter is divided into the following major sections:

- [Overview of the Middle Tier Upgrade Process](#)
- [Task 1: Install a New 10g Release 2 \(10.1.2\) Middle Tier In Preparation for Upgrade](#)
- [Task 2: Prepare to Use the OracleAS Upgrade Assistant](#)
- [Task 3: Run the OracleAS Upgrade Assistant](#)
- [Task 4: Troubleshoot Any Upgrade Problems](#)
- [Task 5: Complete the Middle Tier Upgrade](#)
- [Task 6: Start the Upgraded Middle Tier and Perform Final Upgrade Tasks](#)
- [Task 7: Validate the Upgraded Middle Tier](#)
- [Task 8: Decommission the Middle-Tier Source Oracle Home](#)
- [Special Considerations When Upgrading OracleAS Clusters, OracleAS Wireless, or Oracle Workflow](#)

4.1 Overview of the Middle Tier Upgrade Process

Note: Only the 10g Release 2 (10.1.2) Oracle home is changed in the upgrade process. This makes it possible to revert to using the source Oracle home.

For each middle tier, you perform the following upgrade tasks:

1. If you are upgrading middle tier that is part of an OracleAS Cluster, or if you are upgrading OracleAS Wireless or Oracle Workflow, review [Section 4.10, "Special](#)

[Considerations When Upgrading OracleAS Clusters, OracleAS Wireless, or Oracle Workflow](#)".

2. Install a new Oracle Application Server 10g Release 2 (10.1.2) Oracle home on the same host as the original middle-tier.
3. Use the OracleAS Upgrade Assistant, which is installed in the upgrade directory of the 10g Release 2 (10.1.2) middle tier Oracle home, to copy your custom applications and configuration data to the new Oracle home.
4. Perform any required post-upgrade tasks for specific Oracle Application Server components that you have used or configured.
5. Start and verify the newly upgraded middle tier.
6. Optionally, decommission the original Release 2 (9.0.2), Release 2 (9.0.3), or 10g (9.0.4) Oracle home.

4.2 Task 1: Install a New 10g Release 2 (10.1.2) Middle Tier In Preparation for Upgrade

The first step in upgrading an Oracle Application Server middle tier is to install a new 10g Release 2 (10.1.2) middle tier, which will serve as the destination Oracle home.

The following sections provide information on the tasks you need to perform when installing a new 10g Release 2 (10.1.2) Middle Tier in preparation for upgrade:

- [Before Installing the 10g Release 2 \(10.1.2\) Middle Tier Against a Release 2 \(9.0.2\) Oracle Internet Directory](#)
- [Registering the OracleAS Web Cache Port Before Upgrading OracleAS Single Sign-On from Release 2 \(9.0.2\)](#)
- [Applying Required Release 2 \(9.0.2\) Patchsets](#)
- [Installing the Oracle Application Server 10g Release 2 \(10.1.2\) Middle Tier](#)

4.2.1 Before Installing the 10g Release 2 (10.1.2) Middle Tier Against a Release 2 (9.0.2) Oracle Internet Directory

If you are using a Release 2 (9.0.2) Oracle Internet Directory, use the procedure in [Section 2.6.5, "Updating an Entry in the Release 2 \(9.0.2\) Oracle Internet Directory Before Installing the 10g Release 2 \(10.1.2\) Middle Tier"](#).

This step is required in order for the 10g Release 2 (10.1.2) middle tier to operate with the Release 2 (9.0.2) Oracle Internet Directory.

4.2.2 Registering the OracleAS Web Cache Port Before Upgrading OracleAS Single Sign-On from Release 2 (9.0.2)

Before you upgrade your Release 2 (9.0.2) middle tiers, make sure that the `mod_osso` Oracle HTTP Server module is configured properly. The `mod_osso` module provides authentication to OracleAS OracleAS Single Sign-On applications.

Specifically, you must verify that `mod_osso` is configured to use the OracleAS Web Cache port. By default, when you install Release 2 (9.0.2), `mod_osso` is configured to use the Oracle HTTP Server listen port.

To reconfigure `mod_osso`, use the Release 2 (9.0.2) `ossoreg.jar` utility to re-register the Release 2 (9.0.2) OracleAS Single Sign-On software so it uses the OracleAS Web Cache port.

For information about using the `ossoreg.jar` utility, see "Reregistering the Oracle HTTP Server with the Single Sign-On Server" in the *Oracle9iAS Single Sign-On Release Notes*. You can find the Release 2 (9.0.2) release notes in the platform-specific Release 2 (9.0.2) documentation libraries available on the Oracle Technology Network:

<http://www.oracle.com/technology/documentation/ias.html>

When you run the Release 2 (9.0.2) `ossoreg.jar` utility replace all the port designations with the OracleAS Web Cache port, which can be found in the `portlist.ini` file in the Release 2 (9.0.2) Oracle home:

`ORACLE_HOME\install\portlist.ini`

When you view the contents of the `portlist.ini` file, the first entry is the Oracle HTTP Server port against which the OracleAS Single Sign-On server is registered by default. The next port listed in the file is the OracleAS Web Cache port. Use this OracleAS Web Cache port when you run the `ossoreg.jar` utility.

4.2.3 Applying Required Release 2 (9.0.2) Patchsets

The middle-tier upgrade procedures have been tested using the latest patchsets available from *OracleMetaLink*.

As a result, before you install 10g Release 2 (10.1.2) in preparation for an upgrade from Oracle Application Server Release 2 (9.0.2), apply the latest Oracle Application Server 9.0.2 patchsets to the source middle tier that you are upgrading and to the OracleAS Infrastructure components that the middle tier relies upon.

The *OracleMetaLink* Web site is at the following URL:

<http://metalink.oracle.com/>

At the time this document was published the most recent Oracle9iAS patchset release was the Oracle9iAS 9.0.2.3 patchset (3038037). To locate this patchset, search for patch number 3038037 on *OracleMetaLink*.

Note: After applying Oracle9iAS 9.0.2.3 patchset (3038037), verify that the patchset was applied successfully before proceeding with the 10g Release 2 (10.1.2) upgrade. For example, verify that the Application Server Control, your deployed applications, and the components you use are functioning properly after you apply the patchset.

4.2.4 Installing the Oracle Application Server 10g Release 2 (10.1.2) Middle Tier

The first step in upgrading a middle tier is to install Oracle Application Server 10g Release 2 (10.1.2) middle tier.

To save time later and to avoid potential problems when upgrading to the new Oracle home, review the following checklist before you install the new 10g Release 2 (10.1.2) destination Oracle home:

- ❑ Refer to the *Oracle Application Server Installation Guide* specific to your platform for complete instructions on installing the 10g Release 2 (10.1.2) middle tier.

- ❑ Install the 10g Release 2 (10.1.2) middle tier on the same computer as the source middle tier
- ❑ Use the same operating system user that installed the source middle tier
- ❑ Install the 10g Release 2 (10.1.2) middle tier in a separate Oracle home from the source middle tier
- ❑ During the installation, select an installation type that is compatible with source middle tier

See Also: [Section 1.6, "Upgrade Paths Organized by Installation Type"](#)

- ❑ If the source middle tier users any OracleAS Infrastructure components, be sure that the 10g Release 2 (10.1.2) middle tier users the same OracleAS Metadata Repository and OracleAS Identity Management as the source middle tier.
- ❑ If you are upgrading a middle tier that is part of an OracleAS Cluster, if you are upgrading an OracleAS Wireless Release 2 (9.0.2) middle tier, or if you are upgrading Oracle Workflow, then refer to the following section before you install Oracle Application Server 10g Release 2 (10.1.2):

[Section 4.10, "Special Considerations When Upgrading OracleAS Clusters, OracleAS Wireless, or Oracle Workflow"](#)

- ❑ Be aware that only components that are configured in the destination Oracle home will be functional after the middle tier upgrade has completed.
- ❑ If you are upgrading OracleAS Portal, note that the OracleAS Portal component will not be functional in the Oracle Application Server 10g Release 2 (10.1.2) instance until after you run the OracleAS Upgrade Assistant. As a result, OracleAS Portal can be accessed only by the source middle tiers until after the middle tier upgrade is complete.

4.3 Task 2: Prepare to Use the OracleAS Upgrade Assistant

The following sections provide information about tasks you must perform before you begin upgrading your middle tier application server instances:

- [Stopping the Enterprise Manager Web Site in a Release 2 \(9.0.2\) or Release 2 \(9.0.3\) Source Oracle Home](#)
- [Optionally Increasing JVM Memory for Large OC4J Upgrades](#)
- [Verifying that the Infrastructure Used by the Middle Tier is Running](#)

4.3.1 Stopping the Enterprise Manager Web Site in a Release 2 (9.0.2) or Release 2 (9.0.3) Source Oracle Home

When you run the OracleAS Upgrade Assistant, it will stop all the processes in the source Oracle home and the destination Oracle home, except for the Enterprise Manager Web site in a Release 2 (9.0.2) or Release 2 (9.0.3) source Oracle home.

For several reasons, the OracleAS Upgrade Assistant cannot stop the Enterprise Manager Web site automatically. Instead, you must use the following procedure to stop the Enterprise Manager Web site manually:

- If you have multiple Release 2 (9.0.2) or Release 2 (9.0.3) instances on the same host, do the following:

1. Determine which instance hosts the active Enterprise Manager Web site.

The active Enterprise Manager Web site is stored in the following entry in the Windows registry:

```
HKEY_LOCAL_MACHINE\SOFTWARE\ORACLE\em_loc
```

2. Stop the active Enterprise Manager Web site as follows:

```
ACTIVE_EM_ORACLE_HOME\bin\emctl stop
```

Enterprise Manager prompts you for the `ias_admin` management password.

3. If the instance you want to upgrade contains the active Enterprise Manager Web site, switch the active Oracle Enterprise Manager to another Release 2 (9.0.2) or Release 2 (9.0.3) instance using the following command:

```
ACTIVE_EM_ORACLE_HOME\bin\emctl switch home
```

This command displays a dialog where you can select another Oracle9iAS instance that contains the active Oracle Enterprise Manager.

- If the instance you want to upgrade is the only Release 2 (9.0.2) or Release 2 (9.0.3) instance on the host, stop the Enterprise Manager Web site as follows:

```
SOURCE_ORACLE_HOME\bin\emctl stop
```

4.3.2 Optionally Increasing JVM Memory for Large OC4J Upgrades

If you are upgrading a large number of applications or a large number of OC4J instances, it might be helpful to increase the memory for the extract phase of the OC4J upgrade. The extract phase of the upgrade process starts a new Java process; that is, it has a new Java Virtual Machine (JVM). You can configure the minimum and maximum memory for the JVM. To do this, you configure the `JavaVM` property in the following configuration file:

```
DESTINATION_ORACLE_HOME\upgrade\Oc4jPlugin.cfg
```

[Example 4-1](#) shows the `JavaVM` property and the arguments you can adjust.

Example 4-1 JavaVM Property in Oc4jPlugin.cfg File

```
<JavaVM>
  <JVMproperties property="-Xms256m" />
  <JVMproperties property="-Xmx512m" />
</JavaVM>
```

The default values of 256MB minimum and 512MB maximum are shown in [Example 4-1](#); however, 1024MB is a plausible upper limit for upgrading several OC4J instances and many large applications.

4.3.3 Verifying that the Infrastructure Used by the Middle Tier is Running

Before you upgrade any middle tier that uses an Infrastructure, the Infrastructure must be started and accessible. If the Infrastructure is stopped, certain upgrade processes will fail (for example, Oracle Application Server Containers for J2EE, OracleAS Portal, and Oracle Application Server Wireless).

4.4 Task 3: Run the OracleAS Upgrade Assistant

The following sections provide instructions for using OracleAS Upgrade Assistant to upgrade your Oracle Application Server instances to 10g Release 2 (10.1.2):

- [Optionally Specifying Logging Behaviors for the OracleAS Upgrade Assistant](#)
- [Performing an Upgrade with the OracleAS Upgrade Assistant \(Graphical User Interface \(GUI\) Version\)](#)
- [Performing an Upgrade with the OracleAS Upgrade Assistant \(Command-line Version\)](#)

4.4.1 Optionally Specifying Logging Behaviors for the OracleAS Upgrade Assistant

The OracleAS Upgrade Assistant provides a set of log files that you can use to troubleshoot any problems you might run into while upgrading your Oracle Application Server middle tiers.

Optionally, you can customize the default logging behavior of the OracleAS Upgrade Assistant by setting properties in the following configuration file:

```
DESTINATION_ORACLE_HOME\upgrade\iasua.properties
```

The logging properties and their uses are:

- **log.level** — Use this property to specify the level of logging for the OracleAS Upgrade Assistant and all component plug-ins. For example, `log.level=NOTIFICATION` would set the logging level for all components upgraded by the OracleAS Upgrade Assistant to NOTIFICATION. (The default value is NOTIFICATION.)
- **<plug-in name>.log.level** — Use this property to specify the level of logging for a specific component plug-in, used to override the `log.level` property for a given component upgrade. For example, `OC4J.log.level=TRACE` would set the logging level for the Oracle Application Server Containers for J2EE upgrade to TRACE, even if the log level for the OracleAS Upgrade Assistant was set to NOTIFICATION. (The default value is NOTIFICATION.)
- **log.append** — Use this property to specify whether to append log entries to the existing log file or create a new log file. For example, `log.append=TRUE` would append log entries to the existing log file. (The default value is TRUE.)

Note: Property names are case sensitive. Property values are case insensitive.

Table 4–1 Logging Properties for the OracleAS Upgrade Assistant

Property Name	Description	Valid Values
log.level	Level of logging for the OracleAS Upgrade Assistant and all component plug-ins	NOTIFICATION (default value) ERROR TRACE DEBUG

Table 4–1 (Cont.) Logging Properties for the OracleAS Upgrade Assistant

Property Name	Description	Valid Values
<plug-in name>.log.level	Level of logging for a specific component plug-in, used to override the log.level property for a given component upgrade Possible values of <plug-in name> are OPMN, InstanceConfig, OHS, OC4J, WebCache, modplsql, EM, UDDI, UltraSearch, Portal, Wireless, and Net	NOTIFICATION (default value) ERROR TRACE DEBUG
log.append	Specifies whether to append log entries to the existing log file or create a new log file	TRUE (default value) FALSE

4.4.2 Performing an Upgrade with the OracleAS Upgrade Assistant (Graphical User Interface (GUI) Version)

This section provides step-by step instructions for using the OracleAS Upgrade Assistant GUI version to perform an upgrade:

1. Log in to the user account that was used to install the source Oracle home.
2. Start the OracleAS Upgrade Assistant with the command:

```
DESTINATION_ORACLE_HOME\upgrade\iasua.bat
```

The Welcome screen appears.

3. Click **Next**.

The Oracle Homes screen appears. The **Source Oracle Home** drop-down list contains the names of Release 2 (9.0.2), Release 2 (9.0.3), and 10g (9.0.4) Oracle homes that are found in the inventory of Oracle products on the current computer and that were installed using an installation type that is compatible with the installation type of the destination Oracle home.

The destination Oracle home is the 10g Release 2 (10.1.2) Oracle home in which the OracleAS Upgrade Assistant is running.

4. Select the source Oracle home that you want to upgrade from the drop-down list; then, click **Next**.

The OracleAS Upgrade Assistant performs many of the required pre-upgrade tasks automatically before it begins the upgrade process.

However, in some situations, the Upgrade Assistant displays a dialog box, which provides you with a list of the pre-upgrade requirements that are not performed automatically. These requirements must be met in order for the OracleAS Upgrade Assistant to successfully continue.

Specifically, there are two scenarios that cause this dialog box to appear:

- If you are upgrading an Oracle Application Server Release 2 (9.0.2) or Release 2 (9.0.3) middle tier instance, this dialog box prompts you to be sure the Oracle Enterprise Manager Web site has been stopped.
- If you are upgrading a middle-tier instance that requires an OracleAS Infrastructure component, this dialog box prompts you to be sure that the required Infrastructure components are up and running.

5. Ensure that all requirements are fulfilled, and click **Yes**.

The Examining Components dialog box appears. The OracleAS Upgrade Assistant examines each component in the source Oracle home to determine whether it needs to be upgraded.

The Status column for each component contains one of the examination status values shown in [Table 4-2](#).

Table 4-2 OracleAS Upgrade Assistant Component Examination Status

Status	Meaning
in progress...	The OracleAS Upgrade Assistant is examining the component's upgrade items.
pending...	The component will be examined when the OracleAS Upgrade Assistant finishes examining the current component.
succeeded	The component was examined successfully.
failed	There was a failure during the examination of the component. The OracleAS Upgrade Assistant cannot upgrade the component.

6. If one or more components failed, the OracleAS Upgrade Assistant displays an Examination Failure Warning dialog box.

If the upgrade cannot continue without you addressing the failed examination, a dialog box tells you to fix the problem and restart the OracleAS Upgrade Assistant later.

If the examination uncovers a problem that affects only a subset of the components you are upgrading, OracleAS Upgrade Assistant displays a dialog box that identifies the component that failed. At this point, click **Help** for more information about what to do next.

7. If all component examinations succeed, the Summary screen appears.
8. Scroll to view the components, clicking the plus symbol (+) to expand a component's upgrade items. Review the components; then, click **Finish**.

Note: The Summary screen is the last screen before upgrade processing begins. Before you click **Finish**, verify that the choices on previous screens are correct and the upgrade items listed are ready to upgrade.

The Upgrading screen appears.

The Status column for each component contains one of the status values shown in [Table 4-3](#).

Table 4-3 OracleAS Upgrade Assistant Upgrading Status

Status	Meaning
in progress...	The OracleAS Upgrade Assistant is upgrading the component's upgrade items.
pending...	The component will be upgraded when the OracleAS Upgrade Assistant finishes upgrading the current component.
succeeded	The component was upgraded successfully.

Table 4–3 (Cont.) OracleAS Upgrade Assistant Upgrading Status

Status	Meaning
failed	The OracleAS Upgrade Assistant could not upgrade the component.

If the upgrade completes successfully, then the Upgrade Succeeded screen appears.

If the upgrade fails, the Upgrade Failed screen appears.

9. Do one of the following.

- Click **OK** to close the Upgrade Failure screen and remedy the conditions that prevented the components from being upgraded. Start the OracleAS Upgrade Assistant again.

See Also: [Section 4.5.1, "Resolving OracleAS Upgrade Assistant Errors"](#) and [Section 4.5.2, "Restarting the OracleAS Upgrade Assistant"](#) for instructions on how to resolve the errors and restart the OracleAS Upgrade Assistant.

- Click **OK** to close the Upgrade Succeeded screen.

The Upgrade Succeeded screen specifies the location of the upgrade log file and lists the post-upgrade tasks to be performed for various components.

4.4.3 Performing an Upgrade with the OracleAS Upgrade Assistant (Command-line Version)

This section explains how to start and use the OracleAS Upgrade Assistant command-line version to perform an upgrade.

Note: The OracleAS Upgrade Assistant examines components differently in the command-line version and the GUI version.

If the examination of a component fails in the command line version, then the upgrade is not performed.

If the examination of a component fails in the GUI version, the following choices are provided: retry, continue with an incomplete upgrade, specify another Oracle home, or cancel the upgrade.

1. Start the OracleAS Upgrade Assistant with the command:

```
DESTINATION_ORACLE_HOME\upgrade\iasua.bat -sourcehome SOURCE_ORACLE_HOME
```

Table 4–4 Summary of the OracleAS Upgrade Assistant Command-Line Arguments

Argument	Description
-sourcehome	This argument is required to start the command-line version of the OracleAS Upgrade Assistant. Running the command without this argument starts the GUI version.
-verbose	Use this argument to output detailed information to the screen during the upgrade.

Table 4–4 (Cont.) Summary of the OracleAS Upgrade Assistant Command-Line

Argument	Description
-noprompt	Use this argument to turn off prompts and user confirmations during the upgrade. By default, prompting and user confirmation are on.

[Example 4–2](#) shows a sample of the output you should see from the `iasua.bat` command. If the middle tier you are upgrading relies on an OracleAS Infrastructure, the prompt reminds you to start the Infrastructure; if the middle tier is a Release 2 (9.0.2) or Release 2 (9.0.3) installation, the prompt reminds you to stop the Enterprise Manager Web site process, which OracleAS Upgrade Assistant cannot stop automatically.

2. Ensure that all the listed requirements are met; then, enter yes in answer to the prompt.

Messages similar to those in [Example 4–3](#) appear on the screen. (The messages vary according to components found in the Oracle home).

3. If any error messages appear after Step 2, correct the errors as explained in [Section 4.5.1, "Resolving OracleAS Upgrade Assistant Errors"](#) on page 4-11. Then restart the Upgrade Assistant and perform the upgrade process again.

Example 4–2 Sample Output from the Command-Line OracleAS Upgrade Assistant

```
prompt> iasua.bat -sourcehome D:\private\oracle\appserver1
Validating Oracle homes
Validating component plug-ins
Initializing component plug-ins
Pre-upgrade requirements:
Start the Infrastructure Associated with the source and destination Oracle home.
Verify that each of the pre-upgrade requirements above have been met.
Have the pre-upgrade requirements been met?[No]Yes
```

Example 4–3 Additional Sample Output from the Command-Line OracleAS Upgrade Assistant

```
Examining component "Oracle Process Manager and Notification Server (OPMN) "
Examining component "Instance Configuration"
Examining component "Oracle Application Server Containers for J2EE (OC4J) "
Examining component "Oracle HTTP Server"
Examining component "OracleAS Web Cache"
Examining component "Oracle mod_plsql"
Examining component "Oracle Enterprise Manager"
Upgrading component "Oracle Process Manager and Notification Server (OPMN) "
Upgrading component "Instance Configuration"
Upgrading component "Oracle Application Server Containers for J2EE (OC4J) "
Upgrading component "Oracle HTTP Server"
Upgrading component "OracleAS Web Cache"
Upgrading component "Oracle mod_plsql"
Upgrading component "Oracle Enterprise Manager"
The command completed successfully
```

4.5 Task 4: Troubleshoot Any Upgrade Problems

The following sections describe how you can troubleshoot any problems that occur during the middle tier upgrade:

- [Resolving OracleAS Upgrade Assistant Errors](#)

- [Restarting the OracleAS Upgrade Assistant](#)

4.5.1 Resolving OracleAS Upgrade Assistant Errors

If errors occur at either stage of the upgrade process, you must correct the conditions that caused them before you try the upgrade again. The following sections provide some guidance in resolving OracleAS Upgrade Assistant errors:

- [Resolving Common Errors](#)
- [Examining the Log File](#)

4.5.1.1 Resolving Common Errors

Under certain conditions, the OracleAS Upgrade Assistant cannot perform an upgrade. Among these are that the starting configuration is unsupported, processes are running in the Oracle homes, the Infrastructure services are unavailable, or there is insufficient memory for a large-scale OC4J application upgrade.

This section identifies each condition and its cause(s), and explains how to resolve it.

4.5.1.1.1 Source Oracle Home Not Provided by OracleAS Upgrade Assistant If the source Oracle home does not appear as expected in the drop-down list on the Oracle Homes, suspect one of these conditions: wrong installation type, Oracle homes are on different computers, or the Oracle home is not identified in the inventory of Oracle products. The solution for each of these is detailed below.

Wrong Installation Type The source Oracle home will not appear if the installation type of the source middle tier is not compatible with the installation type of the destination middle tier instance. If this is the case, you must do one of the following:

- Expand the installation type, as described in [Section 1.6.3, "A Note About Expanding or Changing an Installation Type"](#).
- Reinstall the destination middle tier using an installation type that is compatible with the source middle tier.

Oracle Homes on Different Computers Another case in which the source middle tier will not appear as a selection is that the source middle tier instance is installed on a different computer from the destination middle tier instance. If this is the case, you must install the destination middle tier instance on the same computer as the source instance to be upgraded.

Oracle Home Not Identified in the Oracle Inventory The OracleAS Upgrade Assistant locates Oracle Application Server Oracle homes on your system by analyzing the contents of the Oracle inventory.

Every time you install an Oracle software product on a host computer, Oracle Universal Installer saves information about the software installation on your hard disk. The directories and files that contain this software configuration information are referred to as the Oracle Universal Installer inventory.

In some cases, a particular installation may not appear in the inventory. It could be that the inventory directory was deleted or damaged, or it could be that multiple inventories are installed on the computer.

See Also: *Oracle Universal Installer Concepts* for information about the Oracle Universal Installer inventory.

Oracle Universal Installer Concepts is available as part of the Oracle Database 10g (10.1.0.2) documentation library available on OTN:

<http://www.oracle.com/technology/documentation/database10g.html>

4.5.1.1.2 Upgrade Fails During OPMN, OC4J, or Oracle HTTP Server Upgrade If the upgrade fails during the OPMN, OC4J or Oracle HTTP Server upgrade, it is probably because OPMN is still running in one or both instances (source and destination). You must stop OPMN before starting the OracleAS Upgrade Assistant.

See Also: [Section 4.3.1, "Stopping the Enterprise Manager Web Site in a Release 2 \(9.0.2\) or Release 2 \(9.0.3\) Source Oracle Home"](#)

4.5.1.1.3 Upgrade Fails During the Examination If the upgrade fails during the examination phase, it is probably because the Infrastructure is unavailable. The OracleAS Upgrade Assistant needs the Infrastructure services for certain operations, so the Infrastructure must be started before you start the OracleAS Upgrade Assistant.

See Also: [Section 4.3.3, "Verifying that the Infrastructure Used by the Middle Tier is Running"](#)

4.5.1.1.4 Upgrade Fails During Extensive OC4J Upgrade If the upgrade fails while attempting to upgrade many OC4J applications, or large OC4J applications, the problem could be caused by a memory shortage. You can configure a memory increase for the upgrade operation.

See Also: [Section 4.3.2, "Optionally Increasing JVM Memory for Large OC4J Upgrades"](#)

4.5.1.2 Examining the Log File

You can use the OracleAS Upgrade Assistant log file to determine the cause of examination and upgrade failures.

The OracleAS Upgrade Assistant log file is located at:

`DESTINATION_ORACLE_HOME\upgrade\log\iasua.log`

Note: By default, the OracleAS Upgrade Assistant appends logging data to the existing log file. To modify this default behavior so that each session of OracleAS Upgrade Assistant overwrites the existing log file, see [Section 4.4.1, "Optionally Specifying Logging Behaviors for the OracleAS Upgrade Assistant"](#).

4.5.1.2.1 Investigating Examination Failures To determine the cause of an examination failure:

1. Note the name of the failed component in the OracleAS Upgrade Assistant dialog or command-line output.
2. Open the following OracleAS Upgrade Assistant log file:

`DESTINATION_ORACLE_HOME\upgrade\log\iasua.log`

3. Search for the message `Starting to examine component_name`.

4. Refer to [Appendix C, "Upgrade and Compatibility Error Messages"](#) for information about specific error messages in the Upgrade log files.

4.5.1.2.2 Investigating Upgrade Failures

To determine the cause of an upgrade failure:

1. Note the name of the failed component in the OracleAS Upgrade Assistant dialog or command-line output.
2. Open the Upgrade log file:
`DESTINATION_ORACLE_HOME\upgrade\log\iasua.log`
3. Search for the message `Starting to upgrade component_name`.
4. Refer to [Appendix C, "Upgrade and Compatibility Error Messages"](#) for information about specific error messages in the Upgrade log files.

4.5.1.3 Reasons for Oracle Application Server Containers for J2EE Upgrade and Deployment Failures

The following sections discuss reasons for which an Oracle Application Server Containers for J2EE upgrade may fail and ways you can address the issues:

- [Configuration Change Requirements](#)
- [Overview of Application Deployment and J2EE Compliance Requirements](#)
- [Validating EAR Files for J2EE Compliance](#)
- [Configuring Proxy Settings for the `validateEarFile` Command](#)

4.5.1.3.1 Configuration Change Requirements If a configuration does not perform as expected after an upgrade, it might be because configuration changes were made to OC4J application files by means other than the Application Server Control Console. Only the changes made by the Application Server Control Console will be included in the OC4J upgrade performed by the OracleAS Upgrade Assistant. Manually edited files may not be in the scope of the managed configuration, and the edits may not be preserved in an upgrade.

4.5.1.3.2 Overview of Application Deployment and J2EE Compliance Requirements OC4J deployment enforces J2EE compliance rules, so the OracleAS Upgrade Assistant may not upgrade applications that are not fully J2EE compliant. The OracleAS Upgrade Assistant simply reads the files in the source Oracle home and attempts to deploy them to the destination Oracle home; if deployment fails, it could be because an application is not J2EE compliant. If the OracleAS Upgrade Assistant cannot deploy an application for any reason, it logs the exception in the following log file:

`DESTINATION_ORACLE_HOME\upgrade\log\iasua.log`

The exception may not be explicitly described as a J2EE compliance issue, but that may be the reason for the failure. Knowledge of the J2EE and EJB specifications, and the EJB features used in applications will be helpful in preventing and troubleshooting deployment failures. Note that 10g Release 2 (10.1.2) supports a higher version of the EJB specification than Release 2 (9.0.2) or Release 2 (9.0.3).

While the development of J2EE applications is standardized and portable, the XML configuration files are not. Multiple XML files may need to be configured for an OC4J application to be deployed, and the required configuration varies according to the services the application uses. For example, if the application uses a database, the `DataSource` object in the `data-sources.xml` file must be configured.

It is a good idea to review all applications for overall J2EE compliance before upgrading them, since there are cases in which an application is deployable, but delivers unpredictable or undesirable server behavior. For example, ensure that each application has a unique context root defined in `application.xml`.

4.5.1.3.3 Validating EAR Files for J2EE Compliance The `dcmctl` utility provides a J2EE compliance validation command. It takes one input, the name of an EAR file, and then lists non-compliant characteristics of that file. The syntax is:

```
DESTINATION_ORACLE_HOME\dcm\bin\dcmctl validateEarFile -f
full_path_and_filename_for_ear_file
```

You must provide the full path to the EAR file.

If you connect to the Internet using a proxy server, you must configure proxy settings so that the validation routine can access DTDs (for example, on the Sun Microsystems site).

For more information, see [Section 4.5.1.3.4, "Configuring Proxy Settings for the validateEarFile Command"](#).

If you do not use a proxy server to connect to an external network, use the `-noproxy` flag with the command. For example:

```
DESTINATION_ORACLE_HOME\dcm\bin\dcmctl validateEarFile -f
full_path_and_filename_for_ear_file -noproxy
```

See [Example 4-4](#) and [Example 4-5](#) to review sample output from the `validateEarFile` command.

Example 4-4 validateEarFile Command and Output for J2EE-Compliant Application

```
dcmctl validateEarFile -v -f simple.ear
No J2EE XML/DTD validation errors were found
```

Example 4-5 validateEarFile Command and Output for non-J2EE-Compliant Application

```
dcmctl validateEarFile -v -f petstore.ear
Warning: J2EE/DTD validation errors were found
ADMN-906001 {0} Base Exception:
oracle.ias.sysmgmt.deployment.j2ee.exception.J2eeDeploymentException:
Cannot get xml document by parsing /var/tmp/jar50152.tmp: Invalid element
'servlet' in content of 'web-app', expected elements '[servlet-mapping,
session-config, mime-mapping, welcome-file-list,error-page, taglib,
resource-ref, security-constraint, login-config, security-role, env-entry,
ejb-ref]'.

```

4.5.1.3.4 Configuring Proxy Settings for the validateEarFile Command To configure the proxy settings for the `validateEarFile` command, you define an environment variable called `ORACLE_DCM_JVM_ARGS`, which specifies a hostname and port for the proxy.

For example, on Windows 2000 systems, you can use the System control panel as follows:

1. Open the System control panel.
2. Click the **Advanced** tab.
3. Click **Environment Variables** to display the Environment Variables dialog box.
4. Click **New** to display the New beneath the System Variables list to display the New System Variable dialog box.

5. Enter ORACLE_DCM_JVM_ARGS in the **Variable Name** field, and enter the following in the **Variable Value** field:

```
-Dhttp.Proxyhost=hostname.domain -Dhttp.Proxyport=port
```

In this example, replace *hostname.domain* with the host name and domain for the proxy server, and replace *port* with the port for the proxy server.

Alternatively, you can issue this command to set the variable in a DOS Command window:

```
set ORACLE_DCM_JVM_ARGS=-Dhttp.Proxyhost=www-proxy.hostname.com
-Dhttp.Proxyport=9999
```

4.5.2 Restarting the OracleAS Upgrade Assistant

You can restart the OracleAS Upgrade Assistant after it has partially or completely processed an Oracle home. Follow these steps:

1. Start the OracleAS Upgrade Assistant GUI version as described in [Section 4.4.2](#), or the command-line version as described in [Section 4.4.3](#).

The OracleAS Upgrade Assistant displays one of the following messages, depending on the outcome of the previous upgrade:

If the previous upgrade was unsuccessful, then the message is:

```
The OracleAS Upgrade Assistant has already processed this
destination Oracle home directory, it didn't complete
successfully.
```

If the previous upgrade was successful, then the message is:

```
The OracleAS Upgrade Assistant has already successfully
processed this destination Oracle home directory.
```

2. Close the dialog (GUI version) or enter Yes (command-line version) and continue with the upgrade.

4.6 Task 5: Complete the Middle Tier Upgrade

This section explains how to perform the tasks that may be necessary to make the newly upgraded 10g Release 2 (10.1.2) instance functional after the OracleAS Upgrade Assistant has finished executing.

This section contains the following topics:

- [About Port Values and the portlist.ini File After Upgrade](#)
- [About Administration Passwords After Upgrade](#)
- [Completing the Oracle HTTP Server Upgrade](#)
- [Completing the Oracle Application Server Containers for J2EE \(OC4J\) Upgrade](#)
- [Completing the Upgrade of OracleAS Web Cache](#)
- [Completing the OracleAS Portal Middle Tier Upgrade](#)
- [Completing the Oracle Business Intelligence Discoverer Viewer Upgrade](#)
- [Completing the Oracle Application Server Reports Services Upgrade](#)
- [Completing the Oracle Application Server Wireless Upgrade](#)
- [Completing the Oracle Application Server Forms Services Upgrade](#)

4.6.1 About Port Values and the portlist.ini File After Upgrade

After you upgrade a middle tier to Oracle Application Server 10g Release 2 (10.1.2), the upgraded instance is configured by OracleAS Upgrade Assistant to use the same ports that were used by the source instance. For this reason, after upgrade, you cannot start both the source and destination middle tier instances at the same time; otherwise, port conflicts will occur.

Refer to the following sections for important information about port assignments before and after upgrade:

- [About the portlist.ini File](#)
- [Using the Ports Page in the Application Server Control Console to Identity Port Assignments](#)
- [Examples of Port Assignments Before and After Upgrade](#)

4.6.1.1 About the portlist.ini File

Note that the `portlist.ini` file does not reflect the upgraded port settings; instead, it lists the port values assigned by the installer when the destination instance was initially installed. The `portlist.ini` file can be found in the following location in the destination Oracle home:

```
DESTINATION_ORACLE_HOME\install\portlist.ini
```

4.6.1.2 Using the Ports Page in the Application Server Control Console to Identity Port Assignments

Another way to review the current port settings for the upgraded middle tier, is to use the Ports page on the Application Server Home page in the Application Server Control Console. The Ports page lists all the ports in use by the Oracle Application Server instance.

See Also: "Introduction to Administration Tools" in the *Oracle Application Server Administrator's Guide* for more information about using the Application Server Control Console

To display the Application Server Control Console, enter the following URL in your browser:

```
http://appserver_host_name:app_server_control_port_number
```

If you do not know the Application Server Control Console port, you can locate the port number by checking the `StandaloneConsoleURL` entry in the following configuration file in the application server Oracle home:

```
DESTINATION_ORACLE_HOME\sysman\emd\targets.xml
```

See Also: "Managing Ports" in the *Oracle Application Server Administrator's Guide*

4.6.1.3 About the Application Server Control Console Ports Before and After Upgrade

If you are upgrading from Release 2 (9.0.2), the OracleAS Upgrade Assistant cannot reset the port for the Application Server Control Console to its original port. This is because the port used to access the console may or not be defined within the upgraded Oracle home.

However, if you are upgrading from 10g (9.0.4), the port number for the Application Server Control Console is automatically reset by the OracleAS Upgrade Assistant so it uses the original port number from the source Oracle home.

Note that after you upgrade from 10g (9.0.4) the 10g Release 2 (10.1.2) Welcome pages will continue to link to the Application Server Control Console port number assigned during the 10g Release 2 (10.1.2) installation. As a result, the link from the 10g Release 2 (10.1.2) Welcome pages to the Application Server Control Console will not work after you upgrade from 10g (9.0.4).

See Also: [Section 4.6.1.4, "Examples of Port Assignments Before and After Upgrade"](#) for an example of how the Application Server Control Console ports are assigned before and after a 10g Release 2 (10.1.2) upgrade.

"Managing Previous Versions of Oracle Application Server" in the *Oracle Application Server Administrator's Guide* for more information about the differences between the Enterprise Manager Web site in Release 2 (9.0.2) and Release 2 (9.0.3) and the Application Server Control Console in 10g (9.0.4) and 10g Release 2 (10.1.2).

4.6.1.4 Examples of Port Assignments Before and After Upgrade

To illustrate how ports are initially assigned to the new 10g Release 2 (10.1.2) Oracle home and then modified by the OracleAS Upgrade Assistant, [Table 4–5](#) lists examples of pre- and post-upgrade values for Oracle HTTP Server, Oracle Enterprise Manager 10g Application Server Control Console, and Oracle Application Server Web Cache.

Table 4–5 Sample Port Values Before and After Upgrade

Component	Port in Source Oracle Home	Port Value in Destination Oracle Home Assigned by Installer and Recorded in portlist.ini File	Post-Upgrade Port Value
Oracle HTTP Server	Port: 7777	Port: 7783	Port: 7777
	Listen: 7778	Listen: 7784	Listen: 7778
	Listen: 4444 (SSL)	Listen: 4445 (SSL)	Listen: 4444 (SSL) ¹
Oracle Enterprise Manager 10g Application Server Control Console	1810	1812	1812, if the source Oracle home is Release 2 (9.0.2) or Release 2 (9.0.3).
			1810, if the source Oracle home is 10g (9.0.4)
Oracle Application Server Web Cache	Administration: 4000	Administration: 4003	Administration: 4000
	Invalidation: 4001	Invalidation: 4004	Invalidation: 4001
	Statistics: 4002	Statistics: 4005	Statistics: 4002

¹ For more information, see [Section 4.6.3.1, "Verifying the Secure Sockets Layer \(SSL\) Configuration After Upgrade"](#)

4.6.2 About Administration Passwords After Upgrade

After you upgrade a middle tier, use the following passwords in the destination Oracle home:

- To log in to the Application Server Control Console, use the `ias_admin` password you defined during the installation of the destination Oracle home.

- To log in to the OracleAS Web Cache Manager, use the OracleAS Web Cache Administrator password you used in the OracleAS Web Cache source Oracle home.

4.6.3 Completing the Oracle HTTP Server Upgrade

The following section describe post-upgrade tasks for the Oracle HTTP Server:

- [Verifying the Secure Sockets Layer \(SSL\) Configuration After Upgrade](#)
- [Manual Upgrade Tasks You May Need to Perform](#)

4.6.3.1 Verifying the Secure Sockets Layer (SSL) Configuration After Upgrade

If you enabled SSL in the source Oracle home, verify that the component is still configured for secure communications after you have used the OracleAS Upgrade Assistant.

To verify the proper configuration of your secure Oracle HTTP Server, use the following procedure to check the required values in the `opmn.xml` and `httpd.conf` configuration files. Unless both of these files are configured as described in this procedure, you could encounter problems with your SSL configuration:

1. Use a text editor to open the following OPMN configuration file:

`DESTINATION_ORACLE_HOME\opmn\conf\opmn.xml`

2. Locate the following `ias-component` entry in the `opmn.xml` file:

```
<ias-component id="HTTP_Server">
  <process-type id="HTTP_Server" module-id="OHS">
    <module-data>
      <category id="start-parameters">
        <data id="start-mode" value="ssl-enabled"/>
      </category>
    </module-data>
  </process-type>
</ias-component>
```

3. Within the `start-parameters` category tag, verify that the `start-mode` parameter is set to `ssl-enabled`.

This ensures that OPMN starts Oracle HTTP Server in SSL mode.

4. Use a text editor to open the following Oracle HTTP Server configuration file:

`DESTINATION_ORACLE_HOME\Apache\Apache\conf\httpd.conf`

5. Locate the following entry in the `httpd.conf` file:

```
<IfDefine SSL>
  LoadModule ssl_module libexec/mod_ssl.so
</IfDefine>
```

In particular, be sure that the `LoadModule ssl_module` command is surrounded by the `<IfDefine SSL>` tag. This ensures that Oracle HTTP Server will be started in SSL mode if and only if OPMN directs it to start in SSL mode. Without the surrounding `<IfDefine SSL>` tag, Oracle HTTP Server starts in SSL mode regardless of whether OPMN has been configured to do so.

In 10g Release 2 (10.1.2), the SSL configuration is controlled by OPMN so it is important that the settings in both the `opmn.xml` file and `httpd.conf` file be consistent.

4.6.3.2 Manual Upgrade Tasks You May Need to Perform

The OracleAS Upgrade Assistant upgrades the standard settings for the Oracle HTTP Server. If you have configuration files or documents that are in non-standard locations or referenced in non-standard ways, you must upgrade these manually. These, and other specific cases for manual upgrade, are detailed below.

- **If mod_osso was configured:** If `mod_osso` was configured, after upgrade, the `osso.conf` file continues to use the source Oracle home partner entry in the Single Sign-On server. If the name of the entry in use is obsolete (in that it refers in some way to the source Oracle home), rename it accordingly.
- **If there are configuration files in non-default locations:** If `httpd.conf`, `mod_osc4j.conf`, `mod_osso.conf` and `moddav.conf` files are not in the default location, you must upgrade them manually by applying the customizations in the files in the source Oracle home to the files in the destination Oracle home.
- **If there are custom files and directories referenced by Oracle HTTP Server configuration files:** Because the OracleAS Upgrade Assistant only upgrades the items listed in [Section A.1.4.1, "OHS Upgrade Items"](#) on page A-5, there could be files or directories referred to by directives such as `Alias`, `mod_rewrite`, and `log` directives, such as `ErrorLog`, that are not present after the upgrade. Ensure that all such items are upgraded manually and exist in the locations expected by the directives. If these files or directives are missing after the upgrade, the Oracle HTTP Server may not start. You can identify errors by starting the Oracle HTTP Server individually after the upgrade, and examining the following file for errors associated with these items:

`DESTINATION_ORACLE_HOME\Apache\Apache\logs\error_log`

- **If there are Dynamic Monitoring Service (DMS) configuration elements in the `httpd.conf` and `mod_osc4j.conf` files:** You must relocate these configuration elements into the `dms.conf` file.
- **If Oracle Application Server Web Cache is the first listener:** If OracleAS Web Cache is configured as the first listener, ensure that the Oracle HTTP Server directives listed in [Table 4–6](#) have the same values as the corresponding OracleAS Web Cache elements. In particular, note that the Oracle HTTP Server Port directive specifies the port number of a front-end load balancer or reverse proxy. Thus, if Oracle Application Server Web Cache is used, then the Oracle HTTP Server Port directive should have the value of the port on which OracleAS Web Cache is listening.

Table 4–6 Oracle HTTP Server and Oracle Application Server Web Cache Port Settings

Oracle HTTP Server Directive	Oracle Application Server Web Cache Element
<code>VirtualHost</code>	Site definitions
<code>Listen</code>	Origin server ports
<code>VirtualHost</code> , <code>Listen</code>	Site-to-server mappings
<code>Port</code>	Listen

- **If you have static documents in the default DocumentRoot directory that you want to upgrade:** The OracleAS Upgrade Assistant locates static document files and directories for upgrade in the location specified in the `DocumentRoot` directive. The `DocumentRoot` directive defines the location for static documents and related directories. The base server has a document root location, and each

virtual host has one. The OracleAS Upgrade Assistant copies files under these directories to the destination Oracle home. The default DocumentRoot directory contains demonstration programs and release notes placed there by the installer, so the OracleAS Upgrade Assistant does not upgrade this directory. You must upgrade this directory manually:

`SOURCE_ORACLE_HOME\Apache\Apache\htdocs`

4.6.4 Completing the Oracle Application Server Containers for J2EE (OC4J) Upgrade

The OracleAS Upgrade Assistant performs many of the Oracle Application Server Containers for J2EE (OC4J) upgrade tasks. However, some components of OC4J may require manual adjustments, or may have characteristics of which you should be aware before using Oracle Application Server 10g Release 2 (10.1.2).

The following sections describe some of the tasks you may need to perform to finish the OC4J upgrade:

- [Section 4.6.4.1, "Upgrading Oracle Application Server Java Authentication and Authorization Service \(JAAS\) Provider \(JAZN\) Security Settings"](#)
- [Section 4.6.4.2, "Upgrading JAZN Library Path Entries After Upgrading From Release 2 \(9.0.2\)"](#)
- [Section 4.6.4.3, "Reviewing the Default OC4J Instances After Upgrade"](#)
- [Section 4.6.4.4, "Completing the Upgrade of User-Created OC4J Instances"](#)
- [Section 4.6.4.5, "Upgrading application.xml Entries"](#)
- [Section 4.6.4.6, "Using the Compatibility Test Suite \(CTS\) Compatibility Flag for Backward Compatibility"](#)
- [Section 4.6.4.7, "Upgrade Considerations for Enterprise Java Beans"](#)
- [Section 4.6.4.8, "Upgrade Considerations for the OC4J Java Server Pages \(JSP\) Container"](#)
- [Section 4.6.4.9, "Considering JDK 1.4 Issues: Cannot Invoke Classes Not in Packages"](#)
- [Section 4.6.4.10, "Considering Modified Servlet APIs and Behavior"](#)
- [Section 4.6.4.11, "Deploying Oracle Business Components for Java \(BC4J\) Applications After Upgrade"](#)

4.6.4.1 Upgrading Oracle Application Server Java Authentication and Authorization Service (JAAS) Provider (JAZN) Security Settings

During upgrade, the OC4J upgrade assistant redeploys your J2EE applications in an OC4J instance in the new 10g Release 2 (10.1.2) Oracle home. Thus, changes made to the `jazn-data.xml` and `jazn.xml` files packaged within an application's EAR file will be migrated automatically.

However, manual steps are needed for the following cases, which are not common.

- In `orion-application.xml`, the application can specify the location of `jazn-data.xml`; for example:

```
<jazn provider="XML" location="SOURCE_ORACLE_HOME\j2ee\jazn-data.xml">
```

When `jazn-data.xml` is not packaged within the application's EAR file, then `jazn-data.xml` needs to be copied manually to the new 10g Release 2 (10.1.2)

environment. The location of the file may need to be updated accordingly in the `orion-application.xml` file.

- In `orion-application.xml`, the application can point to `jazn.xml` using the following syntax:

```
<jazn config="path_to_jazn.xml" />
```

When `jazn.xml` is not packaged within the application's EAR file, then it needs to be copied manually to the new install environment. The location of the file may need to be updated accordingly in the `orion-application.xml` file.

4.6.4.2 Upgrading JAZN Library Path Entries After Upgrading From Release 2 (9.0.2)

If you are upgrading OC4J instances in a Release 2 (9.0.2) Oracle home, note that in Oracle Application Server 10g (9.0.4) and 10g Release 2 (10.1.2) the `jazn.jar` file is split into two JAR files: `jazn.jar` and `jazncore.jar`.

For this reason, after upgrading OC4J applications that use JAZN and require dynamic compilation (for example, JSP), both JAR file names should be added to the library path entries in the `application.xml` file.

Ensure that the `application.xml` file contains both of the entries below:

```
<library path="DESTINATION_J2EE_HOME\jazn.jar"/>
<library path="DESTINATION_J2EE_HOME\jazncore.jar"/>
```

In this example, replace `DESTINATION_J2EE_HOME` with the following directory path:

```
DESTINATION_ORACLE_HOME\j2ee\home
```

4.6.4.3 Reviewing the Default OC4J Instances After Upgrade

Default OC4J instances are installed automatically by the Oracle Universal Installer and are used by Oracle Application Server components.

During upgrade, the OracleAS Upgrade Assistant does not upgrade default OC4J instances. These default OC4J instances are replaced by new default instances that are installed by the 10g Release 2 (10.1.2) installation procedure in the destination Oracle home. In most cases, these default instances are designed for specific use by the Oracle Application Server components. These default instances include:

- OC4J_SECURITY
- OC4J_PORTAL
- OC4J_WIRELESS

4.6.4.4 Completing the Upgrade of User-Created OC4J Instances

User-created OC4J instances are created or modified by the user; this category includes the home instance.

Note: the home OC4J instance is created automatically by the Oracle Application Server installation procedure, but it is considered a user-created OC4J instance because it is created specifically to provide a default OC4J instance that administrators can use to deploy their own J2EE applications.

As a result, users often modify the attributes and properties of the home instance, and those attributes and properties must be upgraded to the new 10g Release 2 (10.1.2) Oracle home.

The OracleAS Upgrade Assistant upgrades most of the properties and attributes of user-created OC4J instances, including the home instance. However, not all the properties and attributes of a user-created OC4J instance are upgraded automatically.

For example, the OracleAS Upgrade Assistant adds any properties defined in `oc4j.properties` to the corresponding `java-options` section (for both start and stop parameters) in `opmn.xml`. However, the OracleAS Upgrade Assistant does not upgrade the `process-set` properties that define the number Java Virtual Machines (JVMs) defined for the instance.

The following sections describe the rules used by the OracleAS Upgrade Assistant to determine which attributes and properties in the `opmn.xml` file can be upgraded automatically for each user-created OC4J instance:

- [About the java-options Parameters in the opmn.xml File](#)
- [Upgrading java-options Other Than -D Options for OC4J Instances Defined in the OPMN.XML File](#)
- [Upgrading -D java-options for OC4J Instances Defined in the OPMN.XML File](#)
- [About the start-parameters and stop-parameters Sections of the OPMN.XML File](#)

4.6.4.4.1 About the java-options Parameters in the opmn.xml File The attributes and properties of each OC4J instance you create are defined in the `opmn.xml` file along with other Oracle Application Server components that are managed by Oracle Process Manager and Notification Server (OPMN).

Example 4–6 shows a typical entry in the `opmn.xml` file that defines the home instance, which is a default OC4J instance that can be used and modified by the user.

Example 4–6 OC4J Instance Properties in the opmn.xml File

```
<ias-component id="OC4J">
  <process-type id="home" module-id="OC4J" status="enabled">
    <module-data>
      <category id="start-parameters">
        <data id="java-options" value="-server -Djava.security.policy=$ORACLE_
HOME/j2ee/home/config/java2.policy -Djava.awt.headless=true"/>
      </category>
      <category id="stop-parameters">
        <data id="java-options" value="-Djava.security.policy=$ORACLE_
HOME/j2ee/home/config/java2.policy -Djava.awt.headless=true"/>
      </category>
    </module-data>
    <start timeout="600" retry="2"/>
    <stop timeout="120"/>
    <restart timeout="720" retry="2"/>
    <port id="ajp" range="3301-3400"/>
  </process-type>
</ias-component>
```

```

    <port id="rmi" range="3201-3300"/>
    <port id="jms" range="3701-3800"/>
    <process-set id="default_island" numprocs="1"/>
  </process-type>
</ias-component>

```

Note the `java-options` tags in [Example 4–6](#), as well as the `start-parameters` and `stop-parameters` defined the OC4J instance.

4.6.4.4.2 Upgrading java-options Other Than -D Options for OC4J Instances Defined in the OPMN.XML File For `java-options` that do not start with `-D`, the OracleAS Upgrade Assistant performs the following evaluations and actions for each user-created OC4J instance defined in the `opmn.xml` file:

- The OracleAS Upgrade Assistant compares arguments defined in the `java-options` tag in the source Oracle home with those defined in the destination Oracle Home.
- If the `java-options` exist in the source Oracle home, but not in the destination Oracle home, the OracleAS Upgrade Assistant appends the `java-options` defined in the source Oracle home to the `java-options` tag in the destination Oracle home.

The OracleAS Upgrade Assistant does not analyze the semantics of the `java-option` parameter. For example, if `-Xmx256m` is defined in the source `opmn.xml` file and `-Xmx512m` is defined in the destination file, the resulting file will contain the following:

```

<data id="java-options" value="-server -Djava.security.policy=$ORACLE_
HOME\j2ee\home\config\java2.policy -Djava.awt.headless=true" -Xmx512m -Xmx256m />

```

Note, however, that the default `java-options` for 10.1.2 do not include any `-X` options, so it is unlikely the destination `java-options` tag will include additional arguments when you perform the middle tier upgrade. Specifically, the default `java-options` for the home OC4J instance appear as follows in the `opmn.xml` file:

```

<data id="java-options" value="-server -Djava.security.policy=$ORACLE_
HOME/j2ee/home/config/java2.policy -Djava.awt.headless=true"

```

4.6.4.4.3 Upgrading -D java-options for OC4J Instances Defined in the OPMN.XML File For `java-options` that start with `-D`, the OracleAS Upgrade Assistant performs the following evaluations and actions for each user-created OC4J instance defined in the `opmn.xml` file:

- The `-D` parameters of the `java-options` tag consist of property/value pairs. If the value is a path to a file and the path includes the source Oracle home, OracleAS Upgrade Assistant ignores the parameter.
- If the value of the `-D` parameter is not a path to a file or if the path does not include the source Oracle home, OracleAS Upgrade Assistant compares the `java-options` tag the source Oracle home with the same tag in the destination Oracle home. If the property is already defined in the destination Oracle home and it has a different value, OracleAS Upgrade Assistant replaces the value with the value defined in the source Oracle home.
- On the other hand, if the property is not defined in the destination Oracle home, the OracleAS Upgrade Assistant adds the `-D` parameter to the destination Oracle home.

4.6.4.4.4 About the start-parameters and stop-parameters Sections of the OPMN.XML File

When upgrading a 10g (9.0.4) Oracle home, the OracleAS Upgrade Assistant upgrades

the `java-options` for both `start-parameters` and the `stop-parameters` sections of the `opmn.xml` file.

However, in Oracle Application Server Release 2 (9.0.2) there is only one `java-option` for each OC4J instance. In this case, the OracleAS Upgrade Assistant upgrades the single `java-options` tag for each instance and the parameters defined apply to both starting and stopping the OC4J instance.

4.6.4.5 Upgrading application.xml Entries

If you have customized entries in the [application.xml](#) file, such as library paths, Java options, and OC4J options, you must upgrade them manually.

4.6.4.6 Using the Compatibility Test Suite (CTS) Compatibility Flag for Backward Compatibility

In Oracle Application Server 10g Release 2 (10.1.2), OC4J by default complies with the J2EE 1.3 specification. In some cases, this results in behavior that differs from that seen with previous OC4J implementations. To allow for backward compatibility, OC4J supports a CTS compliance flag that you can set to false to revert to previous OC4J behavior in the following components:

- Oracle JMS
- Oracle JDBC
- Oracle XML parser for JAXP/XDK

The compliance behavior of OC4J is determined by the flag `oracle.cts.useCtsFlags`, with a default value of `true`. If any of the upgrade issues are critical in a particular application, you can disable CTS compliance and revert to old behavior for an OC4J instance by setting the flag value to false in an OC4J properties file, and providing the location of the properties file to OC4J.

For example, consider the following configuration file:

```
DESTINATION_ORACLE_HOME\j2ee\home\config\oc4j.properties
```

This file might contain the flag:

```
oracle.cts.useCtsFlags=false
```

Supply the name and location of a properties file to OC4J through an `<oc4j-option>` element in the `opmn.xml` file. The `opmn.xml` file is located in the following directory:

```
DESTINATION_ORACLE_HOME\opmn\conf\opmn.xml
```

The `<oc4j-option>` element should appear as in the following example:

```
<oc4j>
...
<oc4j-option value="-p DESTINATION_ORACLE_HOME\j2ee\home\config\oc4j.properties"/>
...
</oc4j>
```

This is equivalent to starting OC4J as follows in standalone mode:

```
java -jar oc4j.jar -p DESTINATION_ORACLE_HOME\j2ee\home\config\oc4j.properties
```

4.6.4.6.1 CTS Compatibility and OJMS In the Oracle Application Server 10g Release 2 (10.1.2) implementation of Oracle JMS (OJMS), which complies with J2EE 1.3, some behavior differs from OJMS behavior in Oracle9iAS Release 1 (1.0.2.2). (There are no

such upgrade considerations between Oracle9iAS releases 9.0.2 and 9.0.3.) The differences are as follows:

- **JMSEExpiration**—In the OJMS 10g Release 2 (10.1.2) J2EE 1.3-compliant implementation, the JMSEExpiration header value in a dequeued message is the sum of the JMS timestamp when the message was enqueued, and the time-to-live. This value is expressed in milliseconds from midnight, January 1, 1970 to the current Greenwich Mean Time. If a message never expires, the value is 0.

In the OJMS 1.0.2.2 implementation, the JMSEExpiration header value in a dequeued message is the duration until expiration of the message, in milliseconds. If a message never expires, the value is -1.

- **JMSPriority**—In the OJMS Release 2 (9.0.4) 1.3-compliant implementation, 9 is the highest priority, 0 is the lowest priority, and 4 is the default priority.

In the OJMS 1.0.2.2 implementation, `java.lang.Integer.MIN_VALUE` is the highest priority, `Integer.MAX_VALUE` is the lowest priority, and 1 is the default priority.

- **Durable subscribers**—In the OJMS 10g Release 2 (10.1.2) J2EE 1.3-compliant implementation, durable Topic Subscribers with the same name are not allowed under any circumstances.

In the OJMS 1.0.2.2 implementation, durable Topic Subscribers with the same name are allowed if they are subscribed to different topics.

- **Strongly typed JMS selectors**—In accordance with the JMS 1.02b specification and J2EE 1.3 compliance requirements, the OJMS 10g Release 2 (10.1.2) implementation uses only a certain subset of SQL92 syntax for selector expression syntax, with the following mandated restrictions:

- Selector expressions are strongly typed, meaning operators and operands in arithmetic comparisons must be of the same type. Automatic type conversions for the purpose of comparison, such as converting the string "1" to the integer 1, are prohibited.
- String and boolean comparisons are restricted to "=", "<", and ">". Two strings are equal only if they contain the exact same sequence of characters.
- The "!=" operator is prohibited.

The OJMS 1.0.2.2 implementation is not subject to these restrictions or to the limited subset of SQL92 syntax for selector expression syntax.

4.6.4.6.2 CTS Compatibility and JDBC In the Oracle Application Server 10g Release 2 (10.1.2) implementation of Oracle JDBC, which complies with J2EE 1.3, some behavior differs from JDBC behavior in Oracle9iAS Release 2 (9.0.2) and prior. The differences are as follows:

- **Java types for NUMBER columns**—In 10g Release 2 (10.1.2), the `getObject()` method of a result set (`java.sql.ResultSet` instance) returns a `java.lang.Double` value for a NUMBER column with precision, or a `java.math.BigDecimal` value for a NUMBER column without precision.

In Release 2 (9.0.2) and prior releases, `getObject()` returns a `BigDecimal` value for any NUMBER column.

- **Metadata for NUMBER columns**—In 10g Release 2 (10.1.2), the `getColumnTypeName()` method of a result set metadata object (`java.sql.ResultSetMetaData` instance) returns "FLOAT" for a NUMBER column with precision, or "NUMBER" for a NUMBER column without precision. The

`getColumnType()` method returns `java.sql.Types.FLOAT` for a NUMBER column with precision, or `Types.NUMBER` for a NUMBER column without precision.

In Release 2 (9.0.2) and prior releases, `getColumnTypeName()` returns "NUMBER" for any NUMBER column, and `getColumnType()` returns `Types.NUMBER` for any NUMBER column.

- Java types for DATE and TIMESTAMP columns—In 10g Release 2 (10.1.2), the `getObject()` method of a result set returns a `java.sql.Date` value for a DATE column, and a `java.sql.Timestamp` value for a TIMESTAMP column.

In Release 2 (9.0.2) and prior releases, `getObject()` returns a `java.sql.Timestamp` value for a DATE column. (TIMESTAMP columns were not supported.)

- Exceptions for inappropriate SQL statements—In 10g Release 2 (10.1.2), if an `executeQuery()` call in a statement object contains anything but a SELECT statement (such as if it instead contains an INSERT or UPDATE statement), the JDBC driver properly throws an exception. Similarly, if an `executeUpdate()` call contains a SELECT statement, the driver properly throws an exception. (An UPDATE, INSERT, or DELETE statement is expected.)

In Release 2 (9.0.2) and prior releases, these situations did not result in exceptions.

4.6.4.6.3 CTS Compatibility and the JAXP/XDK XML Parser In the Oracle Application Server 10g Release 2 (10.1.2) implementation of the XML parser for JAXP/XDK, which complies with J2EE 1.3, some behavior differs from XML parser behavior in Oracle9iAS Release 2 (9.0.2) and prior. The differences are as follows:

- `getNamespaceURI()` null return values—In 10g Release 2 (10.1.2), the `getNamespaceURI()` method returns 'null' if the namespace is not defined for an element or attribute.

In Release 2 (9.0.2) and prior releases, the `getNamespaceURI()` method returns ' ' ' ' in these circumstances.

- `getLocalName()` null return values—In 10g Release 2 (10.1.2), the `getLocalName()` method returns 'null' if the element or attribute was created using a DOM level 1 API call to `createElement()` or `createAttribute()`.

In Release 2 (9.0.2) and prior releases, the `getLocalName()` method returns '"Transfer interrupted! "' in these circumstances.

- `getPrefix()` null return values—In 10g Release 2 (10.1.2), the `getPrefix()` method returns 'null' if the element or attribute was created using a DOM level 1 API call to `createElement()` or `createAttribute()`.

In Release 2 (9.0.2) and prior releases, the `getPrefix()` method returns ' ' ' ' in these circumstances.

Note: The `getNamespaceURI()`, `getLocalName()`, and `getPrefix()` methods exist with the preceding changes in the `XMLElement` and `XMLAttr` classes of the `oracle.xml.parser.v2` package.

- SAX exceptions—In 10g Release 2 (10.1.2), registered error handlers throw a `SAXException` or `SAXParseException` in error conditions.

In Release 2 (9.0.2) and prior releases, error handlers throw an `XMLParseException` in error conditions.

- I/O exceptions—In 10g Release 2 (10.1.2), an `IOException` is thrown as is in I/O error conditions.

In Release 2 (9.0.2) and prior releases, an `IOException` is wrapped in an `XMLParseException`.

4.6.4.7 Upgrade Considerations for Enterprise Java Beans

Beginning with Oracle9iAS Release 2 (9.0.3), Oracle Application Server Containers for J2EE complies with the J2EE 1.3 specification and implements the Enterprise Java Beans (EJB) 2.0 specification in entirety. Therefore, if you are upgrading from Release 2 (9.0.2) to 10g Release 2 (10.1.2), applications using EJB features in the areas of container-managed persistence and container-managed relationships will require modification.

See Also: *Oracle Application Server Containers for J2EE Enterprise JavaBeans Developer's Guide*, Appendix C for guidance on modifying these applications.

4.6.4.8 Upgrade Considerations for the OC4J Java Server Pages (JSP) Container

The following sections describes JSP settings that are affected by the upgrade:

- [Enabling Extra Imports](#)
- [Setting Additional JSP Flags for Backward Compatibility](#)

4.6.4.8.1 Enabling Extra Imports Beginning with Oracle9iAS Release 2 (9.0.3), the OC4J JSP container by default imports the packages listed below into any JSP page, in accordance with the JSP specification. No page directive import settings are required.

```
javax.servlet.*
javax.servlet.http.*
javax.servlet.jsp.*
```

In previous releases, the following packages were also imported by default:

```
java.io.*
java.util.*
java.lang.reflect.*
java.beans.*
```

For backward compatibility, you can use the JSP `extra_imports` configuration parameter as a workaround. Alternatively, you can add desired imports through page directives or global includes. See the Oracle Application Server Containers for J2EE Support for JavaServer Pages Developer's Guide for information about these topics.

4.6.4.8.2 Setting Additional JSP Flags for Backward Compatibility When upgrading to Oracle Application Server 10g Release 2 (10.1.2) and using JSP pages, use appropriate settings for the following important JSP configuration parameters.

- `check_page_scope`
- `forgive_dup_dir_attr`

These are set as initialization parameters for the JSP front-end servlet, either in the [global-web-application.xml](#) file or in the application [orion-web.xml](#) file. [Example 4–7](#) shows an example of the JSP configuration parameters. Here is an example.

Example 4–7 JSP Configuration Parameters for Upgrading to 10g Release 2 (10.1.2)

```
<servlet>
  <servlet-name>jsp</servlet-name>
  <servlet-class>oracle.jsp.runtimev2.JspServlet</servlet-class>
  <init-param>
    <param-name>check_page_scope</param-name>
    <param-value>true</param-value>
  </init-param>
  ...
</servlet>
```

See the Oracle Application Server Containers for J2EE Support for JavaServer Pages Developer's Guide for more information about JSP configuration parameters.

`check_page_scope` (boolean; default: `false`): This parameter was introduced in Oracle9iAS Release 2 (9.0.3). For OC4J environments, set it to `true` to enable Oracle-specific page-scope checking by the `JspScopeListener` utility.

This parameter is not relevant for non-OC4J environments. For JServ, Oracle-specific page-scope checking is always enabled. For other environments, the Oracle-specific implementation is not used and you must use the `checkPageScope` custom tag for `JspScopeListener` page-scope functionality. See the Oracle Application Server Containers for J2EE JSP Tag Libraries and Utilities Reference for information about `JspScopeListener`.

`forgive_dup_dir_attr` (boolean; default: `false`): This parameter was introduced in Oracle9iAS Release 2 (9.0.3). Set it to `true` to avoid translation errors in a JSP 1.2 environment such as OC4J if you have duplicate settings for the same directive attribute within a single JSP translation unit (a JSP page plus anything it includes through `include` directives).

The JSP 1.2 specification directs that a JSP container must verify that directive attributes, with the exception of the page directive `import` attribute, are not set more than once each within a single JSP translation unit.

The JSP 1.1 specification did not specify such a limitation. OC4J offers the `forgive_dup_dir_attr` parameter for backward compatibility.

4.6.4.9 Considering JDK 1.4 Issues: Cannot Invoke Classes Not in Packages

Among the migration considerations in moving to a Sun Microsystems JDK 1.4 environment, which is the environment that is shipped with Oracle Application Server 10g Release 2 (10.1.2), there is one of particular importance to servlet and JSP developers.

As stated by Sun Microsystems, "The compiler now rejects import statements that import a type from the unnamed namespace." (This was to address security concerns and ambiguities with previous JDK versions.) Essentially, this means that you cannot invoke a class (a method of a class) that is not within a package. Any attempt to do so will result in a fatal error at compilation time.

This especially affects JSP developers who invoke JavaBeans from their JSP pages, as such beans are often outside of any package (although the JSP 2.0 specification now requires beans to be within packages, in order to satisfy the new compiler requirements). Where JavaBeans outside of packages are invoked, JSP applications that

were built and executed in an OC4J 9.0.3 / JDK 1.3.1 or prior environment will no longer work in an OC4J 9.0.4 / JDK 1.4 environment.

Until you update your application so that all JavaBeans and other invoked classes are within packages, you have the alternative of reverting back to a JDK 1.3.1 environment to avoid this issue.

Notes:

The `javac -source` compiler option is intended to allow JDK 1.3.1 code to be processed seamlessly by the JDK 1.4 compiler, but this option does not account for the "classes not in packages" issue.

Only the JDK 1.3.1 and JDK 1.4 compilers are supported and certified by OC4J. It is possible to specify an alternative compiler by adding a `<java-compiler>` element to the `server.xml` file, and this might provide a workaround for the "classes not in packages" issue, but no other compilers are certified or supported by Oracle for use with OC4J. (Furthermore, do not update the `server.xml` file directly in an Oracle9iAS environment. Use the Oracle Enterprise Manager 10g Application Server Control Console.)

For more information about the "classes not in packages" issue and other JDK 1.4 compatibility issues, refer to the following Web site:

<http://java.sun.com/j2se/1.4/compatibility.html>

In particular, click the link "Incompatibilities Between Java 2 Platform, Standard Edition, v1.4.0 and v1.3".

4.6.4.10 Considering Modified Servlet APIs and Behavior

When upgrading to Oracle Application Server 10g Release 2 (10.1.2) and using servlets, consider the following changes in servlet APIs and behavior:

- Changes relating to `getRequestURI()`
- Changes regarding filtering of servlets that are forward or include targets

4.6.4.10.1 Changes Relating to `getRequestURI()` In previous Oracle9iAS releases, whenever Oracle HTTP Server received a request, it would unencode the URI before passing it to OC4J. Therefore, servlets making computations based on the response of `getRequestURI()` (a method on the request object) were implicitly getting a value that had been unencoded one time. As of the OC4J 9.0.4 implementation, Oracle HTTP Server will send OC4J an unaltered version of the URI, which in turn is used by OC4J as the return value of `getRequestURI()`.

If the `mod_rewrite` module is being used in conjunction with `mod_oc4j` in communications between Oracle HTTP Server and OC4J, the rewritten URI that is sent to `mod_oc4j` is the same as what is sent to OC4J, and the return value of `getRequestURI()` will have had `mod_rewrite` rules applied to it.

The `mod_rewrite` and `mod_oc4j` modules are discussed in the Oracle HTTP Server Administrator's Guide. Further details about `mod_rewrite` are available in the Apache Server documentation.

4.6.4.10.2 Filtering of Servlets That Are Forward or Include Targets In previous Oracle Application Server releases, if a filtered servlet forwards to or includes another servlet, the target servlet, by default, is also filtered. In Oracle Application Server 10g Release 2

(10.1.2), this is no longer the default behavior. Having the target servlet not filtered by default matches the intention of the servlet specification.

This behavior is configurable: in the OC4J 9.0.4 implementation, it is according to the `oracle.j2ee.filter.on.dispatch` environment flag (false by default); in future implementations, it will be according to `web.xml` configuration as set forth in the servlet 2.4 specification.

4.6.4.11 Deploying Oracle Business Components for Java (BC4J) Applications After Upgrade

After you upgrade to Oracle Application Server 10g Release 2 (10.1.2), you will want to redeploy your J2EE applications using the OC4J component of your newly upgrade 10g Release 2 (10.1.2) instance.

However, before you redeploy any applications that use the capabilities of Oracle Business Components for Java (BC4J), you must repackage the application .EAR file. Specifically, you must be sure to package the 10g Release 2 (10.1.2) version of the `bc4jhtml.jar` file into the `WEB-INF/lib` directory of your application .EAR file.

See Also: The Oracle JDeveloper documentation and release notes

4.6.5 Completing the Upgrade of OracleAS Web Cache

The following sections describe procedures to consider when upgrading the middle tiers that are part of an OracleAS Web Cache Cluster:

- [Using Multiple Versions of OracleAS Web Cache within an OracleAS Web Cache Cluster](#)
- [Synchronizing the Upgraded OracleAS Web Cache Cluster Configuration](#)
- [Upgrading an OracleAS Web Cache Cluster from Release 2 \(9.0.2.x\) to 10g Release 2 \(10.1.2\)](#)
- [About Linking to the Application Server Control From the OracleAS Web Cache Welcome Page](#)
- [Verifying the Location of OracleAS Web Cache Wallets](#)

4.6.5.1 Using Multiple Versions of OracleAS Web Cache within an OracleAS Web Cache Cluster

When upgrading an OracleAS Web Cache cluster, you can upgrade one cache cluster member at a time. The caches will continue to function, but because the other cluster members have a different version of the configuration, the caches will not forward requests to cache cluster members operating with a different version.

For example, if you upgrade `Cache_A` to the current version, but have not yet upgraded `Cache_B` and `Cache_C`, `Cache_A` will not forward requests to the cache cluster members `Cache_B` and `Cache_C`.

In this situation, the Operations page in Web Cache Manager indicates that the Operation Needed is Incompatible software version.

Note: When the cache cluster members are not running the same version of OracleAS Web Cache, you can still invalidate documents and you can propagate the invalidation to other cluster members.

However, if any of the cache cluster members are operating with a version earlier than 10g (9.0.4), the invalidation requests must originate with the cache that is operating with the earlier version of OracleAS Web Cache, such as Release 2 (9.0.2) or Release 2 (9.0.3).

4.6.5.2 Synchronizing the Upgraded OracleAS Web Cache Cluster Configuration

After you upgrade each cache cluster member to 10g Release 2 (10.1.2), you must perform the following additional steps to synchronize the configuration for the members of the cluster:

1. If the caches have not been started, for each upgraded cache, start OracleAS Web Cache and OracleAS Web Cache Manager. On the command line, enter:

```
opmnctl startproc ias-component=WebCache
```

This command starts the OracleAS Web Cache cache server process and admin server process.

2. In a browser, enter the URL for the OracleAS Web Cache Manager for one of the upgraded caches, and, when prompted, enter the username and password for the `ias_admin` or `administrator` user.

Note that after you upgrade an OracleAS Web Cache instance, you log into the OracleAS Web Cache Manager using the `Administrator` password defined when you installed and configured OracleAS Web Cache source Oracle home.

See Also: [Section 4.6.2, "About Administration Passwords After Upgrade"](#)

3. In the navigator frame, select **Administration -> Operations**.

The **Operations** page appears.

4. In the Operations page, click **Retrieve Configuration**.

Web Cache retrieves the cache-specific configuration information from the remote cache cluster members. Then, Web Cache Manager indicates that the Operation Needed is Propagate Configuration.

5. To propagate the configuration to all cache cluster members, select **All caches** and an **Interval** of **Immediate**. Then, click **Propagate**.
6. Restart the caches by selecting **All caches** and an **Interval**. Then, click **Restart**. (Note that you can perform this operation as you upgrade each cache, or you can perform this operation after all of the cache cluster members have been upgraded.)

4.6.5.3 Upgrading an OracleAS Web Cache Cluster from Release 2 (9.0.2.x) to 10g Release 2 (10.1.2)

A Release 2 (9.0.2) cache cannot accept invalidation messages from a 10g Release 2 (10.1.2) cache. In a configuration that uses a OracleAS Web Cache cluster with a mixture of Release 2 (9.0.2) and 10g Release 2 (10.1.2) cluster members, you must configure the Load Balancer to send invalidation messages only to the Release 2 (9.0.2.x) members.

When upgrading a cache cluster from Release 2 (9.0.2) to 10g Release 2 (10.1.2), remove cluster members one at a time from the invalidation pool for the Load Balancer prior and upgrade them. Once all the cluster members are upgraded, add them back to the invalidation pool. As an example, assume a configuration with a Load Balancer in front of a cache cluster that is comprised of four members, `webche1-host`, `webche2-host`, `webche3-host`, and `webche4-host`, all running Release 2 (9.0.2.x).

To upgrade this cache cluster:

1. In the Load Balancer configuration, remove `webche1-host` from the pool that is responsible for invalidation.
2. Upgrade `webche1-host` from Release 2 (9.0.2) to 10g Release 2 (10.1.2).
3. In the Load Balancer configuration, remove `webche2-host` from the pool that is responsible for invalidation.
4. Upgrade `webche2-host` from Release 2 (9.0.2) to 10g Release 2 (10.1.2).
5. In the Load Balancer configuration, remove `webche3-host` from the pool that is responsible for invalidation.
6. Upgrade `webche3-host` from Release 2 (9.0.2) to 10g Release 2 (10.1.2).
7. Upgrade `webche4-host` from Release 2 (9.0.2) to 10g Release 2 (10.1.2). As this is the last cache member in the Load Balancer configuration, it is not necessary to remove it from the invalidation pool.
8. In the Load Balancer configuration, add `webche1-host`, `webche2-host`, and `webche3-host` back into the pool that is responsible for invalidation.

4.6.5.4 About Linking to the Application Server Control From the OracleAS Web Cache Welcome Page

When you install the 10g Release 2 (10.1.2) destination Oracle home, the OracleAS Web Cache Welcome page is configured to link to the 10g Release 2 (10.1.2) Application Server Control Console URL. However, during the upgrade of the middle tier, the OracleAS Upgrade Assistant configures Application Server Control so you can access it from the original port number assigned when you installed the source 10g (9.0.4) Oracle home.

As a result, after you upgrade from OracleAS Web Cache 10g (9.0.4) to 10g Release 2 (10.1.2), the link to the Oracle Enterprise Manager Application Server Control Console on the OracleAS Web Cache Welcome page does not work. To access the Application Server Control Console, use the 10g (9.0.4) Application Server Control URL.

4.6.5.5 Verifying the Location of OracleAS Web Cache Wallets

If you configured OracleAS Web Cache for HTTPS requests, then you defined a wallet that OracleAS Web Cache must use to support the HTTPS protocol.

The OracleAS Upgrade Assistant automatically upgrades your destination Oracle home with the location of the OracleAS Web Cache wallet as long as the wallet is stored in the Oracle home directory.

However, in some cases, if you did not use the same case when specifying the path to the wallet, the OracleAS Upgrade Assistant incorrectly identifies the wallet as being located outside of the Oracle home. In those cases, the path to the wallet is not updated correctly in the destination Oracle home.

As a result, after you upgrade OracleAS Web Cache, verify that OracleAS Web Cache is configured to locate your wallets in the destination Oracle home and not the source Oracle home.

See Also: "Configuring OracleAS Web Cache for HTTPS Requests" in the *Oracle Application Server Web Cache Administrator's Guide*

4.6.6 Completing the OracleAS Portal Middle Tier Upgrade

This section explains how to perform the manual procedures required to complete the Portal upgrade after the OracleAS Upgrade Assistant has finished processing. It discusses the following topics:

- [Verifying Oracle Internet Directory Properties for Custom Portals in the OracleAS Portal Dependency File](#)
- [Updating Deployment Properties for Portal Development Kit Services for Java \(JPKD\) Web Providers](#)

4.6.6.1 Verifying Oracle Internet Directory Properties for Custom Portals in the OracleAS Portal Dependency File

In cases where a Portal instance accessed through the middle-tier is not using the same Oracle Internet Directory that the middle-tier is registered with, some additional steps need to be carried out after upgrade of the middle tier. These steps validate that the Oracle Internet Directory details stored in the OracleAS Portal Dependency Settings File are correct. When you perform an upgrade, not all of the values are available to the upgrade tool and are simply set to a default value.

To verify the Oracle Internet Directory properties:

1. Open the following file in a text editor:

```
DESTINATION_ORACLE_HOME\portal\conf\iasconfig.xml
```

2. Review the contents of the file for entries that apply to OracleAS Portal.

In particular, note each occurrence of the `PortalInstance` element within the file. [Example 4–8](#) shows the contents of a typical `iasconfig.xml` file.

3. For each `PortalInstance` element that refers to an Oracle Internet Directory other than the one with which the middle tier is registered, do the following:
 - a. Set the `LDAPSSLPort` property in the `OIDDependency` element to the SSL port for the Oracle Internet Directory.
 - b. Verify that the `AdminDN` property of the corresponding `OIDComponent` element is set to the Administration DN of the Oracle Internet Directory.
 - c. Verify that the `AdminPassword` property of the corresponding `OIDComponent` element is correctly set to the password of the Oracle Internet Directory.
4. Save your changes and close the `iasconfig.xml` file.
5. Encrypt all manually entered password properties using the following command:

```
DESTINATION_ORACLE_HOME\portal\conf\ptlconfig -encrypt
```

Refer to the *Oracle Application Server Portal Configuration Guide* for more information about the `iasconfig.xml` and the `ptlconfig` tool.

Example 4–8 Sample Contents of the OracleAS Portal *iasconfig.xml* File

```

<IASInstance Name="midtier.abc.company.com" Host="abc.company.com">
  <WebCacheComponent AdminPort="4000" ListenPort="80"
    InvalidationPort="4001" InvalidationUsername="invalidator"
    InvalidationPassword="@BdS/zVGJHrElbOMohqLzurxsPRlau77peA=="
    SSLEnabled="false"/>
  <EMComponent ConsoleHTTPPort="1811" SSLEnabled="false"/>
</IASInstance>
<IASInstance Name="infra.xyz.company.com" Host="xyz.company.com">
  <OIDComponent AdminPassword="welcome1"
    AdminDN="cn=orcladmin" SSLEnabled="false" LDAPPort="389"/>
</IASInstance>
<PortalInstance DADLocation="/pls/portal30" SchemaUsername="portal30"
  SchemaPassword="welcome1"
    connectionString="dbserver.company.com:1521:orcl">
  <WebCacheDependency ContainerType="IASInstance"
    Name="midtier.abc.company.com"/>
  <OIDDependency ContainerType="IASInstance" LDAPSSLPort="4339"
    Name="infra.xyz.company.com"/>
  <EMDependency ContainerType="IASInstance"
    Name="midtier.abc.company.com"/>
</PortalInstance>

```

4.6.6.2 Updating Deployment Properties for Portal Development Kit Services for Java (JPKD) Web Providers

Any new deployment property files added in the source Oracle home will be copied to the destination Oracle home. However, any property file that is modified from its original installation time values will not be copied. Any changes in those files must be manually applied to the destination Oracle home.

The location of the property file will vary among web providers, and can be located using the service identifier of the web provider. The service identifier identifies a provider within an application. The deployment property files are named according to the following convention:

```

SOURCE_ORACLE_HOME\j2ee\OC4J_Portal\applications\application_name\
web_application_name\WEB-INF\deployment\service_identifier.properties

```

For example, the deployment properties for the JPKD sample web provider, whose identifier is sample, reside in:

```

SOURCE_ORACLE_HOME\j2ee\OC4J_Portal\applications\jpkd\jpkd\WEB-INF\
deployment\sample.properties

```

To migrate modified deployment properties from the source to the destination Oracle home:

1. Identify all customized property files (files in which new properties were added or whose default property values were changed) in the source Oracle home.
2. Copy the customized properties from these property files in the source Oracle home to the corresponding files in the destination Oracle home.

4.6.7 Completing the Oracle Business Intelligence Discoverer Viewer Upgrade

If you are upgrading from Oracle9iAS Discoverer version 9.0.2.52 or earlier, you must upgrade the End User Layer schema before you can use Oracle Business Intelligence Discoverer 9.0.4 in 10g Release 2 (10.1.2).

See [Section 8.5.1, "Upgrading the Oracle Business Intelligence Discoverer End User Layer Schema"](#), for instructions.

4.6.8 Completing the Oracle Application Server Reports Services Upgrade

The following sections describe the post-upgrade tasks to perform after you upgrade OracleAS Reports Services:

- [Upgrading OracleAS Reports Services Customizations](#)
- [Enabling Management of OracleAS Reports Services from the Application Server Control Console](#)
- [Registering Standalone Reports Servers with OPMN and Oracle Enterprise Manager](#)
- [Upgrading User-Defined OC4J Instances With OracleAS Reports Services Deployments](#)
- [Configuring OracleAS Reports Services After Upgrading from Business Intelligence & Forms to Forms and Reports Services](#)

4.6.8.1 Upgrading OracleAS Reports Services Customizations

The OracleAS Upgrade Assistant performs most of the Oracle Application Server Reports Services upgrade. However, it does not process the following:

- The .bat script files in the following source Oracle home location:

```
SOURCE_ORACLE_HOME\reports\samples\scripts\rw*.bat
SOURCE_ORACLE_HOME\reports\samples\scripts\reports.bat
```

- The template file in the following source Oracle home location:

```
SOURCE_ORACLE_HOME\reports\conf\rwserver.template
```

- The jdbcpds.conf configuration file in the following source Oracle home location:

```
SOURCE_ORACLE_HOME\reports\conf\jdbcpds.conf
```

If you have customized any of these files, you must apply the customizations to the corresponding files in the destination Oracle home.

Caution: To apply customizations, you must copy the individual customized entries from the file in the source Oracle home to the file in the destination Oracle home. Do not replace any 10g Release 2 (10.1.2) files with the files from the source Oracle home, because the organization and content of the files are different in 10g Release 2 (10.1.2).

In addition, to preserve the cache files and the cache directory from source Oracle home, copy the reports server cache directory from the source Oracle home to the destination Oracle home.

4.6.8.2 Enabling Management of OracleAS Reports Services from the Application Server Control Console

After you upgrade OracleAS Reports Services in the middle tier, make the following changes to the `targets.xml` configuration file to manage the upgraded OracleAS

Reports Services server from the Application Server Control Console. These changes are necessary in order for the EM integration to work with the upgraded OracleAS Reports Services in-process server:

1. Use a text editor to open the following configuration file in the destination Oracle home:

```
DESTINATION_ORACLE_HOME\sysman\emd\targets.xml
```

2. Locate the following entry in the `targets.xml` file for the Reports in-process server:

```
TYPE="oracle_repserv" and DISPLAY_NAME="Reports Server: new_server_name
```

Note that *new_server_name* will be in the following format:

```
rep_hostname_newOracleHome
```

In this example, *hostname* is the name of host computer without the domain name and *newOracleHome* is the destination Oracle home.

3. For the `oracle_repserv` entry, replace all occurrences of *new_server_name* with the original server name that was used in the source Oracle home before you performed the middle-tier upgrade.

[Example 4-9](#) uses boldface type to identify the typical occurrences of new server name in the `oracle_repserv` entry in the `targets.xml` file.

Note that the original server name can be found in the following OracleAS Reports Services configuration file:

```
DESTINATION_ORACLE_HOME\reports\conf\rwservlet.properties
```

4. Use the Services control panel to restart the Application Server Control service for the changes to take effect.

Example 4-9 Sample OracleAS Reports Services Content in the targets.xml File

```
<Target TYPE="oracle_repserv"
  NAME="appserv1.acme.com_Reports_Server: new_server_name"
  DISPLAY_NAME="Reports Server: new_server_name"
  VERSION="1.0"
  ON_HOST="appserv1.acme.com">
  <Property NAME="IASInternalName" VALUE="new_server_name" />
  <Property NAME="Password" VALUE="77c1ed41793a5ce6" ENCRYPTED="TRUE" />
  <Property NAME="Server" VALUE="new_server_name" />
  <Property NAME="Servlet"
    VALUE="http://appserv1.acme.com:port/reports/rwservlet" />
  ...
  ...
</Target>
```

4.6.8.3 Registering Standalone Reports Servers with OPMN and Oracle Enterprise Manager

The OracleAS Upgrade Assistant does not upgrade OracleAS Reports Services standalone servers. As a result, if you are using any standalone OracleAS Reports Services servers, you must manually register those servers with Oracle Process Manager and Notification Server (OPMN) and with Oracle Enterprise Manager 10g Application Server Control.

Registering the standalone servers with OPMN and Application Server Control involves updating the `opmn.xml` and `targets.xml` configuration files. Oracle Application Server provides a script you can use to automatically perform the updates.

To register your OracleAS Reports Services standalone servers, run the following command once for each standalone server you want to register:

```
DESTINATION_ORACLE_HOME\bin\addNewServerTarget.bat standalone-server-name
```

In this example, replace *standalone-server-name* with the name of the OracleAS Reports Services standalone server you want to register with OPMN and Oracle Enterprise Manager.

4.6.8.4 Upgrading User-Defined OC4J Instances With OracleAS Reports Services Deployments

The OracleAS Upgrade Assistant upgrades your Release 2 (9.0.2) or 10g (9.0.4) Business Intelligence & Forms configuration to an Oracle Application Server 10g Release 2 (10.1.2) Business Intelligence & Forms configuration. The OracleAS Upgrade Assistant is not aware of OC4J instances outside of these configurations that may contain deployed reports, or of customizations made to those instances in order to enable the deployed reports to run.

Therefore, if you are using OC4J instances other than the standard Business Intelligence and Forms OC4J instance, you must apply any manual deployment steps that you performed on those instances to the equivalent instances in Oracle Application Server 10g Release 2 (10.1.2).

4.6.8.5 Configuring OracleAS Reports Services After Upgrading from Business Intelligence & Forms to Forms and Reports Services

This section applies only if you are upgrading from the Release 2 (9.0.2) or 10g (9.0.4) Business Intelligence & Forms installation type to the 10g Release 2 (10.1.2.0.2) Forms and Reports Services installation type.

After upgrading to the 10g Release 2 (10.1.2.0.2) Forms and Reports Services installation type, perform the following steps to make all Reports Servers (in-process and standalone servers) unsecure and enable them to work properly:

1. Modify the `server_name.conf` file, as follows:

- a. Locate and open the `server_name.conf` configuration file:

```
DESTINATION_ORACLE_HOME\reports\conf\server_name.conf
```

- b. Locate the following element in the file:

```
<security id="rwSec" class="oracle.reports.server.RWSecurity">
<!--property name="securityUserId" value="portal_db_username/portal_db_
password@%portal_db_tnsname" confidential="yes" encrypted="no"/-->
<property name="oidEntity" value="reports_oid_entity"/>
</security>
```

- c. Comment the security element as shown in the following example.

Be sure to remove any existing comment characters (`<!--` and `-->`) within the security element:

```
<!--security id="rwSec" class="oracle.reports.server.RWSecurity">
<property name="securityUserId" value="portal_db_username/portal_db_
password@%portal_db_tnsname" confidential="yes" encrypted="no"/>
```

```
<property name="oidEntity" value="reports_oid_entity"/>
</security-->
```

- d. Save and close the `server_name.conf` file.
2. Modify the `rwsvrlet.properties` file:
 - a. Open the `rwsvrlet.properties` configuration file:
`DESTINATION_ORACLE_HOME\reports\conf\rwsvrlet.properties`
 - b. Locate the `OID_ENTITY` entry in the `rwsvrlet.properties` file.
For example:
`OID_ENTITY=reportsApp.acme.com_FD502C79FB3F660CE0340003BA182918`
 - c. Comment the `OID_ENTITY` entry as follows:
`#OID_ENTITY=reportsApp.acme.com_FD502C79FB3F660CE0340003BA182918`
 - d. Save and close the `rwsvrlet.properties` file.

4.6.9 Completing the Oracle Application Server Wireless Upgrade

The following sections provide information on upgrading the Oracle Application Server Wireless Middle Tier from Release 2 (9.0.2) or 10g (9.0.4) to 10g Release 2 (10.1.2):

- [Section 4.6.9.1, "Using the Oracle Application Server Wireless Notification Service Upgrade Script"](#)
- [Section 4.6.9.2, "Operating OracleAS Wireless Release 2 \(9.0.2\), 10g \(9.0.4\), and 10g Release 2 \(10.1.2\) Middle Tiers Together"](#)
- [Section 4.6.9.3, "Configuring Site-Level Drivers in a Mixed Mode Environment"](#)
- [Section 4.6.9.4, "Restoring the OracleAS Wireless Release 2 \(9.0.2\) Schema"](#)
- [Section 4.6.9.5, "Manually Creating Oracle Sensor Edge Server Processes After the OracleAS Metadata Repository Upgrade"](#)
- [Section 4.6.9.6, "OracleAS Wireless Middle Tier Applications Require Upgrade of the OracleAS Metadata Repository"](#)

See Also: *Oracle Application Server Wireless Developer's Guide* for information on any unfamiliar concepts introduced here, and for information on configuration and development of OracleAS Wireless applications

Note: New OracleAS Wireless features added for the 10g Release 2 (10.1.2) release will not be available until you upgrade the OracleAS Metadata Repository to 10g Release 2 (10.1.2). For more information, see [Chapter 7, "Upgrading the OracleAS Metadata Repository"](#).

4.6.9.1 Using the Oracle Application Server Wireless Notification Service Upgrade Script

This section explains how to upgrade notifications created by the Oracle Application Server Wireless Release 2 (9.0.2) Notification Engine in the Oracle Application Server

Wireless System Manager. The architecture and functionality of the Notification Engine are not described here.

This procedure is not necessary if you are upgrading from 10g (9.0.4).

You can upgrade notifications from Release 2 (9.0.2) to 10g Release 2 (10.1.2) with the `migrateNotifications.bat` script. To execute the script:

1. Navigate to `DESTINATION_ORACLE_HOME\wireless\bin`.
2. Set the `ORACLE_HOME` environment variable to the 10g Release 2 (10.1.2) Oracle home.
3. Issue one of the commands below:
 - **`migrateNotifications.bat -name deprecated master alert name(s) -owner owner user name`**
 - **`migrateNotifications.bat -oid deprecated master alert oid -owner owner user name`**

Notes: The `name` parameter enables you to upgrade alerts by name.

The `oid` parameter enables you to upgrade a specific alert by object ID.

You can use the `%` wildcard character to specify deprecated master alert names. All 9.0.4.x notification objects (master alert service, master service, link, and so on) will be owned by the user name specified.

The script does the following:

- Creates a new master alert service named `old master alert name_New`. (This process involves converting the message template to a valid mobile xml, if necessary.)
- Creates the folder `\master\notifications`, if it does not exist.
- Creates the master service `old master alert name_MS`.
- Creates a mapping for the new master alert and the new master service based on the message template for the old master alert.
- Creates the folder `\Users Home\username\notifications`, if it does not exist.
- Discovers all associated 9.0.2.x `AlertService` objects and converts them to link objects. (The top-level authorization is flattened to link level authorization during this process.)
- Transforms all subscriptions for alert services converted.

The following command upgrades all 9.0.2.x master alert services whose name starts with `StockAlert` (for example, `StockAlertNews`, `StockAlertWarning`, and so on). All new objects will be owned by the `orcladmin` user.

```
migrateNotifications.bat -name StockAlert% -owner orcladmin
```

The following command upgrades the 9.0.2.x master alert service with the name `StockAlert`, and assigns all new objects to the `systemadmin` user.

```
migrateNotifications.bat -name StockAlert -owner systemadmin
```

The following command upgrades the 9.0.2.x master alert service with the object ID 1973, and assigns all new objects to the `systemadmin` user.

```
migrateNotifications.bat -oid 1973 -owner systemadmin
```

4.6.9.2 Operating OracleAS Wireless Release 2 (9.0.2), 10g (9.0.4), and 10g Release 2 (10.1.2) Middle Tiers Together

You can operate an environment with Oracle9iAS Wireless Release 2 (9.0.2) and Oracle Application Server Wireless 10g Release 2 (10.1.2) middle tiers using the same Infrastructure services. However, this configuration is subject to some restrictions, as described below.

- J2ME download and XHTML/XForms based applications should not be used in a mixed environment. These features are new in Oracle Application Server Wireless 10g Release 2 (10.1.2), and would cause errors when attempting to access them from any of the Oracle9iAS Wireless Release 2 (9.0.2) middle tiers. If you wish to use these features, then it is necessary to upgrade all middle tiers to Oracle Application Server Wireless 10g Release 2 (10.1.2).
- The Notification Engine cannot be used in a mixed environment. Instead, you should use the Alert Engine.
- Service access point (service-level address) should be created through an Oracle Application Server Wireless 10g Release 2 (10.1.2) middle tier, in order for them to be visible to both the Oracle Application Server Wireless 10g Release 2 (10.1.2) middle tiers and Oracle9iAS Wireless Release 2 (9.0.2) middle tiers.
- Oracle Application Server Wireless 10g Release 2 (10.1.2) supports user name case sensitivity. However, this requires that you upgrade the Oracle Internet Directory to Oracle Application Server 10g Release 2 (10.1.2).
- If you change (add, delete, or update) a 10g Release 2 (10.1.2) ASK Access point, the changes you make will not be reflected in the Release 2 (9.0.2) Enterprise Manager Web site until the Release 2 (9.0.2) Enterprise Manager Web site and the `OC4J_Wireless OC4J` instance is restarted.

Specifically, a driver account (for example, an e-mail account for an e-mail driver) that is removed from an instance and subsequently added to another instance that is a different release version (for example, from Release 2 (9.0.2) to 10g Release 2 (10.1.2)) may cause messages to be lost. Restarting the `OC4J_Wireless OC4J` instance resolves this problem.

- The Notification Engine introduced in Oracle Application Server Wireless 10g Release 2 (10.1.2) replaces the Alert Engine, which was part of Oracle9iAS Wireless Release 2 (9.0.2). Although the Alert Engine is still available in Oracle Application Server Wireless 10g Release 2 (10.1.2), Oracle Corporation recommends that after all middle tiers have been upgraded to Oracle Application Server Wireless 10g Release 2 (10.1.2), you switch to the Notification Engine, as the Alert Engine may not be available in future versions of Oracle Application Server Wireless.

Upgrade scripts are available to help you with this task. See the Oracle Application Server Wireless Developer's Guide for details. The Oracle9iAS Wireless Release 2 (9.0.2) Alert APIs have been deprecated, and you must upgrade your applications to use the Oracle Application Server Wireless 10g Release 2 (10.1.2) APIs instead.

- Oracle Sensor EdgeServer processes will not operate in a mixed environment of Release 2 (9.0.2), 10g (9.0.4), or 10g Release 2 (10.1.2) middle tiers. To use these features, you must upgrade all middle tiers to 10g Release 2 (10.1.2) and upgrade the OracleAS Metadata Repository to 10g Release 2 (10.1.2).

4.6.9.3 Configuring Site-Level Drivers in a Mixed Mode Environment

In a mixed mode environment, Oracle9iAS Wireless Release 2 (9.0.2) and Oracle Application Server Wireless 10g Release 2 (10.1.2) may have transport drivers configured to receive incoming messages. The two sets of entry points, Oracle9iAS Wireless Release 2 (9.0.2) and Oracle Application Server Wireless 10g Release 2 (10.1.2), should not be exposed to a device at the same time. A user issuing a request to the Release 2 (9.0.2) instance should not subsequently send another request, within an 3 hour period, to the entry point defined in the transport driver of the Oracle Application Server Wireless 10g Release 2 (10.1.2) instance. The same user may not receive any response for requests addressed to the latter entry point, if it is violated.

Since the driver configuration is different in Release 2 (9.0.2) and 10g Release 2 (10.1.2), when a Oracle9iAS Wireless Release 2 (9.0.2) instance is upgraded to Oracle Application Server Wireless 10g Release 2 (10.1.2), the transport drivers must be managed such that requests are processed as expected.

In 10g Release 2 (10.1.2), a site level driver can be enabled or disabled. By default, it is enabled. If a driver is disabled, it is not recognized by the routing algorithm, and therefore is not used by the messaging system. However, in Release 2 (9.0.2), all site level drivers are recognized by the routing algorithm.

If a Release 2 (9.0.2) instance has two middle tiers, after one of the middle tiers and the Infrastructure are upgraded to 10g Release 2 (10.1.2), the upgraded middle tier may enable or disable a site level driver. However, middle tiers that are not yet upgraded recognize all drivers as enabled. For this reason, it is prudent to remove, rather than disable, a driver in this type of environment.

In Release 2 (9.0.2), the transport mechanism can route a message to only one driver, and it does not matter whether there is an instance configured for it. This means that a message will not be delivered if it is indeed routed to a driver that has no instance configured. For this reason, the best practice is to remove all drivers that do not have an instance configured in any Release 2 (9.0.2) environment, including a Release 2 (9.0.2) and 10g Release 2 (10.1.2) mixed environment.

4.6.9.4 Restoring the OracleAS Wireless Release 2 (9.0.2) Schema

If, after installing the Oracle Application Server Wireless 10g Release 2 (10.1.2), you decide that you do not want to use it and want to use OracleAS Wireless Release 2 (9.0.2), you can restore the 9.0.2 WIRELESS schema:

1. Remove all objects from the WIRELESS schema, which is now at version 9.0.4, in the 9.0.2 metadata repository.

To do this, run the `wirelessrm.sql` script. The Oracle home refers to the Oracle home for the 9.0.4 middle tier.

```
cd %ORACLE_HOME%\wireless\repository\sql
sqlplus system/password@service_name @wirelessrm.sql
```

2. Restore the 9.0.2 WIRELESS schema by importing the database export file created in step 2 of the previous procedure.

```
imp system/password@service_name file=iasw902.dmp
fromuser=wireless touser=wireless
```

4.6.9.5 Manually Creating Oracle Sensor Edge Server Processes After the OracleAS Metadata Repository Upgrade

When you upgrade to 10g Release 2 (10.1.2), Oracle Sensor EdgeServer Processes will not be created automatically. Instead, you must create these processes manually after

you run the OracleAS Upgrade Assistant and after you have upgraded the OracleAS Metadata Repository to 10g Release 2 (10.1.2).

Note, however, that you cannot create Oracle Sensor Edge Server processes until after you upgrade the OracleAS Metadata Repository to 10g Release 2 (10.1.2).

See Also: [Section 7.5.2, "Completing the OracleAS Wireless Schema Upgrade Process"](#)

4.6.9.6 OracleAS Wireless Middle Tier Applications Require Upgrade of the OracleAS Metadata Repository

After you upgrade an OracleAS Wireless middle tier to 10g Release 2 (10.1.2), some of the applications provided by Oracle Application Server Wireless, such as Commerce, Location, PIM, and Examples will generate errors when accessed from your 10g Release 2 (10.1.2) middle tier. To prevent these errors from occurring, upgrade the OracleAS Metadata Repository to 10g Release 2 (10.1.2).

See Also: [Chapter 7, "Upgrading the OracleAS Metadata Repository"](#)

4.6.10 Completing the Oracle Application Server Forms Services Upgrade

The OracleAS Upgrade Assistant moves most of the OracleAS Forms Services configuration data from the source to the destination Oracle home. However, there may be manual tasks remaining after the upgrade. This section explains how to perform these tasks.

Note: After the upgrade, the `default.env` configuration file contains a list of default environment variables for OracleAS Forms Services, as well as any user defined environment variables.

OracleAS Upgrade Assistant appends user modifications to the default environment variable at the end of existing entries and appends any user-defined environment variables at the end of the file in the destination Oracle Home.

Refer to the following sections for more information:

- [New Names for OracleAS Forms Services Files, Directories, URLs, and Environment Variables](#)
- [Upgrading Forms *.fmx Files](#)
- [Upgrading OracleAS Forms Services EAR File Deployed in User-defined OC4J Instances](#)

4.6.10.1 New Names for OracleAS Forms Services Files, Directories, URLs, and Environment Variables

For Oracle Application Server 10g Release 2 (10.1.2.0.2), the names of many OracleAS Forms Services files, directories, URLs, and environment variables have changed. The OracleAS Upgrade Assistant converts your OracleAS Forms Services configuration to the new names automatically.

See Also: [Section A.1.13.6, "OracleAS Forms Services File Name, Directory Name, URL, and Variable Name Changes in 10g Release 2 \(10.1.2.0.2\)"](#) for a complete list of the OracleAS Forms Services name changes.

4.6.10.2 Upgrading Forms *.fmx Files

If the OracleAS Forms Services executable files (.fmx files) exist in a directory within the source Oracle home, then manually copy these files to a relative path in the destination Oracle home. However, if these files are not in the source Oracle Home (for example, in a separate directory referenced by the FORMS_PATH environment variable), then this manual step is not required.

4.6.10.3 Upgrading OracleAS Forms Services EAR File Deployed in User-defined OC4J Instances

In the source Oracle home, the OracleAS Forms Services EAR file (forms90app.ear) is deployed by default into the OC4J_BI_Forms OC4J instance as forms90app. If you have re-deployed this ear file in a customized configuration in the OC4J_BI_Forms OC4J instance, then the OracleAS Upgrade Assistant automatically upgrades this deployment to the destination Oracle home.

However, if you have deployed the ear in any other default OC4J instance (home, OC4J_Portal, OC4J_Wireless) or in any user-defined OC4J instances, then this configuration will not be upgraded. In that case, redeploy the OracleAS Forms Services EAR file to the corresponding OC4J instance in the destination Oracle home.

The OracleAS Forms Services 10g Release 2 (10.1.2.0.2) formsapp.ear file is located in the following directory:

`DESTINATION_ORACLE_HOME\forms\j2ee`

4.7 Task 6: Start the Upgraded Middle Tier and Perform Final Upgrade Tasks

After the OracleAS Upgrade Assistant has finished processing, and you have completed all of the applicable manual post-upgrade tasks, you can start the upgraded middle tier instance.

The following sections provide more information:

- [Starting the Upgraded Middle Tier](#)
- [Updating the OracleAS Portal Provider Information](#)
- [Refreshing the Event/Parameter Passing Samples Provider for OracleAS Portal](#)

4.7.1 Starting the Upgraded Middle Tier

If the middle tier instance uses an Infrastructure, ensure that the Infrastructure is running.

See Also: [Section 4.3.3, "Verifying that the Infrastructure Used by the Middle Tier is Running"](#)

Follow these instructions to start the middle tier instance:

1. Start OPMN and its managed processes by starting the Process Manager service in the Services control panel.

2. Start the Application Server Control service in the Services control panel.

4.7.2 Updating the OracleAS Portal Provider Information

Portal instances access web providers via a URL. The process of specifying this URL is referred to as provider registration. If the destination Oracle home will be accessed using a hostname and/or port number different from that of the source Oracle home, or the web providers have been deployed to a different URL path, then you need to update the URLs used to access the upgraded web providers. Web providers can be referenced by multiple portal instances; all of these must be updated.

Follow these steps to update the web provider URL:

1. Log on to OracleAS Portal as an administrator.
2. Click the **Navigator** link.
The **Portal Navigator** page appears.
3. Click the **Providers** tab.
4. Click **Registered Providers**.
A sorted list of registered providers appears.
5. Locate the provider to update, using the **Next** and **Previous** links if necessary.
6. Click the **Edit Registration** link for the provider to update.
The **Edit Provider** page appears.
7. Click the **Connection** tab.
8. Update the URL to reflect the new location of the provider.
9. Click **OK** or **Apply** to save the changes.

4.7.3 Refreshing the Event/Parameter Passing Samples Provider for OracleAS Portal

This section applies only to Release 2 (9.0.2) instances. It does not apply if you are upgrading a 10g (9.0.4) middle tier that contains OracleAS Portal.

The Event/Parameter Passing Samples Provider definition has changed since Release 2 (9.0.2). Consequently, if you are upgrading a Release 2 (9.0.2) middle tier, the provider must be refreshed in the OracleAS Portal repository.

Repeat these steps for each Release 2 (9.0.2) OracleAS Portal instance that references this provider.

Follow these steps to update the web provider URL:

1. Log on to OracleAS Portal as an administrator.
2. Click the **Navigator** link.
The **Portal Navigator** page appears.
3. Click the **Providers** tab.
4. Click **Registered Providers**.
A sorted list of registered providers appears.
5. Locate the JPKD V2 Sample Event Web Provider, using the **Next** and **Previous** links, if necessary.
6. Click the **Refresh** link for the JPKD V2 Sample Event Web Provider.

4.8 Task 7: Validate the Upgraded Middle Tier

The following sections describe tasks you should perform after the middle tier upgrade to validate that the upgrade was successful:

- [Verify Operation of Middle Tier Components](#)
- [Check Significant URLs](#)
- [Reverting to the Source Oracle Home Resetting the Portal Service Monitoring Link](#)

4.8.1 Verify Operation of Middle Tier Components

Follow these steps to verify that the middle tier components that were upgraded are started:

1. In a browser, access the Application Server Control Console in the 10g Release 2 (10.1.2) middle tier Oracle home by entering the Application Server Control Console URL.

For example:

```
http://midtierhostname:port
```

Be sure you have entered the correct port number. See [Section 4.6.1, "About Port Values and the portlist.ini File After Upgrade"](#) for information about determining the Application Server Control Console port after you have upgraded the middle tier.

Enterprise Manager prompts you to log in to the Application Server Control Console.

2. Enter the `ias_admin` login credentials that you used for the destination Oracle home.

After you upgrade an Oracle Application Server instance, use the password you defined when installing the destination Oracle home to log in to the Application Server Control Console in the destination 10g Release 2 (10.1.2) instance.

See Also: [Section 4.6.2, "About Administration Passwords After Upgrade"](#)

Enterprise Manager displays the Farm page in your browser window. A link for the middle tier instance appears in the Standalone Instances section of the page.

3. Click the name of the middle tier instance in the Standalone Instances section.
The **System Components** page appears.
4. Verify that the components are running.
5. Verify that the configuration information for the components in use is reflected in the 10g Release 2 (10.1.2) Oracle home.

4.8.2 Check Significant URLs

Follow these steps to verify that you can access the Oracle HTTP Server and application URLs:

1. Verify that you can access the Oracle HTTP Server on the same host and port that you did in the previous release by entering the URL. Ensure that you provide the correct host name and port number. For example:

```
http://midtierhost.mycompany.com:7777
```

2. Verify that you can access the URLs for the applications you operated in the previous release, and ensure that the applications are functioning as they did in the previous release.

4.8.3 Reverting to the Source Oracle Home Resetting the Portal Service Monitoring Link

As described earlier in this chapter, when you upgrade a middle tier, the source Oracle home is left untouched. In other words, the source Oracle home is still operational. However, if you decide to revert to the source middle tier after you have upgraded to 10g Release 2 (10.1.2), then refer to the following information about using OracleAS Portal:

- [Resetting the OracleAS Portal Service Monitoring Link In the Source Oracle Home](#)
- [Resetting the OracleAS Portal Services Monitoring Link When Reverting Back to the Destination Oracle Home](#)

4.8.3.1 Resetting the OracleAS Portal Service Monitoring Link In the Source Oracle Home

If you decide to revert to using the source middle tier, you must reset the Portal Service Monitoring link in the Services portlet on the Portal Builder page before you can begin using the Oracle home again.

Oracle Application Server provides the `monseed.sql` script to automate the process of resetting the Portal Service Monitoring link.

The following instructions describe how to use the script:

1. Set the `ORACLE_HOME` environment variable to the source middle tier Oracle home.

2. Navigate to the following directory:

```
%ORACLE_HOME%\portal\admin\plsql\wwc
```

3. Using SQL*Plus, connect to the Portal schema.

4. If you are reverting to a Release 2 (9.0.2) Oracle home, enter the following command to run the `monseed.sql` script:

```
@monseed.sql EM_host EM_port Portal_DAD middle_tier_host middle_tier_port  
instance_name
```

For example:

```
@monseed.sql midtierhost.acme.com 1810 portal midtierhost.acme.com 7777  
ias902mid.midtierhost.acme.com
```

Refer to [Table 4–7](#) for a description of the arguments you must provide to the `monseed.sql` script.

5. If you are reverting to a 10g (9.0.4) Oracle home, then enter the following command to run the `monseed.sql` script:

```
@monseed.sql EM_protocol EM_host EM_port Portal_DAD instance_name
```

For example:

```
@monseed.sql http midtierhost.acme.com 1810 portal as904.midtierhost.acme.com
```

Refer to [Table 4–7](#) for a description of the arguments you must provide to the `monseed.sql` script.

Table 4–7 Arguments to Use for the `monseed.sql` Script

Argument	Description
<code>EM_protocol</code>	Enter the protocol for the 10g (9.0.4) Application Server Control Console URL. The value can be HTTP or HTTPS.
<code>EM_host</code>	Enter the host name for the Release 2 (9.0.2) Enterprise Manager Web site URL or the 10g (9.0.4) Application Server Control Console URL.
<code>EM_port</code>	Enter the port for the Release 2 (9.0.2) Enterprise Manager Web site URL or the 10g (9.0.4) Application Server Control Console URL.
<code>Portal_DAD</code>	Enter the name of the Portal database access descriptor (DAD). The default name for the DAD is <code>portal</code> .
<code>middle_tier_host</code>	Enter the host name of the Release 2 (9.0.2) middle tier.
<code>middle_tier_port</code>	Enter the OracleAS Web Cache listen port of the Release 2 (9.0.2) middle tier.
<code>instance_name</code>	<p>The instance name given to the source middle tier at installation time. This name is found in the following configuration file:</p> <pre>SOURCE_ORACLE_HOME\sysman\emd\targets.xml</pre> <p>Within the <code>targets.xml</code> file, the instance name is in the <code>Composite Membership</code> segment of the HTTP Server target that is running the source middle tier.</p> <p>Determine the HTTP Server target by finding the HTTP Server target with the <code>ORACLE_HOME</code> property matching the home of the HTTP Server that is servicing the source middle tier.</p>

4.8.3.2 Resetting the OracleAS Portal Services Monitoring Link When Reverting Back to the Destination Oracle Home

If you upgrade to 10g Release 2 (10.1.2.0.2), revert to the source Oracle home, and later want to revert back to the 10g Release 2 (10.1.2.0.2) Oracle home, consider the following information about the OracleAS Portal Services Monitoring link.

In earlier releases of Oracle Application Server, including Release 2 (9.0.2), 10g (9.0.4), and 10g Release 2 (10.1.2.0.0), clicking the Portal Services Monitoring link displays the OracleAS Portal Monitoring Page in the Application Server Control Console.

Starting with 10g Release 2 (10.1.2.0.2), the behavior of this link has changed. It now displays the Farm page in the Application Server Control Console. You can then access the OracleAS Portal Monitoring Page by selecting the Application Server that is servicing the Portal that you want to monitor, and then selecting the Portal target in the System Components table.

See Also: "Introduction to Administration Tools" in the *Oracle Application Server Administrator's Guide* for more information about the Farm page in the Application Server Control Console

As a result, if you upgrade to 10g Release 2 (10.1.2.0.2), revert to the source Oracle home, and later want to revert back to the 10g Release 2 (10.1.2.0.2) Oracle home, then you must run the `monseed.sql` script with a slightly different set of arguments than those described in [Section 4.8.3.1, "Resetting the OracleAS Portal Service Monitoring Link In the Source Oracle Home"](#).

Otherwise, the Portal Service Monitoring link will not function properly.

To revert back to the 10g Release 2 (10.1.2.0.2) Oracle home, perform steps 1 through 3 as described in [Section 4.8.3.1](#), and then enter the following command to reset the Portal Services Monitoring link for 10g Release 2 (10.1.2.0.2):

```
monseed.sql EM_protocol EM_host EM_port
```

In this example:

- *EM_protocol* is the protocol used to connect to the Application Server Control Console. The value can be http or https. Use https if the the Application Server Control security has been enabled.
- *EM_host* is the hostname used to connect to the Application Server Control
- *EM_port* is the port used to connect to the Application Server Control

4.9 Task 8: Decommission the Middle-Tier Source Oracle Home

The upgrade process leaves the source Oracle home unchanged. Depending on the type of installation you have, and your future needs, you may elect to remove the source Oracle home, or to retain it for specific reasons.

Note: If you retain the source Oracle home, you cannot operate it simultaneously with the destination Oracle home, because certain components have the same port values after upgraded. See [Section 4.6.1, "About Port Values and the portlist.ini File After Upgrade"](#).

The following sections provide more information about decommissioning an upgraded source Oracle home:

- [Preserving Application Files and Log Files](#)
- [Retaining the Source Home for Future Language Loading](#)
- [Removing the Source Oracle Home from the OracleAS Farm](#)
- [Deinstalling a Release 2 \(9.0.2\) or Release 2 \(9.0.3\) Source Oracle Home](#)
- [Deinstalling a 10g \(9.0.4\) Oracle Home](#)

4.9.1 Preserving Application Files and Log Files

If there are application files or log files in the source Oracle home that are being referenced or used by the destination Oracle home, you should move them to another location before you decommission the source Oracle home, and, in the destination Oracle home, change any references to the files to the new location.

4.9.2 Retaining the Source Home for Future Language Loading

If you continue to operate a Release 2 (9.0.2) or 10g (9.0.4) Portal repository, you should not decommission the source Oracle home if there is a possibility that you might later want to load additional languages into the Release 2 (9.0.2) or 10g (9.0.4) Portal repository. The utilities for loading languages in Oracle Application Server 10g Release 2 (10.1.2) are not compatible with OracleAS Portal in Release 2 (9.0.2) or 10g (9.0.4).

4.9.3 Removing the Source Oracle Home from the OracleAS Farm

If the middle tier instance you have upgraded is a member of an OracleAS Farm, be sure to remove the source instance from the farm before you deinstall the source Oracle home.

For example, after you upgrade an instance that was using an OracleAS Infrastructure, the source instance remains in the list of instances on the Application Server Control Console Farm page.

To remove the source instance from the farm and from the Farm page, use the following command in the source Oracle home:

```
SOURCE_ORACLE_HOME\dcml\bin\dcmlctl leavefarm
```

See Also: *Distributed Configuration Management Administrator's Guide* for more information about the `dcmlctl leavefarm` command

"Introduction to Administration Tools" in the *Oracle Application Server Administrator's Guide* for more information about the Farm page in the Application Server Control Console

4.9.4 Deinstalling a Release 2 (9.0.2) or Release 2 (9.0.3) Source Oracle Home

When you are certain that the upgrade was successful, you have all of the necessary backups, and you have no plans to revert to the source Oracle home, you may elect to remove the files from the source Oracle home. Use the Oracle Universal Installer to deinstall the instance.

However, before you begin deinstalling an instance, consider the following sections:

- [Deinstallation of 9.0.2 or 9.0.3 Instances from a Computer that Also Contains 10g Release 2 \(10.1.2\) Instances](#)
- [Issue: 10g Release 2 \(10.1.2\) Instance Must Not Contain the Active Oracle Enterprise Manager](#)
- [If a 10g Release 2 \(10.1.2\) Instance Becomes the Active Oracle Enterprise Manager](#)

See Also: *Oracle9i Application Server Installation Guide* in the Release 2 (9.0.2) or (9.0.3) documentation library for instructions on deinstalling the instance.

4.9.4.1 Deinstallation of 9.0.2 or 9.0.3 Instances from a Computer that Also Contains 10g Release 2 (10.1.2) Instances

If you have 9.0.2 or 9.0.3 and 10g Release 2 (10.1.2) instances on the same computer, and you want to deinstall a 9.0.2 or 9.0.3 instance, perform these steps:

1. Apply patch 3352263 to your 9.0.2 or 9.0.3 instances. You can download the patch from *OracleMetaLink* (<http://metalink.oracle.com>).

See [Section 4.9.4.2, "Issue: 10g Release 2 \(10.1.2\) Instance Must Not Contain the Active Oracle Enterprise Manager"](#) for details on why you need this patch.

2. Stop all processes associated with the instance you want to deinstall.
3. Run the installer to deinstall the 9.0.2 or 9.0.3 instance. Make sure you run the version of Oracle Universal Installer that was used to install the Release 2 (9.0.2) or Release 2 (9.0.3) instance.

For example, for Release 2 (9.0.2) and Release 2 (9.0.3) instances, start the installer from the Start menu: **Start / Programs / Oracle Installation Products / Universal Installer**.

4.9.4.2 Issue: 10g Release 2 (10.1.2) Instance Must Not Contain the Active Oracle Enterprise Manager

If you have multiple 9.0.2 and/or 9.0.3 instances on the same computer, these instances share an Oracle Enterprise Manager. This is the "active Oracle Enterprise Manager". When you deinstall the instance that contains the active Oracle Enterprise Manager using the installer, the installer needs to switch the active Oracle Enterprise Manager to one of the remaining instances. If there is only one remaining instance, then the installer automatically makes it the active Oracle Enterprise Manager. If more than one instance remain, the installer prompts you to select the instance to contain the active Oracle Enterprise Manager.

Unlike 9.0.2 or 9.0.3 instances, Oracle Application Server 10g Release 2 (10.1.2) instances on the same computer do not share an Oracle Enterprise Manager. Each 10g Release 2 (10.1.2) instance has its own Oracle Enterprise Manager.

Because 10g Release 2 (10.1.2) instances do not share an Oracle Enterprise Manager, you must not select a 10g Release 2 (10.1.2) instance to contain the active Oracle Enterprise Manager. You must select a 9.0.2 or 9.0.3 instance to contain the active Oracle Enterprise Manager.

If you select a 10g Release 2 (10.1.2) instance, or if the installer automatically switches the active Oracle Enterprise Manager to a remaining instance that happens to be a 10g Release 2 (10.1.2) instance, the installer overwrites files in the 10g Release 2 (10.1.2) Oracle home with files from the 9.0.2 or 9.0.3 home. This causes Oracle Enterprise Manager to stop working.

The patch described in [Section 4.9.4.1, "Deinstallation of 9.0.2 or 9.0.3 Instances from a Computer that Also Contains 10g Release 2 \(10.1.2\) Instances"](#) prevents the installer from automatically switching the active Oracle Enterprise Manager to a 10g Release 2 (10.1.2) instance in the case where the only remaining instances are 10g Release 2 (10.1.2) instances. It also prevents the installer from displaying 10g Release 2 (10.1.2) instances in the list where you select the instance to contain the active Oracle Enterprise Manager.

4.9.4.3 If a 10g Release 2 (10.1.2) Instance Becomes the Active Oracle Enterprise Manager

If a 10g Release 2 (10.1.2) instance becomes the active Oracle Enterprise Manager, Oracle Enterprise Manager will stop working.

To fix this, perform these steps in the 10g Release 2 (10.1.2) Oracle home:

1. Shut down the Oracle Enterprise Manager Application Server Control:

```
DESTINATION_ORACLE_HOME\bin\emctl stop iasconsole
```

2. Rename the following files. Do not delete the files, because you might need them in step 5. You can rename them with an "active" suffix (for example, `iasadmin.properties.active`):

```
DESTINATION_ORACLE_HOME\sysman\config\iasadmin.properties
```

```
DESTINATION_ORACLE_HOME\sysman\emd\targets.xml
```

```
DESTINATION_ORACLE_HOME\sysman\j2ee\config\jazz-data.xml
```

```
DESTINATION_ORACLE_HOME\sysman\webapps\emd\WEB-INF\config\consoleConfig.xml
```

3. Copy the backup files for the files listed in the preceding step.

The backup files are in the same directory as the listed files. The names of the backup files are suffixed with a digit (for example, `iasadmin.properties.1`). Check the timestamp, or check the content, of the backup files to determine the most recent backup file.

4. Start the Oracle Enterprise Manager Application Server Control.

```
DESTINATION_ORACLE_HOME\bin\emctl start iasconsole
```

5. If you have remaining Release 2 (9.0.2) or Release 2 (9.0.3) instances on the computer, you need to designate one of them to contain the active Oracle Enterprise Manager.

- a. Copy the files listed in step 2 (which you renamed with the `active` suffix) to the Release 2 (9.0.2) or Release 2 (9.0.3) instance Oracle home. Rename them back to the original names (that is, remove the `active` suffix).
- b. Update the following key in the Registry to refer to the new active Oracle Enterprise Manager:

```
HKEY_LOCAL_MACHINE / SOFTWARE / ORACLE / EM_LOC
```

Steps for updating the key:

- i. Select **Start / Run**. Enter **regedit** to start up the Registry Editor.
- ii. In the left frame, expand **HKEY_LOCAL_MACHINE / SOFTWARE**.
- iii. In the left frame, select **ORACLE**.
- iv. In the right frame, double-click **EM_LOC**. Update the path to point to the new active Oracle Enterprise Manager and click **OK**.

4.9.5 Deinstalling a 10g (9.0.4) Oracle Home

When you are certain that the upgrade was successful, you have all of the necessary backups, and have no plans to revert to the source Oracle home, you may elect to remove the files from the source Oracle home. Use the Oracle Universal Installer to deinstall the instance.

See Also: *Oracle9i Application Server Installation Guide* in the 10g (9.0.4) documentation library for instructions on deinstalling the instance.

4.10 Special Considerations When Upgrading OracleAS Clusters, OracleAS Wireless, or Oracle Workflow

The following special considerations apply if you are upgrading a middle tier that is part of an Oracle Application Server Cluster, or if you are upgrading an OracleAS Wireless Release 2 (9.0.2) or Oracle Workflow middle tier:

- [Special Instructions When Upgrading an OracleAS Wireless Release 2 \(9.0.2\) Middle Tier](#)
- [Special Instructions When Upgrading an Oracle Application Server Cluster](#)
- [Special Instructions When Upgrading Oracle Workflow Middle Tier Components](#)

4.10.1 Special Instructions When Upgrading an Oracle Application Server Cluster

If you are using an Oracle Application Server Cluster, review the following sections before you begin upgrading the middle tiers that comprise a cluster:

- [Understanding the Components of Oracle Application Server Cluster](#)
- [Upgrading Oracle Application Server Cluster in a Database-Based Repository](#)
- [Upgrading Oracle Application Server Cluster in a File-Based Repository](#)
- [Updating the mod_oc4j Configuration File for an Upgraded Cluster](#)

Note: The following sections assume you are currently using Oracle Application Server Cluster and that you are familiar with the procedures for creating and managing Oracle Application Server Cluster.

[Section 4.10.1.1, "Understanding the Components of Oracle Application Server Cluster"](#) is provided as a summary of OracleAS Cluster concepts; it should not replace a thorough review of the concepts described in *Distributed Configuration Management Administrator's Guide*.

4.10.1.1 Understanding the Components of Oracle Application Server Cluster

If you are using Oracle Application Server Cluster, then you have installed multiple Oracle Application Server middle-tier instances, and two or more of the instances belong to the same farm and to the same OracleAS Cluster.

A farm is a collection of instances that share the same Distributed Configuration Management (DCM) repository. The DCM repository can be one of the following:

- A **database-based repository** that contains the DCM schema

The database-based repository can be an OracleAS Metadata Repository installed as part of an Oracle Application Server Infrastructure installation, or it can be an OracleAS Metadata Repository created using the Oracle Application Server Metadata Repository Creation Assistant (OracleAS Metadata Repository Creation Assistant).

In either case, the database repository contains the DCM schema, as well as schemas used by many other Oracle Application Server components.

- A **File-based Repository** that does not require an Oracle database.

The File-based Repository contains only the DCM schema and does not contain other component schemas required for various Oracle Application Server components. As a result, it can be used only as an OracleAS Farm for multiple J2EE and Web Cache installations.

When you create a cluster in a file-based DCM repository, there is no database, but one of the instances in the cluster becomes the **repository host**. The file-based repository resides on the repository host.

See Also: "Distributed Configuration Management Overview" in the *Distributed Configuration Management Administrator's Guide*

4.10.1.2 Upgrading Oracle Application Server Cluster in a Database-Based Repository

To upgrade Oracle Application Server Cluster in a database-based repository:

1. Log in to one of the middle tier instances that are part of the cluster and identify the names of all the middle tier instances that are currently in the cluster.

You can use the DCM command line to identify the members of the cluster, or you can use the Application Server Control Console.

To use the DCM command line:

- a. Enter the following command to identify the name of the cluster:

```
SOURCE_ORACLE_HOME\dcn\bin\dcmtl listclusters
```

- b. Enter the following command to list the instances in the cluster:

```
SOURCE_ORACLE_HOME\dcn\bin\dcmtl listinstances -cl cluster_name
```

To use the Application Server Control Console, navigate to the Cluster page to see a list of the instances in the cluster.

See Also: "About Managing Oracle Application Server Clusters" in the Application Server Control online help

2. Use the instructions in the remaining sections of this chapter to upgrade each of the middle tiers in the cluster and then start each newly upgraded 10g Release 2 (10.1.2) instance.
3. When all the middle tiers are upgraded and running, make sure the original, source instances are stopped.
4. For each source middle tier, use the following commands to remove the source middle tier from the cluster and then from the database-based farm:

```
SOURCE_ORACLE_HOME\dcn\dcmtl leavecluster
```

```
SOURCE_ORACLE_HOME\dcn\dcmtl leavefarm
```

5. Add each of the newly upgraded 10g Release 2 (10.1.2) instances to the database-based farm.

You can add each instance to the farm by using the Application Server Control Console.

See Also: "Adding an Instance to an Oracle Application Server Farm" in the Application Server Control online help

6. After you add the 10g Release 2 (10.1.2) instances to the farm, recreate the cluster and add each of the instances to the new 10g Release 2 (10.1.2) cluster.

You can recreate the cluster and add each instance to the cluster by using the DCM command line (`dcmtl`) or by using the Farm page in the Application Server Control Console.

See Also: "Farm Creation and Maintenance Tasks" in the *Distributed Configuration Management Administrator's Guide* for information about using the DCM command line

"About Managing Oracle Application Server Clusters" in the Application Server Control online help

4.10.1.3 Upgrading Oracle Application Server Cluster in a File-Based Repository

To upgrade OracleAS Cluster in a file-based repository:

1. Identify the file-base repository host.

The repository host is the computer you were logged in to when you created the file-based repository. The file-based repository resides on this host.

2. Log in to the repository host and identify the names of all the middle tier instances that are currently in the cluster.

You can use the DCM command line to identify the members of the cluster, or you can use the Application Server Control Console.

To use the DCM command line:

- a. Enter the following command to identify the name of the cluster:

```
SOURCE_ORACLE_HOME\dcn\bin\dcnctl listclusters
```

- b. Enter the following command to list the instances in the cluster:

```
SOURCE_ORACLE_HOME\dcn\bin\dcnctl listinstances -cl cluster_name
```

To use the Application Server Control Console, navigate to the Cluster Home page to see a list of the instances in the cluster.

See Also: "About Managing Oracle Application Server Clusters" in the Application Server Control online help

3. In preparation for upgrading the cluster, install a new 10g Release 2 (10.1.2) J2EE and Web Cache instance in a new Oracle home on the file-based repository host.

During the installation procedure, create a new file-based repository for the 10g Release 2 (10.1.2) instance. Do not use the OracleAS Upgrade Assistant to upgrade the original source Oracle home to 10g Release 2 (10.1.2) until later in this procedure.

See Also: *Oracle Application Server Installation Guide* for information on creating a new file-based repository as part of the Oracle Application Server installation procedure.

4. For each of the other cluster members—but not the instance on the repository host—do the following:

- a. Log in to the middle tier host and install a new 10g Release 2 (10.1.2) J2EE and Web Cache instance in a new Oracle home.

During the installation, join the 10g Release 2 (10.1.2) farm you created when you installed 10g Release 2 (10.1.2) on the repository host.

- b. Use the instructions in [Section 4.4, "Task 3: Run the OracleAS Upgrade Assistant"](#) to upgrade the instance to 10g Release 2 (10.1.2).

5. Log in to the file-based repository host and, using the instructions in [Section 4.4, "Task 3: Run the OracleAS Upgrade Assistant"](#), upgrade the instance on the repository host to 10g Release 2 (10.1.2).

6. Recreate the cluster and then add each of the instances to the new 10g Release 2 (10.1.2) cluster.

You can recreate the cluster and add each instance to the cluster by using the DCM command line (`dcnctl`) or by using the Farm page in the Application Server Control Console.

See Also: *Distributed Configuration Management Administrator's Guide* for information about using the DCM command line

"About Managing Oracle Application Server Clusters" in the Application Server Control online help

4.10.1.4 Updating the mod_oc4j Configuration File for an Upgraded Cluster

Perform the following additional tasks after you upgrade the cluster to preserve your request routing configuration:

1. Use a text editor to open the following file in one of the instances, noting the instance and cluster names in the `Oc4jMount` directives:

`DESTINATION_ORACLE_HOME\Apache\Apache\conf\mod_oc4j.conf`
2. Change the instance (and, if necessary) cluster names to the instance name of the upgraded instance.
3. Copy the `Oc4jMount` directives to the `mod_oc4.conf` file in each instance in the new cluster.
4. Verify that requests that match the URL patterns in the `Oc4jMount` directives are routed to the correct instances.

4.10.2 Special Instructions When Upgrading an OracleAS Wireless Release 2 (9.0.2) Middle Tier

If you are upgrading one or more Release 2 (9.0.2) middle tiers that are running Oracle Application Server Wireless, you must perform the following procedure before running the OracleAS Upgrade Assistant:

1. Shut down all Release 2 (9.0.2) middle tiers that are running Oracle9iAS Wireless.

See Also: "Starting and Stopping the Application Server" in the *Oracle9i Application Server Administrator's Guide* in the Release 2 (9.0.2) documentation library

2. Back up the WIRELESS schema in the Release 2 (9.0.2) OracleAS Metadata Repository.

This step is recommended because when you install the Oracle Application Server Wireless 10g Release 2 (10.1.2) middle tier (in the next step), the Wireless Configuration Assistant upgrades the WIRELESS schema in the Release 2 (9.0.2) OracleAS Metadata Repository to 10g (9.0.4).

Later, when you upgrade the OracleAS Metadata Repository to 10g Release 2 (10.1.2), the Metadata Repository Upgrade Assistant (MRUA) will upgrade the 10g (9.0.4) WIRELESS schema to 10g Release 2 (10.1.2).

You can back up the WIRELESS schema by using the Export database utility.

```
exp system/password@service_name file=iasw902.dmp owner=WIRELESS
```

In this example, you must provide the following values:

- *password* - password of the SYSTEM account.
- *service_name* - local net service name that points to the 9.0.2 metadata repository, for example, asdb.

This command creates a database export file called `iasw902.dmp` with the contents of the WIRELESS schema.

3. Continue with the middle tier upgrade process as described in the rest of this chapter.

The middle tier upgrade process includes a step where you install a 10g Release 2 (10.1.2) middle tier. When you install a 10g Release 2 (10.1.2) Portal and Wireless installation against the Release 2 (9.0.2) infrastructure, the Wireless Configuration Assistant upgrades the WIRELESS schema to 9.0.4.

If you install additional Oracle Application Server Wireless 10g Release 2 (10.1.2) middle tiers against the same OracleAS Metadata Repository, the configuration assistant detects that the schema is already upgraded and does not upgrade it again.

4. After you upgrade one of the Portal and Wireless middle tiers to 10g Release 2 (10.1.2), you can continue upgrading the other middle tiers, or you can restart the other middle tiers where Release 2 (9.0.2) Wireless is configured.

Note: If you plan to continue using OracleAS Wireless in any Release 2 (9.0.2) middle tiers after the Oracle Application Server Wireless schema has been upgraded to 10g (9.0.4), you must be running one of the following patches on the middle tier:

- Oracle9iAS Wireless 9.0.2.8.0 patch (2831134)
- Oracle9iAS Wireless 9.0.2.10.0 patch (3174514)
- Oracle9iAS 9.0.2.2.0 bundled patch set (2926973)
- Oracle9iAS 9.0.2.3.0 patch set (3038037)

Otherwise, the OracleAS Wireless middle tier will not be able to function with the upgraded WIRELESS schema. You can download patches from *OracleMetaLink*:

<http://metalink.oracle.com>

4.10.3 Special Instructions When Upgrading Oracle Workflow Middle Tier Components

To upgrade Oracle Workflow, you must perform your upgrade using the following steps

1. Install the 10g Release 2 (10.1.2) Oracle home, as described in [Section 4.2, "Task 1: Install a New 10g Release 2 \(10.1.2\) Middle Tier In Preparation for Upgrade"](#).
2. Install Oracle Workflow Release 2.6.3.5 from the Oracle Content Management SDK CD into the new 10g Release 2 (10.1.2) middle tier Oracle home.
3. Use the OracleAS Upgrade Assistant to upgrade the middle tier to 10g Release 2 (10.1.2) as described in the following sections:
 - [Section 4.3, "Task 2: Prepare to Use the OracleAS Upgrade Assistant"](#)
 - [Section 4.4, "Task 3: Run the OracleAS Upgrade Assistant"](#)
4. Run the Workflow Configuration Assistant as described in the *Oracle Workflow Installation Notes for Oracle Content Management Software Development Kit*, which is available on the Oracle Technology Network at the following location:

http://www.oracle.com/technology/documentation/cm_sdk.html

The Workflow Configuration Assistant performs additional upgrade tasks for the middle tier, and if necessary, upgrades the Oracle Workflow schema.

When you run the Workflow configuration Assistant, note the following:

- If you already upgraded the Oracle Workflow schema, use the **Configure Middletier** install option.

For example, the Oracle Workflow schema might have been upgraded previously during the upgrade of another Oracle Workflow middle tier.

- If you are upgrading the Oracle Workflow schema in a customer database and configuring the Oracle Workflow middle tier at the same time, use the **Server and Middletier** install option.

See Also: [Section 8.5.3, "Upgrading the Oracle Workflow Schema in a Customer Database"](#)

Oracle Workflow Administrator's Guide

Upgrading Identity Management Services

This chapter contains the following sections:

- [Overview of the OracleAS Identity Management Components](#)
- [Task 1: Review Your OracleAS Identity Management Configuration](#)
- [Task 2: Understand the OracleAS Identity Management Database Requirements](#)
- [Task 3: Back Up the OracleAS Identity Management Installation](#)
- [Task 4: Perform the OracleAS Identity Management Upgrade](#)
- [Task 5: Complete the OracleAS Identity Management Upgrade](#)
- [Task 6: Validate the Identity Management Upgrade](#)
- [Task 7: Decommission the OracleAS Identity Management Source Oracle Home](#)

Note: If you are upgrading a distributed OracleAS Identity Management environment, an OracleAS Identity Management replication environment, or if you are interested in the data migration method of upgrading OracleAS Identity Management, see [Chapter 6, "Additional OracleAS Identity Management Upgrade Procedures"](#).

5.1 Overview of the OracleAS Identity Management Components

OracleAS Identity Management is part of the Oracle Application Server Infrastructure. It consists of:

- OracleAS Single Sign-On
- Oracle Internet Directory
- Oracle Delegated Administration Services
- Oracle Directory Integration and Provisioning
- Oracle Application Server Certificate Authority

See Also: *Oracle Application Server Concepts* for an overview of the OracleAS Infrastructure

Oracle Application Server Installation Guide for information about installing OracleAS Identity Management

5.2 Task 1: Review Your OracleAS Identity Management Configuration

Before you upgrade OracleAS Identity Management, you should be familiar with the various configurations that you may have implemented at your site.

The OracleAS Identity Management you want to upgrade will vary depending upon whether you are running Oracle Application Server Release 2 (9.0.2) or Oracle Application Server 10g (9.0.4). The following sections describe the configuration options available for each version of Oracle Application Server:

- [Oracle Application Server Release 2 \(9.0.2\) OracleAS Identity Management Configuration Options](#)
- [Oracle Application Server 10g \(9.0.4\) OracleAS Identity Management Configuration Options](#)
- [About Oracle Application Server Certificate Authority](#)

5.2.1 Oracle Application Server Release 2 (9.0.2) OracleAS Identity Management Configuration Options

In Oracle Application Server Release 2 (9.0.2), the components of OracleAS Identity Management are always installed with a OracleAS Metadata Repository. As a result, each Oracle Application Server Release 2 (9.0.2) Infrastructure installations is a colocated Infrastructure.

See Also: [Section 1.1.2, "Reviewing Your Current OracleAS Infrastructure Configuration"](#) for definitions of colocated and non-colocated OracleAS Infrastructure installations

However, even though all Release 2 (9.0.2) OracleAS Identity Management installations include an OracleAS Metadata Repository, the Release 2 (9.0.2) Identity Management configuration can still be non-distributed or distributed.

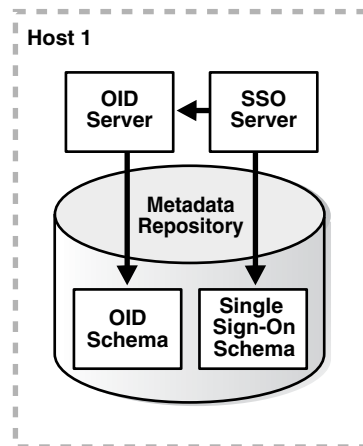
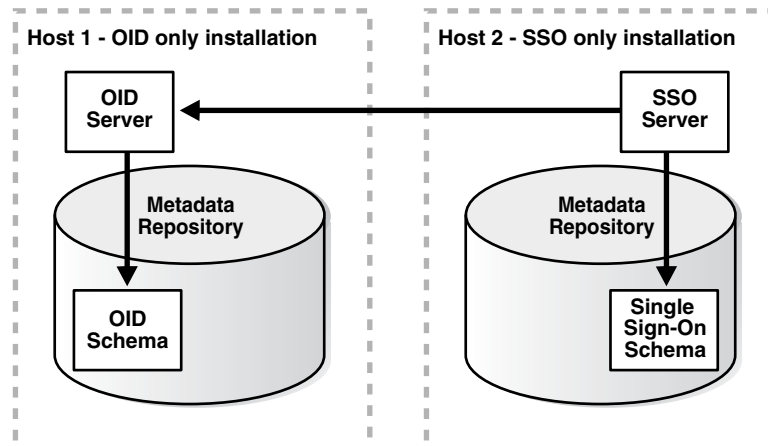
In a non-distributed Release 2 (9.0.2) OracleAS Identity Management installation, Oracle Application Server Single Sign-On and Oracle Internet Directory share a metadata repository, as shown in [Figure 5-1](#).

Alternatively, the Release 2 (9.0.2) Identity Management configuration can be distributed, in which Oracle Application Server Single Sign-On and Oracle Internet Directory each use a separate metadata repository. This is depicted in [Figure 5-2](#).

Notes: If, in Oracle9iAS Release 2 (9.0.2), you had a Oracle Delegated Administration Services (DAS) or Oracle Directory Integration and Provisioning (DIP) operating in a middle tier, and you want to set up DAS or DIP in 10g Release 2 (10.1.2), you must perform a DAS-only or DIP-only installation in a separate Oracle home.

See the section titled "Installing Identity Management Components Only" in the chapter "Installing OracleAS Infrastructure 10g" in the *Oracle Application Server Installation Guide*.

In addition, if the Release 2 (9.0.2) OracleAS Single Sign-On server was using a middle tier other than the default middle-tier installation with the SSO server, then you can install a new 10g Release 2 (10.1.2) OracleAS Single Sign-On middle tier and decommission the non-default, old OracleAS Single Sign-On middle tier.

Figure 5–1 Non-Distributed Identity Management**Figure 5–2 Distributed Identity Management in Release 2 (9.0.2)**

5.2.2 Oracle Application Server 10g (9.0.4) OracleAS Identity Management Configuration Options

Oracle Application Server 10g (9.0.4) introduced three OracleAS Infrastructure installation types. These installation types are also available in Oracle Application Server 10g Release 2 (10.1.2). These installation types allow you to install:

- Identity Management and OracleAS Metadata Repository
- Identity Management
- OracleAS Metadata Repository

Selecting the **Identity Management and OracleAS Metadata Repository** installation type results in a colocated Infrastructure, where both the OracleAS Metadata Repository and OracleAS Identity Management are in the same Oracle home.

If you install only OracleAS Identity Management, you must provide connection details and logon credentials for a valid OracleAS Metadata Repository.

The option you choose when you install the OracleAS Infrastructure determines whether or not you are installing a colocated Infrastructure or a non-colocated Infrastructure.

See Also: [Section 1.1.2, "Reviewing Your Current OracleAS Infrastructure Configuration"](#) for more information about colocated Infrastructure and non-colocated Infrastructure installations

As with Oracle Application Server Release 2 (9.0.2), your 10g (9.0.4) OracleAS Identity Management configuration can be distributed or non-distributed. The 10g (9.0.4) non-distributed configuration is the same as Release 2 (9.0.2) non-distributed OracleAS Identity Management configuration shown in [Figure 5-1](#).

However, in 10g (9.0.4), the OracleAS Identity Management components do not require an OracleAS Metadata Repository in the same Oracle home. Consider the following examples of distributed OracleAS Identity Management installations:

- [Figure 5-3](#) shows how the OracleAS Single Sign-On component of OracleAS Identity Management can be installed in a separate 10g (9.0.4) Oracle home from the Oracle Internet Directory, but share the same OracleAS Metadata Repository.
- [Figure 5-4](#) shows an extension of the previous example. It introduces a third host, which is used to host an Oracle Application Server Certificate Authority (OCA) installation. The OCA installation uses the same Oracle Internet Directory as OracleAS Single Sign-On, but it has its own OracleAS Metadata Repository to store the OCA schema.

Figure 5-3 Distributed Identity Management in 10g (9.0.4) - Example 1

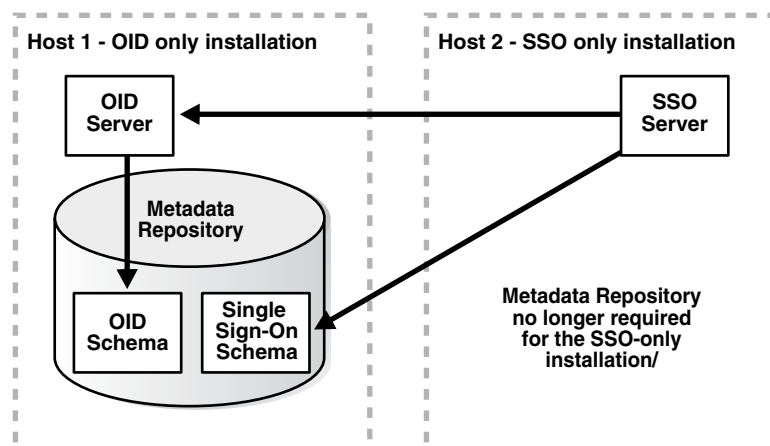
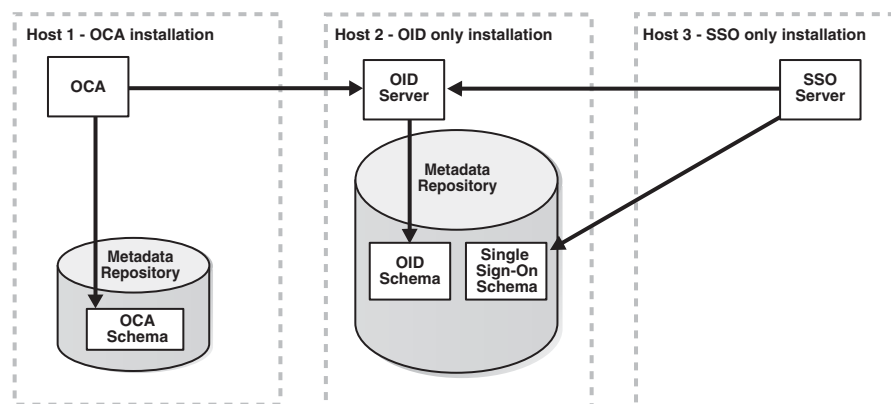


Figure 5-4 Distributed Identity Management in 10g (9.0.4) - Example 2



5.2.3 About Oracle Application Server Certificate Authority

Oracle Application Server Certificate Authority (OCA) is an OracleAS Identity Management component that was introduced in 10g (9.0.4).

If you are upgrading from 10g (9.0.4) and you have installed and configured OCA, the OracleAS Identity Management upgrade procedure will also upgrade OCA.

However, if you are upgrading from Release 2 (9.0.2), and you would like to add OCA to your OracleAS Identity Management installation, you must install OCA into its own Oracle home after upgrading the other OracleAS Identity Management components to 10g Release 2 (10.1.2.0.2).

Specifically, you can add OCA to your existing OracleAS Identity Management Oracle environment as follows:

1. Upgrade the OracleAS Identity Management components to 10g Release 2 (10.1.2.0.2) as described later in this chapter.
2. Use the instructions in [Chapter 7, "Upgrading the OracleAS Metadata Repository"](#) to run the Metadata Repository Upgrade Assistant (MRUA).

If the OCA schema does not exist in the OracleAS Metadata Repository, MRUA will create the OCA schema.

3. Do one of the following:
 - Install OCA into a new 10g Release 2 (10.1.2.0.2) Oracle home that uses the existing Oracle Internet Directory, OracleAS Single Sign-On, and the upgraded OracleAS Metadata Repository where the new OCA schema now exists.
 - OR
 - Install OCA into a new 10g Release 2 (10.1.2.0.2) Oracle home with its own OracleAS Metadata Repository, but using the existing Oracle Internet Directory and OracleAS Single Sign-On.

5.3 Task 2: Understand the OracleAS Identity Management Database Requirements

Regardless of the OracleAS Identity Management configuration, all OracleAS Identity Management installations require access to an OracleAS Metadata Repository. The OracleAS Metadata Repository is required because OracleAS Identity Management depends upon specific schemas that are created in the OracleAS Metadata Repository during the OracleAS Metadata Repository installation.

When you upgrade OracleAS Identity Management, the upgrade procedure upgrades the OracleAS Identity Management schemas in the OracleAS Metadata Repository. However, it can only do so if the database that hosts the OracleAS Metadata Repository is upgraded to a database version supported by Oracle Application Server 10g Release 2 (10.1.2).

How you upgrade the database depends upon the whether or not the OracleAS Identity Management is part of a colocated or non-colocated Infrastructure.

See Also: [Section 1.1.2, "Reviewing Your Current OracleAS Infrastructure Configuration"](#) for a definition of colocated and non-colocated Infrastructures

The following sections provide more details about the database requirements when upgrading OracleAS Identity Management:

- [Database Upgrade Requirements When the OracleAS Identity Management is Part of a Colocated Infrastructure](#)
- [Database Upgrade Requirements When the OracleAS Identity Management is Part of Non-Colocated Infrastructure](#)
- [Stopping the Database Listener When Prompted During the OracleAS Identity Management Upgrade](#)
- [Summary of the OracleAS Identity Management Database Upgrade Requirements](#)

5.3.1 Database Upgrade Requirements When the OracleAS Identity Management is Part of a Colocated Infrastructure

If the OracleAS Identity Management you are upgrading is part of a colocated Infrastructure, Oracle Universal Installer automatically upgrades the OracleAS Metadata Repository database to a supported version when you upgrade OracleAS Identity Management.

See Also: [Section 5.5.1, "Upgrading OracleAS Identity Management in a Colocated Infrastructure"](#)

After you upgrade OracleAS Identity Management in a colocated Infrastructure, refer to the following sections for information about post-upgrade tasks you should consider performing to help you manage and maintain the upgraded database:

- [Section 7.1.6, "Relocating the Database Datafiles, Control Files, and Log Files"](#)
- [Section 7.1.7, "Configuring Oracle Enterprise Manager 10g Database Control"](#)

Note: After you upgrade Release 2 (9.0.2) OracleAS Identity Management in a colocated Infrastructure, the upgraded database contains invalid objects and represents an unsupported configuration. As a result, you must run the Metadata Repository Upgrade Assistant (MRUA) immediately after the database upgrade.

See [Chapter 7, "Upgrading the OracleAS Metadata Repository"](#) for more information about running MRUA.

See [Section 1.7, "Understanding Transitional, Stable, and Unsupported Configurations"](#) for more information about transitional, stable, and unsupported configurations while upgrading to 10g Release 2 (10.1.2).

5.3.2 Database Upgrade Requirements When the OracleAS Identity Management is Part of Non-Colocated Infrastructure

If the OracleAS Identity Management you are upgrading is part of a non-colocated Infrastructure, you must upgrade the OracleAS Metadata Repository database first, before upgrading the OracleAS Identity Management installation.

The procedure you use to upgrade the database depends upon whether or not the database is a seed database or a OracleAS Metadata Repository Creation Assistant database.

See Also: [Section 1.1.3, "Determining Whether Your Database is a Seed Database or OracleAS Metadata Repository Creation Assistant Database"](#)

Consider the following when upgrading a OracleAS Metadata Repository database in a non-colocated Infrastructure:

- If the OracleAS Metadata Repository was installed in a seed database, as part of a 10g (9.0.4) OracleAS Metadata Repository installation, you can use Oracle Universal Installer to upgrade the database automatically.
- On the other hand, if you used the OracleAS Metadata Repository Creation Assistant to create the OracleAS Metadata Repository, you must upgrade the database manually, using the standard Oracle database upgrade procedures.

See Also: [Section 7.1, "Task 1: Upgrade the Database That Hosts the OracleAS Metadata Repository"](#)

5.3.3 Stopping the Database Listener When Prompted During the OracleAS Identity Management Upgrade

Depending upon the OracleAS Identity Management configuration you are upgrading, you might be prompted to stop the database listener during the OracleAS Identity Management upgrade. Specifically, you should receive this prompt if you are upgrading a colocated Infrastructure, where the OracleAS Metadata Repository and OracleAS Identity Management are installed in the same Oracle home.

You should not stop the listener until you are prompted to do so. However, when such a prompt appears, use the `lsnrctl` utility to stop the database listener as follows:

1. Set the `ORACLE_HOME` environment variable to the Oracle home of the listener you want to stop.
2. Verify the version of the listener you are about to stop by entering the following command:

```
%ORACLE_HOME%\bin\lsnrctl version
```

The `lsnrctl` utility displays information about the current database listener. Review the information to verify that you are stopping the correct listener.

3. Stop the listener by entering the following command:

```
%ORACLE_HOME%\bin\lsnrctl stop
```

5.3.4 Summary of the OracleAS Identity Management Database Upgrade Requirements

In summary, before you upgrade OracleAS Identity Management, the database that hosts the OracleAS Identity Management schemas must be a version of the database supported by 10g Release 2 (10.1.2.0.2).

For more information, refer to [Section 7.1, "Task 1: Upgrade the Database That Hosts the OracleAS Metadata Repository"](#). Information about database support requirements is also available in the *Oracle Application Server Metadata Repository Creation Assistant User's Guide*.

See Also: [Section 7.1.2, "Using OracleMetaLink to Obtain the Latest Oracle Application Server Software Requirements"](#) for information about obtaining the very latest information on the OracleAS Metadata Repository database requirements

5.4 Task 3: Back Up the OracleAS Identity Management Installation

Before you begin upgrading your OracleAS Identity Management installation, perform a backup of the OracleAS Identity Management Oracle home, and perform a backup of the database that hosts the OracleAS Identity Management schemas.

See Also: [Section 3.1, "Backup Strategies Before Upgrade"](#)

5.5 Task 4: Perform the OracleAS Identity Management Upgrade

The following sections describe how to perform the OracleAS Identity Management upgrade for the typical OracleAS Identity Management configurations.

- [Upgrading OracleAS Identity Management in a Colocated Infrastructure](#)
- [Upgrading OracleAS Identity Management in a Non-Colocated 10g \(9.0.4\) Infrastructure](#)
- [Upgrading Distributed OracleAS Identity Management Configurations](#)

See Also: [Chapter 6, "Additional OracleAS Identity Management Upgrade Procedures"](#) for information about upgrading more advanced OracleAS Identity Management configurations

5.5.1 Upgrading OracleAS Identity Management in a Colocated Infrastructure

If OracleAS Identity Management is installed as part of a colocated Infrastructure, you can use Oracle Universal Installer to do all of the following as part of the Oracle Application Server 10g Release 2 (10.1.2) installation procedure:

- Upgrade the OracleAS Metadata Repository database.
- Upgrade the OracleAS Identity Management program, configuration, and data files.
- Upgrade the OracleAS Identity Management schemas in the OracleAS Metadata Repository.

To upgrade OracleAS Identity Management in a colocated Infrastructure Oracle home:

1. If you are upgrading from Release 2 (9.0.2), make sure you have applied the latest Release 2 (9.0.2) patchsets.

The OracleAS Identity Management upgrade procedures have been tested using the latest patchsets available from *OracleMetaLink*. Therefore, before you upgrade Release 2 (9.0.2) OracleAS Identity Management, apply the latest Oracle Application Server 9.0.2 patchsets.

The *OracleMetaLink* Web site is at the following URL:

<http://metalink.oracle.com/>

At the time this document was published the most recent Oracle9iAS patchset release was the Oracle9iAS 9.0.2.3 patchset (3038037). To locate this patchset, search for patch number 3038037 on *OracleMetaLink*.

Note: After applying Oracle9iAS 9.0.2.3 patchset (3038037), verify that the patchset was applied successfully before proceeding with the 10g Release 2 (10.1.2) upgrade. For example, verify that the Application Server Control, your deployed applications, and the components you use are functioning properly after you apply the patchset.

2. Stop all the middle tiers that are using the services of the OracleAS Identity Management installation.
3. Log in to the computer on which Release 2 (9.0.2) or 10g (9.0.4) instance is installed, as the same operating system user that performed the Release 2 (9.0.2) or 10g (9.0.4) installation.

Note: The account you log in to install or upgrade the OracleAS Metadata Repository must be listed as a member of the Administrators group.

4. Make sure that the OracleAS Metadata Repository database and database listener are up and running.
5. Make sure the Oracle Internet Directory server is up and running.

To verify that Oracle Internet Directory is running, enter one of the following commands.

Note: You may have to temporarily set the ORACLE_HOME environment variable to the Oracle Internet Directory Oracle home before running the ldapbind command.

After you verify that the Oracle Internet Directory is running, you must then make sure the ORACLE_HOME environment variable is not defined before you start the 10g Release 2 (10.1.2) installer, as directed in Step 6.

If you are running Oracle Internet Directory on a non-secure port:

```
SOURCE_ORACLE_HOME\bin\ldapbind -p Non-SSL_port -h
```

If you are running Oracle Internet Directory on a secure port:

```
SOURCE_ORACLE_HOME\bin\ldapbind -p SSL_port -h -U 1
```

These commands should return a "bind successful" message.

See Also: "Syntax for LDIF and Command-Line Tools" in the *Oracle Internet Directory Administrator's Guide* for more information about the ldapbind utility

Note: Oracle Internet Directory 10g (9.0.4) allows you to start and stop the directory service using OPMN or the `oidctl` utility.

Before upgrading a 10g (9.0.4) OracleAS Identity Management Oracle home that contains Oracle Internet Directory, start the Oracle Internet Directory instance using the `opmnctl` utility or the Application Server Control Console. Do not use the `oidctl` utility to start and stop Oracle Universal Installer in a 10g (9.0.4) Oracle home; otherwise, Oracle Universal Installer will not be able to start and stop Oracle Internet Directory automatically during the upgrade process.

The correct use of `opmnctl` and `oidctl` is described in the Chapter "Oracle Internet Directory Process Control–Best Practices" in the *Oracle Internet Directory Administrator's Guide*.

6. Set the required environment variables, as defined in the section "Environment Variables" in the "Requirements" chapter of the *Oracle Application Server Installation Guide*.

In particular, be sure to set following variables so they do not reference any Oracle home directories:

- `PATH`
- `CLASSPATH`

In addition, be sure the following environment variables are not set:

- `TNS_ADMIN`
- `ORACLE_HOME`
- `ORACLE_SID`

7. If you the `ORACLE_HOME` environment variable was previously set, restart the host computer after unsetting the variable.

The system restart is necessary to clear the `ORACLE_HOME` variable from the system registry. If you do not restart the computer after clearing the `ORACLE_HOME` variable, the installation might report an error and prevent you from finishing the installation.

8. Mount the media and start the installer.

See Also: *Oracle Application Server Installation Guide* for detailed instructions about starting Oracle Universal Installer on your platform

9. Refer to [Table 5–1](#) for information on the options you should select on each screen.
10. After the End of Installation screen appears, exit Oracle Universal Installer and then verify that Oracle Internet Directory and Oracle Application Server Single Sign-On are functioning and accessible in the new 10g Release 2 (10.1.2) Oracle home.

See Also: *Oracle Application Server Administrator's Guide*, Chapter 1, "Accessing the Single Sign-On Server"

11. If you are upgrading from Release 2 (9.0.2), immediately run the Metadata Repository Upgrade Assistant (MRUA) to upgrade the OracleAS Metadata Repository component schemas.

After you upgrade Release 2 (9.0.2) OracleAS Identity Management in a colocated Infrastructure, the upgraded database contains invalid objects and represents an unsupported configuration. As a result, you must run the Metadata Repository Upgrade Assistant (MRUA) immediately after the database upgrade.

See Also: [Chapter 7, "Upgrading the OracleAS Metadata Repository"](#) for more information about running MRUA.

[Section 1.7, "Understanding Transitional, Stable, and Unsupported Configurations"](#) for more information about transitional, stable, and unsupported configurations while upgrading to 10g Release 2 (10.1.2).

Table 5–1 Summary of the Oracle Universal Installer Screens During the OracleAS Identity Management Upgrade in a Colocated infrastructure

Screen	Description and Recommended Options to Select
Welcome	Welcomes you to Oracle Universal Installer and the Oracle Application Server 10g Release 2 (10.1.2) installation procedure.
Specify File Locations	Enter a name and path for the new Oracle home. This new Oracle home will be the destination Oracle home for your Oracle Application Server 10g Release 2 (10.1.2) upgrade.
Select a Product to Install	Select Oracle Application Server Infrastructure 10g . If multiple languages are used in the OracleAS Infrastructure you are upgrading, then click Product Languages .
Language Selection	The screen appears only if you clicked Product Languages on the Select a Product to Install screen. If multiple languages are used in the OracleAS Infrastructure you are upgrading, select those languages. If you are not sure which languages were installed, but want languages other than English, click the double arrow button (>>) to select all languages.
Select Installation Type	Select Identity Management and Metadata Repository . Note: It is very important that you select the same installation type that is used in the Oracle home you are upgrading.
Upgrade Existing Infrastructure	This screen appears when Oracle Universal Installer detects an existing Oracle Application Server installation of the same type as the one you selected on the Select Installation Type screen. Select the option to upgrade an existing OracleAS Infrastructure, and then select the Oracle home you want to upgrade from the drop-down list. (If there is only one Infrastructure of the selected time on the computer, then the drop-down list is inactive.) Figure 5–5 shows an example of the Upgrade Existing Infrastructure screen when you are upgrading from a Release 2 (9.0.2) OracleAS Infrastructure.
Specify Oracle Internet Directory Login	Enter the Oracle Internet Directory superuser distinguished name (DN) in the Username field. The superuser DN <code>cn=orcladmin</code> is the default for this field; change this value if the Oracle Internet Directory superuser DN is not <code>cn=orcladmin</code> . Enter the password for the superuser DN in the Password field.
Specify Infrastructure Database Connection Information	Enter <code>SYS</code> in the Username field and the <code>SYS</code> user's password in the Password field.

Table 5–1 (Cont.) Summary of the Oracle Universal Installer Screens During the OracleAS Identity Management Upgrade in a Colocated infrastructure

Screen	Description and Recommended Options to Select
Warning dialog box	<p>This dialog box warns you that all the clients of the OracleAS Metadata Repository database must now be stopped. Oracle Universal Installer will automatically stop any clients within the source Oracle home.¹</p> <p>However, you must manually stop any database clients and OracleAS Metadata Repository clients that reside in another Oracle home.</p> <p>Clients of the OracleAS Metadata Repository include:</p> <ul style="list-style-type: none"> ■ OracleAS Identity Management components that use this OracleAS Metadata Repository. ■ Middle tier instances that use this OracleAS Metadata Repository <p>Within each middle tier that uses this OracleAS Metadata Repository, you must be sure to stop all components, including Oracle HTTP Server and OracleAS Web Cache.</p> <p>For more information, see the chapter "Starting and Stopping " in the <i>Oracle Application Server Administrator's Guide</i>.</p>
Database Listener Warning Dialog Box	<p>Review the dialog box determine whether or not you need to stop the listener manually.</p> <p>For more information, see Section 5.3.3, "Stopping the Database Listener When Prompted During the OracleAS Identity Management Upgrade".</p>
Specify Instance Name and ias_admin Password	<p>Enter a name for the new Oracle Application Server 10g Release 2 (10.1.2) instance and a password for the ias_admin Administrator account.</p> <p>You use the ias_admin password to log on to Application Server Control Console to manage Oracle Application Server.</p> <p>In general, the minimum length of the ias_admin password is five alphanumeric characters. At least one of the characters must be a number and the password cannot start with a number.</p> <p>For more information, see the section "The ias_admin User and Restrictions on its Password" in the <i>Oracle Application Server Installation Guide</i>.</p>
Summary	<p>Use this screen to confirm the choices you've made. Click Install to begin upgrading to the new 10g Release 2 (10.1.2) Oracle home.</p>
The Configuration Assistants	<p>After the initial software is installed, a set of configuration assistants automatically set up the components in the new 10g Release 2 (10.1.2) Oracle home. Use this screen to follow the progress of each assistant and to identify any problems during this phase of the installation.</p> <p>Notes:</p> <ul style="list-style-type: none"> ■ The Database Upgrade Assistant (DBUA) can take a significant amount of time to upgrade the database. For more information how long it takes to upgrade your database, see Section 3.3, "Planning for System Downtime". ■ While Database Upgrade Assistant is running, do not use the Stop button to interrupt the execution of Database Upgrade Assistant. If you press Stop, the underlying processes for Database Upgrade Assistant will continue to run. Also, Oracle Universal Installer will wait until those processes complete before returning control to the user.

Table 5–1 (Cont.) Summary of the Oracle Universal Installer Screens During the OracleAS Identity Management Upgrade in a Colocated infrastructure

Screen	Description and Recommended Options to Select
End of Installation	<p>When the installation and upgrade is complete, this screen provides important details about the 10g Release 2 (10.1.2) Oracle home, such as the URL for the Application Server Control Console and the location of the <code>setupinfo.txt</code> file.</p> <p>After you review the information on this screen, you can exit Oracle Universal Installer and proceed to the post-upgrade tasks.</p>

¹ You can access a log of the automated shutdown procedure executed by Oracle Universal Installer in the `shutdownprocesses.log` file, which is located in the `cfgtoollogs` directory in the destination Oracle home.

Figure 5–5 Upgrade Existing OracleAS Infrastructure Screen

5.5.2 Upgrading OracleAS Identity Management in a Non-Colocated 10g (9.0.4) Infrastructure

To upgrade OracleAS Identity Management in a non-colocated Infrastructure, you use Oracle Universal Installer just as you do when OracleAS Identity Management is in a colocated Infrastructure.

This section applies only to 10g (9.0.4) OracleAS Identity Management upgrades; Release 2 (9.0.2) did not support non-colocated Infrastructure installations.

Before you can upgrade OracleAS Identity Management in a non-colocated Infrastructure, you must verify that the OracleAS Metadata Repository that hosts the OracleAS Identity Management schemas is running in a supported version of the Oracle database.

See Also: [Section 5.3, "Task 2: Understand the OracleAS Identity Management Database Requirements"](#)

If the OracleAS Metadata Repository is not hosted by a supported database version, you must upgrade the database. The method you use to upgrade the OracleAS Metadata Repository database varies, depending upon whether the database is a seed database or a OracleAS Metadata Repository Creation Assistant database.

See Also: [Section 1.1.3, "Determining Whether Your Database is a Seed Database or OracleAS Metadata Repository Creation Assistant Database"](#)

After you determine whether or not the database is a seed database or an OracleAS Metadata Repository Creation Assistant database, you can upgrade the database by following the instructions for upgrading the OracleAS Metadata Repository database.

See Also: [Section 7.1, "Task 1: Upgrade the Database That Hosts the OracleAS Metadata Repository"](#)

To upgrade OracleAS Identity Management in a non-colocated Infrastructure:

1. Verify that the version of the database that hosts the OracleAS Identity Management schemas is a supported version for 10g Release 2 (10.1.2) OracleAS Identity Management.

The OracleAS Identity Management schemas are stored in an OracleAS Metadata Repository.

If necessary, upgrade the database by using the instructions in [Section 7.1, "Task 1: Upgrade the Database That Hosts the OracleAS Metadata Repository"](#).

2. Make sure that the OracleAS Metadata Repository database and database listener are up and running.
3. Log in to the computer on which the 10g (9.0.4) instance is installed, as the same operating system user that performed the 10g (9.0.4) installation.
4. Make sure the Oracle Internet Directory server is up and running.

To verify that Oracle Internet Directory is running, enter one of the following commands.

Note: You may have to temporarily set the ORACLE_HOME environment variable to the Oracle Internet Directory Oracle home before running the `ldapbind` command.

After you verify that the Oracle Internet Directory is running, you must then make sure the ORACLE_HOME environment variable is not defined before you start the 10g Release 2 (10.1.2) installer, as directed in Step 6.

If you are running Oracle Internet Directory on a non-secure port:

```
SOURCE_ORACLE_HOME\bin\ldapbind -p Non-SSL_port
```

If you are running Oracle Internet Directory on a secure port:

```
SOURCE_ORACLE_HOME\bin\ldapbind -p SSL_port -U 1
```

These commands should return a "bind successful" message.

See Also: "Syntax for LDIF and Command-Line Tools" in the *Oracle Internet Directory Administrator's Guide* for more information about the `ldapbind` utility

Note: Oracle Internet Directory 10g (9.0.4) allows you to start and stop the directory service using OPMN or the `oidctl` utility.

Before upgrading an OracleAS Identity Management Oracle home that contains Oracle Internet Directory, start the Oracle Internet Directory instance using the `opmnctl` utility or the Application Server Control Console. Do not use the `oidctl` utility; otherwise, Oracle Universal Installer will not be able to start and stop Oracle Internet Directory automatically during the upgrade process.

The correct use of `opmnctl` and `oidctl` is described in the Chapter "Oracle Internet Directory Process Control—Best Practices" in the *Oracle Internet Directory Administrator's Guide*.

5. Be sure to set the environment variables, as defined in the section "Environment Variables" in the "Requirements" chapter of the *Oracle Application Server Installation Guide*.

In particular, be sure to set following variables so they do not reference any Oracle home directories:

- `PATH`
- `CLASSPATH`

In addition, be sure the following environment variables are not set:

- `TNS_ADMIN`
- `ORACLE_HOME`
- `ORACLE_SID`

6. If you the `ORACLE_HOME` environment variable was previously set, restart the host computer after unsetting the variable.

The system restart is necessary to clear the `ORACLE_HOME` variable from the system registry. If you do not restart the computer after clearing the `ORACLE_HOME` variable, the installation might report an error and prevent you from finishing the installation.

7. Mount the Oracle Application Server 10g Release 2 (10.1.2) CD-ROM and start the installer.

See Also: *Oracle Application Server Installation Guide* for detailed instructions about starting Oracle Universal Installer on your platform

8. Refer to [Table 5–2](#) for information on the options you should select on each screen.
9. After the End of Installation screen appears, exit Oracle Universal Installer and then verify that Oracle Internet Directory and Oracle Application Server Single Sign-On are functioning and accessible in the new 10g Release 2 (10.1.2) Oracle home.

See Also: *Oracle Application Server Administrator's Guide*, Chapter 1, "Accessing the Single Sign-On Server"

Table 5–2 Summary of the Oracle Universal Installer Screens During the OracleAS Identity Management Upgrade in a 10g (9.0.4) Non-Colocated Infrastructure

Screen	Description and Recommended Options to Select
Welcome	Welcomes you to Oracle Universal Installer and the Oracle Application Server 10g Release 2 (10.1.2) installation procedure.
Specify File Locations	Enter a name and path for the new Oracle home. This new Oracle home will be the destination Oracle home for your Oracle Application Server 10g Release 2 (10.1.2) upgrade.
Select a Product to Install	Select OracleAS Infrastructure 10g . If multiple languages are used in the OracleAS Infrastructure you are upgrading, then click Product Languages .
Language Selection	The screen appears only if you clicked Product Languages on the Select a Product to Install screen. If multiple languages are used in the OracleAS Infrastructure you are upgrading, select those languages. If you are not sure which languages were installed, but want languages other than English, click the double arrow button (>>) to select all languages.
Select Installation Type	Select Identity Management . Note: It is very important that you select the same installation type that is used in the Oracle home you are upgrading.
Upgrade Existing Infrastructure	This screen (Figure 5–5) appears when Oracle Universal Installer detects an existing Oracle Application Server installation of the same type as the one you selected on the Select Installation Type screen. Select the option to upgrade an existing OracleAS Infrastructure, and then select the Oracle home you want to upgrade from the drop-down list. (If there is only one Infrastructure of the selected time on the computer, then the drop-down list is inactive.)
Specify OID Login	Enter the Oracle Internet Directory superuser distinguished name (DN) in the Username field. The superuser DN <code>cn=orcladmin</code> is the default for this field; change this value if the Oracle Internet Directory superuser DN is not <code>cn=orcladmin</code> . Enter the password for the superuser DN in the Password field.
Specify Infrastructure Database Connection Information	Enter <code>SYS</code> in the Username field and the <code>SYS</code> user's password in the Password field.

Table 5–2 (Cont.) Summary of the Oracle Universal Installer Screens During the OracleAS Identity Management Upgrade in a 10g (9.0.4) Non-Colocated infrastructure

Screen	Description and Recommended Options to Select
Warning dialog box	<p>This dialog box warns you that all the clients of the OracleAS Identity Management installation must now be stopped. Oracle Universal Installer will automatically stop any clients within the source Oracle home automatically.¹</p> <p>However, you must manually stop any OracleAS Identity Management clients that reside in another Oracle home</p> <p>Clients of an OracleAS Identity Management instance include:</p> <ul style="list-style-type: none"> ■ OracleAS Identity Management components that are distributed and installed in another Oracle home ■ Middle tier instances that use this OracleAS Identity Management instance for authentication or identity services <p>Within each middle tier that uses this OracleAS Identity Management instance, you must be sure to stop all components, including Oracle HTTP Server and OracleAS Web Cache.</p> <p>For more information, see the chapter "Starting and Stopping " in the <i>Oracle Application Server Administrator's Guide</i>.</p>
Database Listener Warning Dialog Box	<p>If a database listener is running on the host, a warning dialog box displays. Review the dialog box determine whether or not you need to stop the listener manually.</p> <p>For more information, see Section 5.3.3, "Stopping the Database Listener When Prompted During the OracleAS Identity Management Upgrade".</p>
Specify Instance Name and ias_admin Password	<p>Enter a name for the new Oracle Application Server 10g Release 2 (10.1.2) instance and a password for the ias_admin Administrator account.</p> <p>You use the ias_admin password to log on to the Application Server Control Console to manage the Oracle Application Server instance.</p> <p>In general, the minimum length of the ias_admin password is five alphanumeric characters. At least one of the characters must be a number and the password cannot start with a number.</p> <p>For more information, see the section "The ias_admin User and Restrictions on its Password" in the <i>Oracle Application Server Installation Guide</i>.</p>
Summary	<p>Use this screen to confirm the choices you've made. Click Install to begin upgrading to the new 10g Release 2 (10.1.2) Oracle home. The install screen shows you the progress of the installation as it copies files to your local disk.</p>
The Configuration Assistants	<p>After the initial software is installed, a set of configuration assistants automatically set up the components in the new 10g Release 2 (10.1.2) Oracle home. Use this screen to follow the progress of each assistant and to identify any problems during this phase of the installation.</p>
End of Installation	<p>When the installation and upgrade is complete, this screen provides important details about the 10g Release 2 (10.1.2) Oracle home, such as the URL for the Application Server Control Console and the location of the <code>setupinfo.txt</code> file.</p> <p>After you review the information on this screen, you can exit Oracle Universal Installer and proceed to the post-upgrade tasks.</p>

- ¹ You can access a log of the automated shutdown procedure executed by Oracle Universal Installer in the `shutdownprocesses.log` file, which is located in the `cfgtoollogs` directory in the destination Oracle home.

5.5.3 Upgrading Distributed OracleAS Identity Management Configurations

The following sections describe how to upgrade a distributed OracleAS Identity Management configuration:

- [Upgrading Release 2 \(9.0.2\) Distributed OracleAS Identity Management Configurations](#)
- [Upgrading 10g \(9.0.4\) Distributed OracleAS Identity Management Configurations](#)
- [Verifying Whether OracleAS Identity Management Components are Enabled or Disabled](#)
- [Enabling Secure Sockets Layer \(SSL\) for OracleAS Identity Management Components](#)

5.5.3.1 Upgrading Release 2 (9.0.2) Distributed OracleAS Identity Management Configurations

A distributed OracleAS Identity Management configuration consists of multiple Oracle homes. One of the Oracle homes contains the Oracle Internet Directory.

In a Release 2 (9.0.2) distributed OracleAS Identity Management installation, the other Oracle home contains OracleAS Single Sign-On and its own OracleAS Metadata Repository ([Figure 5–2](#)).

To upgrade a Release 2 (9.0.2) distributed OracleAS Identity Management configuration:

1. Review [Section 5.5.3.3, "Verifying Whether OracleAS Identity Management Components are Enabled or Disabled"](#) to determine exactly which OracleAS Identity Management components will be upgraded.
2. Use the procedure in [Section 5.5.1, "Upgrading OracleAS Identity Management in a Colocated Infrastructure"](#) to upgrade the Oracle home that includes the Oracle Internet Directory and its OracleAS Metadata Repository.

You must upgrade the Oracle Internet Directory first before upgrading the other distributed OracleAS Identity Management components.

Note: If you are running only Oracle Internet Directory from the Oracle home, check to be sure the other OracleAS Identity Management components are disabled so they will not be upgraded or started in the destination 10g Release 2 (10.1.2) Oracle home.

For more information, see [Section 5.5.3.3, "Verifying Whether OracleAS Identity Management Components are Enabled or Disabled"](#).

3. Make sure you have applied the latest Release 2 (9.0.2) patchsets to the OracleAS Identity Management Oracle home you are about to upgrade.

The OracleAS Identity Management upgrade procedures have been tested using the latest patchsets available from *OracleMetaLink*. As a result, before you upgrade Release 2 (9.0.2) OracleAS Identity Management, apply the latest Oracle Application Server 9.0.2 patchsets.

The Oracle*MetaLink* Web site is at the following URL:

<http://metalink.oracle.com/>

At the time this document was published the most recent Oracle9iAS patchset release was the Oracle9iAS 9.0.2.3 patchset (3038037). To locate this patchset, search for patch number 3038037 on Oracle*MetaLink*.

Note: After applying Oracle9iAS 9.0.2.3 patchset (3038037), verify that the patchset was applied successfully before proceeding with the 10g Release 2 (10.1.2) upgrade. For example, verify that the Application Server Control, your deployed applications, and the components you use are functioning properly after you apply the patchset.

4. Make sure that the OracleAS Metadata Repository database being used by Oracle Application Server Single Sign-On and its database listener are up and running.
5. Log in to the computer on which the other distributed OracleAS Identity Management components are installed, as the same operating system user that performed the Release 2 (9.0.2) installation.

Note: The account you log in to install or upgrade the OracleAS Metadata Repository must be listed as a member of the Administrators group.

6. Make sure the Oracle Internet Directory Server has been upgraded to 10g Release 2 (10.1.2) and that it is up and running.

To verify that Oracle Internet Directory is running, enter one of the following commands.

Note: You may have to temporarily set the ORACLE_HOME environment variable to the Oracle Internet Directory Oracle home before running the ldapbind command.

After you verify that the Oracle Internet Directory is running, you must then make sure the ORACLE_HOME environment variable is not defined before you start the 10g Release 2 (10.1.2) installer, as directed in Step 6.

If you are running Oracle Internet Directory on a non-secure port:

```
SOURCE_ORACLE_HOME\bin\ldapbind -p Non-SSL_port
```

If you are running Oracle Internet Directory on a secure port:

```
SOURCE_ORACLE_HOME\bin\ldapbind -p SSL_port -U 1
```

These commands should return a "bind successful" message.

See Also: "Syntax for LDIF and Command-Line Tools" in the *Oracle Internet Directory Administrator's Guide* for more information about the ldapbind utility

7. Be sure to set the environment variables, as defined in the section "Environment Variables" in the "Requirements" chapter of the *Oracle Application Server Installation Guide*.

In particular, be sure to set following variables so they do not reference any Oracle home directories:

- PATH
- CLASSPATH

In addition, be sure the following environment variables are not set:

- TNS_ADMIN
- ORACLE_HOME
- ORACLE_SID

8. Mount the Oracle Application Server 10g Release 2 (10.1.2) CD-ROM and start the installer.

See Also: *Oracle Application Server Installation Guide* for detailed instructions about starting Oracle Universal Installer on your platform

9. Refer to [Table 5–3](#) for information on the options you should select on each screen.
10. After the End of Installation screen appears, exit Oracle Universal Installer and then verify that Oracle Internet Directory and Oracle Application Server Single Sign-On are functioning and accessible in the new 10g Release 2 (10.1.2) Oracle home.

See Also: "Accessing the Single Sign-On Server" in the *Oracle Application Server Single Sign-On Administrator's Guide*

Table 5–3 Summary of the Oracle Universal Installer Screens During a Release 2 (9.0.2) Distributed OracleAS Identity Management Upgrade

Screen	Description and Recommended Options to Select
Welcome	Welcomes you to Oracle Universal Installer and the Oracle Application Server 10g Release 2 (10.1.2) installation procedure.
Specify File Locations	Enter a name and path for the new Oracle home. This new Oracle home will be the destination Oracle home for your Oracle Application Server 10g Release 2 (10.1.2) upgrade.
Select a Product to Install	Select Oracle Application Server Infrastructure 10g . If multiple languages are used in the OracleAS Infrastructure you are upgrading, then click Product Languages .
Language Selection	The screen appears only if you clicked Product Languages on the Select a Product to Install screen. If multiple languages are used in the OracleAS Infrastructure you are upgrading, select those languages. If you are not sure which languages were installed, but want languages other than English, click the double arrow button (>>) to select all languages.

Table 5–3 (Cont.) Summary of the Oracle Universal Installer Screens During a Release 2 (9.0.2) Distributed OracleAS Identity Management Upgrade

Screen	Description and Recommended Options to Select
Select Installation Type	<p>Select Identity Management and Metadata Repository.</p> <p>Note: It is very important that you select the same installation type that is used in the Oracle home you are upgrading. In this case, the Release 2 (9.0.2) OracleAS Single Sign-On installation includes its own OracleAS Metadata Repository, so you must select the colocated OracleAS Identity Management and OracleAS Metadata Repository installation type.</p>
Upgrade Existing Infrastructure	<p>This screen (Figure 5–5) appears when Oracle Universal Installer detects an existing Oracle Application Server installation of the same type as the one you selected on the Select Installation Type screen.</p> <p>Select the option to upgrade an existing OracleAS Infrastructure, and then select the Oracle home you want to upgrade from the drop-down list. (If there is only one Infrastructure of the selected time on the computer, then the drop-down list is inactive.)</p>
Specify Oracle Internet Directory Login	<p>Enter the Oracle Internet Directory superuser distinguished name (DN) in the Username field. The superuser DN <code>cn=orcladmin</code> is the default for this field; change this value if the Oracle Internet Directory superuser DN is not <code>cn=orcladmin</code>.</p> <p>Enter the password for the superuser DN in the Password field.</p>
Specify Infrastructure Database Connection Information	<p>Enter <code>SYS</code> in the Username field and the <code>SYS</code> user's password in the Password field.</p> <p>These are the login credentials for the database installed in the OracleAS Single Sign-On Oracle home. See Figure 5–2, "Distributed Identity Management in Release 2 (9.0.2)".</p>
Specify OID Database Login	<p>Enter <code>SYS</code> in the Username field and the <code>SYS</code> user's password for the Oracle Internet Directory database in the Password field.</p> <p>These are login credentials for the database where Oracle Internet Directory has been installed. See Figure 5–2, "Distributed Identity Management in Release 2 (9.0.2)".</p>
Warning dialog box	<p>This dialog box warns you that all the clients of the OracleAS Identity Management installation must now be stopped. Oracle Universal Installer will automatically stop any clients within the source Oracle home automatically.¹</p> <p>However, you must manually stop any OracleAS Identity Management clients that reside in another Oracle home</p> <p>Clients of an OracleAS Identity Management instance include:</p> <ul style="list-style-type: none"> ■ OracleAS Identity Management components that are distributed and installed in another Oracle home ■ Middle tier instances that use this OracleAS Identity Management instance for authentication or identity services <p>Within each middle tier that uses this OracleAS Identity Management instance, you must be sure to stop all components, including Oracle HTTP Server and OracleAS Web Cache.</p> <p>For more information, see the chapter "Starting and Stopping " in the <i>Oracle Application Server Administrator's Guide</i>.</p>

Table 5–3 (Cont.) Summary of the Oracle Universal Installer Screens During a Release 2 (9.0.2) Distributed OracleAS Identity Management Upgrade

Screen	Description and Recommended Options to Select
Database Listener Warning Dialog Box	<p>If a database listener is running on the host, a warning dialog box displays. Review the dialog box determine whether or not you need to stop the listener manually.</p> <p>For more information, see Section 5.3.3, "Stopping the Database Listener When Prompted During the OracleAS Identity Management Upgrade".</p>
Specify Instance Name and ias_admin Password	<p>Enter a name for the new Oracle Application Server 10g Release 2 (10.1.2) instance and a password for the ias_admin Administrator account.</p> <p>You use the ias_admin password to log on to Application Server Control Console to manage Oracle Application Server.</p> <p>In general, the minimum length of the ias_admin password is five alphanumeric characters. At least one of the characters must be a number and the password cannot start with a number.</p> <p>For more information, see the section "The ias_admin User and Restrictions on its Password" in the <i>Oracle Application Server Installation Guide</i>.</p>
Summary	<p>Use this screen to confirm the choices you've made. Click Install to begin upgrading to the new 10g Release 2 (10.1.2) Oracle home.</p>
The Configuration Assistants	<p>After the initial software is installed, a set of configuration assistants automatically set up the components in the new 10g Release 2 (10.1.2) Oracle home. Use this screen to follow the progress of each assistant and to identify any problems during this phase of the installation.</p> <p>Notes:</p> <ul style="list-style-type: none"> ■ The Database Upgrade Assistant (DBUA) can take a significant amount of time to upgrade the database. For more information how long it takes to upgrade your database, see Section 3.3, "Planning for System Downtime". ■ While Database Upgrade Assistant is running, do not use the Stop button to interrupt the execution of Database Upgrade Assistant. If you press Stop, the underlying processes for Database Upgrade Assistant will continue to run. Also, Oracle Universal Installer will wait until those processes complete before returning control to the user.
End of Installation	<p>When the installation and upgrade is complete, this screen provides important details about the 10g Release 2 (10.1.2) Oracle home, such as the URL for the Application Server Control Console and the location of the setupinfo.txt file.</p> <p>After you review the information on this screen, you can exit Oracle Universal Installer and proceed to the post-upgrade tasks.</p>

¹ You can access a log of the automated shutdown procedure executed by Oracle Universal Installer in the shutdownprocesses.log file, which is located in the cfgtoollogs directory in the destination Oracle home.

5.5.3.2 Upgrading 10g (9.0.4) Distributed OracleAS Identity Management Configurations

A distributed OracleAS Identity Management configuration consists of multiple Oracle homes. One of the Oracle homes contains the Oracle Internet Directory.

In a 10g (9.0.4) distributed OracleAS Identity Management installation, the other Oracle homes contain additional OracleAS Identity Management components, such as OracleAS Single Sign-On, Delegated Administration Services, Oracle Directory Integration and Provisioning, and OracleAS Certificate Authority.

To upgrade a 10g (9.0.4) distributed OracleAS Identity Management configuration (as shown in [Figure 5-3](#)), do the following:

1. Review [Section 5.5.3.3, "Verifying Whether OracleAS Identity Management Components are Enabled or Disabled"](#) to determine exactly which OracleAS Identity Management components will be upgraded.
2. Synchronize the system clocks on all nodes where the OracleAS Identity Management components reside so they are running within 250 seconds of each other.

When synchronizing the system clocks, make sure the clocks are set to the same time zone.

3. Upgrade the Oracle home that includes the Oracle Internet Directory used by the other OracleAS Identity Management components.

You must upgrade the Oracle Internet Directory first before upgrading the other distributed OracleAS Identity Management components.

To upgrade the Oracle Internet Directory Oracle home, use one of the following procedures, depending upon the type of installation used for the Oracle Internet Directory Oracle home:

- If the Oracle Internet Directory Oracle home includes its OracleAS Metadata Repository, then use the procedure in [Section 5.5.1, "Upgrading OracleAS Identity Management in a Colocated Infrastructure"](#)
- If the Oracle Internet Directory is in its own Oracle home, and the its OracleAS Metadata Repository resides in a different Oracle home, use the procedure in [Section 5.5.2, "Upgrading OracleAS Identity Management in a Non-Colocated 10g \(9.0.4\) Infrastructure"](#)

Note: If you are running only Oracle Internet Directory from the Oracle home, check to be sure the other OracleAS Identity Management components are disabled so they will not be upgraded or started in the destination 10g Release 2 (10.1.2) Oracle home.

For more information, see [Section 5.5.3.3, "Verifying Whether OracleAS Identity Management Components are Enabled or Disabled"](#).

4. Make sure that the OracleAS Metadata Repository database and database listener used by the distributed components are up and running.
5. Log in to the computer on which the distributed OracleAS Identity Management components are installed, as the same operating system user that performed the 10g (9.0.4) installation.

Note: The account you log in to install or upgrade the OracleAS Metadata Repository must be listed as a member of the Administrators group.

6. Make sure the Oracle Internet Directory server is upgraded to 10g Release 2 (10.1.2) and that it is up and running.

To verify that Oracle Internet Directory is running, enter one of the following commands.

Note: You may have to temporarily set the ORACLE_HOME environment variable to the Oracle Internet Directory Oracle home before running the ldapbind command.

After you verify that the Oracle Internet Directory is running, you must then make sure the ORACLE_HOME environment variable is not defined before you start the 10g Release 2 (10.1.2) installer, as directed in Step 6.

If you are running Oracle Internet Directory on a non-secure port:

```
SOURCE_ORACLE_HOME\bin\ldapbind -p Non-SSL_port
```

If you are running Oracle Internet Directory on a secure port:

```
SOURCE_ORACLE_HOME\bin\ldapbind -p SSL_port -U 1
```

These commands should return a "bind successful" message.

7. Be sure to set the environment variables, as defined in the section "Environment Variables" in the "Requirements" chapter of the *Oracle Application Server Installation Guide*.

In particular, be sure to set following variables so they do not reference any Oracle home directories:

- PATH
- CLASSPATH

In addition, be sure the following environment variables are not set:

- TNS_ADMIN
- ORACLE_HOME
- ORACLE_SID

8. If you the ORACLE_HOME environment variable was previously set, restart the host computer after unsetting the variable.

The system restart is necessary to clear the ORACLE_HOME variable from the system registry. If you do not restart the computer after clearing the ORACLE_HOME variable, the installation might report an error and prevent you from finishing the installation.

9. Mount the Oracle Application Server 10g Release 2 (10.1.2) CD-ROM and start the installer.

See Also: *Oracle Application Server Installation Guide* for detailed instructions about starting Oracle Universal Installer on your platform

10. Refer to [Table 5–4](#) for information on the options you should select on each screen.

11. After the End of Installation screen appears, exit Oracle Universal Installer and then verify that Oracle Internet Directory and Oracle Application Server Single Sign-On are functioning and accessible.

See Also: "Accessing the Single Sign-On Server" in the *Oracle Application Server Single Sign-On Administrator's Guide*

Table 5–4 Summary of the Oracle Universal Installer Screens During a 10g (9.0.4) Distributed OracleAS Identity Management Upgrade

Screen	Description and Recommended Options to Select
Welcome	Welcomes you to Oracle Universal Installer and the Oracle Application Server 10g Release 2 (10.1.2) installation procedure.
Specify File Locations	Enter a name and path for the new Oracle home. This new Oracle home will be the destination Oracle home for your Oracle Application Server 10g Release 2 (10.1.2) upgrade.
Select a Product to Install	Select Oracle Application Server Infrastructure 10g . If multiple languages are used in the OracleAS Infrastructure you are upgrading, then click Product Languages .
Language Selection	The screen appears only if you clicked Product Languages on the Select a Product to Install screen. If multiple languages are used in the OracleAS Infrastructure you are upgrading, select those languages. If you are not sure which languages were installed, but want languages other than English, click the double arrow button (>>) to select all languages.
Select Installation Type	Select Identity Management or Identity Management and Metadata Repository , depending upon the installation type you selected when you installed the distributed OracleAS Identity Management components. Note: It is very important that you select the same installation type that is used in the Oracle home you are upgrading. In this case, you are upgrading a non-colocated OracleAS Identity Management installation, so you must select Identity Management .
Upgrade Existing Infrastructure	This screen (Figure 5–5) appears when Oracle Universal Installer detects an existing Oracle Application Server installation of the same type as the one you selected on the Select Installation Type screen. Select the option to upgrade an existing OracleAS Infrastructure, and then select the Oracle home you want to upgrade from the drop-down list. (If there is only one Infrastructure of the selected time on the computer, then the drop-down list is inactive.)
Specify OID Login	Enter the Oracle Internet Directory superuser distinguished name (DN) in the Username field. The superuser DN <code>cn=orcladmin</code> is the default for this field; change this value if the Oracle Internet Directory superuser DN is not <code>cn=orcladmin</code> . Enter the password for the superuser DN in the Password field.
Specify Infrastructure Database Connection Information	Enter <code>SYS</code> in the Username field and the <code>SYS</code> user's password in the Password field.

Table 5–4 (Cont.) Summary of the Oracle Universal Installer Screens During a 10g (9.0.4) Distributed OracleAS Identity Management Upgrade

Screen	Description and Recommended Options to Select
Warning dialog box	<p>This dialog box warns you that all the clients of the OracleAS Identity Management installation must now be stopped. Oracle Universal Installer will automatically stop any clients within the source Oracle home automatically.¹</p> <p>However, you must manually stop any OracleAS Identity Management clients that reside in another Oracle home</p> <p>Clients of an OracleAS Identity Management instance include:</p> <ul style="list-style-type: none"> ■ OracleAS Identity Management components that are distributed and installed in another Oracle home ■ Middle tier instances that use this OracleAS Identity Management instance for authentication or identity services <p>Within each middle tier that uses this OracleAS Identity Management instance, you must be sure to stop all components, including Oracle HTTP Server and OracleAS Web Cache.</p> <p>For more information, see the chapter "Starting and Stopping " in the <i>Oracle Application Server Administrator's Guide</i>.</p>
Database Listener Warning Dialog Box	<p>If a database listener is running on the host, a warning dialog box displays. Review the dialog box determine whether or not you need to stop the listener manually.</p> <p>For more information, see Section 5.3.3, "Stopping the Database Listener When Prompted During the OracleAS Identity Management Upgrade".</p>
Specify Instance Name and ias_admin Password	<p>Enter a name for the new Oracle Application Server 10g Release 2 (10.1.2) instance and a password for the ias_admin Administrator account.</p> <p>You use the ias_admin password to log on to Application Server Control Console to manage Oracle Application Server.</p> <p>In general, the minimum length of the ias_admin password is five alphanumeric characters. At least one of the characters must be a number and the password cannot start with a number.</p> <p>For more information, see the section "The ias_admin User and Restrictions on its Password" in the <i>Oracle Application Server Installation Guide</i>.</p>
Summary	<p>Use this screen to confirm the choices you've made. Click Install to begin upgrading to the new 10g Release 2 (10.1.2) Oracle home.</p>
The Configuration Assistants	<p>After the initial software is installed, a set of configuration assistants automatically set up the components in the new 10g Release 2 (10.1.2) Oracle home. Use this screen to follow the progress of each assistant and to identify any problems during this phase of the installation.</p> <p>Notes:</p> <ul style="list-style-type: none"> ■ The Database Upgrade Assistant (DBUA) can take a significant amount of time to upgrade the database. For more information how long it takes to upgrade your database, see Section 3.3, "Planning for System Downtime". ■ While Database Upgrade Assistant is running, do not use the Stop button to interrupt the execution of Database Upgrade Assistant. If you press Stop, the underlying processes for Database Upgrade Assistant will continue to run. Also, Oracle Universal Installer will wait until those processes complete before returning control to the user.

Table 5–4 (Cont.) Summary of the Oracle Universal Installer Screens During a 10g (9.0.4) Distributed OracleAS Identity Management Upgrade

Screen	Description and Recommended Options to Select
End of Installation	<p>When the installation and upgrade is complete, this screen provides important details about the 10g Release 2 (10.1.2) Oracle home, such as the URL for the Application Server Control Console and the location of the <code>setupinfo.txt</code> file.</p> <p>After you review the information on this screen, you can exit Oracle Universal Installer and proceed to the post-upgrade tasks.</p>

¹ You can access a log of the automated shutdown procedure executed by Oracle Universal Installer in the `shutdownprocesses.log` file, which is located in the `cfgtoollogs` directory in the destination Oracle home.

5.5.3.3 Verifying Whether OracleAS Identity Management Components are Enabled or Disabled

When you upgrade a distributed OracleAS Identity Management configuration, the 10g Release 2 (10.1.2) installer will upgrade any OracleAS Identity Management components that are enabled in the source Oracle home.

An OracleAS Identity Management component is considered enabled when it is marked as such in the following configuration file in the source Oracle home:

`SOURCE_ORACLE_HOME\config\ias.properties`

Before you upgrade your Oracle Internet Directory installation in a distributed OracleAS Identity Management configuration, you can check the contents of this file to verify which components are enabled. If necessary, modify the entries to reflect exactly which components you have enabled, and as a result, which components will be upgraded.

The entries in the `ias.properties` file vary, depending upon whether you are upgrading a Release 2 (9.0.2) Oracle home or a 10g (9.0.4) Oracle home. Refer to the following sections for more information:

- [Verifying Enabled OracleAS Identity Management Components in a Release 2 \(9.0.2\) Oracle Home](#)
- [Verifying Enabled OracleAS Identity Management Components in a 10g \(9.0.4\) Oracle Home](#)

5.5.3.3.1 Verifying Enabled OracleAS Identity Management Components in a Release 2 (9.0.2) Oracle Home If you are running only Oracle Internet Directory in a Release 2 (9.0.2) Oracle home, the `ias.properties` file should contain the following entries:

```
SSO.LaunchSuccess=False
OID.LaunchSuccess=True
```

If there were other OracleAS Identity Management components configured in the Release 2 (9.0.2) source Oracle home after Release 2 (9.0.2) was installed, those other components, such as Oracle Delegated Administration Services (DAS), will not be upgraded to 10g Release 2 (10.1.2) in the destination Oracle home. If you want to run those other components in the 10g Release 2 (10.1.2) home, configure those components to the 10g Release 2 (10.1.2) destination Oracle home.

5.5.3.3.2 Verifying Enabled OracleAS Identity Management Components in a 10g (9.0.4) Oracle Home If you are running only Oracle Internet Directory in a 10g (9.0.4) Oracle home, the `ias.properties` file should contain the following entries:

```
SSO.LaunchSuccess=False
OID.LaunchSuccess=True
DAS.LaunchSuccess=False
DIP.LaunchSuccess=False
OCA.LaunchSuccess=False
```

On the other hand, if you are running OracleAS Single Sign-On, Oracle Delegated Administration Services, and Oracle Directory Integration and Provisioning in one Oracle home, but using Oracle Internet Directory in another Oracle home, the entries would appear as follows:

```
SSO.LaunchSuccess=True
OID.LaunchSuccess=False
DAS.LaunchSuccess=True
DIP.LaunchSuccess=True
OCA.LaunchSuccess=False
```

5.6 Task 5: Complete the OracleAS Identity Management Upgrade

This section details the post-upgrade procedures which will complete the Infrastructure upgrade to 10g Release 2 (10.1.2). It is organized into these sections:

- [Section 5.6.1, "Verifying the Application Server Control Console Port"](#)
- [Section 5.6.2, "About Administration Passwords After Upgrade"](#)
- [Section 5.6.3, "Enabling Secure Sockets Layer \(SSL\) for OracleAS Identity Management Components"](#)
- [Section 5.6.4, "Completing the Oracle Internet Directory Upgrade"](#)
- [Section 5.6.5, "Completing the OracleAS Single Sign-On Upgrade"](#)
- [Section 5.6.6, "Completing the Oracle Application Server Certificate Authority Upgrade"](#)
- [Section 5.6.7, "Completing the OracleAS Wireless Upgrade"](#)
- [Section 5.6.8, "Configuring Oracle Enterprise Manager 10g Database Control After OracleAS Identity Management Upgrade"](#)

5.6.1 Verifying the Application Server Control Console Port

After you upgrade your OracleAS Identity Management, you can use the Oracle Enterprise Manager 10g Application Server Control Console to manage the upgraded 10g Release 2 (10.1.2) OracleAS Identity Management instance.

However, the port used for the Application Server Control Console will be the port assigned by Oracle Universal Installer during the 10g Release 2 (10.1.2) installation. You will not be able to use the port number that was previously used by Enterprise Manager in the source Oracle home.

See Also: [Section 4.6.1, "About Port Values and the portlist.ini File After Upgrade"](#) for information about how port numbers are changed during the upgrade process

"Managing Ports" in the *Oracle Application Server Administrator's Guide* for information about changing the Application Server Control Console port after upgrade

5.6.2 About Administration Passwords After Upgrade

After you upgrade your Oracle Application Server instance, use the following passwords in the destination Oracle home:

- To log in to the Application Server Control Console, use the `ias_admin` password you defined during the installation of the destination Oracle home.
- To log in to the OracleAS Web Cache Manager, use the OracleAS Web Cache Administrator password you used in the OracleAS Web Cache source Oracle home.

5.6.3 Enabling Secure Sockets Layer (SSL) for OracleAS Identity Management Components

If you are upgrading distributed OracleAS Identity Management components that were configured to use SSL, you must re-enable SSL for the OracleAS Single Sign-On and Oracle Delegated Administration Services after the upgrade. For more information, see the following sections:

- [Enabling SSL for Oracle Internet Directory After Upgrade](#)
- [Enabling SSL for OracleAS Single Sign-On After Upgrade](#)
- [Enabling SSL for Oracle Delegated Administration Services After Upgrade](#)

5.6.3.1 Enabling SSL for Oracle Internet Directory After Upgrade

There is no need to enable SSL for Oracle Internet Directory, since the upgrade procedure automatically re-enables SSL for Oracle Internet Directory in the destination Oracle home if you were using SSL with Oracle Internet Directory in the source Oracle home.

5.6.3.2 Enabling SSL for OracleAS Single Sign-On After Upgrade

To enable SSL for OracleAS Single Sign-On, use the procedure described in the section "Enabling SSL" in the "Advanced Deployment Options" chapter of the *Oracle Application Server Single Sign-On Administrator's Guide*.

In particular, you must perform the following steps as described in that section of the *Oracle Application Server Single Sign-On Administrator's Guide*:

1. Enable SSL on the Single Sign-On middle tier.
2. Update `targets.xml`.
3. Protect Single Sign-On URLs.
4. Restart the Oracle HTTP Server and the Single Sign-On Middle Tier.
5. Register `mod_osso` with the SSL virtual host as documented in the section "Configuring `mod_osso` with Virtual Hosts" in the *Oracle Application Server Single Sign-On Administrator's Guide*.

5.6.3.3 Enabling SSL for Oracle Delegated Administration Services After Upgrade

If you have also configured Oracle Delegated Administration Services in the upgraded Oracle home, you must reconfigure the Oracle Delegated Administration Services URL.

To reconfigure the Oracle Delegated Administration Services URL:

1. Start the Oracle Directory Manager in the Oracle Delegated Administration Services Oracle home:

From the **Start** menu, choose **Programs**, then *ORACLE_HOME*, then **Integrated Management**, then **Oracle Directory Manager**.
2. Use the Navigator Pane to expand the directory tree until you locate the following entry:

```
cn=OperationUrls,cn=DAS,cn=Products,cn=OracleContext
```

3. Select the entry in the tree.

Oracle Directory Manager displays the attributes of the entry in the right pane of the Directory Manager window.
4. Change the `orclDasurlbase` attribute so it references the HTTPS, SSL URL for the Oracle Delegated Administration Services:

```
https://hostname:http_ssl_port_number/
```

For example:

```
https://mgmt42.acme.com:4489/
```

See Also: "Using Oracle Directory Manager" in the *Oracle Internet Directory Administrator's Guide*

5.6.4 Completing the Oracle Internet Directory Upgrade

To complete the Oracle Internet Directory Upgrade, you must perform the following tasks:

- [Section 5.6.4.1, "Running the oidpu904.sql Script to Recreate the orclnormdn Catalog"](#)
- [Section 5.6.4.2, "Running the Certificate Upgrade Tool \(upgradecert.pl\)"](#)
- [Section 5.6.4.3, "Configuring Oracle Internet Directory 10g Release 2 \(10.1.2\) for Release 2 \(9.0.2\) Middle Tiers"](#)
- [Section 5.6.4.4, "Modifying Access Policies After Oracle Internet Directory Upgrade"](#)
- [Section 5.6.4.5, "Resetting the Replication Wallet Password"](#)
- [Section 5.6.4.6, "Completing the Upgrade for the Oracle Directory Integration and Provisioning"](#)
- [Section 5.6.4.7, "Oracle Internet Directory Post-Upgrade Steps Required for OracleAS Portal"](#)
- [Section 5.6.4.8, "Running the oidstats.sql Script After Upgrading Oracle Internet Directory from 10g \(9.0.4\)"](#)
- [Section 5.6.4.9, "Modifying DSA Configuration Entries After Upgrade"](#)
- [Section 5.6.4.10, "Recreating Oracle Internet Directory Indexes After Upgrade"](#)

5.6.4.1 Running the oidpu904.sql Script to Recreate the orclnormdn Catalog

After you upgrade Oracle Internet Directory from Release 2 (9.0.2) to 10g Release 2 (10.1.2), you must run the `oidpu904.sql` script and recreate the `orclnormdn` catalog in the Oracle Internet Directory; otherwise, some Oracle Application Server components will not work correctly with the Oracle Internet Directory server.

Note that this procedure is not necessary if you have upgraded from Oracle Internet Directory 10g (9.0.4).

To perform this procedure:

1. Ensure that the ORACLE_HOME environment variable is set to destination Oracle home and the ORACLE_SID environment variable is set to the system identifier (SID) of the Infrastructure database.
2. Run following command:

```
sqlplus ods/ods_password@net_service_name_for_OID_database @DESTINATION_ORACLE_HOME\ldap\admin\oidpu904.sql
```

For example:

```
sqlplus ods/welcome1@iasdb @DESTINATION_ORACLE_HOME\ldap\admin\oidpu904.sql
```

Note: When you upgrade Oracle Internet Directory to 10g Release 2 (10.1.2), the password for the Oracle Internet Directory schema (ODS) is reset to the password for the `ias_admin` password.

3. Re-create the index for the `orclnormdn` attribute by executing the `catalog.sh` script, which drops and re-creates the catalog for the `orclnormdn` attribute.

- a. Ensure that the Oracle Internet Directory server is operating in read-only mode.

To set the server to read-only mode, first create an LDIF file named `readonly.ldif` that contains the following lines:

```
dn:
changetype:modify
replace:orclservermode
orclservermode:r
```

Then, run the following command:

```
ORACLE_HOME\bin\ldapmodify -p oid_port -D cn=orcladmin
-w orcladmin_passwd -v -f readonly.ldif
```

In the example, replace `oid_port` with the listening port of the directory server and replace `orcladmin_password` with the password of the superuser DN (`cn=orcladmin`).

- b. Set the PATH variable to include the `DESTINATION_ORACLE_HOME/bin` directory.
 - c. Issue these commands to re-create the index for the `orclnormdn` attribute:

```
DESTINATION_ORACLE_HOME\ldap\bin\catalog.sh -connect oid_database_net_
service_name -delete -attr orclnormdn
```

```
DESTINATION_ORACLE_HOME\ldap\bin\catalog.sh -connect oid_database_net_
service_name -add -attr orclnormdn
```

See Also: Section "1.1.2 UNIX Emulation Utilities for Windows" in the *Oracle Identity Management User Reference* for information about running the `catalog.sh` script on Microsoft Windows

4. Reset the Oracle Internet Directory server to operate in read-write mode.

To set the server to read-write mode, first create an LDIF file named `readwrite.ldif` that contains the following lines:

```
dn:  
changetype:modify  
replace:orclservermode  
orclservermode:rw
```

Then, run the following command:

```
ORACLE_HOME\bin\ldapmodify -p oid_port -D cn=orcladmin  
-w orcladmin_passwd -v -f readwrite.ldif
```

In the example, replace `oid_port` with the listening port of the directory server and replace `orcladmin_password` with the password of the superuser DN (`cn=orcladmin`).

5.6.4.2 Running the Certificate Upgrade Tool (`upgradecert.pl`)

Starting with release 10.1.2, a certificate hash value can be used to bind to Oracle Internet Directory. The introduction of this hash value requires that user certificates issued before release 10.1.2 be updated in the directory. This is a post-upgrade step and it is required only if user certificates are provisioned in the directory. The `upgradecert.pl` tool is used for this purpose.

Complete instructions for running the Certificate Upgrade Tool are available in Appendix A, "Syntax for LDIF and Command-Line Tools," in the *Oracle Internet Directory Administrator's Guide*.

5.6.4.3 Configuring Oracle Internet Directory 10g Release 2 (10.1.2) for Release 2 (9.0.2) Middle Tiers

Before you can use Release 2 (9.0.2) middle tiers against the upgraded 10g Release 2 (10.1.2) Oracle Internet Directory, you must run `configure Oracle Internet Directory` using the `imconfig` script.

For information on using the `imconfig` script, see [Section 4.2.1, "Before Installing the 10g Release 2 \(10.1.2\) Middle Tier Against a Release 2 \(9.0.2\) Oracle Internet Directory"](#).

5.6.4.4 Modifying Access Policies After Oracle Internet Directory Upgrade

During the Oracle Internet Directory upgrade, LDAP objects within the directory are modified or added to the Oracle Internet Directory. These updates often include access control information.

In a production environment, customized access control policies are often enforced in the directory. For this reason, the upgrade process leaves certain entries in the directory untouched intentionally to retain any customized behaviour you may have implemented in the directory.

Further, in some cases, the default, out-of-the-box access control settings are required for Oracle components to function properly. As a result, after the Oracle Internet Directory upgrade, you should analyze the differences between the default, out-of-the-box access control policies and any custom policies you have implemented. The result of this task should be a new set of customized access control policies that will meet the requirements of Oracle components, as well as the access control policies of your organization.

Even if you have not implemented any customized access control policies, Oracle strongly recommends that you manually update the ACLs with the new default values after an upgrade.

The following example uses "dc=acme, dc=com" as a default realm DN. In this example, consider the following when analyzing the ACL policy for your directory:

- Realm DN (eg. dc=acme, dc=com)
- Parent of the Realm DN. This is also known as the Realm Search Base, for example, "dc=com".
- Realm User container. This is also known as the Realm User Search Base, for example, "cn=Users, dc=acme, dc=com". Depending on the deployment requirement, this can be customized.
- Realm Group container. This is also known as the Realm Group Search Base, for example, "cn=Groups, dc=acme, dc=com". Depending on the deployment requirement, this can be customized.

The out-of-the-box access control policies is available in the following files:

- Policies for the Parent of Realm DN can be found in the following file:
`$ORACLE_HOME/ldap/schema/oid/oidDefaultSubscriberConfig.sbs`
- Policies for the Realm DN, Realm User container, and Realm Group container can be found in:
`$ORACLE_HOME/ldap/schema/oid/oidSubscriberCreateAuxDIT.sbs`

The default ACL policy is described in the *Oracle Internet Directory Administrator's Guide*, in Chapter 17, in the section on "Default Privileges for Reading Common Group Attributes".

5.6.4.5 Resetting the Replication Wallet Password

If you upgrade a 9.0.x node to 10g Release 2 (10.1.2) and then try to set up replication for this node, the replication server will fail to come up and the replication setup itself may fail. Therefore, before setting up replication, reset the replication wallet password on the upgraded 10g Release 2 (10.1.2) node by using the following command:

```
DESTINATION_ORACLE_HOME\bin\remtool -presetpwd -v -bind host:port
```

This step ensures that the upgrade node can be configured in replication, if required.

5.6.4.6 Completing the Upgrade for the Oracle Directory Integration and Provisioning

If you had an older version (9.0.2 or 9.0.4) of the Directory Integration Platform (DIP) operating in a different Oracle home, on a different computer, and using the Oracle Internet Directory you are currently upgrading, and you want to continue using the DIP, you must re-register the DIP server.

See Also: *Oracle Identity Management Integration Guide* for instructions on registering the DIP server.

5.6.4.7 Oracle Internet Directory Post-Upgrade Steps Required for OracleAS Portal

The following post-upgrade steps are required if you have configured OracleAS Portal against this Identity Management and Oracle Internet Directory was upgraded directly from Release 2 (9.0.2):

- [Apply Interoperability Patches for Oracle9iAS Portal Release 2 \(9.0.2\)](#)
- [Reconfigure the OracleAS Portal Instances for the Oracle Internet Directory Server](#)
- [Refresh the Oracle Delegated Administration Services \(DAS\) URL Cache](#)

5.6.4.7.1 Apply Interoperability Patches for Oracle9iAS Portal Release 2 (9.0.2) If Oracle Internet Directory was upgraded directly from Release 2 (9.0.2), and you are operating Oracle9iAS Portal Release 2 (9.0.2 or 9.0.2.3), an interoperability patch must be applied to the Oracle9iAS repository, as explained below. This step can be skipped if the Oracle9iAS Portal version is 9.0.2.6 or later:

- **If you are operating Portal version 9.0.2.0 or 9.0.2.2 (Oracle9iAS 9.0.2.0.1):** You must apply Patch 3238095, which corrects problems with registering users and groups in Oracle9iAS Release 2 (9.0.2) Identity Management configuration, and resolves interoperability issues.
- **If you are operating Portal 9.0.2.3 (Oracle9iAS 9.0.2.3):** You must apply Patch 3076511 to resolve interoperability issues.

To apply the patches:

1. Log in to Oracle MetaLink at:
<http://metalink.oracle.com>
2. Locate the patch specified for the Portal version you are operating.
3. Follow the instructions in the patch Readme file.

5.6.4.7.2 Reconfigure the OracleAS Portal Instances for the Oracle Internet Directory Server If Oracle Internet Directory was upgraded directly from Release 2 (9.0.2), and if there are any OracleAS Portal instances using the upgraded Oracle Internet Directory server, they should be reconfigured. Follow these steps to reconfigure OracleAS Portal from a middle tier whose version is 10g (10.1.2):

1. Change directory to the following location in the destination middle tier Oracle home:

```
DESTINATION_ORACLE_HOME\portal\conf
```

2. Run the following command:

```
ptlconfig -dad portal_DAD -oid
```

See Also: *Oracle Application Server Portal Configuration Guide*

If the version of your middle-tier is lower than 10.1.2, you must use the Oracle Portal Configuration Assistant command line utility `ptlasst` to reconfigure OracleAS Portal instances to work with Oracle Internet Directory. Refer to the appropriate version of the *Oracle Application Server Portal Configuration Guide* for instructions on how to use `ptlasst`.

5.6.4.7.3 Refresh the Oracle Delegated Administration Services (DAS) URL Cache The URLs for the Delegated Administration Services are different in Oracle9iAS Release 2 (9.0.2) Oracle Internet Directory server and the Oracle Application Server 10g Release 2 (10.1.2) Oracle Internet Directory server. When the Oracle Internet Directory server is upgraded, these URLs are updated to the correct values. However, OracleAS Portal maintains a cache of these URLs, which does not get upgraded, and is therefore inconsistent with the set of URLs in 10g Release 2 (10.1.2).

If Oracle Internet Directory was upgraded directly from Release 2 (9.0.2), the DAS URL cache will have to be refreshed. The procedure for refreshing the cache is dependent on the OracleAS Portal version you have. To refresh the cache, follow the steps in one of the sections below:

To refresh the URL cache in Version 9.0.2.6 or later:

1. Log in to the Portal as a Portal administrator.
2. Click the **Administer** tab.
3. Click the **Global Settings** link in the **Services** portlet.
4. Click the **SSO/OID** tab.
5. Note the values that appear under the section **Cache for OID Parameters**.
6. Click the check box next to **Refresh Cache for OID Parameters**.
7. Click **Apply**.
8. Verify that the values displayed under **Cache for OID Parameters** have changed.
9. Click **OK**.

To refresh the URL cache in versions prior to 9.0.2.6:

1. Apply the one-off patch 3225970. This patch is available at:
<http://metalink.oracle.com>.
2. Clear the Web Cache by performing these steps:
 - a. Log in to the Portal as a Portal Administrator.
 - b. Click the **Administer** tab.
 - c. Click the **Global Settings** link in the **Services** portlet.
 - d. Click the **Cache** tab.
 - e. Click the check box next to **Clear the Entire Web Cache**.
 - f. Click **OK**.
3. Clear the middle tier cache by performing a recursive delete of all the files and subdirectories inside the following directory:

`DESTINATION_ORACLE_HOME\Apache\modplsql\cache`

5.6.4.8 Running the oidstats.sql Script After Upgrading Oracle Internet Directory from 10g (9.0.4)

After you upgrade Oracle Internet Directory from 10g (9.0.4) to 10g Release 2 (10.1.2), you could observe some degradation in the performance of some LDAP queries.

To remedy this issue, perform the following procedure, which updates some database statistics in the Oracle Database 10g database that hosts the Oracle Internet Directory server:

1. In the newly upgraded Oracle Internet Directory Oracle home, execute the following SQL script by connecting to the OID database as the ODS database user:
`sqlplus ods/<passwd> @%ORACLE_HOME%/ldap/admin/oidstats.sql`
2. Restart the Oracle Internet Directory server as follows:
 - a. Run the following command to stop the Oracle Internet Directory server:

```
opmnctl stopproc ias-component=OID
```

- b. Wait a few seconds for the Oracle Internet Directory server to shut down completely.
- c. Run the following command to start the Oracle Internet Directory server:

```
opmnctl startproc ias-component=OID
```

Similarly, if you are running in an environment where the database that hosts the Oracle Internet Directory is upgraded before you upgrade the Oracle Internet Directory, you should gather the database statistics immediately after the database upgrade by running the following SQL command on the database:

```
exec dbms_stats.gather_schema_stats('ODS');
```

5.6.4.9 Modifying DSA Configuration Entries After Upgrade

When you upgrade Oracle Internet Directory from 10g (9.0.4) to 10g Release 2 (10.1.2), all attributes in the DSA Configuration entry are reset to their default values. For example:

```
cn=dsaconfig,cn=configsets,cn=oracle internet directory
```

As a result, if any attributes in this entry were modified before the upgrade, you must reconfigure them to their values before the upgrade.

5.6.4.10 Recreating Oracle Internet Directory Indexes After Upgrade

When you upgrade Oracle Internet Directory from 10g (9.0.4) to 10g Release 2 (10.1.2), some indexes are recreated automatically by the upgrade procedure. For example, the `EI_attrstore` index is recreated automatically during the upgrade.

As a result, if you recreated the `EI_attrstore` index before the upgrade, then the index will have to be recreated again after the upgrade. Note that recreating the `EI_attrstore` index is part of the performance recommendation for large group entry lookups described in section "21.8.1 Optimizing Searches for Large Group Entries" of the *Oracle Internet Directory Administrator's Guide*. If you performed this procedure prior to the upgrade to 10g Release 2 (10.1.2), you will need to perform this task again after the upgrade.

5.6.5 Completing the OracleAS Single Sign-On Upgrade

To complete the OracleAS Single Sign-On upgrade, depending on the configuration upgraded, you may need to perform the tasks described in the following sections:

- [Section 5.6.5.1, "Re-configuring the OracleAS Single Sign-On Middle Tier"](#)
- [Section 5.6.5.2, "Configuring Third-party Authentication"](#)
- [Section 5.6.5.3, "Installing Customized Pages in the Upgraded Server"](#)
- [Section 5.6.5.4, "Converting External Application IDs"](#)
- [Table 5.6.5.5, "Setting Up OracleAS Single Sign-On Replication"](#)
- [Section 5.6.5.6, "Upgrading the OracleAS Single Sign-On Server with a Customized Middle Tier"](#)
- [Section 5.6.5.7, "Troubleshooting Wireless Voice Authentication"](#)
- [Section 5.6.5.8, "Installing Languages in the OracleAS Single Sign-On Server"](#)

- [Section 5.6.5.9, "Re-Registering OracleAS Portal with the Upgraded OracleAS Single Sign-On Server"](#)
- [Section 5.6.5.10, "Re-Registering mod_osso with the Upgraded OracleAS Single Sign-On Server"](#)
- [Section 5.6.5.11, "Using an Upgraded Identity Management Configuration with Oracle9iAS Discoverer Release 2 \(9.0.2\)"](#)
- [Section 5.6.5.12, "Inactivity Timeout Issues When Upgrading From Release 2 \(9.0.2\) to 10g Release 2 \(10.1.2\)"](#)
- [Section 5.6.5.13, "Removing Obsolete OracleAS Single Sign-On Partner Applications"](#)

5.6.5.1 Re-configuring the OracleAS Single Sign-On Middle Tier

If the Release 2 (9.0.2) or 10g (9.0.4) middle tier for the Single Sign-On server had custom configurations (for example, Oracle HTTP Server configured for SSL, or the Oracle Application Server Single Sign-On server Database Access Descriptor had any custom configuration), then you must re-configure the upgraded 10g Release 2 (10.1.2) middle tier in a like manner.

See Also: *Oracle Application Server Single Sign-On Administrator's Guide* for instructions on configuring the middle tier.

If you are using OracleAS Portal and you reconfigure the 10g Release 2 (10.1.2) middle tier for SSL, the URL used for Oracle Delegated Administration Services might not be up-to-date. To remedy this problem, force a refresh of the portal cache, which holds the relevant Oracle Internet Directory information:

1. Logon to OracleAS Portal as a user with administrator privileges.
2. Go to the Builder.
3. Click the **Administration** tab.
4. From the Portal tab, open Global Settings and navigate to the SSO/OID tab.
5. Scroll to the bottom of the page.
6. Check **Refresh Cache** for the Oracle Internet Directory parameters.
7. Click **Apply**.

The page should refresh with the appropriate value in the DAS Host Name field.

See Also: *Oracle Application Server Portal Configuration Guide*

5.6.5.2 Configuring Third-party Authentication

If the Release 2 (9.0.2) or 10g (9.0.4) middle tier was configured to authenticate with a user certificate or third party authentication mechanism, then you must re-configure the 10g Release 2 (10.1.2) OracleAS Single Sign-On server in a like manner.

See Also: *Oracle Application Server Single Sign-On Administrator's Guide*, Chapter 13, for instructions on configuring the middle tier.

5.6.5.3 Installing Customized Pages in the Upgraded Server

If you have customized the login, password and the sign-off pages in the Release 2 (9.0.2) or 10g (9.0.4) Single Sign-On server, then you must update those pages with 10g Release 2 (10.1.2) specifications. This is also applicable if you have enabled support for

Application Service Providers and updated the deployment login page to enable the company field.

See Also: *Oracle Application Server Single Sign-On Administrator's Guide*, Chapter 12, for instructions on configuring the middle tier.

5.6.5.4 Converting External Application IDs

Note: You do not need to perform this task if you upgraded from an OracleAS Single Sign-On version of 9.0.2.5 or later.

You can verify the version of OracleAS Single Sign-On you are running by running the following SQL statement against the OracleAS Single Sign-On database:

```
select version from orasso.wwc_version$;
```

It should return a value like 9.0.2.5.x.

To avoid ID conflicts while exporting and importing external application data among multiple OracleAS Single Sign-On server instances, external application IDs must be unique. In the Release 2 (9.0.2) release, external application IDs were sequential, and not unique across instances. If you are upgrading from Release 2 (9.0.2) directly to 10g Release 2 (10.1.2), then you must convert existing short external application IDs to the longer format in the OracleAS Single Sign-On schema. Follow the steps below to convert the IDs:

1. Set the ORACLE_HOME environment variable to the Oracle home of the OracleAS Single Sign-On instance.
2. Execute the following script from the OracleAS Single Sign-On Oracle home, by using the following commands:

```
sqlplus orasso/password
spool extappid.log
@?/sso/admin/plsql/sso/ssoupeid.sql
spool off
```

See Also: "Obtaining the Single Sign-On Schema Password" in the *Oracle Application Server Single Sign-On Administrator's Guide*

Note: The ssoupeid.sql script generates and displays the SSO_IDENTIFIER. You might need the SSO_IDENTIFIER value to apply the patches to the OracleAS Portal schema if the value cannot be generated in the OracleAS Portal schema automatically or if the OracleAS Single Sign-On server used a randomly selected value for the SSO_IDENTIFIER.

3. If you are not upgrading OracleAS Portal to 10g Release 2 (10.1.2), but you have upgraded OracleAS Single Sign-On from Release 2 (9.0.2) directly to 10g Release 2 (10.1.2), you must apply a patch to each OracleAS Portal instance that is not going to be upgraded to 10g Release 2 (10.1.2).

Refer to [Table 5-5](#) for the appropriate patch number. Patches are available at:

<http://metalink.oracle.com/>

Table 5–5 OracleAS Portal Patches for Converting to Long Format Application IDs

OracleAS Portal Version	Patch Number
3.0.9.8.4	2769007
3.0.9.8.5	2665597
9.0.2, 9.0.2.3	2665607
9.0.2.6	4029584
9.0.4	4037687
9.0.4.1	4029587

5.6.5.5 Setting Up OracleAS Single Sign-On Replication

If you are using Oracle Internet Directory replication and want to also use OracleAS Single Sign-On replication, add the upgraded 10g Release 2 (10.1.2) tables in the replication group along with 9.0.4 Oracle Internet Directory. Follow the steps below to add OracleAS Single Sign-On tables for replication:

1. Stop the Oracle Internet Directory replication server on all replicas of the Directory Replication Group.
2. On the Master Directory replica, in %ORACLE_HOME%\ldap\admin, issue the following command:


```
sqlplus repadmin/password@<mds connect id> @oidrssou.sql
```
3. Start the Oracle Internet Directory replication server on all replicas of the Directory Replication Group.

See Also: Oracle Internet Directory Administrator's Guide, Chapter 25, "Managing Directory Replication", for instructions.

5.6.5.6 Upgrading the OracleAS Single Sign-On Server with a Customized Middle Tier

If the Release 2 (9.0.2) or 10g (9.0.4) OracleAS Single Sign-On server was using a middle tier other than the default mid-tier installation along with the OracleAS Single Sign-On server, then you must configure that middle tier to point to the upgraded OracleAS Single Sign-On server.

For example, if there was a reverse proxy configured in the Release 2 (9.0.2) or 10g (9.0.4) OracleAS Single Sign-On server middle tier, then you must configure it on the 10g Release 2 (10.1.2) OracleAS Single Sign-On server middle tier.

5.6.5.7 Troubleshooting Wireless Voice Authentication

If you want to use wireless voice authentication with the 10g Release 2 (10.1.2) OracleAS Single Sign-On server, and it doesn't work, verify that the OracleAS Single Sign-On server entry is a member of the Verifier Services Group in Oracle Internet Directory (cn=verifierServices, cn=Groups, cn=OracleContext). This is a requirement for the wireless voice authentication feature. Follow the steps below to verify membership:

1. Issue the following command:

```
ldapsearch -h host
-p port
-D "cn=orcladmin"
-w password
```

```
-b "cn=verifierServices, cn=Groups, cn=OracleContext" "objectclass=*
```

The OracleAS Single Sign-On server is a member of the Verifier Services Group if it is listed as a `uniquemember` in the entry, as shown in [Example 5–1](#).

Example 5–1 OracleAS Single Sign-On Server `uniquemember` Listing

```
cn=verifierServices, cn=Groups, cn=OracleContext
.
.
.
uniquemember=orclApplication
CommonName=ORASSO_SSOSERVER, cn=SSO, cn=Products, cn=OracleContext
.
.
.
```

5.6.5.8 Installing Languages in the OracleAS Single Sign-On Server

If you did not select any languages during the OracleAS Single Sign-On upgrade, or you want to install additional languages after the upgrade, you can install the necessary languages by following the steps below.

1. Copy the necessary language files from the Repository Creation Assistant CD-ROM to the OracleAS Single Sign-On server Oracle home:

```
copy repCA_CD\portal\admin\plssql\nlsres\ctl\lang\*. * DESTINATION_ORACLE_
HOME\sso\nlsres\ctl\lang
```

In this example, `lang` is the language code. For example, the language code for Japanese is `ja`.

2. Load the languages into the server.

See Also: *Oracle Application Server Single Sign-On Administrator's Guide*, Chapter 2, "Configuring Globalization Support" section, for instructions on loading the languages.

5.6.5.9 Re-Registering OracleAS Portal with the Upgraded OracleAS Single Sign-On Server

After performing a distributed Identity Management upgrade (depicted in [Figure 5–2](#) and [Figure 5–3](#)) from Oracle*9i*AS Release 2 (9.0.2) to Oracle Application Server 10g Release 2 (10.1.2), the OracleAS Single Sign-On schemas are relocated in the Oracle Internet Directory database. OracleAS Portal keeps a database link reference to the OracleAS Single Sign-On server password store schema `ORASSO_PS`. This link reference must be updated.

To re-register OracleAS Portal with the upgraded OracleAS Single Sign-On server from a middle tier whose version is 10g (10.1.2):

1. Change directory to the following location in the destination middle tier Oracle home:

```
DESTINATION_ORACLE_HOME\portal\conf
```

2. Run the following command:

```
ptlconfig -dad portal_DAD -sso
```

See Also: *Oracle Application Server Portal Configuration Guide*, for more information about the `ptlconfig` tool

If the version of your middle-tier is lower than 10.1.2, you must use the Oracle Portal Configuration Assistant command line utility `ptlasst` to reregister OracleAS Portal with Oracle Single Sign-On. Refer to the appropriate version of the *Oracle Application Server Portal Configuration Guide* for instructions on how to use `ptlasst`.

5.6.5.10 Re-Registering mod_osso with the Upgraded OracleAS Single Sign-On Server

After performing a distributed Identity Management upgrade (depicted in [Figure 5–2](#) and [Figure 5–3](#)) from Oracle9iAS Release 2 (9.0.2) to Oracle Application Server 10g Release 2 (10.1.2), you may need to re-register `mod_osso` in order for an Oracle9iAS Release 2 (9.0.2) middle tier to operate with the upgraded OracleAS Single Sign-On server.

You will need to do this if the Oracle HTTP Server host and port information for `mod_osso` was changed. Before re-registering `mod_osso`, you must first set the value of the `CollocatedDBCommonName` attribute in the following configuration file to the global database name of the new OracleAS Single Sign-On server database shared with Oracle Internet Directory (for example, `iasdb.host.mydomain`).

```
SOURCE_ORACLE_HOME\config\ias.properties
```

5.6.5.11 Using an Upgraded Identity Management Configuration with Oracle9iAS Discoverer Release 2 (9.0.2)

If you upgraded an Identity Management configuration that was in use by Oracle9iAS Discoverer Release 2 (9.0.2), and you want to continue operating Oracle9iAS Discoverer Release 2 (9.0.2) with the upgraded Identity Management, then you must change the value of the `CollocatedDBCommonName` attribute in the following configuration file:

```
SOURCE_ORACLE_HOME\config\ias.properties
```

The value must be changed to the global database name of the database used by the upgraded Oracle Internet Directory (for example, `iasdb.oid_host_name.domain`).

5.6.5.12 Inactivity Timeout Issues When Upgrading From Release 2 (9.0.2) to 10g Release 2 (10.1.2)

If you are upgrading OracleAS Single Sign-On server from Release 2 (9.0.2) to 10g Release 2 (10.1.2) and you are using the inactivity timeout feature, then you must do the following:

1. Upgrade associated mid-tiers used by other applications, such as Portal, to 10g Release 2 (10.1.2).
2. Re-register `mod_osso` to ensure that inactivity timeout cookie issued by 10g Release 2 (10.1.2) OracleAS Single Sign-On server can be interpreted and used by associated mid-tiers to enforce inactivity timeout.

5.6.5.13 Removing Obsolete OracleAS Single Sign-On Partner Applications

After the upgrade, you will notice additional partner applications on the OracleAS Single Sign-On Partner Application administration page.

For example, you will notice two Oracle Application Server Certificate Authority (OCA) partner applications and two OracleAS Wireless partner applications.

You can safely remove the 10g (9.0.4) OCA partner application that uses port 4400.

See Also: [Section 5.7.2, "Testing Oracle Application Server Certificate Authority After Upgrade"](#)

As for the OracleAS Wireless partner applications, the 10g Release 2 (10.1.2) Oracle HTTP Server configuration is changed after during the upgrade to use the 10g (9.0.4) HTTP Server port; this partner application is not valid and can be removed. The valid OracleAS Wirelesspartner application is the upgraded partner application, which existed in the 10g (9.0.4) environment.

5.6.6 Completing the Oracle Application Server Certificate Authority Upgrade

After you use Oracle Universal Installer and the 10g Release 2 (10.1.2.0.2) installation procedure to upgrade Oracle Application Server Certificate Authority (OCA), verify the following database settings:

- Verify that the **Database Pool Size** is set to **20**
- Verify that the **Database Pool Scheme** is set to **Dynamic scheme**.

See Also: "Configuring Oracle Application Server Certificate Authority" in the *Oracle Application Server Certificate Authority Administrator's Guide*

5.6.7 Completing the OracleAS Wireless Upgrade

The following sections describe the tasks you must perform in order to complete the Oracle Application Server Wireless upgrade:

- [Section 5.6.7.1, "Upgrading Wireless User Accounts in Oracle Internet Directory"](#)
- [Section 5.6.7.2, "Adding Unique Constraint on the orclWirelessAccountNumber Attribute in Oracle Internet Directory"](#)
- [Section 5.6.7.3, "Disabling Oracle Application Server Wireless Upgrade Triggers in the Infrastructure Repository"](#)
- [Section 5.6.7.4, "Activating All OracleAS Wireless 10g Release 2 \(10.1.2\) Features"](#)
- [Section 5.6.7.5, "Assigning Change Password Privilege to OracleAS Wireless"](#)
- [Section 5.6.7.6, "Specifying URL Query Parameters for Wireless Services That Use the HTTP Adapter"](#)

5.6.7.1 Upgrading Wireless User Accounts in Oracle Internet Directory

In Oracle Application Server Wireless Release 2 (9.0.2), user account numbers and PINs for wireless voice authentication were stored in the Wireless repository.

In Oracle Application Server Wireless 10g Release 2 (10.1.2), new attributes are added in the object definition of the `orcluserV2` object class of Oracle Internet Directory to store the account number and PIN. As part of the Oracle Application Server Wireless upgrade from Release 2 (9.0.2) to 10g Release 2 (10.1.2), user account numbers and PINs must be transferred from the Wireless repository to Oracle Internet Directory.

This upgrade step can be performed only after the Oracle Application Server Infrastructure and all middle tiers are upgraded to 10g Release 2 (10.1.2). If they are not upgraded, the Oracle Application Server Wireless server will continue to authenticate voice devices locally (without Oracle Application Server Single Sign-On).

To upgrade the account numbers and PINs:

1. Issue the command:

```

DESTINATION_ORACLE_HOME\wireless\bin\migrate902VoiceAttrsToOID.bat
DESTINATION_ORACLE_HOME
ldapmodify_location
userdn
password
dif_file_location
log_file

```

In this example:

- *ldapmodify_location* is the location of the `ldapmodify` utility, which is usually in the `bin` directory of the destination Oracle home.
- *user_dn* is the DN of the Oracle Internet Directory administrator user
- *password* is the password of the Oracle Internet Directory administrator user
- *ldif_file_location* is the absolute path to the `ldif` (Lightweight Directory Interchange Format) file. This file contains user account numbers and PINs and is uploaded to Oracle Internet Directory by the `ldapmodify` utility. This temporary file may be removed after the user upgrade procedure has been completed successfully.
- *log_file* is the absolute path to the log file

Example:

```

migrate902VoiceAttrsToOID.bat
c:\oracle\ias904\
c:\oracle\ias904\bin\ldapmodify
"cn=orcladmin"
welcome1
c:\oracle\ias904\users.ldif
c:\oracle\ias904\users.log

```

5.6.7.2 Adding Unique Constraint on the `orclWirelessAccountNumber` Attribute in Oracle Internet Directory

In 10g Release 2 (10.1.2), Oracle Internet Directory does not automatically set unique constraints on any user attributes. Wireless voice authentication will not function properly unless a unique constraint is set on the `orclWirelessAccountNumber` attribute of the `orclUserV2` object class.

Set the unique constraint by performing the steps below after the middle tier and infrastructure upgrades are complete.

1. Execute the script `addAccountNumberUniqueConstraint.bat`, which is located in the following directory:

```
DESTINATION_ORACLE_HOME\wireless\bin
```

The script takes one argument, the full path to the Oracle home. For example:

```
addAccountNumberUniqueConstraint.bat DESTINATION_ORACLE_HOME
```

2. Restart the Oracle Internet Directory server.

5.6.7.3 Disabling Oracle Application Server Wireless Upgrade Triggers in the Infrastructure Repository

When Oracle Application Server Wireless 10g Release 2 (10.1.2) is installed against an Oracle9iAS Release 2 (9.0.2) infrastructure, a number of triggers are automatically installed, that ensure that both Oracle9iAS Wireless Release 2 (9.0.2) and Oracle

Application Server Wireless 10g Release 2 (10.1.2) middle tiers can function correctly. Once all Oracle9iAS Wireless Release 2 (9.0.2) middle tiers and the infrastructure tier have been upgraded to Oracle Application Server Wireless 10g Release 2 (10.1.2), you must execute the following script to disable any upgrade-related triggers.

```
disable902-904_trg.bat
```

This script is located in the following directory:

```
DESTINATION_ORACLE_HOME\wireless\bin
```

You must set the ORACLE_HOME environment variable before you execute the script.

5.6.7.4 Activating All OracleAS Wireless 10g Release 2 (10.1.2) Features

When Oracle Application Server Wireless 10g Release 2 (10.1.2) is installed against an Oracle9iAS Release 2 (9.0.2) Infrastructure, a number of features are disabled by default, as they are not compatible with existing Oracle9iAS Wireless Release 2 (9.0.2) middle tiers that are installed against the same Infrastructure. After all Oracle9iAS Wireless Release 2 (9.0.2) middle tiers have been upgraded to Oracle Application Server Wireless 10g Release 2 (10.1.2), you can manually enable these features. Once you have enabled these features, the Oracle9iAS Wireless Release 2 (9.0.2) middle tiers will no longer function correctly.

Enable the Oracle Application Server Wireless 10g Release 2 (10.1.2) features by executing the following script from any of the Oracle Application Server Wireless 10g Release 2 (10.1.2) middle tiers, using the command below. This script is in the following directory of the destination Oracle home:

```
DESTINATION_ORACLE_HOME\wireless\bin
```

The command takes the following arguments:

```
upload.bat wireless_repository_location -l wireless_user_name/wireless_password
```

In this example:

- *wireless_repository_location* is the relative path to the OracleAS Wireless XML-based repository
- *wireless_user_name* is the name of the Oracle Application Server Wireless user
- *wireless_password* is the password of the Oracle Internet Administrator

For example:

```
upload.bat ..\repository\xml\activate-9040.xml -l orcladmin/welcome1
```

5.6.7.5 Assigning Change Password Privilege to OracleAS Wireless

In Oracle Application Server 10g Release 2 (10.1.2), by default, the OracleAS Wireless application entity does not have the privileges to change the user password. Consequently, upon installation, users cannot change the password to the OracleAS Wireless server. However, you can enable functionality to change passwords by assigning the UserSecurityAdmins privilege to the OracleAS Wireless application entity.

To do this, execute the following script:

```
DESTINATION_ORACLE_HOME\wireless\bin\assignUserSecurityAdminsPrivilege.bat
```

The syntax is:

```
assignUserSecurityAdminsPrivilege.bat oid_super_user_dn user_password
```

In this example:

- *oid_super user_dn* is the Distinguished Name of the Oracle Internet Directory super user. This user should have privileges to grant UserSecurityAdmins privileges to application entities.
- *user_password* is the password of the Oracle Internet Directory super user.

For example:

```
assignUserSecurityAdminsPrivilege.bat "cn=orcladmin" welcome1
```

See Also: "Resetting the Password" in *Oracle Application Server Wireless Administrator's Guide*

5.6.7.6 Specifying URL Query Parameters for Wireless Services That Use the HTTP Adapter

When you use the HTTP adapter to build Wireless services, one of the service parameters that you must specify is the URL to a back-end application. In some cases, you may send some query parameters to the back-end application. There are two ways to do this from OracleAS Wireless, shown in [Example 5-2](#) and [Example 5-3](#). In [Example 5-2](#), the parameter name is `fn` and the value is `Joe`.

Example 5-2 URL Using a Query Parameter

```
http://localhost:7777/myapp/home.jsp?fn=Joe
```

The query parameter is sent only in the request for the first page of that service. If there is a link from the first page to some other pages, then the parameter is not added to the request for those pages.

Example 5-3 URL Using an Extra Service Parameter

```
http://localhost:7777/myapp/home.jsp
```

Instead of modifying the URL, you add an extra service parameter with name `fn` and value `Joe`. The parameter is sent to all pages, not just the first one. The parameter is also sent with all HTTP redirect requests. However, this method also sends extra URL parameters to the OracleAS Single Sign-On server, which causes the server to return an error.

The error occurs when the back-end application is protected by `mod_osso`. In that case, the request to that application is intercepted and redirected to the Oracle SSO server for user authentication. The OracleAS Single Sign-On server has restrictive rules concerning query parameters that can be sent to it. Consequently, for back-end applications protected by `mod_osso`, you must change the Wireless service and add the query parameter to the URL as shown in [Example 5-2](#).

5.6.8 Configuring Oracle Enterprise Manager 10g Database Control After OracleAS Identity Management Upgrade

The Oracle Enterprise Manager 10g Database Control provides a Web-based console you can use to manage Oracle Database 10g. When your OracleAS Metadata Repository is installed in an Oracle Database 10g instance, you can use the Database Control to manage your OracleAS Metadata Repository database.

See Also: "Managing the OracleAS Metadata Repository Database with Database Control" in the *Oracle Application Server Administrator's Guide*

However, after you use Oracle Universal Installer to upgrade OracleAS Identity Management in a colocated Infrastructure, the OracleAS Metadata Repository database is automatically upgraded to Oracle Database 10g, but the Database Control is not configured automatically.

Instead, if you want to use the Database Control to manage your upgraded OracleAS Metadata Repository database, you must configure the Database Control manually using the Enterprise Manager Configuration Assistant (EMCA).

See Also: "Configuring the Database Control with EMCA" in *Oracle Enterprise Manager Advanced Configuration*

5.7 Task 6: Validate the Identity Management Upgrade

This section describes the steps you must perform after the Identity Management Upgrade to ensure that the upgrade was successful.

- [Testing OracleAS Single Sign-On Connectivity](#)
- [Testing Oracle Application Server Certificate Authority After Upgrade](#)

5.7.1 Testing OracleAS Single Sign-On Connectivity

After the Identity Management upgrade is complete, log in to Oracle Application Server Single Sign-On as user ORCLADMIN. A successful login indicates that Oracle Application Server Single Sign-On and Oracle Internet Directory are functioning after the Identity Management upgrade.

1. In a browser, access the Oracle Enterprise Manager 10g Application Server Control Console in the destination Infrastructure Oracle home by entering its URL. Ensure that you provide the correct host name and port number. For example:

```
http://infrahost.mycompany.com:1812
```

Oracle Enterprise Manager 10g displays the Farm page, with the Oracle Application Server 10g Release 2 (10.1.2) Identity Management instance in the **Standalone Instances** section.

2. Click the link for the Identity Management instance.
The **System Components** page appears.
3. Verify that the status of the Oracle HTTP Server, Oracle Internet Directory, and Oracle Application Server Single Sign-On components is **Up**.
4. In the browser, access the ORASSO page by entering its URL. Ensure that you enter the correct host name and port number for the upgraded Oracle HTTP Server. For example:

```
http://infrahost.mycompany.com:7777/pls/orasso/ORASSO.home
```

The ORASSO page appears.

5. Click the **Login** link (in the upper right corner of the page).

A page appears with **User Name** and **Password** fields.

6. Enter ORCLADMIN in the User Name field, and the password you have selected for ORCLADMIN in the Password field.
7. Click **Login**.

The Oracle Application Server Single Sign-On Server **Administration** page appears, thus validating the basic operation of the upgraded Identity Management components (Oracle Application Server Single Sign-On and Oracle Internet Directory).

5.7.2 Testing Oracle Application Server Certificate Authority After Upgrade

If you have upgraded Oracle Application Server Certificate Authority (OCA), you can verify that the upgrade completed successfully by accessing the OCA User page.

Open your Web browser and enter the following URL:

`https://infrahost.mycompany.com:6600/oca/user`

Check to be sure that you can log in as a regular user and view the user's existing certificates. This ensures that OCA is working with Oracle Internet Directory and OracleAS Single Sign-On.

Note: After the upgrade, you will notice two OCA partner applications in the OracleAS Single Sign-On Partner Application administration page. One is the partner application for the 10g (9.0.4) OCA installation and the other is the partner application for the upgraded 10g Release 2 (10.1.2) OCA installation.

The original partner application can be removed. The upgraded OCA will be running on port 6600 after upgrade, instead of port 4400.

5.8 Task 7: Decommission the OracleAS Identity Management Source Oracle Home

After you upgrade your OracleAS Identity Management Oracle home, the source Oracle home can eventually be deinstalled. However, before you deinstall the source Oracle home, review the following sections carefully:

- [Relocating the Database Datafiles, Control Files, and Log Files After Upgrading a Colocated Infrastructure](#)
- [Preserving Application Files and Log Files](#)
- [Before You Deinstall Release 2 \(9.0.2\) OracleAS Identity Management from a Computer that Also Contains 10g Release 2 \(10.1.2\) Instances](#)
- [Deinstalling the OracleAS Identity Management Source Oracle Home](#)

5.8.1 Relocating the Database Datafiles, Control Files, and Log Files After Upgrading a Colocated Infrastructure

If you upgraded OracleAS Identity Management as part of a colocated Infrastructure, then you also upgraded the OracleAS Metadata Repository database to a supported database version.

After you upgrade the OracleAS Metadata Repository database using the OracleAS Upgrade Assistant, the datafiles, control files, and log files for the database remain in

the source Oracle home. Before you deinstall or remove the Oracle home, you must first relocate the database files.

See Also: [Section 7.1.6, "Relocating the Database Datafiles, Control Files, and Log Files"](#)

5.8.2 Preserving Application Files and Log Files

If there are application files or log files in the source Oracle home that are being referenced or used by the destination Oracle home, you should move them to another location before you decommission the source Oracle home, and, in the destination Oracle home, change any references to the files to the new location.

5.8.3 Before You Deinstall Release 2 (9.0.2) OracleAS Identity Management from a Computer that Also Contains 10g Release 2 (10.1.2) Instances

If you have 9.0.2 or 9.0.3 and 10g Release 2 (10.1.2) instances on the same computer, and you want to deinstall a 9.0.2 instance, review the information in [Section 4.9.4, "Deinstalling a Release 2 \(9.0.2\) or Release 2 \(9.0.3\) Source Oracle Home"](#).

5.8.4 Deinstalling the OracleAS Identity Management Source Oracle Home

When you are certain that the upgrade was successful, you have all of the necessary backups, and have no plans to revert to the source Oracle home, you may elect to remove the files from the source Oracle home. Use the Oracle Universal Installer to deinstall the instance.

Note, however, that deinstalling an Oracle9iAS Release 2 (9.0.2) or (9.0.3) instance when there is also an OracleAS 10g Release 2 (10.1.2) instance on the computer requires a patch. Before you deinstall such an instance, be aware of the issues associated with this deinstallation that may apply to your configuration.

See Also: [Section 4.9.4.1, "Deinstallation of 9.0.2 or 9.0.3 Instances from a Computer that Also Contains 10g Release 2 \(10.1.2\) Instances"](#)

Additional OracleAS Identity Management Upgrade Procedures

This chapter describes additional upgrade procedures that may benefit specific OracleAS Identity Management users. This chapter contains the following sections:

- [Performing an Oracle Internet Directory Multi-Master Replication Upgrade](#)
- [Upgrading Oracle Internet Directory Version 9.2.0.x](#)
- [Using the Data Migration Method of Upgrading OracleAS Identity Management](#)

6.1 Performing an Oracle Internet Directory Multi-Master Replication Upgrade

This section describes how to upgrade Oracle Internet Directory in a replicated environment. You can upgrade one computer at a time, or all of the computers at one time. Instructions are provided for each method in the following sub-sections:

- [Preparing for an Oracle Internet Directory Multi-Master Replication Upgrade](#)
- [Upgrading Oracle Internet Directory on One Replica](#)
- [Upgrading Oracle Internet Directory on Multiple Replicas Simultaneously](#)

Oracle Corporation recommends that during upgrade, in order to prevent conflicts, the replication environment be a Single Master (that is, only one replica is read/write and all others are read only).

See Also: *Oracle Internet Directory Administrator's Guide* for information about managing and configuring Oracle Internet Directory replication configurations

6.1.1 Preparing for an Oracle Internet Directory Multi-Master Replication Upgrade

Before you begin upgrading Oracle Internet Directory 9.0.4.x.x in a replicated environment, you must perform the following steps for all replicas other than Master Definition Site (MDS) Replica or Primary supplier replica:

1. Locate the database registration entry of the database of replica to be upgraded.

```
SOURCE_ORACLE_HOME\bin\ldapsearch -h host -p port -D cn=orcladmin -w superuser_
password -b "cn=oraclecontext" -s one "(objectclass=orcldbserver)" dn
```

This will return a list of Distinguished Names (DNs) corresponding to all the Databases registered in Oracle Internet Directory in the following form:

```
cn=database_name,cn=oraclecontext
```

Of these entries, locate the DN of the following entry, which will be used in Step 3 of this procedure:

```
cn=dbname_of_replica_to_be_upgraded,cn=oraclecontext
```

2. Identify the replica ID of the replica to be upgraded by issuing following command:

```
SOURCE_ORACLE_HOME\bin\ldapsearch -h hostname_of_replica_being_upgraded -p port  
-D cn=orcladmin -w superuser_password -b "" -s base "(objectclass=*)" orclreplicaid
```

3. Modify the `seealso` attribute of Replica Subentry of the replica to be upgraded as given below:

- a. Create a file, for example `mod.ldif`, with following contents:

```
#File Name : mod.ldif  
dn: orclreplicaid=replicaid_from_step_2,cn=replication configuration  
changetype: modify  
replace: seeAlso  
#The DN used in seealso attribute is obtained in Step #1.  
seealso: cn=dbname_of_replica_being_upgraded,cn=oraclecontext
```

- b. Modify replica subentry using `ldapmodify` command.

```
SOURCE_ORACLE_HOME\bin\ldapmodify -h hostname_of_replica_being_upgraded -p  
port -D superuser_DN -w superuser_password -v -f mod.ldif
```

4. Navigate to the following directory and locate `ias.properties` file:

```
SOURCE_ORACLE_HOME\config
```

5. Open the `ias.properties` file and modify properties as shown in [Table 6-1](#).
6. Make sure the Oracle Internet Directory server is upgraded to 10g Release 2 (10.1.2) and that it is up and running.

To verify that Oracle Internet Directory is running, enter one of the following commands.

Note: You may have to temporarily set the `ORACLE_HOME` environment variable to the Oracle Internet Directory Oracle home before running the `ldapbind` command.

After you verify that the Oracle Internet Directory is running, you must then make sure the `ORACLE_HOME` environment variable is not defined before you start the 10g Release 2 (10.1.2) installer.

If you are running Oracle Internet Directory on a non-secure port:

```
SOURCE_ORACLE_HOME\bin\ldapbind -p Non-SSL_port
```

If you are running Oracle Internet Directory on a secure port:

```
SOURCE_ORACLE_HOME\bin\ldapbind -p SSL_port -U 1
```

These commands should return a "bind successful" message.

7. Verify that the `tnsnames.ora` file contains only one alias for the database.

For example, the `tnsnames.ora` file might contain two entries for a database called `ORCL03`, as in the following example:

```
ORCL03 =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP)
        (HOST = stakb03.acme.com)
        (PORT = 1521)))
    (CONNECT_DATA =
      (SERVICE_NAME = orcl03.acme.com)))

ORCL03.US.ORACLE.COM =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP)
        (HOST = stakb03.acme.com)
        (PORT = 1521)))
    (CONNECT_DATA =
      (SERVICE_NAME = orcl03.us.oracle.com)))
```

In this example, remove the second, fully-qualified entry before you begin the upgrade procedure. After upgrade is complete, you can add the fully qualified database name alias to the `tnsnames.ora` file.

8. Create an LDIF file, for example `add.ldif`, with the contents shown in [Example 6–1](#).
9. Start a second instance of LDAP server with "change log generation disabled" as shown below.

Note that this example assumes that the second instance is not in use and port 4444 is not used by any process.

```
oidctl connect=connect_string_of_db server=oidldapd instance=2 flags="-p 4444
-l false" start
```

10. Add the entries defined in the `ldif` file you created in Step 8 by using `ldapadd` tool as shown below.

To add these entries, you must use the port used for the LDAP server you started in Step 9. This example assumes that the LDAP server you started in step 8 is listening at port 4444.

```
ldapadd -p 4444 -h hostname -D cn=orcladmin -w password -f ldif_filename -c
```

For example:

```
ldapadd -p 4444 -h mgmt42.acme.com -D cn=orcladmin -w m03kslj -f add.ldif -c
```

11. Stop the second LDAP server as shown below.

This example assumes that the instance number used for the second instance was 2.

```
oidctl connect=<connect_string_of_db> server=oidldapd instance=2 stop
```

Table 6–1 Properties to Modify in `ias.properties` Before Replication Upgrade

Property Name	Original Value	Change to This Value
OID.LaunchSuccess	False	True
InstallType	Infrastructure	Infrastructure

Table 6–1 (Cont.) Properties to Modify in `ias.properties` Before Replication Upgrade

Property Name	Original Value	Change to This Value
OIDhost	<i>host name of supplier</i>	<i>host name of replica</i>
OIDport	<i>port of supplier</i>	<i>port of replica</i>
OIDsslport	<i>SSL port for supplier</i>	<i>SSL port for replica</i>

Example 6–1 Contents of LDIF File Used to Prepare for Replication Upgrade

```
#File Name : add.ldif
#####
# Event Type Configuration
#####

dn: cn=ProvisioningEventTypeConfig,cn=odi,cn=oracle internet directory
changetype: add
cn: ProvisioningEventTypeConfig
orclaci: access to entry by group="cn=Provisioning Admins,
      cn=changelog subscriber,cn=oracle internet directory" (browse,add,delete)
orclaci: access to attr=(*) by group="cn=Provisioning Admins,
      cn=changelog subscriber,cn=oracle internet directory"
      (read,search,write,compare)
objectclass: orclContainer

dn: orclODIPProvEventObjectType=ENTRY,cn=ProvisioningEventTypeConfig,cn=odi,
      cn=oracle internet directory
changetype: add
orclODIPProvEventObjectType: ENTRY
orclODIPProvEventLDAPChangeType: Add
orclODIPProvEventLDAPChangeType: Modify
orclODIPProvEventLDAPChangeType: Delete
orclODIPProvEventCriteria: objectclass=*
objectclass: orclODIPProvEventTypeConfig

dn: orclODIPProvEventObjectType=USER,cn=ProvisioningEventTypeConfig,cn=odi,
      cn=oracle internet directory
changetype: add
orclODIPProvEventObjectType: USER
orclODIPProvEventLDAPChangeType: Add
orclODIPProvEventLDAPChangeType: Modify
orclODIPProvEventLDAPChangeType: Delete
orclODIPProvEventCriteria: objectclass=InetOrgPerson
orclODIPProvEventCriteria: objectclass=orclUserV2
objectclass: orclODIPProvEventTypeConfig

dn: orclODIPProvEventObjectType=IDENTITY,cn=ProvisioningEventTypeConfig,cn=odi,
      cn=oracle internet directory
changetype: add
orclODIPProvEventObjectType: IDENTITY
orclODIPProvEventLDAPChangeType: Add
orclODIPProvEventLDAPChangeType: Modify
orclODIPProvEventLDAPChangeType: Delete
orclODIPProvEventCriteria: objectclass=InetOrgPerson
orclODIPProvEventCriteria: objectclass=orclUserV2
objectclass: orclODIPProvEventTypeConfig

dn: orclODIPProvEventObjectType=GROUP,cn=ProvisioningEventTypeConfig,cn=odi,
      cn=oracle internet directory
changetype: add
```

```

orclODIPProvEventLDAPChangeType: Add
orclODIPProvEventLDAPChangeType: Modify
orclODIPProvEventLDAPChangeType: Delete
orclODIPProvEventCriteria: objectclass=orclGroup
orclODIPProvEventCriteria: objectclass=orclPrivilegeGroup
orclODIPProvEventCriteria: objectclass=groupOfUniqueNames
orclODIPProvEventCriteria: objectclass=groupofNames
objectclass: orclODIPProvEventTypeConfig

dn: orclODIPProvEventObjectType=SUBSCRIPTION,cn=ProvisioningEventTypeConfig,
   cn=odi,cn=oracle internet directory
changetype: add
orclODIPProvEventObjectType: SUBSCRIPTION
orclODIPProvEventLDAPChangeType: Add
orclODIPProvEventLDAPChangeType: Modify
orclODIPProvEventLDAPChangeType: Delete
orclODIPProvEventCriteria: objectclass=orclServiceSubscriptionDetail
objectclass: orclODIPProvEventTypeConfig

dn: orclODIPProvEventObjectType=SUBSCRIBER,cn=ProvisioningEventTypeConfig,
   cn=odi,cn=oracle internet directory
changetype: add
orclODIPProvEventObjectType: SUBSCRIBER
orclODIPProvEventLDAPChangeType: Add
orclODIPProvEventLDAPChangeType: Modify
orclODIPProvEventLDAPChangeType: Delete
orclODIPProvEventCriteria: objectclass=orclSubscriber
objectclass: orclODIPProvEventTypeConfig

#####
# DIPADMIN Account
#####

dn: cn=dipadmin,cn=odi,cn=oracle internet directory
changetype: add
cn: dipadmin
sn: dipadmin
description: DIP Administrator Identity in OID
objectclass: person

#####
# DIPADMIN Group
#####

dn: cn=dipadmingrp,cn=odi,cn=oracle internet directory
changetype: add
cn: dipadmin
owner: cn=dipadmin,cn=odi,cn=oracle internet directory
uniquemember: cn=orcladmin
uniquemember: cn=dipadmin,cn=odi,cn=oracle internet directory
description: DIP Administrator Group in OID
objectclass: groupOfUniqueNames
objectclass: orclprivilegegroup

#####
# ODIPGROUP getting recreated here from 904 (Had been removed in 902*)
#####

dn: cn=odipgroup,cn=odi,cn=oracle internet directory
changetype: add

```

```
cn: odipgroup
objectclass: top
objectclass: groupofUniquenames
objectclass: orclprivilegeegroup
uniquemember: cn=orcladmin
orclaci: access to entry by group="cn=dipadmingrp,cn=odi,cn=oracle internet
  directory" (browse) by * (none)
orclaci: access to attr=(uniquemember) by group="cn=dipadmingrp,cn=odi,
  cn=oracle internet directory" (search,read,write,compare) by * (none)

dn: cn=odisgroup,cn=odi,cn=oracle internet directory
changetype: add
cn: odisgroup
objectclass: top
objectclass: groupofUniquenames
objectclass: orclprivilegeegroup
uniquemember: cn=orcladmin
orclaci: access to entry by * (none)
orclaci: access to attr=(*) by * (none)
```

6.1.2 Upgrading Oracle Internet Directory on One Replica

Upgrading one computer at a time in a replicated environment ensures that Oracle Internet Directory is available during the upgrade for additions, modifications, and searching.

The following sections describe how to upgrade one replica at a time:

- [Upgrading the Oracle Internet Directory Replica](#)
- [Completing the Upgrade of a 10g \(9.0.4\) Replica](#)
- [Completing the Upgrade of a Release 2 \(9.0.2\) Replica](#)

6.1.2.1 Upgrading the Oracle Internet Directory Replica

Follow these steps to upgrade one replica at a time:

1. If you are upgrading from Release 2 (9.0.2), make sure you have applied the latest Release 2 (9.0.2) patchsets.

The OracleAS Identity Management upgrade procedures have been tested using the latest patchsets available from Oracle*MetaLink*. As a result, before you upgrade Release 2 (9.0.2) OracleAS Identity Management, apply the latest Oracle Application Server 9.0.2 patchsets.

The Oracle*MetaLink* Web site is at the following URL:

<http://metalink.oracle.com/>

At the time this document was published the most recent Oracle*9iAS* patchset release was the Oracle*9iAS* 9.0.2.3 patchset (3038037). To locate this patchset, search for patch number 3038037 on Oracle*MetaLink*.

Note: After applying Oracle*9iAS* 9.0.2.3 patchset (3038037), verify that the patchset was applied successfully before proceeding with the 10g Release 2 (10.1.2) upgrade. For example, verify that the Application Server Control, your deployed applications, and the components you use are functioning properly after you apply the patchset.

2. Make sure you have completed the procedure in [Section 6.1.1, "Preparing for an Oracle Internet Directory Multi-Master Replication Upgrade"](#).

3. Identify the replica to be upgraded.

The replica can be an LDAP-based partial or fan-out replica, or it can be an Oracle Advanced Replication (ASR) based multimaster replica.

See Also: "Directory Replication Concepts" in the *Oracle Internet Directory Administrator's Guide*

4. Stop the replication server on the replica to be upgraded.

Make sure that the LDAP server, the Oracle Internet Directory database, and the database listener are up and running.

5. If you are upgrading an ASR-based replica, then delete all ASR jobs on other replicas by issuing the following command:

```
SOURCE_ORACLE_HOME\ldap\admin\oidrdjob.sql
```

All ASR jobs on other master sites that transfer changes to this replica are deleted. This has the effect of taking the replica currently being upgraded out of the replication environment, so that no changes come to it, while other replicas continue to operate and replicate changes.

6. Upgrade the replica as described in [Section 5.5.1, "Upgrading OracleAS Identity Management in a Colocated Infrastructure"](#) or in [Section 5.5.2, "Upgrading OracleAS Identity Management in a Non-Colocated 10g \(9.0.4\) Infrastructure"](#).

7. Start the replication server database in the upgraded replica Oracle home.

8. Test the connectivity to the other replicas.

The Net Services Upgrade assistant might have modified `listener.ora` and `tnsnames.ora`, breaking connectivity. If connectivity is broken, identify the entries that were modified in the files, and restore the entries from the corresponding files in the source Oracle home.

For example, copy the original entries from the following files in the source Oracle home to the corresponding files in the destination Oracle home:

```
SOURCE_ORACLE_HOME\network\admin\listener.ora
SOURCE_ORACLE_HOME\network\admin\sqlnet.ora
SOURCE_ORACLE_HOME\network\admin\tnsnames.ora
```

9. If you are upgrading a Oracle Advanced Replication (ASR) based Replica, recreate jobs on each replica, after it is upgraded, by issuing the following command:

```
DESTINATION_ORACLE_HOME\bin\remtool -asrrectify
```

The jobs that were deleted in Step 5 are re-created. They will begin transferring the existing changes and new changes from other replicas to the upgraded replicas.

10. Perform the Oracle Internet Directory post-upgrade procedures.

See Also: [Section 5.6.4, "Completing the Oracle Internet Directory Upgrade"](#)

6.1.2.2 Completing the Upgrade of a 10g (9.0.4) Replica

After you upgrade a 10g (9.0.4) replica, change the replication distinguished name (DN) password stored in the wallet using the Replication Environment Management Tool (remtool), as follows:

```
DESTINATION_ORACLE_HOME\bin\remtool -pchgwlpwd -v -bind host:port/repl_dn_pwd
```

If you do not know replication DN password, reset the replication DN password using the following command:

```
DESTINATION_ORACLE_HOME\bin\remtool -presetpwd -v -bind host:port
```

See Also: *Oracle Identity Management User Reference* for details about the arguments you can use with the remtool command.

After you reset the password of the replication DN of partial replica, you must change the password of replication DN at its supplier. To do so, create an LDIF file (for example, modpwd.ldif), with following contents:

```
dn: cn=replication dn,orclreplicad=consumer_replicaid,cn=replication configuration
changetype: modify
replace: userpassword
userpassword: new_password
```

Then, apply the change at supplier using ldapmodify tool as shown below:

```
ldapmodify -h supplier_hostname
           -p supplier_port_number>
           -D cn=orcladmin \
           -w super_user_password_of_supplier
           -f modpwd.ldif
```

After you change or reset the password, you can then start oidmon, LDAP server, and replication server. The replica is upgraded to Oracle Application Server 10g Release 2 (10.1.2) and you can then proceed to upgrade the other replicas in the directory replication group.

6.1.2.3 Completing the Upgrade of a Release 2 (9.0.2) Replica

After you upgrade a Release 2 (9.0.2) replica, you must perform the following steps before restarting and using the upgraded replica:

1. After upgrading the infrastructure to Oracle Application Server 10g Release, use a text editor to open the following configuration file in the destination Oracle home:

```
DESTINATION_ORACLE_HOME\opmn\conf\opmn.xml
```

2. Locate the entry that identifies the Oracle Internet Directory component entry in the opmn.xml file.
3. Add the ORACLE_SID environment variable within an environment element, as shown in [Example 6-2](#).
4. Make sure that the value of the ORACLE_SID environment variable is set to the System Identifier (SID) of the Oracle Application Server 10g Release 2 (10.1.2) database.
5. Save and exit the opmn.xml file.
6. Start the LDAP server and oidmon for the replica you are upgrading.

7. Use the following command to change the password of the replication distinguished name (DN) of upgraded replica:

```
DESTINATION_ORACLE_HOME\bin\remtool -presetpwd -v -bind host:port
```

8. Start the replication server.
9. Proceed with upgrading the remaining master site replicas as described in [Section 6.1.2.1, "Upgrading the Oracle Internet Directory Replica"](#).

10. Upgrade the database replication table by performing the following steps:

- a. Stop the replication server on all replicas.
- b. Quiesce the replication environment by issuing this command on the MDS replica:

```
DESTINATION_ORACLE_HOME\bin\remtool -suspendasr
```

- c. Connect as REPADMIN (the database replication administrator) on the MDS replica and issue the following command:

```
execute DBMS_REPCAT.ALTER_MASTER_REPOBJECT
(sname=> 'ODS', oname=> 'ASR_CHG_LOG', type=> 'TABLE', ddl_text=>
'alter table ods.asr_chg_log modify target_dn varchar2 (1024)')
```

- d. Execute the following SQL command repeatedly until the "no rows selected" message appears:

```
SELECT * from dba_repcatlog WHERE request = 'ALTER_MASTER_REPOBJECT';
```

- e. Generate replication support for the ASR_CHG_LOG table by issuing the command:

```
execute DBMS_REPCAT.GENERATE_REPLICATION_SUPPORT
(sname=> 'ODS', oname=> 'ASR_CHG_LOG', type=> 'TABLE');
```

- f. Execute the following SQL command repeatedly until the "no rows selected" message appears:

```
SELECT * from dba_repcatlog WHERE request = 'ALTER_MASTER_REPOBJECT';
```

- g. Resume the database replication by issuing the following command:

```
DESTINATION_ORACLE_HOME\bin\remtool -resumeasr
```

- h. Start the replication server on all replicas.

Example 6–2 Adding the ORACLE_SID Environment Variable to the opmn.xml file when Upgrading a Release 2 (9.0.2) Oracle Internet Directory Replica

```
<?xml version = '1.0' encoding = 'UTF-8'?>
<opmn xmlns="http://www.acme.com/ias-instance">
...
<ias-component id="OID" status="enabled">
  <process-type id="OID" module-id="OID">
    <environment>
      <variable id="ORACLE_SID" value="value_of_oracle_sid"/>
    </environment>
    <stop timeout="1800"/>
    <process-set id="OID" numprocs="1">
      <dependencies>
        ...
      </dependencies>
    </process-set>
  </process-type>
</ias-component>
```

...
</opmn>

6.1.3 Upgrading Oracle Internet Directory on Multiple Replicas Simultaneously

Upgrading multiple replicas simultaneously ensures that the entire network is upgraded without a transient stage. The procedure is simpler than upgrading one replica at a time, but involves directory service downtime.

The following sections describe how to upgrade multiple replicas at the same time:

- [Upgrading the Oracle Internet Directory Replica](#)
- [Completing the Upgrade of a 10g \(9.0.4\) Replica](#)
- [Completing the Upgrade of a Release 2 \(9.0.2\) Replica](#)

6.1.3.1 Simultaneously Upgrading Multiple Oracle Internet Directory Replicas

Use the following procedure to upgrade all the replicas simultaneously:

1. In all replicas other than MDS replica or primary supplier replica, make sure you have completed the pre-upgrade steps provided in [Section 6.1.1, "Preparing for an Oracle Internet Directory Multi-Master Replication Upgrade"](#).
2. Stop the replication server on all replicas in the Directory Replication Group (DRG).
3. Upgrade all replicas as described in [Section 5.5.1, "Upgrading OracleAS Identity Management in a Colocated Infrastructure"](#) or in [Section 5.5.2, "Upgrading OracleAS Identity Management in a Non-Colocated 10g \(9.0.4\) Infrastructure"](#).
4. Start the database on all the upgraded replicas.
5. Test the connectivity to the other replicas.

The Net Services Upgrade assistant might have modified `listener.ora` and `tnsnames.ora`, breaking connectivity. If connectivity is broken, identify the entries that were modified in the files, and restore the entries from the corresponding files in the source Oracle home.

For example, copy the original entries from the following files in the source Oracle home to the corresponding files in the destination Oracle home:

```
SOURCE_ORACLE_HOME\network\admin\listener.ora  
SOURCE_ORACLE_HOME\network\admin\sqlnet.ora  
SOURCE_ORACLE_HOME\network\admin\tnsnames.ora
```

6. Perform the Oracle Internet Directory post-upgrade procedures.

See Also: [Section 5.6.4, "Completing the Oracle Internet Directory Upgrade"](#)

6.1.3.2 Completing the Simultaneous Upgrade of 10g (9.0.4) Replicas

After you upgrade all the 10g (9.0.4) replicas, reset the replication DN password of the upgraded replica by issuing following command:

```
DESTINATION_ORACLE_HOME\bin\remtool -presetpwd -v -bind host:port
```

Then, you can then start the `oidmon`, LDAP server, and replication server for each replica. All replicas are then upgraded to Oracle Application Server 10g Release 2 (10.1.2).

6.1.3.3 Completing the Simultaneous Upgrade of Release 2 (9.0.2) Replicas

After you upgrade a Release 2 (9.0.2) replica, you must perform the procedure described in [Section 6.1.2.3, "Completing the Upgrade of a Release 2 \(9.0.2\) Replica"](#). After you complete that procedure, all the replicas will then be upgraded to Oracle Application Server 10g Release 2 (10.1.2).

Important: This step should be performed only when all the nodes in the directory replication group are upgraded. Do not repeat this step after each replica upgrade.

6.2 Upgrading Oracle Internet Directory Version 9.2.0.x

The following sections provide information about upgrading Oracle Internet Directory Version 9.2 to 10g Release 2 (10.1.2):

- [Overview of Upgrading Oracle Internet Directory Version 9.2.0.x](#)
- [Performing the Oracle Internet Directory Version 9.2.0.x Upgrade](#)
- [Updating the Oracle Contexts in the 9.2.0.x Oracle Internet Directory](#)
- [Setting Access Control Policies After Upgrading From Oracle Internet Directory Version 9.2.0.x](#)

6.2.1 Overview of Upgrading Oracle Internet Directory Version 9.2.0.x

Oracle Internet Directory Version 9.2.0.x was a standalone release that was distributed with the Oracle9i Release 2 (9.2.0.x) database.

The following list provides an overview of the steps required to upgrade your Version 9.2.0.x Oracle Internet Directory to 10g Release 2 (10.1.2). Complete details on how to perform the upgrade are provided in [Section 6.2.2, "Performing the Oracle Internet Directory Version 9.2.0.x Upgrade"](#).

Table 6–2 Overview of Upgrading Oracle Internet Directory Version 9.2.0.x to 10g Release 2 (10.1.2)

Step Number	Action to Perform	Description
1	Upgrade the Oracle9i database to a version supported by Oracle Application Server 10g Release 2 (10.1.2)	For more information, see Section 7.1, "Task 1: Upgrade the Database That Hosts the OracleAS Metadata Repository" .
2	Use the OracleAS Metadata Repository Creation Assistant to install the 10g Release 2 (10.1.2) OracleAS Metadata Repository into the database.	This step configures your database so it can serve as a host for the 10g Release 2 (10.1.2) OracleAS Identity Management schemas. For more information, see the <i>Oracle Application Server Metadata Repository Creation Assistant User's Guide</i> .
3	Manually create the required Oracle Internet Directory tablespaces and tables in the upgraded database.	The detailed steps for creating the tablespaces and tables are included in Section 6.2.2, "Performing the Oracle Internet Directory Version 9.2.0.x Upgrade"
4	Update the Oracle contexts in the directory.	For more information, see Section 6.2.3, "Updating the Oracle Contexts in the 9.2.0.x Oracle Internet Directory"

Table 6–2 (Cont.) Overview of Upgrading Oracle Internet Directory Version 9.2.0.x to 10g Release 2 (10.1.2)

Step Number	Action to Perform	Description
5	Install 10g Release 2 (10.1.2) OracleAS Identity Management into a new Oracle home.	This step installs a new Oracle Internet Directory 10g Release 2 (10.1.2) Oracle home. During the installation, Oracle Universal Installer automatically performs additional configuration steps in the newly created 10g Release 2 (10.1.2) OracleAS Metadata Repository.
6	Set the appropriate access control policies in the directory.	For more information, see Section 6.2.4, "Setting Access Control Policies After Upgrading From Oracle Internet Directory Version 9.2.0.x"
7	Perform the required Oracle Internet Directory post-upgrade procedures.	These procedures are documented in Section 5.6.4, "Completing the Oracle Internet Directory Upgrade" .

6.2.2 Performing the Oracle Internet Directory Version 9.2.0.x Upgrade

Use the following procedure to upgrade Oracle Internet Directory Version 9.2.0.x to 10g Release 2 (10.1.2):

1. Stop all processes in the Oracle home.

See Also: *""Starting and Stopping" in the Oracle Application Server Administrator's Guide*

2. Back up the database.

See Also: [Section 3.1, "Backup Strategies Before Upgrade"](#)

3. If you created the Oracle Internet Directory database by installing the Oracle9i Management and Integration installation type, install the Oracle9i Database 9.2.0.1.0 Software Only installation type into the same Oracle home, over the database created with the Management and Integration installation type.

The Software Only installation type is necessary because it includes software required to use a Oracle9i Release 2 (9.2.0.x) database as an OracleAS Metadata Repository.

4. If necessary, upgrade the database to a version supported by Oracle Application Server 10g Release 2 (10.1.2).

Refer to [Section 7.1, "Task 1: Upgrade the Database That Hosts the OracleAS Metadata Repository"](#) for information on the supported database versions and for suggested database upgrade paths.

5. Start the database and use the OracleAS Metadata Repository Creation Assistant to install the OracleAS Metadata Repository into the Oracle9i Release 2 (9.2.0.x) database.

Refer to the *Oracle Application Server Metadata Repository Creation Assistant User's Guide* for complete instructions.

Note: While installing the OracleAS Metadata Repository, be sure to select **Register Later** when you are prompted to register with the Oracle Internet Directory.

After you install the OracleAS Metadata Repository, the Oracle9i database contains the schemas for all the Oracle Application Server 10g Release 2 (10.1.2) components, except Oracle Internet Directory. The Oracle Internet Directory schema is still at Version 9.2.

6. Connect to the database as the SYS user with SYSDBA privileges and create the Oracle Internet Directory tablespaces `olts_svrmgstore` and `olts_battrstore` by executing the following SQL statements:

```
CREATE TABLESPACE olts_svrmgstore DATAFILE 'svrmgl_oid.dbf' SIZE 1M REUSE
    AUTOEXTEND ON MAXSIZE UNLIMITED EXTENT MANAGEMENT LOCAL;
```

```
CREATE TABLESPACE olts_battrstore DATAFILE 'battrsl_oid.dbf' SIZE 500K REUSE
    AUTOEXTEND ON EXTENT MANAGEMENT LOCAL AUTOALLOCATE;
```

7. Create the `imcfgregistry` table in the database by running the following SQL statement as the ODS schema:

```
CREATE TABLE imcfgregistry (
    Component      VARCHAR2(255),
    instMode       VARCHAR2(255),
    IASInstance    VARCHAR2(255))
    TABLESPACE OLTS_DEFAULT MONITORING;
```

8. Update the Oracle contexts in the directory, using the procedure in [Section 6.2.3, "Updating the Oracle Contexts in the 9.2.0.x Oracle Internet Directory"](#)
9. Perform a 10g Release 2 (10.1.2) Identity Management installation in a separate Oracle home or on a separate computer.

During the installation, select **Identity Management** as the installation type.

See Also: "Installing Oracle Identity Management Components Only (Including Oracle Internet Directory)" in the *Oracle Application Server Installation Guide*

Later in the installation, Oracle Universal Installer prompts you for the OracleAS Metadata Repository login credentials.

At the end of the installation, Oracle Universal Installer invokes the Oracle Internet Directory Configuration Assistant, which uses these credentials to log in to the database. The configuration assistant checks the version of Oracle Internet Directory schema. If the version is 9.2.0.x, then it upgrades the schema to 10g Release 2 (10.1.2).

After the installation, the following conditions are in effect:

- The Oracle Internet Directory server is running on the non-SSL and SSL ports, as determined by the 10g Release 2 (10.1.2) installation process. The Oracle Internet Directory ports are identified by the `OIDport` and `OIDsslport` properties of the following configuration file:

```
DESTINATION_ORACLE_HOME\config\ias.properties
```

- The Oracle Internet Directory superuser and Oracle Internet Directory database schema (ODS) passwords are set to the same value as the `ias_admin` password specified during the Identity Management installation.
- 10. Set the appropriate access control policies as described in [Section 6.2.4, "Setting Access Control Policies After Upgrading From Oracle Internet Directory Version 9.2.0.x"](#).
- 11. Perform the tasks in [Section 5.6.4, "Completing the Oracle Internet Directory Upgrade"](#).

6.2.3 Updating the Oracle Contexts in the 9.2.0.x Oracle Internet Directory

Use the following procedure to update the Oracle contexts in the Oracle Internet Directory before upgrading from Oracle Internet Directory Version 9.2.0.x:

Note: The `ldapsearch` and `ldapmodify` commands used in this procedure are located in the `bin` directory of the Oracle Internet Directory Oracle home.

1. Make sure the Oracle Internet Directory is up and running.
2. Look up the Oracle Context distinguished names (DNs) in the existing directory by running the following command:

```
ldapsearch -h host -p port -D cn=orcladmin -w superuser_password
-b "" -s sub "cn=oraclecontext" dn
```

In this example, replace *host*, *port*, and *superuser_password* with the host, port, and `cn=orcladmin` password for the Oracle Internet Directory.

Make note of the DN's located by the `ldapsearch` command. You will use this information later in this procedure.

3. Create an LDIF file with the content shown in [Example 6-3](#).

Note: The first line of the LDIF record (the line that begins with "dn") should be on one line with no line breaks. The second line of the file starts with "changetype".

4. Save the file with a recognizable name, such as `oracle_contexts_update.ldif`.
5. For each of the distinguished name entries (DNs) returned by the `ldapsearch` command you used in Step 2, perform the following steps:
 - a. Edit the LDIF file and replace the `%s_OracleContextDN%` string with the DN.
 - b. Use the following `ldapmodify` command to update the directory:

```
ldapmodify -h host -p port -D cn=orcladmin -w superuser_password
-c -v -f oracle_contexts_update.ldif
```

For example, suppose the `ldapsearch` command in Step 2 returns the following DN's:

```
cn=oraclecontext
cn=oraclecontext,dc=acme,dc=com
```

In this example, you would run the `ldapmodify` command twice. The first time, you would edit the LDIF file and replace `%s_OracleContextDN%` with `cn=oraclecontext` before running the `ldapmodify` command.

The second time, you would replace `%s_OracleContextDN%` with `cn=oraclecontext,dc=acme,dc=com` before running the command.

Example 6–3 Contents of LDIF File for Updating the Oracle Contexts in the Version 9.2 Oracle Internet Directory

```
dn: cn=preferredlanguage,cn=Attributes,cn=User Configuration,cn=Attribute
    Configuration, cn=DAS,cn=Products,%s_OracleContextDN%
changetype: add
displayname: Language
objectclass: top
objectclass: orclContainer
objectclass: orclDASConfigAttr
orcldasadminmodifiable: 1
orcldasviewable: 1
orcldasselfmodifiable: 1
cn: preferredlanguage
orcldasuitype: lov
orcldaslov: en
orcldaslov: ar
orcldaslov: pt-BR
orcldaslov: fr-CA
orcldaslov: cs
orcldaslov: da
orcldaslov: nl
orcldaslov: fi
orcldaslov: fr
orcldaslov: de
orcldaslov: el
orcldaslov: iw
orcldaslov: hu
orcldaslov: it
orcldaslov: ja
orcldaslov: ko
orcldaslov: es-ES
orcldaslov: pl
orcldaslov: pt
orcldaslov: ro
orcldaslov: ru
orcldaslov: zh-CN
orcldaslov: sk
orcldaslov: es
orcldaslov: sv
orcldaslov: th
orcldaslov: zh-TW
orcldaslov: tr
orcldaslov: no
```

6.2.4 Setting Access Control Policies After Upgrading From Oracle Internet Directory Version 9.2.0.x

When you upgrade your Version 9.2 Oracle Internet Directory to 10g Release 2 (10.1.2), you must manually set up some required access control policies for the 10g Release 2 (10.1.2) Oracle Delegated Administration Services and for the middle tier installations so they can operate with the upgraded Oracle Internet Directory.

Note: The `ldapsearch` and `ldapmodify` commands used in this procedure are located in the `bin` directory of the Oracle Internet Directory Oracle home.

To set up the required access control policies:

1. Create an LDIF file with the contents shown in [Example 6-4](#).

Note that each value of the `orclaci` attribute (identified with **bold** text in the example) must be a single line, without any line breaks, or an error will occur.

2. Replace all occurrences of `%rlmDN%` in the `upgrade_acp_92.ldif` file with the default realm distinguished name (DN).

The occurrences of `%rlmDN%` are identified with ***bold italic*** text in the example.

You can determine the default realm DN with the following `ldapsearch` command:

```
ldapsearch -h <oid host>
-p oid_port
-D OID_superuser_DN
-w OID_superuser_password
-b "cn=common,cn=products,cn=oraclecontext"
-s base "objectclass=*" orcldefaultsubscriber
```

3. Issue the `ldapmodify` command below:

```
ldapmodify
-p <oid port>
-h <oid host>
-D <OID superuser name>
-w <OID superuser password>
-v -f upgrade_acp_92.ldif
```

Example 6-4 Contents of LDIF File that Sets Access Control Policies When Upgrading from Oracle Internet Directory Version 9.2.0.x

```
#--- BEGIN LDIF file contents---
dn: cn=Attribute Configuration, cn=DAS,cn=Products,cn=OracleContext
changetype: modify add: orclaci
orclaci: access to entry by group="cn=OracleDASConfiguration,
cn=Groups,cn=OracleContext" (add,delete,browse) by * (noadd,nodelete) orclaci:
access to attr=(*) by group="cn=OracleDASConfiguration, cn=Groups,
cn=OracleContext" (read,write,search,compare) by * (nowrite,nocompare)
dn: cn=Attribute Configuration, cn=DAS,cn=Products,cn=OracleContext,%rlmDN%
changetype: modify add: orclaci
orclaci: access to entry by group="cn=OracleDASConfiguration,
cn=Groups,cn=OracleContext,%rlmDN%" (add,delete,browse) by * (noadd,nodelete)
orclaci: access to attr=(*) by group="cn=OracleDASConfiguration, cn=Groups,
cn=OracleContext,%rlmDN%" (read,write,search,compare) by * (nowrite,nocompare)
#---END LDIF file contents-----
```

6.3 Using the Data Migration Method of Upgrading OracleAS Identity Management

Use the following sections to learn more about an alternative method of upgrading your OracleAS Identity Management environment.

6.3.1 Differences Between Data Migration and Typical OracleAS Identity Management Upgrade Procedures

Before you use the instructions in this chapter, review [Table 6–3](#), which describes the differences between data migration and the more typical OracleAS Identity Management upgrade procedures described in [Chapter 5, "Upgrading Identity Management Services"](#).

Use this table to be sure you use the upgrade procedure best suited for your OracleAS Identity Management environment.

Table 6–3 Comparison of Data Migration and Typical OracleAS Identity Management Upgrade Procedure

Typical OracleAS Identity Management Upgrade	Data Migration Upgrade
<p>Use Oracle Universal Installer to automatically:</p> <ol style="list-style-type: none"> 1. Upgrade the OracleAS Metadata Repository database. 2. Install a new OracleAS Identity Management Oracle home. 3. Upgrade the OracleAS Identity Management schemas in the OracleAS Metadata Repository. 4. Copy configuration data to the new OracleAS Identity Management Oracle home. 	<ol style="list-style-type: none"> 1. Use Oracle Universal Installer to install a new OracleAS Identity Management environment, including Oracle Internet Directory, OracleAS Single Sign-On, and the required OracleAS Metadata Repository. 2. Manually back up the data in the original source OracleAS Identity Management environment and restore it to the new destination OracleAS Identity Management environment.
All upgrade tasks are performed on one host on the same platform.	You can migrate your OracleAS Identity Management data from one host to another, and you can migrate data from one platform to another (for example, from UNIX to Microsoft Windows).
After the upgrade, you use the destination Oracle home and the original source Oracle home is decommissioned.	After the data migration, you can continue using both the source and destination installations. The source installation is left untouched.
This upgrade can be used only to upgrade from a previous version to a newer version.	This procedure can be used to upgrade to a newer version of Oracle Application Server or to move data between installations of the same version.
During the upgrade, the OracleAS Identity Management services are down.	During this upgrade, there is no downtime required, although Oracle Internet Directory must be in read-only mode while the data in the directory is backed up.
The upgrade is relatively quick and less time-consuming because many of the steps are automated.	The upgrade procedure will usually take longer than a typical OracleAS Identity Management upgrade because many of the steps are manual.

6.3.2 Using the Data Migration Method of Upgrading OracleAS Identity Management

Use the following steps to upgrade OracleAS Identity Management using the data migration method.

Step 1 Install a new, complete 10g Release 2 (10.1.2.0.2) OracleAS Identity Management environment

You can install any of the supported OracleAS Identity Management topologies described in the *Oracle Application Server Installation Guide*. The new 10g Release 2 (10.1.2.0.2) OracleAS Identity Management environment must include its own OracleAS Metadata Repository and database.

Review the following requirements when installing and configuring the new OracleAS Identity Management environment:

- The database name you select during the installation must not conflict with the database in the source environment.
- Do not install any other iAS component against the new Identity management instance until data migration is complete
- Do not load any user data before data migration is complete
- Test and verify that all identity management components are working smoothly

Step 2 Back up the OracleAS Identity Management data in the source environment

1. Set the Oracle Internet Directory to read-only mode.

- a. Create an LDIF file; for example, `mod.ldif`, with the following content:

```
dn:  
changetype : modify  
replace: orclservermode  
orclservermode: ro
```

- b. Run the following command to execute the LDIF file:

```
SOURCE_ORACLE_HOME\bin\ldapmodify  
-h source_oid_host  
-p port  
-D cn=orcladmin  
-w orcladmin_password  
-v  
-f mod.ldif
```

Setting Oracle Internet Directory to read-only is not required, but if you do not set the directory to read-only, any changes made while you are backing up the directory will not be included in the backup.

2. Back up the Oracle Internet Directory by using the following commands:

```
ldifwrite -c db_connect_string -b "cn=oraclecontext" -f bkp1.ldif  
ldifwrite -c db_connect_string -b "dc=com" -f bkp2.ldif
```

In this example, replace `db_connect_string` with the Oracle Internet Directory database connect string. If you do not provide this string, it defaults to the value of the `ORACLE_SID` environment variable.

Also in this example, it is assumed that `dc=com` is the root of the subscriber. If you have additional subscribers, then execute an equivalent `ldifwrite` command for the root of each subscriber.

See Also: "ldifwrite" in the *Oracle Identity Management User Reference*

3. Merge `bkp1.ldif` and `bkp2.ldif` into one file; for example, `bkp.ldif` and save the file in a known location so you can later load it into the new destination Oracle Internet Directory.
4. Set the Oracle Internet Directory back to read-write mode.

- a. Create an LDIF file; for example, `modrw.ldif`, with the following content:

```
dn:
changetype : modify
replace: orclservermode
orclservermode: rw
```

- b. Run the following command to execute the LDIF file:

```
SOURCE_ORACLE_HOME\bin\ldapmodify
-h source_oid_host
-p port
-D cn=orcladmin
-w orcladmin_password
-v
-f modrw.ldif
```

Step 3 Back up the OracleAS Single Sign-On data in the source environment

Back up the OracleAS Single Sign-On data using the following command:

```
SOURCE_ORACLE_HOME\sso\bin\ssomig
-export
-s orasso
-p source_database_orasso_schema_password
-c source_SSO_database_connect_string
-log_d full_log_directory_path
```

In this example:

- Replace `source_database_orasso_schema_password` with the database schema password for OracleAS Single Sign-On.

This password is randomized during installation of the OracleAS infrastructure. To obtain the password, see Appendix B of the *Oracle Application Server Single Sign-On Administrator's Guide*.

- Replace `source_SSO_database_connect_string` with the net service name for the OracleAS Single Sign-On database.
- Replace `full_log_directory_path` with the name of the log directory.

This directory must be writable. The log file, the export configuration file, and the dump file are written here. Use the absolute path for the directory when running the script. The default is `ORACLE_HOME/sso/log`.

See Also: "Export and Import Script: Syntax and Parameters" in the *Oracle Application Server Single Sign-On Administrator's Guide*

Step 4 Prepare the destination OracleAS Identity Management for Data Migration

1. Back up the local registration information from the destination OracleAS Identity Management so it can be restored after you migrate the data from the source OracleAS Identity Management instance:

```
DESTINATION_ORACLE_HOME\ldap\bin\remtool
-backupmetadata
-replica oidhost:oidport/repdpwd
```

```
-bkup ldiffilename
```

In this example:

- Replace *oidhost* with the host name of the destination Oracle Internet Directory.
- Replace *oidport* with the port at which the destination Oracle Internet Directory is listening.
- Replace *repdnpwd* with the replication DN password of the destination Oracle Internet Directory, which by default is the same as the ODS/cn=orcladmin password after the installation.
- Replace *ldiffilename* with the name of the *ldif* file that will contain the backed up registration data.

See Also: "remtool" in the *Oracle Identity Management User Reference*

2. Merge the destination OracleAS Identity Management schema with the source OracleAS Identity Management schema:

```
ORACLE_HOME\bin\schemasync
-srchost source_oid_hostname
-srcport source_oid_port_number
-srcdn source_oid_privileged_DN
-srcpwd source_oid_privileged_DN_password
-dsthost destination_oid_hostname
-dstport destination_oid_port
-dstdn destination_oid_privileged_dn
-dstpwd destination_oid_privileged_DN_password
-ldap
```

In this example, replace *source_oid_privileged_DN* and *destination_oid_privileged_DN* with the distinguished name of the user used to bind to the directory. This user must have permissions to modify the directory schema, for example the super user (cn=orcladmin).

The *-ldap* parameter is optional. If you include the *-ldap* parameter, then the schema changes are applied directly from the source Oracle Internet Directory to the destination Oracle Internet Directory. If you do not include the *-ldap* parameter, then the new attribute definitions are saved to the following LDIF file:

```
ORACLE_HOME\ldap\odi\data\attributetypes.ldif
```

And, the object class definitions are saved to the following LDIF file:

```
ORACLE_HOME\ldap\odi\data\objectclasses.ldif
```

Any errors that occur during the schema synchronization are logged in the following log files:

```
ORACLE_HOME\ldap\odi\log\attributetypes.log
ORACLE_HOME\ldap\odi\log\objectclasses.log
```

See Also: "schemasync" in the *Oracle Identity Management User Reference*

3. Stop the Oracle Internet Directory in the destination Oracle home using OPMN:

```
DESTINATION_ORACLE_HOME\opmn\bin\opmnctl stopall
```

4. Clean up any conflicting data from the destination Oracle Internet Directory by running the following commands, which correspond to the `ldifwrite` commands used in Step 2:

```
DESTINATION_ORACLE_HOME\ldap\bin\bulkdelete.sh
-connect db_connect_string
-base "cn=OracleContext"
DESTINATION_ORACLE_HOME\ldap\bin\bulkdelete.sh
-connect db_connect_string
-base "dc=com"
```

This example assumes that `dc=com` is the root of the subscriber. If you have additional subscribers, then use an equivalent `bulkdelete` command for the root of each additional subscriber.

Step 5 Load the source Oracle Internet Directory data into the destination Oracle Internet Directory

1. Verify the backup data in the `ldif` file:

```
DESTINATION_ORACLE_HOME\ldap\bin\bulkload.sh
-connect destination_oid_connect_string
-check
-restore path_to_bkp.ldif\bkp.ldif
```

In this example, replace `path_to_bkp.ldif` with the path to the location where you stored the backup LDIF files.

After running the `bulkload -check` command, check the contents of the following log files:

```
DESTINATION_ORACLE_HOME\ldap\log\bulkload.log
DESTINATION_ORACLE_HOME\ldap\log\schemacheck.log
DESTINATION_ORACLE_HOME\ldap\load\badentry.ldif
```

If necessary, perform the `bulkload` command repeatedly on the `ldif` file until no errors are reported in the log files.

For example, look for these common error messages:

- **Error Message:** DN Error --- DN "<DN of the error entry>",
rc=0

Action: An entry in the `ldif` file has an invalid DN and cannot be loaded into the destination Oracle Internet Directory. Remove this entry from the `ldif` file.
- **Error Message:** ERROR * gslsbzCheckDupAttrValinEntry : Dupl
Value {X- ORCLLMV}4F6500711D4185249B624840E0439040 found

Action: An entry in the `ldif` files has duplicate values for Password verifiers. Clean up the entries that have duplicate password verifiers.

2. Load the source Oracle Internet Directory data into the destination Oracle Internet Directory:

```
DESTINATION_ORACLE_HOME\ldap\bin\bulkload.sh
-connect destination_oid_connect_string
-generate
-restore
-load path_to_bkp.ldif\bkp.ldif
```

In this example, replace *path_to_bkp.ldif* with the path to the location where you stored the backup LDIF files.

Check the log files again to be sure no errors were generated while the data was loaded into the destination Oracle Internet Directory. Errors in this step (such as index creation errors) can cause serious problems later.

Step 6 Migrate the OracleAS Single Sign-On data

1. Copy the files created when you backed up the OracleAS Single Sign-On data in the source environment in Step 3 to the destination host.

Use an appropriate method for copying the files to the destination host, such as FTP. The files to copy are *ssomig.dmp* and *ssoconf.log*. By default, these files are created in the following directory:

```
DESTINATION_ORACLE_HOME\sso\log
```

2. Enter the following command to import the Single Sign-On data:

```
SOURCE_ORACLE_HOME\sso\bin\ssomig
-import
-overwrite
-s orasso
-p destination_orasso_schema_password
-c source_SSO_database_connect_string
-log_d full_log_directory_path
-log_f imp.log
```

In the above example:

- Replace *full_log_directory_path* with the directory location where you have copied SSO data files (*ssomig.dmp* and *ssoconf.log*).
- Replace *destination_orasso_schemas_password* with the ORASSO schema password of the destination Oracle database. This password is stored in the LDIF file you created in the first substep of Step 4, "[Prepare the destination OracleAS Identity Management for Data Migration](#)".

In the backup LDIF file, the password is stored as the value of attribute *orclpasswordattribute* of the following entry in the LDIF file:

```
orclresourcename=ORASSO,
  orclReferenceName=database_global_name,
  cn= IAS Infrastructure Databases,
  cn=IAS, cn=Products, cn=OracleContext
```

For example, in the following example, ORASSO schema password is *welcome1*.

```
dn: OrclResourceName=ORASSO,
  orclReferenceName=orcl.myhostdb1.us.oracle.com,
  cn=IAS Infrastructure Databases,
  cn=IAS,
  cn=Products,
  cn=OracleContext
orclflexattribute1: true
orclpasswordattribute: welcome1
orclresourcename: ORASSO
objectclass: orclResourceDescriptor
objectclass: top
```

An example of the resulting *ssomig* command would appear as follows:

```

SOURCE_ORACLE_HOME\sso\bin\ssomig
-import
-overwrite
-s orasso
-p welcome1
-c asdb.us.oracle.com
-log_d ORACLE_HOME/sso/ /log
-log_f imp.log

```

See Also: "Export and Import Script: Syntax and Parameters" in the *Oracle Application Server Single Sign-On Administrator's Guide*

Step 7 Completing the OracleAS Identity Management Data Migration

1. Upgrade the oraclecontext and subscriber context for the destination OracleAS Identity Management installation, as follows:

Note: This step (upgrading the oraclecontext and subscriber context) is applicable only when the source OracleAS Identity Management and the destination OracleAS Identity Management are of different versions. For example, you must run this step when using data migration to upgrade from 10g (9.0.4) to 10g Release 2 (10.1.2.0.2).

- a. Run the following command to upgrade the Oracle Internet Directory metadata as part of a migration from a previous version of OracleAS Identity Management to 10g Release 2 (10.1.2.0.2):

```

DESTINATION_ORACLE_HOME\bin\oidca mode=UPGRADE
-silent
dbuser=DBA_user
dbpwd=DBA_user_password
connstr=TNS_alias_db_connect_string
sudn=oid_superuser_DN
supwd=oid_superuser_password
iaspwd=ias_admin_password
iasinstance=app_server_instance_name
nonsslport=nonsslport | sslport=sslport

```

- b. Run the following command to upgrade the Oracle Directory Integration and Provisioning metadata:

```

DESTINATION_ORACLE_HOME\bin\oidca mode=DIP
-silent
oidhost=oid_host
nonsslport=oid_nonssl_port | sslport=oid_ssl_port
sudn=oid_user_dn
supwd=oid_user_password
iaspwd=ias_admin_password

```

2. Restore the local registration information for the destination OracleAS Identity Management that you saved in the first substep of Step 4, "[Prepare the destination OracleAS Identity Management for Data Migration](#)".

Note that this example assumes you saved the local registration information in a file called `locreg.ldif`.

```

DESTINATION_ORACLE_HOME\bin\ldapmodify
-h destination_oid_hostname
-p destination_oid_port

```

```
-v  
-f locreg.ldif
```

3. Stop the Oracle Internet Directory using the `oidmon` utility and then start it using OPMN.

Oracle recommends this step because the `oidca` utility, which was used when you upgraded the `oraclecontext` and `subscriber` earlier in this procedure, starts the Oracle Internet Directory using the `oidmon` utility.

For more information about using `oidmon` and `opmctl` to control the Oracle Internet Directory, refer to the *Oracle Internet Directory Administrator's Guide*.

Upgrading the OracleAS Metadata Repository

This chapter explains how to upgrade the Oracle Application Server Metadata Repository. The major steps in upgrading the OracleAS Metadata Repository are described in the following sections:

- [Task 1: Upgrade the Database That Hosts the OracleAS Metadata Repository](#)
- [Task 2: Back Up the OracleAS Metadata Repository Before Upgrade](#)
- [Task 3: Review Special Considerations for Specific Component Schemas](#)
- [Task 4: Run the Metadata Repository Upgrade Assistant \(MRUA\)](#)
- [Task 5: Complete the OracleAS Metadata Repository Upgrade for OracleAS Portal and OracleAS Wireless](#)
- [Task 6: Start the Middle Tiers That Use the OracleAS Metadata Repository](#)

7.1 Task 1: Upgrade the Database That Hosts the OracleAS Metadata Repository

Before you can upgrade the OracleAS Metadata Repository, you must be sure the database that hosts the repository is upgraded to a version supported by 10g Release 2 (10.1.2).

The following sections describe in detail the process of upgrading your OracleAS Metadata Repository database:

- [Summary of the OracleAS Metadata Repository Database Requirements](#)
- [Using OracleMetaLink to Obtain the Latest Oracle Application Server Software Requirements](#)
- [Determining Your OracleAS Metadata Repository Database Upgrade Path](#)
- [Upgrading a Seed Database with Oracle Universal Installer](#)
- [Upgrading an OracleAS Metadata Repository Creation Assistant Database](#)
- [Relocating the Database Datafiles, Control Files, and Log Files](#)
- [Database Upgrade Considerations When Using Oracle Ultra Search](#)

7.1.1 Summary of the OracleAS Metadata Repository Database Requirements

The database that hosts the OracleAS Metadata Repository must be one of the following supported versions:

- Oracle Database 10g (10.1.0.4.2)

This is the version of the database that Oracle Universal Installer creates and configures when you install a new 10g Release 2 (10.1.2) OracleAS Metadata Repository using the **Identity Management and OracleAS Metadata Repository** installation type or the **OracleAS Metadata Repository** installation type.

Similarly, this is the version of the database that results when you use Oracle Universal Installer to upgrade a seed database in a colocated Infrastructure or non-colocated Infrastructure Oracle home.

- Oracle9i Release 2 (9.2.0.6)

If you used the OracleAS Metadata Repository Creation Assistant to install the OracleAS Metadata Repository in an existing database, you must upgrade your database to this version and apply patch 4015165.

7.1.2 Using Oracle*MetaLink* to Obtain the Latest Oracle Application Server Software Requirements

The Oracle Application Server 10g Release 2 (10.1.2.0.2) software requirements included in this guide were accurate at the time this manual was released to manufacturing. For the most up-to-date information about software requirements, including the database versions required for Oracle Application Server 10g Release 2 (10.1.2.0.2), refer to Oracle*MetaLink*:

<http://metalink.oracle.com/>

After logging into Oracle*MetaLink*, click **Certify and Availability**. From the resulting Web page, you can view the latest certifications by product, platform, and product availability.

7.1.3 Determining Your OracleAS Metadata Repository Database Upgrade Path

The upgrade path you choose for your OracleAS Metadata Repository database depends upon whether your OracleAS Metadata Repository database is a seed database or an OracleAS Metadata Repository Creation Assistant database.

See Also: [Section 1.1.3, "Determining Whether Your Database is a Seed Database or OracleAS Metadata Repository Creation Assistant Database"](#)

After you determine whether your database is a seed database or an OracleAS Metadata Repository Creation Assistant database, you can begin to determine an upgrade path:

- If your database is a seed database, then you can use Oracle Universal Installer and the standard 10g Release 2 (10.1.2) installation procedure to upgrade your database automatically. Oracle Universal Installer upgrades your database to Oracle Database 10g (10.1.0.4.2).

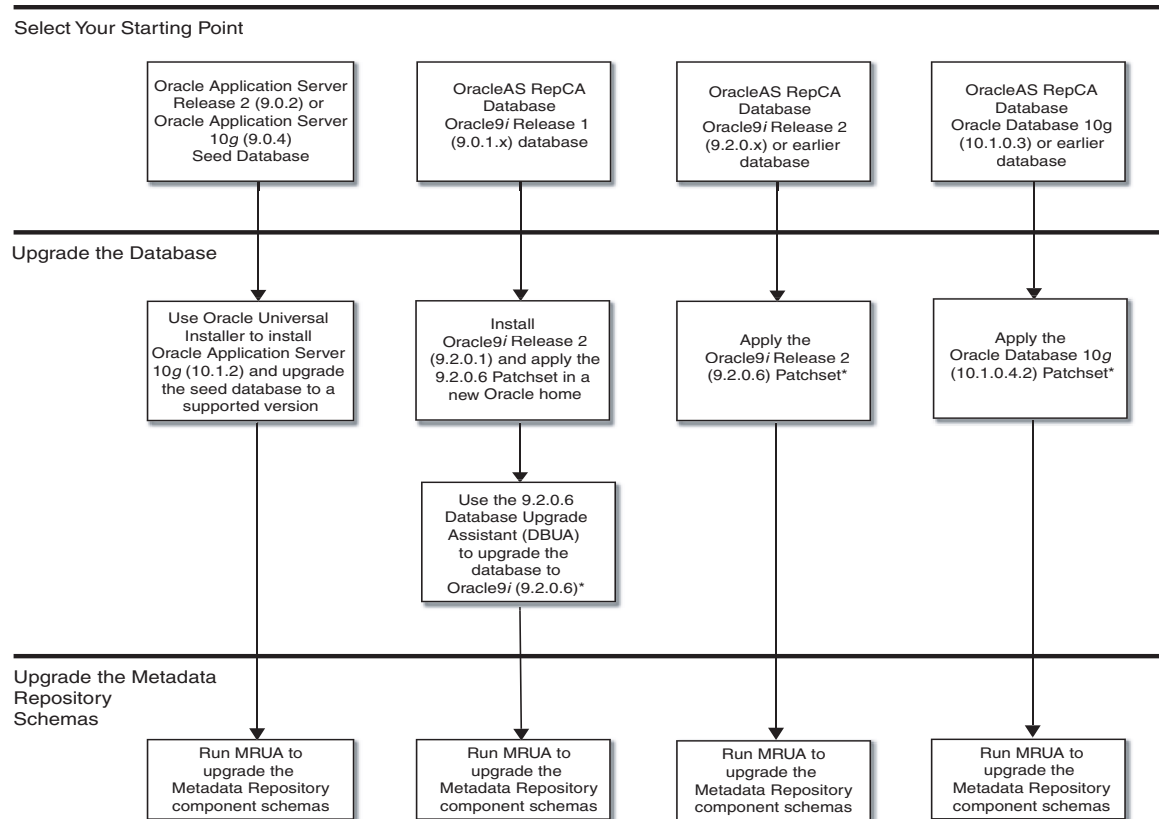
Refer to [Section 7.1.4, "Upgrading a Seed Database with Oracle Universal Installer"](#) for detailed instructions.

- If your database is an OracleAS Metadata Repository Creation Assistant database, you must first determine the current version of the database and upgrade the database, if necessary.

Refer to [Section 7.1.5, "Upgrading an OracleAS Metadata Repository Creation Assistant Database"](#) for details about determining your OracleAS Metadata Repository Creation Assistant database upgrade path.

Figure 7–1 summarizes the supported starting points for upgrading your seed database or OracleAS Metadata Repository Creation Assistant database.

Figure 7–1 Summary of Determining Your Database Upgrade Path



*Note that additional database patches or instructions may be necessary; see the section "Upgrading an OracleAS Metadata Repository Creation Assistant Database" for more information

See Also: [Section 7.1.2, "Using OracleMetaLink to Obtain the Latest Oracle Application Server Software Requirements"](#) for information about obtaining the very latest information on the OracleAS Metadata Repository database requirements

7.1.4 Upgrading a Seed Database with Oracle Universal Installer

If the OracleAS Metadata Repository resides in a seed database, which was created using the Release 2 (9.0.2) or 10g (9.0.4) application server installation procedure, you can use the Oracle Universal Installer and the 10g Release 2 (10.1.2) installation procedure to upgrade your OracleAS Metadata Repository database.

This method of upgrading your database is the easiest method, since Oracle Universal Installer does the database upgrade for you.

Note: When you use Oracle Universal Installer to upgrade your OracleAS Metadata Repository database, the installer invokes the Database Upgrade Assistant (DBUA).

DBUA can take a significant amount of time to upgrade the database. For more information on how long it takes to upgrade your database, see [Section 3.3, "Planning for System Downtime"](#) and plan accordingly.

Refer to the following sections for more information on using Oracle Universal Installer to upgrade your OracleAS Metadata Repository database:

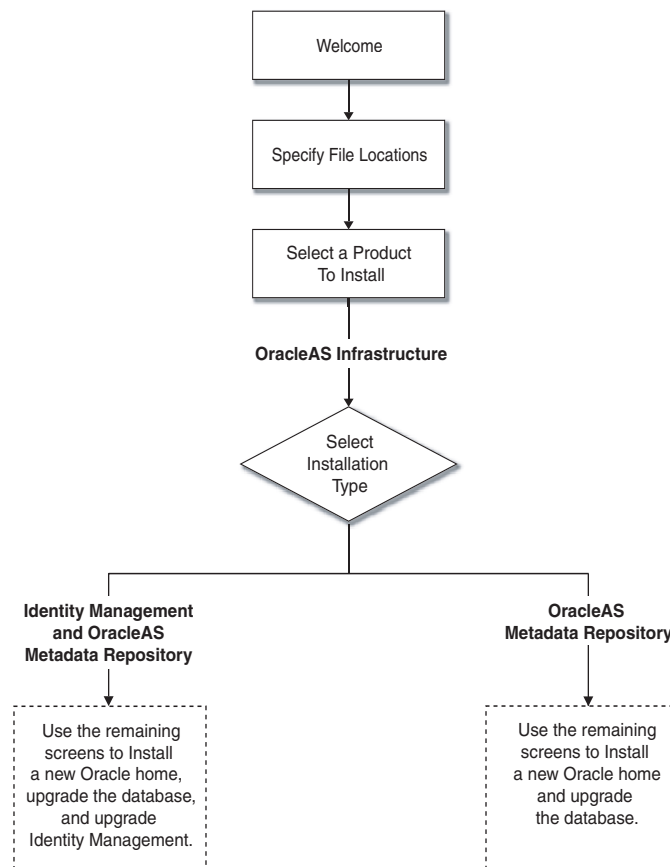
- [Overview of Using Oracle Universal Installer to Upgrade a Seed Database](#)
- [Upgrading a 10g \(9.0.4\) OracleAS Metadata Repository Seed Database in a Non-Colocated Infrastructure](#)

7.1.4.1 Overview of Using Oracle Universal Installer to Upgrade a Seed Database

[Figure 7–2](#) provides a graphical representation of the first few screens of the 10g Release 2 (10.1.2) installation procedure. It shows how you can select the appropriate Installation Type to install 10g Release 2 (10.1.2) and upgrade your existing OracleAS Metadata Repository.

As shown in the illustration, if you have already upgraded OracleAS Identity Management in a colocated Infrastructure, then the database that hosts the OracleAS Metadata Repository has already been upgraded to a supported version.

On the other hand, if your OracleAS Metadata Repository resides in a non-colocated Infrastructure, refer to [Section 7.1.4, "Upgrading a Seed Database with Oracle Universal Installer"](#) for more information.

Figure 7-2 Using Oracle Universal Installer to Upgrade the OracleAS Metadata Repository Database

7.1.4.2 Upgrading a 10g (9.0.4) OracleAS Metadata Repository Seed Database in a Non-Colocated Infrastructure

When you use the 10g Release 2 (10.1.2) installation procedure to upgrade your OracleAS Metadata Repository database in a non-colocated Infrastructure, you perform the following tasks using the standard Oracle Universal Installer installation screens.

If your OracleAS Metadata Repository resides in a colocated Infrastructure, the database is upgraded automatically during the OracleAS Identity Management upgrade by Oracle Universal Installer.

1. If you are using Oracle Ultra Search, refer to [Section 7.1.8, "Database Upgrade Considerations When Using Oracle Ultra Search"](#) before upgrading the database.
2. Stop all the middle tiers that are using the services of the OracleAS Identity Management installation.
3. Make sure that the OracleAS Metadata Repository database and database listener are up and running.
4. Log in to the computer on which source instance is installed, as the same operating system user that performed the 10g (9.0.4) installation.

Note: The account you log in to install or upgrade the OracleAS Metadata Repository must be listed as a member of the Administrators group.

5. Make sure the Oracle Internet Directory server is up and running.

To verify that Oracle Internet Directory is running, enter one of the following commands.

Note: You may have to temporarily set the ORACLE_HOME environment variable to the Oracle Internet Directory Oracle home before running the `ldapbind` command.

After you verify that the Oracle Internet Directory is running, you must then make sure the ORACLE_HOME environment variable is not defined before you start the 10g Release 2 (10.1.2) installer, as directed in Step 6.

If you are running Oracle Internet Directory on a non-secure port:

```
SOURCE_ORACLE_HOME\bin\ldapbind -p Non-SSL_port
```

If you are running Oracle Internet Directory on a secure port:

```
SOURCE_ORACLE_HOME\bin\ldapbind -p SSL_port -U 1
```

These commands should return a "bind successful" message.

6. Set the required environment variables, as defined in the section "Environment Variables" in the "Requirements" chapter of the *Oracle Application Server Installation Guide*.

In particular, be sure to set following variables so they do not reference any Oracle home directories:

- PATH
- CLASSPATH

In addition, be sure the following environment variables are not set:

- TNS_ADMIN
- ORACLE_HOME
- ORACLE_SID

7. Mount the CD-ROM and start the installer.

See Also: *Oracle Application Server Installation Guide* for detailed instructions about starting Oracle Universal Installer on your platform

8. Refer to [Table 7-1](#) for information on the options you should select on each screen.
9. After the End of Installation screen appears, exit Oracle Universal Installer and then verify that Oracle Internet Directory and Oracle Application Server Single Sign-On are functioning and accessible in the new 10g Release 2 (10.1.2) Oracle home.

See Also: *Oracle Application Server Administrator's Guide*, Chapter 1, "Accessing the Single Sign-On Server"

Note that you must run MRUA to upgrade the OracleAS Metadata Repository component schemas after the database is upgraded to a supported database version.

See Also: [Section 5.5.1, "Upgrading OracleAS Identity Management in a Colocated Infrastructure"](#) for a description of the Oracle Universal Installer screens that appear when you upgrade the OracleAS Metadata Repository database in a colocated OracleAS Infrastructure Oracle home

[Section 1.1, "Reviewing Your Current Oracle Application Server Installations"](#) for information about colocated and non-colocated OracleAS Infrastructure Oracle homes

Table 7–1 Summary of the Oracle Universal Installer Screens During the OracleAS Metadata Repository Upgrade in a Non-Colocated Oracle Home

Screen	Description and Recommended Options to Select
Welcome	Welcomes you to Oracle Universal Installer and the Oracle Application Server 10g Release 2 (10.1.2) installation procedure.
Specify File Locations	Enter a name and path for the new Oracle home. This new Oracle home will be the destination Oracle home for your Oracle Application Server 10g Release 2 (10.1.2) upgrade.
Select a Product to Install	Select OracleAS Infrastructure 10g . If multiple languages are used in the OracleAS Infrastructure you are upgrading, then click Product Languages .
Language Selection	The screen appears only if you clicked Product Languages on the Select a Product to Install screen. If multiple languages are used in the OracleAS Infrastructure you are upgrading, select those languages. If you are not sure which languages were installed, but want languages other than English, click the double arrow button (>>) to select all languages.
Select Installation Type	Select Metadata Repository . Note: It is very important that you select the same installation type that is used in the Oracle home you are upgrading.
Upgrade Existing Infrastructure	This screen appears when Oracle Universal Installer detects an existing Oracle Application Server installation of the same type as the one you selected on the Select Installation Type screen. Select the option to upgrade an existing OracleAS Infrastructure, and then select the Oracle home you want to upgrade from the drop-down list. (If there is only one Infrastructure of the selected type on the computer, then the drop-down list is inactive.) Note that Oracle Universal Installer detects only the Oracle homes that match the installation type you selected on the Select Installation Type screen.
Specify Infrastructure Database Connection	Enter SYS in the Username field and the SYS user's password in the Password field.

Table 7–1 (Cont.) Summary of the Oracle Universal Installer Screens During the OracleAS Metadata Repository Upgrade in a Non-Colocated Oracle Home

Screen	Description and Recommended Options to Select
Warning dialog box	<p>This dialog box warns you that all the clients of the OracleAS Metadata Repository database must now be stopped. Oracle Universal Installer will stop any clients within the current Oracle home automatically¹.</p> <p>However, you must manually stop any database or OracleAS Metadata Repository clients that reside in another Oracle home.</p> <p>Clients of the OracleAS Metadata Repository include:</p> <ul style="list-style-type: none"> ■ OracleAS Identity Management components that use this OracleAS Metadata Repository. ■ Middle tier instances that use this OracleAS Metadata Repository <p>Within each middle tier that uses this OracleAS Metadata Repository, you must be sure to stop all components, including Oracle HTTP Server and OracleAS Web Cache.</p> <p>For more information, see the chapter "Starting and Stopping " in the <i>Oracle Application Server Administrator's Guide</i>.</p>
Database Listener Warning Dialog Box	<p>If a database listener is running on the host, a warning dialog box displays. Review the dialog box determine whether or not you need to stop the listener manually.</p> <p>For more information, see Section 5.3.3, "Stopping the Database Listener When Prompted During the OracleAS Identity Management Upgrade".</p>
Summary	<p>Use this screen to confirm the choices you've made. Click Install to begin upgrading to the new 10g Release 2 (10.1.2) Oracle home.</p>
The Configuration Assistants	<p>After the initial software is installed, a set of configuration assistants automatically set up the components in the new 10g Release 2 (10.1.2) Oracle home. Use this screen to follow the progress of each assistant and to identify any problems during this phase of the installation.</p> <p>Notes:</p> <ul style="list-style-type: none"> ■ The Database Upgrade Assistant (DBUA) can take a significant amount of time to upgrade the database. For more information how long it takes to upgrade your database, see Section 3.3, "Planning for System Downtime". ■ While Database Upgrade Assistant is running, do not use the Stop button to interrupt the execution of Database Upgrade Assistant. If you press Stop, the underlying processes for Database Upgrade Assistant will continue to run. Also, Oracle Universal Installer will wait until those processes complete before returning control to the user.
End of Installation	<p>When the installation and upgrade is complete, this screen provides important details about the 10g Release 2 (10.1.2) Oracle home, such as the URL for the Application Server Control Console and the location of the <code>setupinfo.txt</code> file.</p> <p>After you review the information on this screen, you can exit Oracle Universal Installer and proceed to the post-upgrade tasks.</p>

¹ You can access a log of the automated shutdown procedure executed by Oracle Universal Installer in the `shutdownprocesses.log` file, which is located in the `cfgtoollogs` directory in the destination Oracle home.

7.1.5 Upgrading an OracleAS Metadata Repository Creation Assistant Database

If you used OracleAS Metadata Repository Creation Assistant to install the OracleAS Metadata Repository, you must verify the version of the database that hosts the repository.

As shown in [Figure 7-1](#), your goal is to upgrade your database to a version that can support the 10g Release 2 (10.1.2) OracleAS Metadata Repository.

See Also: [Section 7.1.2, "Using OracleMetaLink to Obtain the Latest Oracle Application Server Software Requirements"](#) for information about obtaining the very latest information on the OracleAS Metadata Repository database requirements

Refer to the following sections for more information:

- [If You Installed the OracleAS Metadata Repository in an Oracle9i Database](#)
- [If You Installed the OracleAS Metadata Repository in an Oracle 10g Database](#)

7.1.5.1 If You Installed the OracleAS Metadata Repository in an Oracle9i Database

If you installed your OracleAS Metadata Repository in an Oracle9i Database, you must be sure your database is Oracle9i Release 2 (9.2.0.6) or higher. Refer to the following sections for more information.

If You Installed the OracleAS Metadata Repository in an Oracle9i (9.0.1.x) Database

1. Install Oracle9i Release 2 (9.2.0.1) into a new Oracle home
2. Apply the Oracle9i Release 2 (9.2.0.6) patchset to the Oracle9i Release 2 (9.2.0.1) Oracle home; be sure to carefully follow the instructions in the Oracle9i Release 2 (9.2.0.6) patchset notes.

You can download the patchset from *OracleMetaLink* (<http://metalink.oracle.com>). Download patchset number 3948480.

3. Use the Database Upgrade Assistant (DBUA) in the Oracle9i Release 2 (9.2.0.6) Oracle home.

See Also: *Oracle9i Database Migration* in the Oracle9i Database documentation library for information about using DBUA and upgrading specific database components to Oracle9i Release 2 (9.2.0.6)

4. Apply patch 4015165 to the newly upgraded Oracle9i Release 2 (9.2.0.6) database. The patch is available from OracleMetaLink (<http://metalink.oracle.com>)
5. See section [Section 7.1.5.2, "Special Instructions When Applying the Oracle9i Release 2 \(9.2.0.6\) Database Patchset"](#) for more information before upgrading the OracleAS Metadata Repository.

Note: The Database Upgrade Assistant (DBUA) can take a significant amount of time to upgrade the database. For more information how long it takes to upgrade your database, see [Section 3.3, "Planning for System Downtime"](#).

If you installed the OracleAS Metadata Repository in an Oracle9i Release 2 (9.2.0.x) database

1. Apply the Oracle9i Release 2 (9.2.0.6) patchset to the Oracle9i Release 2 (9.2.0.x) Oracle home; be sure to carefully follow the instructions in the Oracle9i Release 2 (9.2.0.6) patchset notes.

You can download the patch set from *OracleMetaLink* (<http://metalink.oracle.com>). Download patchset number 3948480.

2. Apply patch 4015165 to the newly upgraded Oracle9i Release 2 (9.2.0.6) database.
The patch is available from *OracleMetaLink* (<http://metalink.oracle.com>)
3. See the section [Section 7.1.5.2, "Special Instructions When Applying the Oracle9i Release 2 \(9.2.0.6\) Database Patchset"](#) for more information before upgrading the OracleAS Metadata Repository.

Note: If you are using Oracle Ultra Search, refer to [Section 7.1.8, "Database Upgrade Considerations When Using Oracle Ultra Search"](#) before you begin upgrading your database to Oracle9i Database.

If you installed the OracleAS Metadata Repository in an Oracle9i Release 2 (9.2.0.6) database

1. Apply patch 4015165 to the Oracle9i Release 2 (9.2.0.6) database.
The patch is available from *OracleMetaLink* (<http://metalink.oracle.com>)
2. See the section [Section 7.1.5.2, "Special Instructions When Applying the Oracle9i Release 2 \(9.2.0.6\) Database Patchset"](#) for more information before upgrading the OracleAS Metadata Repository.

7.1.5.2 Special Instructions When Applying the Oracle9i Release 2 (9.2.0.6) Database Patchset

When you upgrade your database to Oracle9i Release 2 (9.2.0.6), make sure that you carefully follow the instructions in the README file for the Oracle9i Release 2 (9.2.0.6) patchset.

In particular, perform the following tasks after you run the Database Upgrade Assistant (DBUA):

- Run the `catpatch.sql` script (step 6 in the README file).
- Run `utlrp.sql` (step 10 in the README file for the patch set).

To check that you have run the `catpatch.sql` script, you can run the following command in SQL*Plus:

```
C:\> sqlplus "sys/password as sysdba"
SQL> select comp_name, version, status from dba_registry
       where comp_id = 'CATPROC';
```

You should get the following results:

COMP_NAME	VERSION	STATUS
Oracle9i Packages and Types	9.2.0.6.0	Valid

Note: Be sure that the `catpatch.sql` script has been run against your database. Even if you have patched your database Oracle home to Oracle9i Release 2 (9.2.0.6), when you create a new database using the Database Configuration Assistant (DBCA), the new database might require the `catpatch.sql` script.

7.1.5.3 If You Installed the OracleAS Metadata Repository in an Oracle 10g Database

If you used the OracleAS Metadata Repository Creation Assistant to install the OracleAS Metadata Repository in an Oracle Database 10g database, you must upgrade the database to Oracle Database 10g (10.1.0.4.2) before you can use Metadata Repository Upgrade Assistant (MRUA) to upgrade the component schemas in the OracleAS Metadata Repository to 10g Release 2 (10.1.2.0.2).

Note: The Oracle Database 10g (10.1.0.4.2) patch is available only on the Oracle Database 10g (10.1.0.4.2) CD in the Oracle Application Server 10g Release 2 (10.1.2.0.2) CD pack.

7.1.6 Relocating the Database Datafiles, Control Files, and Log Files

By default, after you upgrade your database, the datafiles, control files, and log files associated with the database remain in their original location. For example, if you used Oracle Universal Installer to upgrade a OracleAS Metadata Repository seed database, the datafiles for the OracleAS Metadata Repository database remain in the source Oracle home.

As a result, Oracle recommends that you relocate these files as a safeguard against inadvertently deleting them (for example, by deleting or decommissioning the entire source Oracle home directory tree). In addition, there may be performance benefits to moving the database files outside of the source Oracle home.

See Also: "Renaming and Relocating Datafiles" and "Creating Additional Copies, Renaming, and Relocating Control Files" in the *Oracle Database Administrator's Guide*

7.1.7 Configuring Oracle Enterprise Manager 10g Database Control

The Oracle Enterprise Manager 10g Database Control provides a Web-based console you can use to manage Oracle Database 10g. When your OracleAS Metadata Repository is installed in an Oracle Database 10g instance, you can use the Database Control to manage your OracleAS Metadata Repository database.

See Also: "Managing the OracleAS Metadata Repository Database with Database Control" in the *Oracle Application Server Administrator's Guide*

However, after you use Oracle Universal Installer to upgrade your OracleAS Metadata Repository database to Oracle Database 10g, the Database Control is not configured automatically. Instead, if you want to use the Database Control to manage your upgraded OracleAS Metadata Repository database, you must configure the Database Control manually using the Enterprise Manager Configuration Assistant (EMCA).

See Also: "Configuring the Database Control with EMCA" in *Oracle Enterprise Manager Advanced Configuration*

7.1.8 Database Upgrade Considerations When Using Oracle Ultra Search

If you have installed and configured Oracle Ultra Search, there are several issues you must consider before you upgrade your OracleAS Metadata Repository database.

Oracle Ultra Search is distributed both with the Oracle Database and with Oracle Application Server Release 2 (9.0.2) and 10g (9.0.4). The version installed with the Oracle database is different than the version installed with Release 2 (9.0.2) and 10g (9.0.4).

As a result, if you upgrade your database version, incompatibilities can result that will affect some key features of Oracle Ultra Search and, in specific upgrade configurations, some Oracle Ultra Search files can be overwritten in the database Oracle home.

In general, it is important to note the database version to which you are upgrading:

- If you are upgrading an OracleAS Metadata Repository database to Oracle9i Release 2 (9.2.0.6), you do not want Oracle Ultra Search to be upgraded as part of the database upgrade. Instead, your goal is to keep using the current 10g (9.0.4) version of Oracle Ultra Search so it is compatible with Oracle Application Server.
- If, however, you are upgrading your database to Oracle Database 10g, then you want Oracle Ultra Search to be upgraded during the database upgrade. After the upgrade of the database to Oracle Database 10g, you can then run the Metadata Repository Upgrade Assistant to complete the Oracle Ultra Search upgrade.

The following sections describe how to workaround these issues:

- [Upgrading Oracle Ultra Search Middle Tiers Before Upgrading the OracleAS Metadata Repository Database](#)
- [Configuring Oracle Ultra Search When Upgrading a Oracle9i Release 2 \(9.2.0.4\) Database](#)
- [Repairing Oracle Ultra Search After Upgrading an Oracle9i Release 2 \(9.2.0.x\) Database](#)

7.1.8.1 Upgrading Oracle Ultra Search Middle Tiers Before Upgrading the OracleAS Metadata Repository Database

If you have installed and configured Oracle Ultra Search, you must upgrade your middle tiers before you upgrade the OracleAS Metadata Repository database.

For example, if you are upgrading OracleAS Identity Management in a colocated Infrastructure, you must upgrade the middle tiers before you upgrade OracleAS Identity Management. This is because the OracleAS Identity Management upgrade process in a colocated Infrastructure automatically upgrades the database.

If you do not upgrade the middle tiers first, compatibility problems will result between the Oracle Ultra Search files installed in the middle tiers and the Oracle Ultra Search files installed in the upgraded database.

7.1.8.2 Configuring Oracle Ultra Search When Upgrading a Oracle9i Release 2 (9.2.0.4) Database

If you have installed the OracleAS Metadata Repository in a Oracle9i Release 2 (9.2.0.4) database using the OracleAS Metadata Repository Creation Assistant, you

must perform the following procedure to prevent the Oracle9i Database patchset from overwriting Oracle Ultra Search files.

This procedure is necessary only if you are applying an Oracle9i Database patchset to an Oracle9i Release 2 (9.2.0.4) database that hosts the OracleAS Metadata Repository. If you are upgrading from Oracle9i (9.0.1.3) or Oracle9i (9.0.1.5), this procedure is not necessary because that database upgrade results in a new Oracle home.

Before you apply the Oracle9i Database patchset:

1. Log in to the computer that hosts the OracleAS Metadata Repository database and change directory to the database Oracle home.
2. Rename the `ultrasearch` directory in the OracleAS Metadata Repository database Oracle home as follows:

Old name:

`ORACLE_HOME\ultrasearch`

New name:

`ORACLE_HOME\ultrasearch_904`

3. Rename the `ultrasearch` directory that was backed up automatically when you ran the OracleAS Metadata Repository Creation Assistant to initially create the repository in the existing database.

The name of the backup directory is in the following format:

`ORACLE_HOME\ultrasearch_datestamp`

Rename this directory by removing the underscore and datestamp as follows:

`ORACLE_HOME\ultrasearch`

4. Upgrade the database by applying the Oracle9i Release 2 (9.2.0.x) patchset.
5. Rename the `ultrasearch` directory to `ultrasearch_920x`, because this is the directory created by the Oracle9i Database patchset, and the Oracle Ultra Search files installed by the patchset are not usable in this configuration.
6. Rename the `ultrasearch_904` directory to `ultrasearch` because this directory contains the original 10g (9.0.4) files that are compatible with this version of Oracle Application Server.
7. Verify that the Oracle Ultra Search version is correct, by using the following SQL on the OracleAS Metadata Repository database:

```
select wk_util.get_version from dual;
```

This command should return '9.0.4' as the current version of Oracle Ultra Search.

7.1.8.3 Repairing Oracle Ultra Search After Upgrading an Oracle9i Release 2 (9.2.0.x) Database

If you applied an Oracle9i Release 2 (9.2.0.x) patchset to your OracleAS Metadata Repository Creation Assistant database without first configuring Oracle Ultra Search as described in [Section 7.1.8.2, "Configuring Oracle Ultra Search When Upgrading a Oracle9i Release 2 \(9.2.0.4\) Database"](#), then you can repair the Oracle Ultra Search software using the following procedure:

1. Rename the `ultrasearch` directory in the OracleAS Metadata Repository database Oracle home as follows:

Old name:

`ORACLE_HOME\ultrasearch`

New name:

`ORACLE_HOME\ultrasearch_904_920x`

The new `ultrasearch_904_920x` directory contains the Oracle Ultra Search files that are unusable with this version of Oracle Application Server.

2. Create a new version of the `ultrasearch` directory that contains Oracle Ultra Search files that are compatible with this version of Oracle Application Server.

You can create a new `ultrasearch` directory in the OracleAS Metadata Repository database Oracle home by copying the `ultrasearch` directory from the original 10g (9.0.4) OracleAS Metadata Repository Creation Assistant CD-ROM.

7.1.8.4 Upgrading the Oracle Ultra Search Schemas Immediately After Upgrading the OracleAS Metadata Repository Database

When you upgrade the OracleAS Metadata Repository database, the database upgrade procedure also upgrades some components of Oracle Ultra Search.

As a result, if you are using Oracle Ultra Search, upgrade the component schemas with the Metadata Repository Upgrade Assistant as soon as possible after you upgrade the OracleAS Metadata Repository database version.

MRUA completes the Oracle Ultra Search upgrade process by upgrading the Oracle Ultra Search schema and running required Oracle Ultra Search SQL scripts against the OracleAS Metadata Repository.

7.2 Task 2: Back Up the OracleAS Metadata Repository Before Upgrade

Before you begin upgrading your OracleAS Metadata Repository installation, perform a backup of the OracleAS Metadata Repository Oracle home, and perform a backup of the database that hosts the OracleAS Metadata Repository schemas.

See Also: [Section 3.1, "Backup Strategies Before Upgrade"](#)

7.3 Task 3: Review Special Considerations for Specific Component Schemas

The following sections describe special instructions to consider before using MRUA to upgrade the OracleAS Portal, OracleBI Discoverer, OracleAS Wireless, and Oracle Ultra Search schemas in the OracleAS Metadata Repository:

- [Special Instructions Before Upgrading the OracleAS Portal Schemas](#)
- [About Upgrading the Oracle Business Intelligence Discoverer Schema](#)
- [About Upgrading the OracleAS Wireless Schema](#)
- [Preparing to Upgrade the Oracle Ultra Search Component Schema](#)

7.3.1 Special Instructions Before Upgrading the OracleAS Portal Schemas

The following instructions describe required tasks you must perform before upgrading the OracleAS Portal schemas in the OracleAS Metadata Repository:

- [Downloading and Installing the OracleAS Portal 10g \(9.0.4\) Repository Upgrade Software](#)
- [Downloading and Installing the Oracle9iAS Single Sign-On 9.0.2.5 Patch](#)

7.3.1.1 Downloading and Installing the OracleAS Portal 10g (9.0.4) Repository Upgrade Software

If you are upgrading a Release 2 (9.0.2) OracleAS Metadata Repository and you are using OracleAS Portal, then you must perform the following task before running MRUA.

Note that you must also perform this procedure before you upgrade an Oracle9iAS Release 2 (9.0.2) Portal repository in a customer database.

See Also: [Section 8.5.2, "Upgrading the OracleAS Portal Repository in a Customer Database"](#)

This procedure installs a required patch in the Oracle home of the database that contains the OracleAS Portal schemas:

1. Log in to the computer where your OracleAS Portal repository or OracleAS Metadata Repository is installed.
Be sure to log in as the same user who installed the repository.
2. Determine the version of the database where the OracleAS Metadata Repository or OracleAS Portal repository being upgraded resides.
3. Using your Web browser, log in to OracleMetaLink (<http://metalink.oracle.com>) and locate the patch specific to your database version:
 - Patch 4045812 if your database version is 10g or later.
 - Patch 2778342 if your database version is an Oracle9i database.

Note: The two patches contain the same software but are bundled using different versions of the Oracle Universal Installer. Attempting to install the wrong one will result in version related errors in the installer. The latest version of these patches should always be used.

4. Download the ZIP file that contains the patch into a temporary directory on your computer and extract its contents. The file contains the following:
 - `Disk1` - a directory containing the scripts used to run the Oracle AS Portal repository upgrade
 - `readme.html` - A readme file
5. Examine the `readme.html` file for any changes that could affect the remaining procedures.
6. Set the `ORACLE_HOME` environment variable to the database Oracle home for the OracleAS Metadata Repository or OracleAS Portal repository.
7. Run the Oracle Universal Installer to copy the Portal upgrade scripts to the Oracle home using this command:

```
%ORACLE_HOME%\oui\bin\setup.exe
```

[Table 7–2](#) describes the options you should select on each screen of the Oracle Universal Installer.

The installation procedure creates the following directory in the Oracle home:

```
ORACLE_HOME\portal\upg\plsqli
```

It contains the programming code originally required to upgrade your repository from version 9.0.2 to version 10g (9.0.4). These files will automatically be used as part of the repository upgrade to version 10.1.2.

Table 7–2 Summary the Oracle Universal Installer Screens When Installing the OracleAS Portal 10g (9.0.4) Repository Upgrade Patch

Screen	Description and Recommended Options to Select
Welcome	Welcomes you to Oracle Universal Installer.
Specify File Locations	<p>In the Source field, specify the complete path to the <code>products.xml</code> file that was included in the download for Patch 4045812 or the <code>products.jar</code> file that was included in the download for Patch 2778342.</p> <p>For example, if you unzipped the downloaded file into your <code>D:\downloads\portal_patch</code> directory, you would enter the following in the Source field.</p> <ul style="list-style-type: none"> ■ For Patch 4045812: D:\downloads\portal_patch\Disk1\stage\products.xml ■ For Patch 2778342: D:\downloads\portal_patch\Disk1\stage\products.jar <p>In the Destination fields, enter the name and path to the database Oracle home that hosts your OracleAS Portal repository.</p>
Summary	Use this screen to confirm the choices you’ve made. Click Install to begin installing the patch.
End of Installation	<p>This screen appears when the installation is complete.</p> <p>Click Exit to quit Oracle Universal Installer.</p>

7.3.1.2 Downloading and Installing the Oracle9iAS Single Sign-On 9.0.2.5 Patch

If you are using OracleAS Portal and you plan to keep using a 9.0.2 OracleAS Identity Management installation after you upgrade your OracleAS Metadata Repository, then you must perform the following steps in order to allow for interoperability between OracleAS Portal and 9.0.2 OracleAS Single Sign-On.

Note that this procedure also applies to situations where you have installed the OracleAS Portal repository in a customer database, outside of an OracleAS Metadata Repository.

See Also: [Section 8.5.2, "Upgrading the OracleAS Portal Repository in a Customer Database"](#)

This procedure does not apply if you have already upgraded the OracleAS Single Sign-On schema to 9.0.2.5 or if you are upgrading a 10g (9.0.4) OracleAS Portal repository or 10g (9.0.4) OracleAS Metadata Repository.

To apply the OracleAS Single Sign-On 9.0.2.5 patch:

1. Log in to the computer where your Oracle9iAS Release 2 (9.0.2) Metadata Repository containing your OracleAS Single Sign-On schema is located.

Be sure to log in as the same user who installed the Release 2 (9.0.2) Metadata Repository.

2. Log in to *OracleMetaLink* and locate Patch 2995671:

`http://metalink.oracle.com`

3. Download the ZIP file that contains the patch into a temporary directory on your computer and extract its contents. The file contains the following:

- `docs` - a directory containing documentation for installing and applying the patch
- `util` - a directory containing the files required to install and apply the patch
- `readme.txt` - A readme file that describes the patch and its contents

4. Use the instructions in the following HTML file to install and apply the patch:

`patch_directory\docs\sso_patch_902.html`

For example, if you unpacked the patch ZIP file into the `D:\downloads\sso_patch\` directory, the documentation would be located at:

`D:\downloads\sso_patch\docs\sso_patch_902.html`

The patch is applied to the Oracle9iAS Single Sign-On Server schema in the Release 2 (9.0.2) OracleAS Metadata Repository.

7.3.1.3 Converting External Application Identifiers After Applying the OracleAS Single Sign-On 9.0.2.5 Patch

If you are upgrading OracleAS Portal 10g (9.0.4) and you have applied the OracleAS Single Sign-On 9.0.2.5 patch, then you must apply a patch to convert the external application identifiers in the OracleAS Portal schema. Refer to [Table 7-3](#) for the appropriate patch number.

Table 7-3 Required Patches to Convert External Application Identifiers After Applying the Oracle Application Server Single Sign-On 9.0.2.5 Patch

OracleAS Portal Version	Patch Number
9.0.4	4037687
9.0.4.1	4029587

Note: The conversion of external application identifiers is generally performed automatically if you are upgrading directly from OracleAS Portal Release 2 (9.0.2). However, there may be some environments where automatic conversion during upgrade from OracleAS Portal Release 2 (9.0.2) is not possible. If this happens then the pre-check will fail and you will see an error in the upgrade log that indicates that the upgrade was unable to generate an SSO ID. In this case you must apply a patch to convert the external application identifiers and rerun the upgrade. Refer to [Table 5-5](#) in [Section 5.6.5.4, "Converting External Application IDs"](#) for the correct patch number.

7.3.2 About Upgrading the Oracle Business Intelligence Discoverer Schema

After you use MRUA to upgrade the OracleAS Metadata Repository, you will be able to use Oracle Business Intelligence Discoverer schema (DISCOVERER5) only with a 10g Release 2 (10.1.2) Portlet Provider.

See Also: *Oracle Application Server Portal User's Guide* for more information about portlet providers

Specifically, the upgraded 10g Release 2 (10.1.2) OracleBI Discoverer schema cannot be used with a Release 2 (9.0.2) or 10g (9.0.4) Portlet Provider. If you later need to use the OracleAS Metadata Repository with a previous version of the Portlet Provider, the only solution is to restore a backup of the OracleAS Metadata Repository database that was created before you ran MRUA.

7.3.3 About Upgrading the OracleAS Wireless Schema

The following sections provide information you should review before upgrading the OracleAS Wireless schema in the OracleAS Metadata Repository:

- [About Upgrading Release 2 \(9.0.2\) and 10g \(9.0.4\) Wireless Schemas](#)
- [Upgrading OracleAS Wireless Device Definitions](#)

7.3.3.1 About Upgrading Release 2 (9.0.2) and 10g (9.0.4) Wireless Schemas

MRUA upgrades the OracleAS Wireless schema from 10g (9.0.4) to 10g Release 2 (10.1.2), but it does not upgrade the OracleAS Wireless schema from Release 2 (9.0.2).

As a result, if you are upgrading from 10g (9.0.4), then MRUA upgrades the OracleAS Wireless schema successfully and no workarounds or special steps are required. Similarly, or if you are upgrading from Release 2 (9.0.2) and you did not configure OracleAS Wireless, then MRUA installs the Wireless schema with no issues.

However, if you are upgrading from Release 2 (9.0.2) and you configured OracleAS Wireless in the Release 2 (9.0.2) middle tier, then you must follow the instructions for upgrading a Wireless middle tier as described in [Section 4.10.2, "Special Instructions When Upgrading an OracleAS Wireless Release 2 \(9.0.2\) Middle Tier"](#) before using MRUA to upgrade the OracleAS Metadata Repository.

This is because during the middle tier installation and upgrade to 10g Release 2 (10.1.2), the OracleAS Wireless Configuration Assistant upgrades the OracleAS Wireless schema to 10g (9.0.4). You can then use MRUA to upgrade the schema from 10g (9.0.4) to 10g Release 2 (10.1.2).

Note that if you have installed and configured OracleAS Wireless for Release 2 (9.0.2) and you did not install and configure at least one 10g Release 2 (10.1.2) OracleAS Wireless middle tier against the OracleAS Metadata Repository, the following error appears in the MRUA log files:

Invalid upgrade path. Please install AS10G (904) or 10.1.2 wireless mid tier against this infrastructure before running the MR upgrade.

See Also: *Oracle Application Server Installation Guide* for information about installing and configuring OracleAS Wireless as part of a Portal and Wireless installation

7.3.3.2 Upgrading OracleAS Wireless Device Definitions

When you upgrade the OracleAS Wireless schema in the OracleAS Metadata Repository, MRUA does not upgrade any wireless device definitions stored in the OracleAS Metadata Repository.

To obtain the most recent wireless device updates, as well as instructions for how to add them to your repository, navigate to the following URL on the Oracle Technology Network (OTN):

<http://www.oracle.com/technology/products/iaswe/devices/index.html>

7.3.4 Preparing to Upgrade the Oracle Ultra Search Component Schema

If you are using Oracle Ultra Search, log in to the Oracle Ultra Search administration tool and stop and disable all crawler synchronization schedules in every Oracle Ultra Search instance before you run MRUA.

After you run MRUA, you can enable all crawler synchronization schedules.

See Also: *Oracle Ultra Search Administrator's Guide*

7.4 Task 4: Run the Metadata Repository Upgrade Assistant (MRUA)

After you have upgraded the middle tiers that depend upon this OracleAS Metadata Repository and after you have upgraded the database to a supported version, you can then use MRUA to upgrade the application server component schemas in the OracleAS Metadata Repository.

Note: The OracleAS Metadata Repository contains schemas for all the Oracle Application Server components. However, only a subset of those component schemas must be updated by MRUA. Other schemas, such as the OracleAS Identity Management component schemas, are upgraded during the OracleAS Identity Management upgrade. Still others, do not require any upgrade from previous versions.

The following sections describe how to use MRUA to upgrade your component schemas:

- [Section 7.4.1, "Applying Required Release 2 \(9.0.2\) Patchsets"](#)
- [Section 7.4.2, "Verifying That the Oracle Internet Directory and Database Processes Are Running"](#)
- [Section 7.4.3, "Stopping All Middle Tier Instances That Use the OracleAS Metadata Repository"](#)
- [Section 7.4.4, "Checking for Invalid Database Objects"](#)
- [Section 7.4.5, "Running the Metadata Repository Upgrade Assistant \(MRUA\)"](#)
- [Section 7.4.6, "Example Execution Times for the Metadata Repository Upgrade Assistant"](#)
- [Section 7.4.7, "Reviewing the MRUA Log Files"](#)
- [Section 7.4.8, "Reviewing the OracleAS Portal Repository Upgrade Log Files"](#)
- [Section 7.4.9, "Using a SQL Query to Verify the Success of the OracleAS Metadata Repository Upgrade"](#)

7.4.1 Applying Required Release 2 (9.0.2) Patchsets

If you are upgrading from Oracle Application Server Release 2 (9.0.2), be sure you have installed the latest patchsets.

Note that this section does not apply if you are upgrading from 10g (9.0.4).

The upgrade procedures in this manual have been tested using the latest patchsets available from *OracleMetaLink*. As a result, before you upgrade from Oracle Application Server Release 2 (9.0.2), apply the latest Oracle Application Server 9.0.2 patchsets to both the middle tiers and to the OracleAS Infrastructure components that the middle tiers rely upon.

The *OracleMetaLink* Web site is at the following URL:

<http://metalink.oracle.com/>

At the time this document was published the most recent Oracle9iAS patchset release was the Oracle9iAS 9.0.2.3 patchset (3038037). To locate this patchset, search for patch number 3038037 on *OracleMetaLink*.

Note: After applying Oracle9iAS 9.0.2.3 patchset (3038037), verify that the patchset was applied successfully before proceeding with the 10g Release 2 (10.1.2) upgrade. For example, verify that the Application Server Control, your deployed applications, and the components you use are functioning properly after you apply the patchset.

7.4.2 Verifying That the Oracle Internet Directory and Database Processes Are Running

Before you use MRUA, you must be sure that the following processes are up and running:

- The database that hosts the OracleAS Metadata Repository
- The database listener for the OracleAS Metadata Repository database
- The Oracle Internet Directory instance where the OracleAS Metadata Repository database is registered

Log in to the Application Server Control Console to verify that the necessary processes are running and that the required components are configured properly. For example, you can use the Application Server Control Console to verify that the Farm page displays correctly and that the Oracle Internet Directory and OracleAS Single Sign-On components are up and running.

From the Application Server Home page in the Application Server Control Console click **Ports** to view a list of the ports currently in use by the application server instance, and to verify that the components are configured properly.

See Also: "Introduction to Administration Tools" in the *Oracle Application Server Administrator's Guide* for more information about using the Application Server Control Console

7.4.3 Stopping All Middle Tier Instances That Use the OracleAS Metadata Repository

Before you use MRUA, you must stop all processes associated with each middle tier that uses the OracleAS Metadata Repository.

Note that at this point in the upgrade process, as a prerequisite for running MRUA, all the middle tier instances should have been upgraded to 10g Release 2 (10.1.2).

There are two ways to view all the Oracle Application Server instances that use the OracleAS Metadata Repository:

- Display the Farm page in the Application Server Control Console.

See Also: "Introduction to Administration Tools" in the *Oracle Application Server Administrator's Guide* for more information about the Application Server Control Console Farm page

- Use the following Distributed Configuration Management command in the Oracle home of any middle-tier or OracleAS Identity Management instance that belongs to the farm:

```
ORACLE_HOME/dcm/bin/dcmctl listinstances
```

See Also: *Distributed Configuration Management Administrator's Guide* for more information about dcmctl commands

To stop all the processes in a 10g Release 2 (10.1.2) middle tier, use the Services Control panel to stop the ProcessControl service and the Application Server Control.

7.4.4 Checking for Invalid Database Objects

Before you run MRUA, use the following procedure to make sure that none of the database objects that are required by Oracle Application Server are invalid:

1. Connect to the OracleAS Metadata Repository database.

For example:

```
METADATA_REPOSITORY_ORACLE_HOME\bin\sqlplus "connect / as sysdba"
```

2. When prompted, enter the SYS password.
3. Issue the following SQL command:

```
SELECT owner, object_type, object_name
FROM all_objects
WHERE status='INVALID';
```

The query should not return any database objects that have an Oracle Application Server component schema (such as PORTAL, WIRELESS, and so on) in the 'owner' column.

If you find any invalid objects, run the `utlrp.sql` script from the SQL*Plus command line to recompile the invalid objects:

```
@?/rdms/admin/utlrp.sql
```

7.4.5 Running the Metadata Repository Upgrade Assistant (MRUA)

After you have upgraded the OracleAS Metadata Repository database, backed up the database, and stopped the dependent middle-tier installations, you can use MRUA to upgrade the component schemas in the OracleAS Metadata Repository, which now reside in the upgraded database.

Note: Be sure to log in to the computer where the OracleAS Metadata Repository is running as the same user who installed the Release 2 (9.0.2) or 10g (9.0.4) OracleAS Metadata Repository. MRUA must be run on the computer that hosts the OracleAS Metadata Repository that you are about to upgrade.

To run MRUA:

1. Mount the Metadata Repository Upgrade Assistant and Utilities CD-ROM.
The MRUA and Utilities CD-ROM is part of the Oracle Application Server CD-ROM Pack that you receive when you order the Oracle Application Server software.
2. Start MRUA by entering the following command, with the following required arguments, which are described in [Table 7-4](#):

```
CD_DRIVE_LETTER:\mrua\mrua.bat
-oracle_home metadata_repository_oracle_home
-oid_host Oracle_Internet_Directory_host
-oid_ssl_port Oracle_Internet_Directory_SSL_port
```

Table 7-4 Summary of the Required MRUA Command Line Arguments

Argument	Description
-oracle_home	The destination 10g Release 2 (10.1.2) OracleAS Metadata Repository home directory.
-oid_host	The name of the computer that hosts the Oracle Internet Directory where the OracleAS Metadata Repository is registered.
-oid_ssl_port	The secure port for the Oracle Internet Directory. For the purposes of upgrading the OracleAS Metadata Repository, you must use a secure connection to the Oracle Internet Directory.

Note: The value of the `-oid_host` argument and `-oid_ssl_port` arguments must match the value of the corresponding properties defined in following configuration file in the Identity Management Oracle home:

```
IDENTITY_MANAGEMENT_HOME\config\ias.properties
```

For example:

```
OIDhost=sys42.acme.com
OIDsslport=636
```

3. When you are prompted, enter the password for the database SYS user account.
MRUA needs the SYS password so it can access and modify the component schemas in the database.
4. When you are prompted, enter the Oracle Internet Directory cn=orcladmin administrator password.
MRUA needs the Oracle Internet Directory password to connect to the Oracle Internet Directory in which the OracleAS Metadata Repository is registered.

After you provide the required passwords, MRUA checks to be sure the Oracle Internet Directory is running and does one of the following:

- If Oracle Internet Directory is down or unavailable, MRUA displays an error message and exits.
- If Oracle Internet Directory is up and running, MRUA connects to the directory service and obtains additional information required to upgrade the component schemas.
- If multiple instances of the OracleAS Metadata Repository are registered with the directory, MRUA prompts you to select the OracleAS Metadata Repository you want to upgrade.

You can upgrade only one OracleAS Metadata Repository at a time. You must select the OracleAS Metadata Repository on your local machine that corresponds to the value of the `-oracle_home` parameter.

5. If you are prompted to select a OracleAS Metadata Repository, select the OracleAS Metadata Repository you want to upgrade.

MRUA starts the upgrade process. As each step in the upgrade is executed, information messages appear on the screen to show the progress of the upgrade.

[Example 7-1](#) shows an example of a typical MRUA upgrade session.

6. Review the output of the MRUA command; if MRUA reports any errors, see [Section C.10, "Error Messages Generated By the Metadata Repository Upgrade Assistant"](#).

Note: In many cases, MRUA will report that the Oracle Application Server Certificate Authority (OCA) and Oracle Ultra Search component schemas have already been upgraded. This is to be expected because in some cases, the OCA schema is updated automatically by the OracleAS Identity Management and the Oracle Ultra Search schema is updated during the database upgrade.

Example 7-1 Sample Output from an MRUA Session

```
mrua.bat -oracle_home D:\oracle10g -oid_host dserv1.acme.com -oid_ssl_port 3130
```

```
Executing mrua.pl
Running on Windows
```

```
OracleAS Metadata Repository Upgrade Assistant 10.1.2.0.2
```

```
Enter the password for SYS:
Enter the password for cn=orcladmin:
```

```
Upgrading the OracleAS Metadata Repository to release 10.1.2.0.2
```

```
Calling upgrade plugin for MRUA
Component upgraded successfully MRUA
```

```
Calling upgrade plugin for UDDI
Component upgraded successfully UDDI
```

```
Calling upgrade plugin for WCS
Component upgraded successfully WCS
```

```
Calling upgrade plugin for OCA
```

```
Component has already been upgraded OCA

Calling upgrade plugin for ULTRASEARCH
Component has already been upgraded ULTRASEARCH

Calling upgrade plugin for WIRELESS
Component upgraded successfully WIRELESS

Calling upgrade plugin for WORKFLOW
Component upgraded successfully WORKFLOW

Calling upgrade plugin for PORTAL
Component upgraded successfully PORTAL

Calling upgrade plugin for DISCOVERER
Component upgraded successfully DISCOVERER

Calling upgrade plugin for B2B
Component upgraded successfully B2B

Calling upgrade plugin for ORABPEL
Component upgraded successfully ORABPEL

Calling upgrade plugin for BAM
Component upgraded successfully BAM

Calling upgrade plugin for MRC
Component upgraded successfully MRC

SUCCESS: All OracleAS plug-ins report successful upgrade

Finished mrua.pl
```

7.4.6 Example Execution Times for the Metadata Repository Upgrade Assistant

The time required to run MRUA will vary, depending upon your hardware and the amount of data in your OracleAS Metadata Repository. However, testing of MRUA has shown the following typical execution times on the following hardware and software platforms:

- 1 hour, 40 minutes on a Sun UltraSPARC 60, dual CPU, running Solaris 2.9
- 45 minutes on a 2.4GHz Pentium 4, running Windows 2000 Service Pack 4

See Also: [Section 3.3, "Planning for System Downtime"](#)

7.4.7 Reviewing the MRUA Log Files

When you run MRUA, the utility generates a set of log files that you can use to troubleshoot, verify, or analyze the OracleAS Metadata Repository upgrade process. For more information, see the following sections:

- [Guidelines for Using the MRUA Log Files](#)
- [Locating the MRUA Log Files](#)

7.4.7.1 Guidelines for Using the MRUA Log Files

If the MRUA output indicates that one or more of the component upgrades failed, review the MRUA log files, or any component log files referenced from the MRUA log files.

If the OracleAS Portal upgrade fails, then see [Section 7.4.8, "Reviewing the OracleAS Portal Repository Upgrade Log Files"](#) for information on how to proceed.

Otherwise, refer to [Appendix C, "Upgrade and Compatibility Error Messages"](#) for information about specific component error messages you might find in the log files.

If, by reviewing the log files and [Appendix C](#), you are able to identify a solution to the upgrade failure, you can implement your solution and then re-run MRUA. When you re-run MRUA, any components that were upgraded successfully during the previous run will not be affected. However, MRUA will attempt to upgrade any components that were not upgraded successfully during a previous run of the utility.

Contact Oracle Support for any errors that are not documented or that cannot be resolved by following documented actions. Note that some errors that occur will require the repository to be restored from backup, the problem to be resolved, and another upgrade to be run.

7.4.7.2 Locating the MRUA Log Files

The log files are located in the following directory in the Oracle home of the OracleAS Metadata Repository you are upgrading:

```
METADATA_REPOSITORY_ORACLE_HOME\upgrade\logs
```

MRUA generates three log files that are of particular interest when you are troubleshooting upgrade issues. The name of the log file includes the exact time the MRUA session was run. This makes it easy to identify a log file for a particular MRUA session.

For example, the three log files generated when you run MRUA at 12:36 PM on September 16, 2004 would appear as follows in the logs directory:

```
mrua2004-09-16_12-36-36PM.log
mrua2004-09-16_12-36-36PM.err
mrua2004-09-16_12-36-36PM.out
```

[Table 7-5](#) shows the three log file types and the content you can expect to find in each one.

Table 7-5 Summary of the Log Files Generated by MRUA

MRUA Log File	Description
mrua<timestamp>.log	The log file is a good place to start if you are troubleshooting a particular problem with the OracleAS Metadata Repository upgrade. This file contains a high-level summary of all the actions performed by MRUA; as a result, it can help you isolate a specific component that was not upgraded successfully.
mrua<timestamp>.err	The error file contains any errors or stack traces generated during the upgrade process. These errors should contain information that help you diagnose and address specific upgrade errors.
mrua<timestamp>.out	The output file is the largest of the three MRUA log files and it contains the most comprehensive data about the MRUA session. Use this log file to determine exactly when a particular problem occurred to and see the output generated by the MRUA subcomponents.

7.4.8 Reviewing the OracleAS Portal Repository Upgrade Log Files

This section provides information about the OracleAS Portal upgrade log files. If the OracleAS Portal upgrade fails, carefully review this section in its entirety before attempting to troubleshoot the upgrade failure.

Note that if the OracleAS Portal components were upgraded to 10g Release 2 (10.1.2) successfully, then there is no need to examine the log files.

The OracleAS Portal upgrade is made up of two underlying paths:

- 9.0.2 to 9.0.4 (which uses software downloaded from Metalink for Patch 2778342)
- 9.0.4 to 10.1.2 (which uses software included in the Metadata Repository Upgrade Assistant and Utilities CD-ROM)

Each of these two paths generates its own set of log files and temporary directories. When upgrading all the way from Release 2 (9.0.2) to 10g Release 2 (10.1.2) in a single step, log files for both paths are created.

When upgrading OracleAS Portal by running MRUA, the log files are generated into a single directory:

```
ORACLE_HOME\upgrade\temp\portal
```

When upgrading OracleAS Portal manually, as described in [Section 8.5.2, "Upgrading the OracleAS Portal Repository in a Customer Database"](#), the files are located in the directory where the upgrade was run. In all cases, any already existing log files in the relevant directory will be renamed to include a time stamp, so that they are not overwritten.

Table 7–6 Summary of the Repository Upgrade Log Files Generated by OracleAS Portal

Log File	Description
upgrade.log	<p>The log file generated by the 10g (9.0.4) to 10g Release 2 (10.1.2) OracleAS Portal upgrade. This file will always be generated if the starting version is 10g (9.0.4), as long as the checks performed at the beginning of the upgrade succeed.</p> <p>It will also be generated when the starting version is Release 2 (9.0.2), as long as the Release 2 (9.0.2) to 10g (9.0.4) portion of the upgrade succeeds. If this file exists and has an "Upgrade completed successfully" message at the end, the upgrade was successful, regardless of the starting version.</p>
precheck.log	<p>The log file generated for the checks performed before the 10g (9.0.4) to 10g Release 2 (10.1.2) upgrade. This file is generated before the script begins making modifications to the repository, or when a manual upgrade from 10g (9.0.4) is run in -precheck mode.</p> <p>This file will always be generated if the starting version is 10g (9.0.4). It will not be generated if the starting version is Release 2 (9.0.2); precheck902.log is generated in this case instead. If there are errors in precheck.log, the 10g (9.0.4) to 10g Release 2 (10.1.2) upgrade will not run and the upgrade.log file will not be generated.</p>
upgrade902.log	<p>The log file generated by the Release 2 (9.0.2) to 10g (9.0.4) OracleAS Portal upgrade. This file will always be generated if the starting version is Release 2 (9.0.2), as long as the checks performed at the beginning of the upgrade succeed.</p> <p>It will not be generated if the starting version is 10g (9.0.4) or if there are errors in precheck902.log. If there are errors in upgrade902.log, the 10g (9.0.4) to 10g Release 2 (10.1.2) upgrade will not run and the upgrade.log file will not be generated.</p>

Table 7–6 (Cont.) Summary of the Repository Upgrade Log Files Generated by OracleAS

Log File	Description
precheck902.log	<p>The log file generated for the checks performed before the Release 2 (9.0.2) to 10g (9.0.4) upgrade begins making modifications to the repository, or when a manual upgrade from Release 2 (9.0.2) is run in -precheck mode.</p> <p>This file will always be generated if the starting version is Release 2 (9.0.2). It will not be generated if the starting version is 10g (9.0.4); precheck.log is generated in this case instead. If there are errors in this file, none of the other log files will be generated.</p>

At the end of each one of these log files, there is either a success message or a summary of all the errors that occur earlier in the file. These summary messages include references to line numbers. You can go to those lines earlier in the log file to see the errors in their context.

Caution: Any portals running after an upgrade that was not clean are not supported by Oracle.

Look up any errors found in the precheck or upgrade log files using [Section C.7, "Error Messages When Upgrading Oracle Application Server Portal"](#) as a reference. Resolve any errors and warnings that have documented actions. Any errors that occur after the precheck phase require the repository to be restored from backup, the problem resolved and another upgrade run. Contact Oracle Support for any errors that are not documented or that cannot be resolved by following documented actions. When undocumented errors are found, do not attempt to run the upgrade again, run any further steps, alter any files, modify the OracleAS Portal schema, or access the OracleAS Portal instance in your browser.

The following is an example of the end of the log file after a successful upgrade (note the "Upgrade completed successfully" message and the lack of error messages):

```
>>> Running upg/common/popinv.pl
### Upgrade completed successfully
>>> Running tmp/popinv.sql
Portal SQL script started at Thu Apr 22 20:56:23 2004
Connected.
Updating patch inventory.
Upgrade Ended at Thu Apr 22 20:56:24 2004
```

7.4.9 Using a SQL Query to Verify the Success of the OracleAS Metadata Repository Upgrade

Besides the MRUA log files, you can optionally query the database to verify the success of the OracleAS Metadata Repository upgrade. Specifically, you can use a SQL command to view the status of each component schema that MRUA upgrades.

Note: The OracleAS Metadata Repository contains schemas for all the Oracle Application Server components. However, only a subset of those component schemas must be updated by MRUA. Other schemas, such as the OracleAS Identity Management schemas, are upgraded during the Oracle Application Server installation. Still others, do not require any upgrade from previous versions.

To see the current status of each component schema in the repository that is upgraded by MRUA:

1. Connect to the OracleAS Metadata Repository database.

For example:

```
METADATA_REPOSITORY_ORACLE_HOME\bin\sqlplus "connect / as sysdba"
```

2. When prompted, enter the SYS password.
3. Enter the following SQL command to verify the status of the component schemas:

```
SELECT comp_id,version,status FROM APP_REGISTRY;
```

Refer to the following example and tables for an explanation of the output of the query:

- [Example 7-2](#) shows an example of the output displayed from the component schema SQL query.
- [Table 7-7](#) describes the possible values in the COMP_ID column of the SQL query results.
- [Table 7-8](#) describes the possible values in the STATUS column of the SQL query results.

Example 7-2 Sample Output of the Component Schema SQL Query

```
prompt> SELECT comp_id,version,status FROM APP_REGISTRY;
```

COMP_ID	VERSION	STATUS
WIRELESS	10.1.2.0.2	VALID
PORTAL	10.1.2.0.2	VALID
WCS	10.1.2.0.2	VALID
DISCOVERER	10.1.2.0.2	VALID
MRUA	10.1.2.0.2	VALID
B2B	10.1.2.0.2	VALID
WORKFLOW	10.1.2.0.2	VALID
OCA	10.1.2.0.2	VALID
UDDI	10.1.2.0.2	VALID
MRC	10.1.2.0.2	VALID
ORABPEL	10.1.2.0.2	VALID
BAM	10.1.2.0.2	VALID

11 rows selected.

Table 7-7 Component IDs in the OracleAS Metadata Repository

Component ID	Description
WIRELESS	Oracle Application Server Wireless
PORTAL	Oracle Application Server Portal
WCS	Oracle Application Server Web Clipping
DISCOVERER	Oracle Application Server Business Intelligence Discoverer
MRUA	Oracle Application Server Metadata Repository Upgrade Assistant
B2B	Oracle Application Server Integration B2B
WORKFLOW	Oracle Workflow

Table 7–7 (Cont.) Component IDs in the OracleAS Metadata Repository

Component ID	Description
OCA	Oracle Application Server Certificate Authority
UDDI	Oracle Application Server UDDI Registry
MRC	Oracle Application Server Metadata Repository Container
ORABPEL	Oracle Business Process Execution Language (BPEL) Process Manager
BAM	Oracle BPEL Process Analytics

Table 7–8 Component Status Indicators in the OracleAS Metadata Repository

Status	Description
LOADING	MRUA has begun creating the component database objects, but not all the component objects are created and loaded into the database.
LOADED	MRUA has created all the component database objects and loaded them into the database. MRUA can now begin upgrading the component schemas.
UPGRADING	MRUA has begun upgrading the schemas for this component, but the upgrade is not complete.
UPGRADED	MRUA has finished upgrading the schemas for this component.
VALID	The component schemas have been upgraded and are valid. This is the expected status after a successful upgrade to Oracle Application Server 10g Release 2 (10.1.2).
INVALID	The component schemas have been upgraded, but the database component schemas are invalid. This state can be caused by a non-recoverable error or invalid data. See Section 7.4.7 for information about reviewing the MRUA log files.

7.5 Task 5: Complete the OracleAS Metadata Repository Upgrade for OracleAS Portal and OracleAS Wireless

The following sections describe the tasks to perform after running MRUA to upgrade your OracleAS Metadata Repository component schemas:

- [Completing the OracleAS Portal Schema Upgrade Process](#)
- [Completing the OracleAS Wireless Schema Upgrade Process](#)

7.5.1 Completing the OracleAS Portal Schema Upgrade Process

The following sections describe how to complete the upgrade of the OracleAS Portal schema:

- [Reconfiguring OracleAS Portal to Work with Oracle Internet Directory After Upgrading From Release 2 \(9.0.2\)](#)
- [Moving the Portlet Repository to the New Format \(Optional\)](#)
- [Starting all Middle Tiers That Use The Upgraded Portal Instance](#)
- [Accessing the Upgraded OracleAS Portal](#)

- [Impact of Shutting Down the OracleAS Metadata Repository Database on OracleAS Portal Oracle Text Indexes](#)
- [Reconfiguring OracleAS Portal to Work with Delegated Administration Services](#)
- [Updating OracleAS Portal Performance Reporting](#)

7.5.1.1 Reconfiguring OracleAS Portal to Work with Oracle Internet Directory After Upgrading From Release 2 (9.0.2)

If your starting version was Oracle9iAS Portal 9.0.2.x, follow the steps in this section to reconfigure OracleAS Portal for Oracle Internet Directory.

This reconfiguration is necessary because some Oracle Internet Directory privileges have changed between Release 2 (9.0.2) and 10g (10.1.2). For example, the subscription for Oracle Directory Integration and Provisioning event notifications has changed and Oracle Delegated Administration Services URLs have changed.

When you run the `ptlconfig` command, as described in the following procedure, values such as these, which are cached in the Portal schema, get updated accordingly:

1. Change directory to the following location in the destination middle tier Oracle home:

```
DESTINATION_ORACLE_HOME\portal\conf
```

2. Run the following command:

```
ptlconfig -dad portal_DAD -oid
```

In this command, *portal_DAD* is the DAD of the OracleAS Portal repository that you just upgraded.

See Also: *Oracle Application Server Portal Configuration Guide*, for more information about the `ptlconfig` tool

7.5.1.2 Starting all Middle Tiers That Use The Upgraded Portal Instance

After the script has executed successfully, start each middle tier that is using the upgraded Portal instance by performing these steps:

1. Start OPMN and its managed processes by starting the Process Manager service in the Services control panel.
2. Start the Application Server Control service in the Services control panel.

7.5.1.3 Moving the Portlet Repository to the New Format (Optional)

By default, the portlet repository is upgraded in-place in the OracleAS Portal schema. The existing pages, templates, items, and so on, in the portlet repository are upgraded, and the new portlets are added into the repository. Since the old settings are preserved, the pages look very similar to the way they did before the upgrade was run.

Note: If your starting version is Oracle9iAS Portal 9.0.2 and you had rendered the Portlet Repository as grouped by Provider names, then after the upgrade, the folders in the repository will be grouped by category, because the Group by Provider Name option has been deprecated since OracleAS 10g (9.0.4).

To create a similar organization, assign the portlet names to categories representing the Provider names.

If you want the repository to have the appearance of a newly installed instance, a script is available to re-create the upgraded portlet repository. The script removes the existing portlet repository and re-creates it. Use the script only if you do not wish to preserve customizations, settings, styles, banners, and so on in the portlet repository.

To re-create the portlet repository, follow these steps after starting the middle tiers as described in [Section 7.5.1.2, "Starting all Middle Tiers That Use The Upgraded Portal Instance"](#):

1. Perform a backup of the database, since the script overwrites the repository and is not reversible.
2. Navigate to the following directory on the OracleAS Metadata Repository Upgrade Assistant and Utilities CD-ROM, which contains the `prrp1c.sql` script:
`MRUA_CDROM_ROOT\portal\admin\pls1\upg\common`
3. Log in to the OracleAS Metadata Repository database as Portal schema user from SQL*Plus.
4. Run the `prrp1c.sql` script with no arguments.

7.5.1.4 Accessing the Upgraded OracleAS Portal

If there were no errors in the OracleAS Portal Repository upgrade, you can access your upgraded Portal. Open a browser and navigate to the following URL:

`http://host.domain:port/pls/portal_DAD`

For example:

`http://portalhost42.acme.com:7777/pls/portal`

7.5.1.5 Impact of Shutting Down the OracleAS Metadata Repository Database on OracleAS Portal Oracle Text Indexes

Missing Oracle Text indexes are created during the OracleAS Portal upgrade process, but they are not populated, as this can be very time consuming. The new indexes are populated once the upgrade is complete, when the next synchronization job is scheduled.

If you need to shut down the database after the upgrade (to back up) and the Oracle Text index synchronization job has started, consider the impact of the following shutdown commands on the synchronization process:

- Shutdown Immediate or Abort
The indexing job stops immediately and is rolled back.
- Shutdown Normal
Entire indexing job finishes before the database shuts down.

- Shutdown Transactional

Synchronization of the current index is allowed to finish before the database shuts down. If one or more indexes still need to be synchronized, synchronization of the next index is not started.

7.5.1.6 Reconfiguring OracleAS Portal to Work with Delegated Administration Services

In releases of OracleAS Portal prior to 10g Release 2 (10.1.2), if the Infrastructure and Application Server middle tier were separated onto different hosts or protocols, the user and group Lists of Values (LOVs) required configuration to accommodate the JavaScript Origin Server Security policy. The resultant JavaScript errors were due to the OracleAS Portal and Delegated Administration Services (DAS) residing in different domains.

There were two options provided for resolution of this issue:

- Setting up of a common-domain by running the script `secjsdom.sql`
- Deploying DAS on the middle tier.

In OracleAS Portal 10g Release 2 (10.1.2), the implementation of the LOVs has been modified to support a callback method, removing the cross-domain issue and the need for the configuration steps above. However, this callback mechanism requires a corresponding patch to the DAS environment to support the use of LOVs across domains.

Support for the callback method has been included in DAS versions 9.0.4.1 and later. Conversely, if you are using DAS version 9.0.2.3 you can apply patch 3278638 to enable callback support.

If you have installed the appropriate DAS version in your environment, and have not previously implemented the configuration options mentioned above, then no subsequent configuration steps are required in OracleAS Portal to support the LOVs on a separate host. However, if you used the configuration options mentioned above, it is required to remove these steps. This can be done as follows:

1. If a common domain was defined, reset it by executing the `secjsdom.sql` script as follows:

- a. From your operating system command prompt, go to the following directory:

```
DESTINATION_MIDTIER_ORACLE_HOME\portal\admin\plsql\wwc
```

- b. Using SQL*Plus, connect to the OracleAS Portal Repository as the schema owner and run the following commands:

```
@secjsdom ''  
commit;
```

2. If OracleAS Portal has been configured to use a locally deployed DAS servlet, reconfigure it to point to the Infrastructure tier by running the `secdaslc.sql` script as follows:

- a. From the operating system prompt, go to the following directory:

```
DESTINATION_MIDTIER_ORACLE_HOME\portal\admin\plsql\wwc
```

- b. Using SQL*Plus, connect to the OracleAS Portal Repository as the schema owner and run the following commands:

```
@secdaslc N
```

```
commit;
```

7.5.1.7 Updating Customized Login Portlets

If you have customized the login portlet, you must update it to work in this release. In prior releases, user credentials were posted to OracleAS Portal's `wwptl_login.login_url` procedure. In this release, the user credentials must be passed to OracleAS Single Sign-On's `wwsso_app_admin.ls_login` procedure instead. Follow the steps outlined in Oracle*MetaLink* note 290445.1 to update your customized login portlet to use `wwsso_app_admin.ls_login`.

Note: You do not have to perform any additional steps at this time if you followed the instructions provided in the patch documentation after applying Oracle Application Server 10g (9.0.4) Patch Set 1 (9.0.4.1), or any of the following one-off patches:

- 3273358 (Release 9.0.4)
 - 3273354 (Release 9.0.2.6)
 - 3273342 (Release 9.0.2.3)
-

7.5.1.8 Updating OracleAS Portal Performance Reporting

To generate performance reports for OracleAS Portal, you must use a set of SQL scripts. These scripts are used to load OracleAS Portal log files into a database table and create reports based on that information. The scripts are located in the following directory:

```
ORACLE_HOME\portal\admin\plsql\perf
```

If you are already using the performance reporting scripts, then after upgrading to OracleAS Portal 10.1.2.0.2, you must run the new copy of the following file:

```
ORACLE_HOME\portal\admin\plsql\perf\install\update.sql
```

This is to accommodate the new URL format for Repository requests and to enable collection of new data. If this is not done, then the scripts will not work.

For details about how you can use the scripts to monitor OracleAS Portal performance, refer to the following file in the scripts subdirectory:

```
ORACLE_HOME\portal\admin\plsql\perf\scripts\README.html
```

7.5.2 Completing the OracleAS Wireless Schema Upgrade Process

After you upgrade the OracleAS Metadata Repository and restart your middle-tier installations, Oracle Sensor EdgeServer Processes will not be created automatically. Instead, you must create these processes manually after you run the OracleAS Upgrade Assistant and after you have upgraded the OracleAS Metadata Repository to 10g Release 2 (10.1.2).

See Also: "Managing the OracleAS Wireless Server" in the *Oracle Application Server Wireless Administrator's Guide* for information about using the Application Server Control Console to create Oracle Sensor EdgeServer Processes

7.6 Task 6: Start the Middle Tiers That Use the OracleAS Metadata Repository

After you complete the OracleAS Metadata Repository upgrade process, you can start the middle tiers associated with the OracleAS Metadata Repository. For each middle tier, perform the following steps:

1. Start OPMN and its managed processes by starting the Process Manager service in the Services control panel.
2. Start the Application Server Control service in the Services control panel.

Upgrading Standalone and Separately Installed Components

This chapter describes how to upgrade Oracle Application Server standalone components and Oracle Application Server components that are installed separately from the other Oracle Application Server components.

These components are middle-tier components that cannot be upgraded automatically by the OracleAS Upgrade Assistant.

The following section describe how to upgrade these components:

- [Upgrading a Standalone OC4J Instance](#)
- [Upgrading a Standalone OracleAS Web Cache Instance](#)
- [Upgrading Oracle Application Server InterConnect](#)
- [About Upgrading Oracle Application Server ProcessConnect](#)
- [Upgrading Schemas in a Customer Database](#)

8.1 Upgrading a Standalone OC4J Instance

Upgrading a standalone OC4J instance (for example, an instance created with the OC4J that is available for download from Oracle Technology Network in zip format) is a manual process. The OracleAS Upgrade Assistant does not upgrade such instances. You must re-deploy the applications in the Oracle Application Server 10g Release 2 (10.1.2) Oracle home:

1. Create an OC4J instance to host the applications in the 10g Release 2 (10.1.2) Oracle home, using the Oracle Enterprise Manager 10g Application Server Control Console.
2. Configure the OC4J instance with any system properties or environment variables that are unique to the standalone instance.
3. Identify all command-line arguments from the `java -jar` command line in the standalone instance.

In Oracle Application Server, the Oracle Process Manager and Notification Server (OPMN) subsystem is responsible for starting and stopping OC4J.

4. Move all command-line arguments to the following configuration file:

```
DESTINATION_ORACLE_HOME\opmn\conf\opmn.xml
```

5. Move any properties specified in properties files in the standalone instance to the `opmn.xml` file.

6. Re-deploy the standalone applications (EAR files) in the Oracle Application Server 10g Release 2 (10.1.2) Oracle home.
7. You can use the Application Server Control Console to deploy the applications.

See Also: "Introduction to Administration Tools" in the *Oracle Application Server Administrator's Guide* for information about using Application Server Control

"Deploying a New OC4J Application" in the Enterprise Manager online help

8.2 Upgrading a Standalone OracleAS Web Cache Instance

To upgrade a standalone instance of OracleAS Web Cache Release 2 (9.0.2 or 9.0.3) to Oracle Application Server 10g (9.0.4), do not use the OracleAS Upgrade Assistant. Instead, use the procedure described in this section. (A standalone instance is one installed from a kit that included only this product; it was not installed as part of an Oracle Application Server installation.)

Note: To upgrade an instance of OracleAS Web Cache that was installed as part of an Oracle Application Server installation, use the OracleAS Upgrade Assistant, which is documented in [Chapter 4, "Upgrading the Middle Tier"](#)

You use the OracleAS Web Cache Upgrade Tool (WebcacheMigtool), which performs the following functions to provide a way to audit the upgrade process:

- Creates a backup copy of the webcache.xml file from the source Oracle home. The backup file is named webcache.xml.preUpgrade.

Note that if you run the Upgrade Tool more than once, your original settings will be lost. To prevent this, create another backup copy before you begin.
- Logs all upgrade activity in the file wxupgrade.log in the directory in which you run the Upgrade Tool.

To upgrade OracleAS Web Cache, take the following steps:

1. Stop the previous, standalone version of OracleAS Web Cache, using the webcachectl executable:

`ORACLE_HOME\bin\webcachectl stop`
2. Stop the newly installed version, using the opmnctl command:

`opmnctl stopproc ias-component=WebCache`
3. Set the ORACLE_HOME environment variable to the 10g Release 2 (10.1.2) Oracle home.
4. From the command prompt, change the current directory to:

`%ORACLE_HOME%\upgrade`

Note that when you set the ORACLE_HOME environment variable, you must specify the path to the Oracle home that uses same character case that is used in the webcache.xml configuration file.

For example, if the Oracle home specified as `D:\Oracle\webCache1\` in the `webcache.xml` file, then you must include the uppercase "O" and uppercase "C" when you define the `ORACLE_HOME` variable.

5. Run the following command. (Note that it is a single line.)

```
%ORACLE_HOME%\jdk\bin\java -classpath "lib\webcacheua.jar;lib\ua.jar;
%ORACLE_HOME%\lib\xmlparserv2.jar;%ORACLE_HOME%\lib\dms.jar"
oracle\ias\upgrade\config\webcache\WebcacheMigtool
-s source_OH
-d destination_OH
```

In this example, you must supply the following two arguments:

- *source_OH*, which refers to the full path to the Release 2 (9.0.2) or (9.0.3) Oracle home.
- *destination_OH*, which refers to the full path to the 10g Release 2 (10.1.2) Oracle home.

The command provides optional arguments that allow you to upgrade from the same version or upgrade between different hosts. These arguments are necessary only when the source cache is part of a cache cluster. In that case, the configuration file contains entries for more than one cache and you must use one or more of these arguments to specify which cache is the source cache.

- *-o sourcefile_OH*: Specifies the Oracle home for the particular cache in the source configuration file. Usually, this value is equal to `<source_OH>` specified by *-s*. However, to "upgrade" to the same version, such as when you want to migrate the configuration from a test cache to a production cache, you use this option.

To migrate, you must copy the source configuration file and DTD files, and optionally the error files and wallet files, to a temporary directory. Then, you run the Upgrade Tool using the temporary directory as `<source_OH>`, and this option to specify the Oracle home value used in the source configuration file.

- *-h sourcefile_HOSTNAME*: Specifies the HOSTNAME for the particular cache in the source configuration file. Usually, this value is equal to the localhost. However, if the source and the destination installations are on different hosts, you must use both the *-o* and *-h* options.

To migrate to a different host, copy the source configuration file and DTD files and optionally the error files and wallet files, to a temporary directory on the destination host. Then, you execute the Upgrade Tool using the temporary directory as `<source_OH>`, and using the *-o* and *-h* options.

6. Restart the upgraded OracleAS Web Cache, using the following command:

```
opmnctl startproc ias-component=WebCache
```

This command starts the admin server, cache server process, and, if enabled, the auto-restart process.

Note: Do not start the previous version of OracleAS Web Cache because you may encounter port conflicts.

8.3 Upgrading Oracle Application Server InterConnect

This section explains how to upgrade Oracle9iAS InterConnect.

Since Oracle Application Server InterConnect is not distributed on the Oracle Application Server CD-ROM, and thus may not yet be installed, this section includes installation as a first step to upgrading. Installation instructions for each adapter are provided in the Oracle Application Server InterConnect documentation in the Oracle Application Server documentation library.

See Also: *Oracle Application Server InterConnect Installation Guide*

For the purposes of Oracle Application Server InterConnect, you can upgrade from Release 2 (9.0.2), 10g (9.0.4), or 10g Release 2 (10.1.2.0.0). Oracle Application Server InterConnect 10g Release 2 (10.1.2.0.2) provides several new features and improvements, such as the ability to manage InterConnect from the 10g Release 2 (10.1.2.0.2) Application Server Control Console.

See Also: "What's New in This Release" in the *Oracle Application Server Integration InterConnect User's Guide*

The upgrade process consists of the following tasks:

- [Installing and Upgrading Hub Components, Adapters, and Development Kit](#)
- [Upgrading Metadata](#)
- [Upgrading Management](#)
- [Upgrading the Oracle Workflow Schema in a Customer Database](#)

8.3.1 Reviewing Your Current Oracle Application Server InterConnect Installations

The location where you install Oracle Application Server InterConnect components varies, depending upon the version you are using:

- In Oracle9iAS Release 2 (9.0.2) topologies, Oracle Application Server InterConnect components reside in the Infrastructure or middle tier Oracle home, or a different Oracle home.
- In 10g (9.0.4), Oracle Application Server InterConnect components do not reside in the Infrastructure or middle tier Oracle home. In fact, you must install them in a different Oracle home.
- In 10g Release 2 (10.1.2.0.0) and 10g Release 2 (10.1.2.0.2), Oracle Application Server InterConnect components reside in the middle tier Oracle home.

8.3.2 Installing and Upgrading Hub Components, Adapters, and Development Kit

Your first step in upgrading to Oracle Application Server InterConnect 10g Release 2 (10.1.2.0.2) is to install the 10g Release 2 (10.1.2.0.2) Hub, Adapters, and Development Kits by following the installation instructions in the Oracle Application Server InterConnect installation documentation, which is available on the Oracle Application Server 10g Release 2 (10.1.2.0.2) documentation library:

<http://www.oracle.com/technology/documentation/>

The information provided in the installation procedure should reflect the configuration of the components that you are upgrading.

Ensure that the architecture described in the 10g Release 2 (10.1.2.0.2) installation is the same as the architecture you are upgrading, unless you intend to change the architecture.

8.3.3 Upgrading Metadata

Follow these steps to upgrade the Oracle Application Server InterConnect metadata:

1. Install the most recent Oracle Application Server InterConnect patch set for the version you are upgrading.

For example, if you are upgrading from Release 2 (9.0.2), be sure that you have installed the latest Release 2 (9.0.2) patchset.

See Also: [Section 7.4.1, "Applying Required Release 2 \(9.0.2\) Patchsets"](#)

2. Run the `oaiexport` script provided with the Release 2 (9.0.2), 10g (9.0.4), or 10g Release 2 (10.1.2.0.0) installation.

Supply values for repository name, file name, system password, and connect string with the following command:

```
SOURCE_ORACLE_HOME\oai\version\repository\oaiexport
file_name system\system_password
connect_string
```

In this example, `version` represents 9.0.2, 9.0.4, or 10.1.2.0.0, depending upon the version of Oracle Application Server InterConnect you are upgrading.

The metadata is exported to the `file_name` you provide in the current directory.

3. Run the `oaiimport` script provided with the new 10g Release 2 (10.1.2.0.2) installation.

Supply values for repository name, file name, from user (the user ID of the user whose metadata is being imported), system password, `ichub` schema password, and connect string with the following command:

```
DESTINATION_ORACLE_HOME\integration\interconnect\repository\oaiimport
file_name
from_user
system\system_password
ichub_schema_password
connect_string
```

When you run this command, the `file_name` you provide is imported into the 10g Release 2 (10.1.2.0.2) Hub database.

4. Create the tables in the hub schema database by executing one of the following SQL commands in the hub schema.
 - If you are upgrading from Release 2 (9.0.2), execute the SQL commands in [Example 8-1](#).
 - If you are upgrading from 10g (9.0.4), execute the SQL commands in [Example 8-2](#).
 - If you are upgrading from 10g Release 2 (10.1.2.0.0), skip directly to the next step in the procedure.
5. Execute the following SQL script, which is available in the following directory in the new 10g Release 2 (10.1.2.0.2) Oracle home:

`DESTINATION_ORACLE_HOME\integration\interconnect\repository\sql\xsd.sql`

Example 8–1 Creating Oracle Application Server InterConnect Tables When Upgrading From Release 2 (9.0.2)

```
CREATE TABLE emdcomments (emdid NUMBER(10)
    CONSTRAINT fk_emdcomments_emdid REFERENCES
    emd(id) ON DELETE CASCADE
    CONSTRAINT nn_emdcomments_emdid NOT NULL,
    name VARCHAR2(4000)
    CONSTRAINT nn_emdcomments_name NOT NULL,
    comments LONG);

DROP TABLE ComponentInfoValue;
CREATE TABLE ComponentInfoValue (seqnum NUMBER
    CONSTRAINT fk_seqnum REFERENCES
    ComponentInfo(seqnum) ON DELETE CASCADE,
    value RAW(1024);
```

Example 8–2 Creating Oracle Application Server InterConnect Tables When Upgrading From 10g (9.0.4)

```
DROP TABLE ComponentInfoValue;
CREATE TABLE ComponentInfoValue (seqnum NUMBER
    CONSTRAINT fkseqnum REFERENCES
    ComponentInfo(seqnum) ON DELETE CASCADE,
    value RAW(1024);
```

8.3.4 Upgrading Management

The Oracle Application Server Integration InterConnect Management architecture has changed significantly from previous releases. With Oracle Application Server InterConnect 10g Release 2 (10.1.2.0.2), you can now use the Oracle Enterprise Manager 10g Application Server Control Console to manage Oracle Application Server InterConnect runtime components.

Note, however, that the Application Server Control Console can be used only for the following operations:

- Configuring the InterConnect hub, repository and adapter properties
- Starting and stopping the Interconnect runtime components (Repository and Adapters)
- Monitoring the runtime performance metrics of the running adapters

For other management activities (for example, modifying and resubmitting the error and fault messages), you can use the ICManager command-line tool. ICManager is available at the following location within the 10g (10.1.2) Oracle Application Server InterConnect Oracle home:

`DESTINATION_ORACLE_HOME\integration\interconnect\bin\ICManager.bat`

See Also: *Oracle Application Server Integration InterConnect User's Guide* for more information about using the Application Server Control Console and ICManager to manage Oracle Application Server InterConnect

8.4 About Upgrading Oracle Application Server ProcessConnect

For 10g Release 2 (10.1.2), Oracle Application Server ProcessConnect is not being shipped and cannot be upgraded from 10g (9.0.4) to 10g Release 2 (10.1.2). In addition, you cannot migrate Oracle Application Server ProcessConnect 9.0.4 to Oracle Application Server Integration B2B 10.1.2.

8.5 Upgrading Schemas in a Customer Database

This section details the steps for upgrading OracleAS repositories that are stored outside of the OracleAS Metadata Repository.

- [Upgrading the Oracle Business Intelligence Discoverer End User Layer Schema](#)
- [Upgrading the OracleAS Portal Repository in a Customer Database](#)
- [Upgrading the Oracle Workflow Schema in a Customer Database](#)
- [Upgrading a Standalone PL/SQL Web Toolkit Installations](#)

8.5.1 Upgrading the Oracle Business Intelligence Discoverer End User Layer Schema

If you have been using Oracle Business Intelligence Discoverer version 9.0.2.52 or earlier, you must upgrade the End User Layer before you can use Oracle Business Intelligence Discoverer in 10g Release 2 (10.1.2).

To upgrade the Oracle Business Intelligence Discoverer End User Layer schema, you use Oracle Discoverer Administrator, shipped with the Oracle Developer Suite 10g Release 2 (10.1.2).

See Also: *Oracle Business Intelligence Administration Guide* in the Oracle Developer Suite documentation library.

8.5.2 Upgrading the OracleAS Portal Repository in a Customer Database

This section details the steps for upgrading an OracleAS Portal repository stored outside of the OracleAS Metadata Repository.

Note: If your OracleAS Portal instance was originally installed in version 3.0.9 or earlier, or if it was installed using `ptlasst`, it resides outside of an OracleAS Metadata Repository and needs to be upgraded using the steps in this section.

General information on upgrading to OracleAS Portal 10.1.2, as well as instructions for upgrading from other versions, is provided at:

<http://portalcenter.oracle.com/upgrades>

Click **10.1.2** in the list of upgrade targets on the page.

Refer to the following sections for more information about upgrading the OracleAS Portal repository in a customer database:

- [Preparing to Upgrade the OracleAS Portal Repository in a Customer Database](#)
- [Running the OracleAS Portal Repository Upgrade in a Customer Database](#)
- [Completing the OracleAS Portal Repository Upgrade in a Customer Database](#)

8.5.2.1 Preparing to Upgrade the OracleAS Portal Repository in a Customer Database

The following steps should be executed to prepare for the upgrade:

1. Upgrade the middle tiers that are using the OracleAS Portal Repository to Oracle Application Server 10g Release 2 (10.1.2) and test OracleAS Portal using these middle tiers.

Perform this step for all middle tiers that are associated with the OracleAS Portal repository being upgraded. For instructions, refer to [Chapter 4, "Upgrading the Middle Tier"](#).

2. Ensure that the OracleAS Portal repository database is at least Oracle9i Release 2 (9.2.0.7).
3. Follow the instructions provided in [Section 7.3.1.1, "Downloading and Installing the OracleAS Portal 10g \(9.0.4\) Repository Upgrade Software"](#).
4. Follow the instructions provided in [Section 7.3.1.2, "Downloading and Installing the Oracle9iAS Single Sign-On 9.0.2.5 Patch"](#)
5. If you have Portal instances that are upgraded from Portal versions earlier than 9.0.2, follow the instructions in the section on migrating content between upgraded OracleAS Portal instances, in the section "Migrating Content Between Upgraded OracleAS Portal Instances" in the *Oracle Application Server Portal Configuration Guide*.

Export/import is not supported between two portals that are upgraded from versions earlier than 9.0.2. For example, assume that you have a source development Portal instance and a target production Portal instance, both of version 3.0.9. You then upgrade both the instances independently to version 9.0.4, and then to version 10.1.2. Exporting and importing content between these two upgraded 10.1.2 development and production instances is not supported.

For information on system requirements and supported versions, refer to the section "Exporting and Importing Content" in the *Oracle Application Server Portal Configuration Guide*."

8.5.2.2 Running the OracleAS Portal Repository Upgrade in a Customer Database

The following steps should be run to upgrade an OracleAS Portal repository residing in a customer database:

1. Create a cold backup of the database in which your OracleAS Portal repository resides.
2. Set the ORACLE_HOME environment variable to the OracleAS Portal repository database Oracle home.
3. Mount the Metadata Repository Upgrade Assistant and Utilities CD-ROM.

The MRUA and Utilities CD-ROM is part of the Oracle Application Server CD-ROM Pack that you receive when you order the Oracle Application Server software.

4. Verify you can connect to the OracleAS Portal schema through SQL*Plus using the schema password and the TNS name from the database Oracle home where your OracleAS Portal repository is installed.

For example:

```
sqlplus portal30/portal30@orcl
```

5. Stop all Oracle Application Server services in the middle-tier Oracle homes that are associated with the Portal repository being updated.

See Also: "Starting and Stopping the Application Server" in the *Oracle9i Application Server Administrator's Guide* in the Release 2 (9.0.2) documentation library

6. Change directory to a location where you have write permissions. The upgrade will create a set of log files and temporary directories in this location.
7. Verify that the Oracle Internet Directory that is associated with the Portal repository is up and running.
8. Run the upgrade shell script in precheck mode until there are no errors found:

```
MRUA_CD_DRIVE_LETTER:\portal\admin\plsql\upgrade.bat -precheck
```

When `-precheck` is specified, only the prechecks are done and the upgrade exits afterward. In this mode, the upgrade is not immediately terminated if a precheck fails. Instead the errors for all prechecks are consolidated in the precheck log. Look at the end of the log to see a list of checks that failed. Run in this mode until none of the prechecks fail. In this mode, the schema is not altered, so restoring from your backup is not necessary between runs.

9. Run the upgrade script without any parameters:

```
MRUA_CD_DRIVE_LETTER:\portal\admin\plsql\upgrade.bat
```

The script prompts you for information about the system setup. Your answers are echoed back for verification at the end of the script. However, if you discover that you have entered incorrect information before the end of the script, you can exit before any changes are made by answering `n` to the last script inquiry.

The following are the questions from the script. Default answers to the questions are given in brackets.

- Have you backed up your database (y|n)? [y]:

If you have not backed up the database, answer **n**, then back up the database and restart the script. If you have, answer **y**.

- Enter the name of the schema you would like to upgrade [portal]:

If your schema name is different from the default OracleAS Infrastructure 10g installation schema name of `portal`, enter the schema name

- Enter the password of the schema you would like to upgrade [portal]:

Change the default value entered for the schema name, if appropriate.

- Enter the password for the SYS user of your database [change_on_install]:

If the password is not `change_on_install`, enter the database SYS password.

- Enter the TNS connect string to connect to the database [orcl]:

Provide the TNS connect string (found in the `tnsnames.ora` file).

10. When the script is complete, examine the precheck and upgrade log files in the current directory to make sure there are no errors reported at the end.

Caution: Any portals running after an upgrade that was not clean are not supported by Oracle.

Look up any errors found in the precheck or upgrade log files using [Section C.7, "Error Messages When Upgrading Oracle Application Server Portal"](#) as a reference. Resolve any errors and warnings that have documented actions. Any errors that occur after the precheck phase require the repository to be restored from backup, the problem resolved and another upgrade run. Contact Oracle Support for any errors that are not documented or that cannot be resolved by following documented actions. When undocumented errors are found, do not attempt to run the upgrade again, run any further steps, alter any files, modify the OracleAS Portal schema, or access the OracleAS Portal instance in your browser.

For detailed information on the log files generated during the OracleAS Portal upgrade, refer to [Section 7.4.8, "Reviewing the OracleAS Portal Repository Upgrade Log Files"](#).

8.5.2.3 Completing the OracleAS Portal Repository Upgrade in a Customer Database

To complete the OracleAS Portal repository upgrade in a customer database, follow the instructions in [Section 7.5.1, "Completing the OracleAS Portal Schema Upgrade Process"](#).

8.5.3 Upgrading the Oracle Workflow Schema in a Customer Database

The Oracle Workflow schema can be installed in the OracleAS Metadata Repository or in a customer database.

If you the Oracle Workflow schema is installed in a OracleAS Metadata Repository, it will be upgraded with the other Oracle Application Server component schemas when you run the Metadata Repository Upgrade Assistant.

See Also: [Chapter 7, "Upgrading the OracleAS Metadata Repository"](#)

If you have installed the Oracle Workflow schema in a customer database, run the Oracle Workflow Configuration Assistant with either the **Server Only** or the **Server and Middle Tier** install option to upgrade the Oracle Workflow schema.

Ensure that no users are accessing the server; otherwise, locks in the database may prevent a successful upgrade.

See Also: [Section 4.10.3, "Special Instructions When Upgrading Oracle Workflow Middle Tier Components"](#)

Oracle Workflow Installation Notes for Oracle Content Management Software Development Kit

Oracle Workflow Administrator's Guide

8.5.4 Upgrading a Standalone PL/SQL Web Toolkit Installations

The OWA packages that make up the PL/SQL Web Toolkit are not automatically upgraded if you have PL/SQL applications that are installed in a customer database that does not include an OracleAS portal schema.

Refer to "Configuring mod_plsql" the *Oracle Application Server mod_plsql User's Guide* for instruction on how to manually install the latest version of the OWA packages.

Upgrading High Availability Configurations

This chapter describes considerations, restrictions, and recommended procedures for upgrading an Oracle Application Server environment that has been configured for high availability.

This chapter contains the following sections:

- [Summary of High Availability Upgrade Options, Restrictions, and Prerequisites](#)
- [Upgrading an OracleAS Cold Failover Cluster Infrastructure](#)
- [Transforming 10g \(9.0.4\) Rack-Mounted Identity Management to OracleAS Cluster \(Identity Management\)](#)

9.1 Summary of High Availability Upgrade Options, Restrictions, and Prerequisites

Oracle Application Server 10g (9.0.4) introduced high availability configurations that you could install as part of the Oracle Application Server installation procedure.

[Table 9–1](#) shows the upgrade paths supported for the 10g (9.0.4) high availability configurations.

Table 9–1 *Summary of the High Availability Upgrade Options*

10g (9.0.4) Configuration	Upgrade Path	More Information
Oracle Application Server Cold Failover Cluster	Upgrade to Oracle Application Server Cold Failover Cluster for 10g Release 2 (10.1.2.0.2).	Section 9.2, "Upgrading an OracleAS Cold Failover Cluster Infrastructure"
Rack-Mounted Identity Management	Transform the environment into a 10g Release 2 (10.1.2.0.2) OracleAS Cluster (Identity Management) environment.	Section 9.3, "Transforming 10g (9.0.4) Rack-Mounted Identity Management to OracleAS Cluster (Identity Management)"
Disaster Recovery	Upgrade the production site and the standby site separately.	"Oracle Application Server Disaster Recovery" in the <i>Oracle Application Server High Availability Guide</i>

The procedures provided in this chapter assume that you used the Oracle Application Server 10g (9.0.4) installation guide to install and configure your high availability configuration and that you have met all of the prerequisites described in the 10g (9.0.4) installation guide.

For example, these procedures assume you have already installed and configured Microsoft Cluster Server (MSCS) and that you have obtained a virtual address to associate with the cluster. A virtual address consists of a virtual hostname and an IP address. Clients access the OracleAS Cold Failover Cluster using the virtual hostname. The virtual address is in addition to each node's own hostname and IP address.

These procedures also assume you are using the seed database that was installed automatically with the 10g (9.0.4) installation procedure.

See Also: The Oracle Application Server 10g (9.0.4) installation guide for your platform, which is available as part of the platform-specific documentation library on the Oracle Technology Network:

<http://www.oracle.com/technology/documentation/appserver10g.html>

9.2 Upgrading an OracleAS Cold Failover Cluster Infrastructure

The following sections describe how to upgrade an OracleAS Cold Failover Cluster infrastructure:

- [Overview of the OracleAS Cold Failover Cluster Infrastructure Upgrade](#)
- [Backing Up the 10g \(9.0.4\) OracleAS Cold Failover Cluster Infrastructure](#)
- [Preparing to Upgrade to 10g Release 2 \(10.1.2\) From Node 1](#)
- [Upgrading to 10g Release 2 \(10.1.2\) From Node 1](#)
- [Cleaning Up the OracleAS Cold Failover Cluster Infrastructure on Node 1](#)
- [Configuring the Windows Registry, Oracle Inventory, and Services on Node 2](#)
- [Special Instructions for Updating Node 2 When Using Asymmetrical Configurations](#)
- [Using MRUA to Upgrade the OracleAS Metadata Repository from Node 2](#)
- [Performing Required Post-Upgrade Procedures for the OracleAS Cold Failover Cluster](#)

9.2.1 Overview of the OracleAS Cold Failover Cluster Infrastructure Upgrade

This section provides an outline of the steps you must perform to upgrade your 10g (9.0.4) OracleAS Cold Failover Cluster environment to 10g Release 2 (10.1.2).

Note that this procedure assumes that your OracleAS Cold Failover Cluster consists of two nodes (Node 1 and Node 2) and a single shared disk that is used by both nodes. The procedure also assumes that you use Microsoft Cluster Administrator to manage the cluster environment.

Table [Table 9–2](#) summarizes the major steps in the OracleAS Cold Failover Cluster upgrade process.

Table 9–2 Summary of OracleAS Cold Failover Cluster Upgrade Process

Step	Description	Detailed Instructions
1	Back up the 10g (9.0.4) OracleAS Cold Failover Cluster Infrastructure.	Section 9.2.2, "Backing Up the 10g (9.0.4) OracleAS Cold Failover Cluster Infrastructure"
2	From Node 1, prepare to upgrade the 10g (9.0.4) Infrastructure.	Section 9.2.3, "Preparing to Upgrade to 10g Release 2 (10.1.2) From Node 1"

Table 9–2 (Cont.) Summary of OracleAS Cold Failover Cluster Upgrade Process

Step	Description	Detailed Instructions
3	From Node 1, use Oracle Universal Installer to upgrade the Infrastructure on the shared disk to 10g Release 2 (10.1.2).	Section 9.2.4, "Upgrading to 10g Release 2 (10.1.2) From Node 1"
4	From Node 1, clean up the OracleAS Infrastructure upgrade and prepare to update Node 2.	Section 9.2.5, "Cleaning Up the OracleAS Cold Failover Cluster Infrastructure on Node 1"
5	From Node 2, configure the Windows registry, Oracle inventory, and required Windows services.	Section 9.2.6, "Configuring the Windows Registry, Oracle Inventory, and Services on Node 2"
6	From Node 2, use the Metadata Repository Upgrade Assistant (MRUA) to upgrade the OracleAS Metadata Repository.	Section 9.2.8, "Using MRUA to Upgrade the OracleAS Metadata Repository from Node 2"
7	Perform the post-upgrade procedures, which are described in the 10g Release 2 (10.1.2) Oracle Application Server Installation Guide.	Section 9.2.10, "Performing Required Post-Upgrade Procedures for the OracleAS Cold Failover Cluster"

9.2.2 Backing Up the 10g (9.0.4) OracleAS Cold Failover Cluster Infrastructure

Before you upgrade the Infrastructure it is important that you perform a full backup of the entire OracleAS Cold Failover Cluster environment. You will use this backup to restore the 10g (9.0.4) Infrastructure later in the upgrade procedure.

Caution: You must back up the 10g (9.0.4) Infrastructure directories before you start the upgrade process.

Later in the upgrade procedure, you will be asked to restore the directories to their previous 10g (9.0.4) state. If a valid backup of the 10g (9.0.4) Infrastructure is not available, you will not be able to complete the upgrade to 10g Release 2 (10.1.2).

To backup the OracleAS Cold Failover Cluster infrastructure:

1. Start the Microsoft Cluster Server (MSCS) Cluster Administrator.

Windows 2000: **Start > Programs > Administrative Tools > Cluster Administrator**

Windows 2003: **Start > Administrative Tools > Cluster Administrator**

2. Take the Oracle Application Server resources offline:

- a. In the left pane of Cluster Administrator, expand the **Groups** folder and select the name of the cluster group that contains your Oracle Application Server resources.

For example, if you named the cluster group `as904`, then click `as904`.

- b. In the right pane, take each of the resources shown in [Table 9–3](#) offline by right-clicking the resource and then selecting **Take Offline** from the context menu.

Table 9–3 Oracle Application Server Services and Corresponding Cluster Administrator Resources

Service	Format of Service Name	Format of Resource Name
Application Server Control	OracleORACLE_HOMEASControl	OracleORACLE_HOMEASControl
Oracle Process Manager and Notification Server (OPMN)	OracleORACLE_HOMEProcessManager	OracleORACLE_HOMEProcessManager
OracleAS Metadata Repository database	OracleServiceSID	SID
OracleAS Metadata Repository database listener	OracleORACLE_ HOMETNSListenerFslvirtual_host_name	OracleORACLE_ HOMETNSListenerFslvirtual_host_ name

- From the Services control panel, check to be sure that the services shown in [Table 9–3](#) are stopped.
Display the Services control panel as follows:
Windows 2000: Select **Start > Programs > Administrative Tools > Services**.
Windows 2003: Select **Start > Administrative Tools > Services**.
- When you are sure all the required services and cluster groups are stopped, back up the Infrastructure by copying the entire Infrastructure directory structure on the shared disk to a new directory.

For example, if the Oracle home for your OracleAS Infrastructure is F:\oracle\as904, then use the following command to backup the entire directory:

```
copy F:\oracle\as904 G:\backup\as904
```

Important Notes: Consider the following before starting the upgrade to 10g Release 2 (10.1.2):

- The admin and oradata directories associated with the OracleAS Metadata Repository database must be backed up before proceeding with the upgrade procedure. By default, the admin and oradata directories reside inside the Oracle home. However, if you have configured the installation so that these directories and their contents reside outside of the Oracle home, then be sure to back up the admin and oradata database directories as well.
 - This backup of the Oracle Application Server Cold Failover Cluster Infrastructure directory structure is necessary because you will use these backup directories to restore the 10g (9.0.4) Infrastructure later in the OracleAS Cold Failover Cluster upgrade procedure.
-

- Use the Windows Services control panel to start all the Infrastructure services shown in [Table 9–3](#).
- Start the database and listener as follows:

```
ORACLE_HOME\bin\lsrncctl start
ORACLE_HOME\bin\sqlplus "/ as sysdba"
SQL> startup
SQL> exit
```

9.2.3 Preparing to Upgrade to 10g Release 2 (10.1.2) From Node 1

Use the following procedure to perform the pre-installation steps on Node 1.

Step 1 Be Sure You Have Backed Up the Oracle Application Server Cold Failover Cluster Infrastructure Directories

You must back up the Infrastructure directories as directed in [Section 9.2.2, "Backing Up the 10g \(9.0.4\) OracleAS Cold Failover Cluster Infrastructure"](#) before you start the upgrade process.

Later in the upgrade procedure, you will be asked to restore the directories to their previous 10g (9.0.4) state. If a valid backup of the 10g (9.0.4) Infrastructure is not available, you will not be able to complete the upgrade to 10g Release 2 (10.1.2).

Step 2 From Cluster Administrator, Delete the Application Server Resources

1. In Cluster Administrator, open the application server group and delete each of the resources that you took offline in [Section 9.2.2, "Backing Up the 10g \(9.0.4\) OracleAS Cold Failover Cluster Infrastructure"](#).

The resources include:

- The OracleAS Metadata Repository database (for example, asdb)
- The database listener
- Oracle Process Manager and Notification Server (OPMN)
- Application Server Control

Use [Table 9–3](#) to identify the name of each resource, since the resource name is the same as the resource name used in the Services control panel.

To delete a resource, right-click the resource and select **Delete** from the context menu; then, click **Yes** in the confirmation prompt.

Step 3 Make Sure that All the Infrastructure Services are Up and Running

From the Services control panel, check to be sure that the services shown in [Table 9–3](#) are up and running on Node 1.

Note that in this step, you are starting the Windows services from the Windows operating system. The components have already been removed from Cluster Administrator and are no longer being managed by Microsoft Cluster Server.

Step 4 Verify that a Password File Exists and that the remote_login_passwordfile Parameter is Set to EXCLUSIVE mode

If you are not already using a password file for the OracleAS Metadata Repository database, create one using the ORAPWD command.

For example, if your database data files reside in the Oracle home, and your Oracle home is `F:\oracle\as904`, you can create a password file in the `ORACLE_HOME\database` directory called `pwdasdb.ora` by entering the following command:

```
ORAPWD FILE=F:\oracle\as904\database\pwdasdb.ora PASSWORD=sys_password
```

See Also: "Creating and Maintaining a Password File" in the *Oracle Database Administrator's Guide*, which is available as part of the Oracle Database Documentation Library on the Oracle Technology Network (OTN):

<http://www.oracle.com/technology/documentation/>

To check the `remote_login_passwordfile` database parameter value:

1. Execute the following SQL command:

```
prompt> sqlplus "sys/sys_password@database_SID as sysdba"
```

In this example, replace `sys_password` with the password for the database SYS account and replace `database_SID` with the database system identifier (SID).

2. Execute the following command in the SQL plus prompt:

```
SQL> show parameter remote_login_passwordfile
```

3. If the value is set to `NONE`, then update the `init.ora` file parameter as follows:

```
remote_login_passwordfile=EXCLUSIVE
```

The `init.ora` is located on your installation hard drive. For example, if `ORACLE_HOME` is set to `F:\oracle\as904`, then the `init.ora` file would be in the following location:

```
F:\oracle\as904\admin\database_name\pfile\init.ora
```

In the preceding example, replace `database_name` with the database system identifier (SID).

You must restart the database after making this change to the `init.ora` file.

9.2.4 Upgrading to 10g Release 2 (10.1.2) From Node 1

To upgrade Oracle Application Server Cold Failover Cluster (Infrastructure), you use Oracle Universal Installer. During the installation procedure, you must select **Identity Management and Metadata Repository** from the Select Installation Type screen. Oracle Universal Installer then locates the existing installation and prompts you to upgrade the existing 10g (9.0.4) Infrastructure.

When you upgrade the 10g (9.0.4) Infrastructure, Oracle Universal Installer creates a new database for the 10g Release 2 (10.1.2) OracleAS Metadata Repository and a new Oracle Internet Directory instance in a new Oracle home on the shared disk.

The new Oracle home is referred to as the destination Oracle home. The existing 10g (9.0.4) Oracle home is referred to as the source Oracle home.

The Oracle Universal Installer then upgrades the content and data in the 10g (9.0.4) source Oracle home to the 10g Release 2 (10.1.2) destination Oracle home.

1. Stop all the middle tiers that are using the services of the OracleAS Identity Management installation.
2. Log in to the computer on which instance is installed, as the same operating system user that performed the 10g (9.0.4) installation.

Note: The account you log in to install or upgrade the OracleAS Metadata Repository must be listed as a member of the Administrators group.

3. Make sure that the OracleAS Metadata Repository database and database listener are up and running.

For example, you can use the Services control panel to verify that the OracleAS Metadata Repository database service and the database listener service are started.

Use [Table 9-3](#) to locate the name of the database and listener services in the Services control panel.

4. Make sure the Oracle Internet Directory server is up and running.

To verify that Oracle Internet Directory is running, enter one of the following commands.

Note: You may have to temporarily set the ORACLE_HOME environment variable to the Oracle Internet Directory Oracle home before running the ldapbind command.

After you verify that the Oracle Internet Directory is running, you must then make sure the ORACLE_HOME environment variable is not defined before you start the 10g Release 2 (10.1.2) installer, as described later in this procedure.

If you are running Oracle Internet Directory on a non-secure port:

```
SOURCE_ORACLE_HOME\bin\ldapbind -p Non-SSL_port -h oid_host_name
```

If you are running Oracle Internet Directory on a secure port:

```
SOURCE_ORACLE_HOME\bin\ldapbind -p SSL_port -h oid_host_name -U 1
```

These commands should return a "bind successful" message.

See Also: "Syntax for LDIF and Command-Line Tools" in the *Oracle Internet Directory Administrator's Guide* for more information about the ldapbind utility

Note: Oracle Internet Directory 10g (9.0.4) allows you to start and stop the directory service using OPMN or the oidctl utility.

Before upgrading an OracleAS Identity Management Oracle home that contains Oracle Internet Directory, start the Oracle Internet Directory instance using the opmnctl utility or the Application Server Control Console. Do not use the oidctl utility; otherwise, Oracle Universal Installer will not be able to start and stop Oracle Internet Directory automatically during the upgrade process.

The correct use of opmnctl and oidctl is described in the Chapter "Oracle Internet Directory Process Control–Best Practices" in the *Oracle Internet Directory Administrator's Guide*.

5. Set the required environment variables, as defined in the section "Environment Variables" in the "Requirements" chapter of the *Oracle Application Server Installation Guide*.

In particular, be sure the following environment variables are not set:

- TNS_ADMIN
- ORACLE_HOME
- ORACLE_SID

6. If the ORACLE_HOME environment variable was previously set, restart the host computer after unsetting the variable.

The system restart is necessary to clear the ORACLE_HOME variable from the system registry. If you do not restart the computer after clearing the ORACLE_HOME variable, the installation might report an error and prevent you from finishing the installation.

7. Mount the CD-ROM and start the installer.

See Also: *Oracle Application Server Installation Guide* for detailed instructions about starting Oracle Universal Installer on your platform

8. Refer to [Table 9–4](#) for information on the options you should select on each screen.
9. After the End of Installation screen appears, exit Oracle Universal Installer and then verify that Oracle Internet Directory and Oracle Application Server Single Sign-On are functioning and accessible in the new 10g Release 2 (10.1.2) Oracle home.

See Also: *Oracle Application Server Administrator's Guide*, Chapter 1, "Accessing the Single Sign-On Server"

Table 9–4 Summary of the Oracle Universal Installer Screens During the OracleAS Identity Management Upgrade in a Colocated infrastructure

Screen	Description and Recommended Options to Select
Welcome	Welcomes you to Oracle Universal Installer and the Oracle Application Server 10g Release 2 (10.1.2) installation procedure.
Specify File Locations	Enter a name and path for the new Oracle home. For example, F:\oracle\as1012. This new Oracle home will be the destination Oracle home for your Oracle Application Server 10g Release 2 (10.1.2) upgrade.
Select a Product to Install	Select OracleAS Infrastructure 10g . If multiple languages are used in the OracleAS Infrastructure you are upgrading, then click Product Languages .
Language Selection	The screen appears only if you clicked Product Languages on the Select a Product to Install screen. If multiple languages are used in the OracleAS Infrastructure you are upgrading, select those languages. If you are not sure which languages were installed, but want languages other than English, click the double arrow button (>>) to select all languages.
Select Installation Type	Select Identity Management and OracleAS Metadata Repository . Note: It is very important that you select the same installation type that is used in the Oracle home you are upgrading.
Upgrade Existing Infrastructure	This screen appears when Oracle Universal Installer detects an existing Oracle Application Server installation of the same type as the one you selected on the Select Installation Type screen. Select the option to upgrade an existing OracleAS Infrastructure, and then select the Oracle home you want to upgrade from the drop-down list. (If there is only one Infrastructure of the selected time on the computer, then the drop-down list is inactive.)

Table 9–4 (Cont.) Summary of the Oracle Universal Installer Screens During the OracleAS Identity Management Upgrade in a Colocated infrastructure

Screen	Description and Recommended Options to Select
Specify OID Login	<p>Enter the Oracle Internet Directory superuser distinguished name (DN) in the Username field. The superuser DN <code>cn=orcladmin</code> is the default for this field; change this value if the Oracle Internet Directory superuser DN is not <code>cn=orcladmin</code>.</p> <p>Enter the password for the superuser DN in the Password field.</p>
Specify Infrastructure Database Connection Information	<p>Enter <code>SYS</code> in the Username field and the <code>SYS</code> user's password in the Password field.</p>
Warning dialog box	<p>This dialog box warns you that all the clients of the OracleAS Metadata Repository database must now be stopped. Oracle Universal Installer will automatically stop any clients within the source Oracle home.¹</p> <p>However, you must manually stop any database clients and OracleAS Metadata Repository clients that reside in another Oracle home.</p> <p>Clients of the OracleAS Metadata Repository include:</p> <ul style="list-style-type: none"> ■ OracleAS Identity Management components that use this OracleAS Metadata Repository. ■ Middle tier instances that use this OracleAS Metadata Repository <p>Within each middle tier that uses this OracleAS Metadata Repository, you must be sure to stop all components, including Oracle HTTP Server and OracleAS Web Cache.</p> <p>For more information, see the chapter "Starting and Stopping" in the <i>Oracle Application Server Administrator's Guide</i>.</p>
Database Listener Warning Dialog Box	<p>If a database listener is running on the host, a warning dialog box displays. Review the dialog box to determine whether or not you need to stop the listener manually.</p> <p>For more information, see Section 5.3.3, "Stopping the Database Listener When Prompted During the OracleAS Identity Management Upgrade".</p>
Specify Instance Name and ias_admin Password	<p>Enter a name for the new Oracle Application Server 10g Release 2 (10.1.2) instance and a password for the <code>ias_admin</code> Administrator account.</p> <p>You use the <code>ias_admin</code> password to log on to Application Server Control Console to manage Oracle Application Server.</p> <p>In general, the minimum length of the <code>ias_admin</code> password is five alphanumeric characters. At least one of the characters must be a number and the password cannot start with a number.</p> <p>For more information, see the section "The <code>ias_admin</code> User and Restrictions on its Password" in the <i>Oracle Application Server Installation Guide</i>.</p>
Summary	<p>Use this screen to confirm the choices you've made. Click Install to begin upgrading to the new 10g Release 2 (10.1.2) Oracle home.</p>

Table 9–4 (Cont.) Summary of the Oracle Universal Installer Screens During the OracleAS Identity Management Upgrade in a Colocated infrastructure

Screen	Description and Recommended Options to Select
The Configuration Assistants	<p>After the initial software is installed, a set of configuration assistants automatically set up the components in the new 10g Release 2 (10.1.2) Oracle home. Use this screen to follow the progress of each assistant and to identify any problems during this phase of the installation.</p> <p>Notes:</p> <ul style="list-style-type: none"> ■ The Database Upgrade Assistant (DBUA) can take a significant amount of time to upgrade the database. For more information how long it takes to upgrade your database, see Section 3.3, "Planning for System Downtime". ■ While Database Upgrade Assistant is running, do not use the Stop button to interrupt the execution of Database Upgrade Assistant. If you press Stop, the underlying processes for Database Upgrade Assistant will continue to run. Also, Oracle Universal Installer will wait until those processes complete before returning control to the user.
End of Installation	<p>When the installation and upgrade is complete, this screen provides important details about the 10g Release 2 (10.1.2) Oracle home, such as the URL for the Application Server Control Console and the location of the <code>setupinfo.txt</code> file.</p> <p>After you review the information on this screen, you can exit Oracle Universal Installer and proceed to the post-upgrade tasks.</p>

¹ You can access a log of the automated shutdown procedure executed by Oracle Universal Installer in the `shutdownprocesses.log` file, which is located in the `cfgtoollogs` directory in the destination Oracle home.

9.2.5 Cleaning Up the OracleAS Cold Failover Cluster Infrastructure on Node 1

Use the following steps to clean up the OracleAS Cold Failover Cluster Infrastructure on Node 1 and prepare to update Node 2.

Step 1 Stop the OracleAS Infrastructure Services on Node 1, and Set the Startup Type to Manual

1. Display the Services window.

Windows 2000: Select **Start > Programs > Administrative Tools > Services**.

Windows 2003: Select **Start > Administrative Tools > Services**.

2. Stop the 10g Release 2 (10.1.2) services:

- Oracle<OracleHomeName>ASControl
- Oracle<OracleHomeName>ClientCache
- Oracle<OracleHomeName>ProcessManager
- Oracle<OracleHomeName>TNSListenerFsl<VirtualHostName>
- OracleService<SID>

To stop a service, right-click the service and select **Stop** from the pop-up menu.

3. Set the start type of the 10g Release 2 (10.1.2) services listed above to manual.
 - a. Right-click the service, and select **Properties**.
 - b. Select **Manual** from the "Startup Type" section, and click **OK**.

Step 2 Restart Node 1

When you restart Node 1, the shared disk is moved to Node 2. If an error occurs while adding the database service to Oracle Fail Safe, then restart Node 2 and try adding the database to Oracle Fail Safe again.

9.2.6 Configuring the Windows Registry, Oracle Inventory, and Services on Node 2

After you upgrade the OracleAS Infrastructure on Node 1, the next step in the OracleAS Cold Failover Cluster upgrade procedure is to update Node 2 so that the required Windows registry settings, Oracle inventory entries, and Windows services are available for the OracleAS Cold Failover Cluster.

Step 1 Review Your Options for Updating Node 2

Review the following information to determine whether or not the two nodes of your cluster are symmetrical.

The two nodes of an OracleAS Cold Failover Cluster are symmetrical if they have an identical:

- Hardware configuration (for example, the same memory and CPU specifications)
- Software configuration (for example, the same operating system version and patch level)
- Oracle configuration (for example, the same Oracle products and Oracle homes are installed on both nodes)

If the two nodes of your OracleAS Cold Failover Cluster are *not* symmetrical, then skip the remaining steps in this section and go directly to [Section 9.2.7, "Special Instructions for Updating Node 2 When Using Asymmetrical Configurations"](#).

Step 2 Export the Oracle Registry Settings From Node 1

1. From Node 1, select **Run** from the Windows **Start** menu, and enter `regedit` in the resulting text field.
2. Locate and select the `HKEY_LOCAL_MACHINE\SOFTWARE\Oracle` entry in the Windows registry.
3. Select **Export Registry File** from the **Registry** menu.
4. In the resulting dialog box, make sure that the **Selected Branch** radio button is selected and that the `HKEY_LOCAL_MACHINE\SOFTWARE\Oracle` branch is selected.
5. Enter a name for the exported registry file and click **Save**.

For example, enter `oracle_registry_entries`.

Step 3 Remove the Database Instance from Node 1

On node 1, run the following command to remove the 10g Release 2 (10.1.2) OracleAS Metadata Repository database instance that you just upgraded:

```
F:\oracle\as1012\bin> oradim -delete -sid sid
```

Step 4 Import the Registry Settings into the Windows Registry on Node 2

1. Log in to Node 2.
2. Double-click the `oracle_registry_entries.reg` file you created when you exported the registry entries from Node 1.

3. When prompted to add the registry entries, click **Yes**.

Step 5 Create and Start the Required Windows Services for 10g Release 2 (10.1.2)

To create the Windows services on Node 2, you can use the SC tool (`sc .exe`), which is a services control management tool provided by Microsoft.

Note: Before you use this procedure, make sure that the version of the `sc .exe` program you are using is version 5.0.2134.1 or later. For more information, refer to the Microsoft Web site.

To use the SC tool to create the required services on Node 2:

1. Oracle Process Manager and Notification Server (OPMN):

```
sc create Oracle<home name>ProcessManager
binPath= "ORACLE_HOME\opmn\bin\opmn.exe -S"
```

For example:

```
sc create OracleINFRAProcessManager
binPath= "C:\oracle\appserv1\opmn\bin\opmn.exe -S"
```

2. Oracle Enterprise Manager 10g Application Server Control:

```
sc create Oracle<home name>ASControl
binPath= "ORACLE_HOME\bin\nmesrvc.exe"
```

For example:

```
sc create OracleINFRAASControl
binPath= "C:\oracle\appserv1\bin\nmesrvc.exe"
```

3. The OracleAS Metadata Repository database listener:

```
sc create Oracle<home name>TNSListener
binPath= "ORACLE_HOME\bin\TNSLSNR"
```

For example:

```
sc create OracleINFRAListener
binPath= "C:\oracle\appserv1\bin\TNSLSNR"
```

4. The OracleAS Metadata Repository database:

```
sc create OracleService<oracle_sid>
binPath= "ORACLE_HOME\bin\oracle.exe oracle_sid"
```

Note that *oracle_sid* should be in upper case. For example:

```
sc create OracleServiceORCL
binPath= "C:\oracle\appserv1\bin\ORACLE.EXE ORCL"
```

Note: The service used to manage the Oracle Enterprise Manager 10g Database Control is not included in this procedure because the Database Control is not configured automatically during the upgrade procedure. For more information, refer to [Section 7.1.7, "Configuring Oracle Enterprise Manager 10g Database Control"](#)

Step 6 Copy the Oracle Inventory from Node 1 to Node 2

The Oracle Universal Installer inventory stores information about all Oracle software products installed in all Oracle homes on a host, provided the product was installed using Oracle Universal Installer.

The Oracle inventory information is stored in Extensible Markup Language (XML) format in a single directory structure on the host. The inventory is usually located in the following directory on Windows systems:

```
C:\Program Files\Oracle\Inventory
```

You can always find the location of the inventory by selecting the following registry key in the Windows registry and viewing the value of the `inst_loc` string:

```
\\HKEY_LOCAL_MACHINE\\Software\\Oracle\\
```

To copy the Oracle Inventory to Node 2, select the entire directory (for example, `C:\Program Files\Oracle\Inventory`) and copy it to the same location on Node 2.

Step 7 Add Required Paths to the PATH Environment Variable

Use the System control panel to add the following to the beginning of the Windows PATH variable:

```
%ORACLE_HOME%\bin;%ORACLE_HOME%\jlib;
```

See Also: The Windows online help for instructions on how to set the PATH variable for your specific Windows platform

Step 8 Skip to [Section 9.2.8, "Using MRUA to Upgrade the OracleAS Metadata Repository from Node 2"](#)

Unless the nodes of the cluster are asymmetrical, skip [Section 9.2.7](#) and go directly to [Section 9.2.8](#).

9.2.7 Special Instructions for Updating Node 2 When Using Asymmetrical Configurations

If the two nodes in your OracleAS Cold Failover Cluster are not symmetrical, refer to the following procedures to update the configuration of Node 2.

Step 1 Remove the Database Instance from Node 1

On node 1, run the following command to remove the 10g Release 2 (10.1.2) OracleAS Metadata Repository database instance that you just upgraded:

```
F:\oracle\as1012\bin> oradim -delete -sid sid
```

Step 2 From Node 1, Delete the 10g Release 2 (10.1.2) Oracle Home and Restore the 10g (9.0.4) Oracle Home

1. On Node 1, delete the 10g Release 2 (10.1.2) destination Oracle home from the shard disk.
2. Delete the 10g (9.0.4) source Oracle home from the shared disk.
3. Restore the 10g (9.0.4) Infrastructure directories that you backed up in [Section 9.2.2, "Backing Up the 10g \(9.0.4\) OracleAS Cold Failover Cluster Infrastructure"](#).

For example, copy the following backed up directories described in Step 1 to their original locations:

```
copy G:\backup\as904 F:\oracle\as904
```

Note: If the 10g (9.0.4) oradata and admin directories were stored outside of the Infrastructure Oracle home, be sure to restore them to their original directories.

Step 3 From Node 2, Start the 10g (9.0.4) Infrastructure Services

1. Log in to Node 2 as the same operating system user that performed the 10g (9.0.4) installation.

Note: The account you log in to install or upgrade the OracleAS Metadata Repository must be listed as a member of the Administrators group.

2. Display the Services window.

Windows 2000: Select **Start > Programs > Administrative Tools > Services**.

Windows 2003: Select **Start > Administrative Tools > Services**.

3. Start the 10g (9.0.4) services:

- OracleService<SID>
- Oracle<OracleHomeName>TNSListenerFsl<VirtualHostName>
- Oracle<OracleHomeName>ProcessManager
- Oracle<OracleHomeName>ClientCache
- Oracle<OracleHomeName>ASControl

To start a service, right-click the service and select **Start** from the pop-up menu.

Step 4 Verify that a Password File Exists and that the remote_login_passwordfile Parameter is Set to EXCLUSIVE mode

If you are not already using a password file for the OracleAS Metadata Repository database, create one using the ORAPWD command.

For example, if your database data files reside in the Oracle home, and your Oracle home is F:\oracle\as904, you can create a password file in the ORACLE_HOME\database directory called pwdasdb.ora by entering the following command:

```
ORAPWD FILE=F:\oracle\as904\database\pwdasdb.ora PASSWORD=sys_password
```

See Also: "Creating and Maintaining a Password File" in the *Oracle Database Administrator's Guide*

To check the remote_login_passwordfile database parameter value:

1. Execute the following SQL command:

```
prompt> sqlplus "sys/sys_password@database_SID as sysdba"
```

In this example, replace *sys_password* with the password for the database SYS account and replace *database_SID* with the database system identifier (SID).

2. Execute the following command in the SQL plus prompt:

```
SQL> show parameter remote_login_passwordfile
```

3. If the value is set to NONE, then update the `init.ora` file parameter as follows:

```
remote_login_passwordfile=EXCLUSIVE
```

The `init.ora` is located on your installation hard drive. For example, if `ORACLE_HOME` is set to `F:\oracle\as904`, then the `init.ora` file would be in the following location:

```
F:\oracle\as904\admin\database_name\pfile\init.ora
```

In the preceding example, replace `database_name` with the database system identifier (SID).

You must restart the database after making this change to the `init.ora` file.

Step 5 From Node 2, Upgrade the Infrastructure to 10g Release 2 (10.1.2)

1. Make sure that the OracleAS Metadata Repository database and database listener are up and running.
2. Make sure the Oracle Internet Directory server is up and running.

To verify that Oracle Internet Directory is running, enter one of the following commands.

Note: You may have to temporarily set the `ORACLE_HOME` environment variable to the Oracle Internet Directory Oracle home before running the `ldapbind` command.

After you verify that the Oracle Internet Directory is running, you must then make sure the `ORACLE_HOME` environment variable is not defined before you start the 10g Release 2 (10.1.2) installer, as directed later in this procedure.

If you are running Oracle Internet Directory on a non-secure port:

```
SOURCE_ORACLE_HOME\bin\ldapbind -p Non-SSL_port -h oid_host_name
```

If you are running Oracle Internet Directory on a secure port:

```
SOURCE_ORACLE_HOME\bin\ldapbind -p SSL_port -h oid_host_name -U 1
```

These commands should return a "bind successful" message.

See Also: "Syntax for LDIF and Command-Line Tools" in the *Oracle Internet Directory Administrator's Guide* for more information about the `ldapbind` utility

Note: Oracle Internet Directory 10g (9.0.4) allows you to start and stop the directory service using OPMN or the `oidctl` utility.

Before upgrading an OracleAS Identity Management Oracle home that contains Oracle Internet Directory, start the Oracle Internet Directory instance using the `opmnctl` utility or the Application Server Control Console. Do not use the `oidctl` utility; otherwise, Oracle Universal Installer will not be able to start and stop Oracle Internet Directory automatically during the upgrade process.

The correct use of `opmnctl` and `oidctl` is described in the Chapter "Oracle Internet Directory Process Control–Best Practices" in the *Oracle Internet Directory Administrator's Guide*.

3. Set the required environment variables, as defined in the section "Environment Variables" in the "Requirements" chapter of the *Oracle Application Server Installation Guide*.

In particular, be sure the following environment variables are not set:

- TNS_ADMIN
 - ORACLE_HOME
 - ORACLE_SID
4. If the ORACLE_HOME environment variable was previously set, restart the host computer after unsetting the variable.

The system restart is necessary to clear the ORACLE_HOME variable from the system registry. If you do not restart the computer after clearing the ORACLE_HOME variable, the installation might report an error and prevent you from finishing the installation.

5. Mount the CD-ROM and start the installer.

See Also: *Oracle Application Server Installation Guide* for detailed instructions about starting Oracle Universal Installer on your platform

6. Refer to [Table 9–4](#) for information on the options you should select on each screen.

Note: Be sure to select and enter the same instance name, password, and other selected options you used in the previous upgrade that you performed from Node 1.

7. After the End of Installation screen appears, exit Oracle Universal Installer and then verify that Oracle Internet Directory and Oracle Application Server Single Sign-On are functioning and accessible in the new 10g Release 2 (10.1.2) Oracle home.

See Also: *Oracle Application Server Administrator's Guide*, Chapter 1, "Accessing the Single Sign-On Server"

Step 6 Restart Node 2

After you have upgraded the Infrastructure and exited Oracle Universal Installer, perform the following procedure:

1. Restart Node 2.
2. From Cluster Administrator, move the application server group, including the shared disk, to Node 2.

9.2.8 Using MRUA to Upgrade the OracleAS Metadata Repository from Node 2

Log in to Node 2 and use the procedure in [Section 6.4, "Using the Metadata Repository Upgrade Assistant \(MRUA\)"](#) to upgrade the component schemas in the OracleAS Metadata Repository.

9.2.9 Creating a pfile for the Database

A pfile is a text file that contains the database initialization parameters. Oracle Fail Safe requires a "pfile" for your database. You enter the full path to the pfile in the **Parameter File** field when you add the database to the group.

To create a pfile:

1. Create a file called `init<SID>.ora` in the `ORACLE_HOME\database` directory.
2. Populate the file with the following lines:

```
spfile=ORACLE_HOME\database\spfileSID.ora
remote_login_passwordfile=EXCLUSIVE
local_listener="(ADDRESS=(PROTOCOL=TCP) (HOST=Virtual_IP) (PORT=1521))"
```

In this example:

- Replace `ORACLE_HOME` with the full path of your Oracle home directory.
- Replace `SID` with the SID of your database.
- Replace `Virtual_IP` with the virtual IP for the virtual hostname.

9.2.10 Performing Required Post-Upgrade Procedures for the OracleAS Cold Failover Cluster

This section lists the post-upgrade procedures you must perform in order to finish upgrading a OracleAS Cold Failover Cluster on a Windows system.

1. From Node 2, use the Services control panel to set all the 10g (9.0.4) Infrastructure services to **Manual** startup mode.

These services will be removed later, when you decommission and deinstall the 10g (9.0.4) source Oracle homes.
2. Make sure the "Oracle Services for MSCS" is online.
3. Perform the following procedures, which are documented in the *Oracle Application Server Installation Guide*.

In particular, refer to the following sections of that guide:

- Section 12.11.1, "Edit the ORACLE_HOME\Apache\htdocs\index.html File"
- Section 11.12.2, "Make OracleAS Metadata Repository Highly Available"
- Section 11.12.3, "Add the Shared Disk as a Dependency for the Listener"
- Section 11.12.4, "Add the Shared Disk as a Dependency for OPMN"
- Section 11.12.5, "Make OPMN Highly Available"
- Section 11.12.6, "Make Application Server Control Highly Available"

- Section 11.12.7, "Check that the Correct Listener Is Active"
- 4. From Node 2, use the Services control panel to set all the upgraded Infrastructure services to automatic startup mode.

Use [Table 9–3](#) to identify the name of each resource, since the resource name is the same as the resource name used in the Services control panel.
- 5. Use the procedure described in [Section 7.1.7, "Configuring Oracle Enterprise Manager 10g Database Control"](#) to configure the Oracle Enterprise Manager 10g Database Control.

9.2.11 Performing Typical OracleAS Identity Management Post-Upgrade Tasks

Besides the post-upgrade tasks specific to configuring an upgraded OracleAS Cold Failover Cluster environment, you must also perform the typical post-upgrade tasks required when upgrading any OracleAS Identity Management environment.

For more information, refer to the following:

- [Section 5.6, "Task 5: Complete the OracleAS Identity Management Upgrade"](#)
- [Section 5.7, "Task 6: Validate the Identity Management Upgrade"](#)
- [Section 5.8, "Task 7: Decommission the OracleAS Identity Management Source Oracle Home"](#)

9.3 Transforming 10g (9.0.4) Rack-Mounted Identity Management to OracleAS Cluster (Identity Management)

The following sections describe how to transform a 10g (9.0.4) Rack-Mounted Identity Management environment to OracleAS Cluster (Identity Management):

- [Section 9.3.1, "About Rack-Mounted Identity Management and OracleAS Cluster \(Identity Management\)"](#)
- [Section 9.3.2, "OracleAS Cluster \(Identity Management\) Upgrade Requirements"](#)
- [Section 9.3.3, "Overview of the OracleAS Cluster \(Identity Management\) Transformation Process"](#)
- [Section 9.3.4, "Upgrading the Database That Hosts the OracleAS Metadata Repository"](#)
- [Section 9.3.5, "Upgrading the Middle Tiers"](#)
- [Section 9.3.6, "Upgrading the First OracleAS Identity Management Instance"](#)
- [Section 9.3.7, "Using Metadata Repository Upgrade Assistant to Upgrade the Component Schemas in the OracleAS Metadata Repository"](#)
- [Section 9.3.8, "Installing Subsequent OracleAS Cluster \(Identity Management\) Instances"](#)

9.3.1 About Rack-Mounted Identity Management and OracleAS Cluster (Identity Management)

Following the release of Oracle Application Server 10g (9.0.4), a procedure was released for deploying multiple Identity Management instances against one Infrastructure Metadata Repository. This procedure was released in the form of a whitepaper titled *Highly Available Identity Management example - Rack Mounted Identity*

Management and it was made available to customers on the Oracle Technology Network (OTN) at:

http://www.oracle.com/technology/products/ias/hi_av/index.html

Note that the link to the whitepaper on OTN might actually be shown as *Highly Available Identity Management Deployment Example - Multi-box Identity Management*.

With the release of Oracle Application Server 10g Release 2 (10.1.2), an "out-of-the-box" Multiple Identity Management solution is now available. This configuration is known as OracleAS Cluster (Identity Management).

See Also: "Installing in High Availability Environments: OracleAS Cluster (Identity Management)" in the *Oracle Application Server Installation Guide*

The following sections provide step-by-step instructions for customers who wish to upgrade their 10g (9.0.4) Multiple Identity Management deployment to an OracleAS 10.1.2 Clusters (Identity Management) deployment.

The testing and steps provided in this document are based upon an OracleAS Identity Management implementation deployed on RedHat Linux 3.0. The steps provided in this document, however, apply to any Unix platform.

9.3.2 OracleAS Cluster (Identity Management) Upgrade Requirements

The following sections describe the requirements you must meet in order to transform your highly available environment from 10g (9.0.4) Rack-Mounted Identity Management to OracleAS Cluster (Identity Management):

- [OracleAS Identity Management Configuration Requirements](#)
- [Requirements for Colocated Versus Distributed OracleAS Identity Management](#)
- [OracleAS Metadata Repository Storage Requirements](#)
- [OracleAS Cluster \(Identity Management\) Backup Requirements](#)

9.3.2.1 OracleAS Identity Management Configuration Requirements

Before you use this procedure, you must consider the following configuration requirements:

- You must have followed the exact set of steps outlined in the paper *Highly Available Identity Management example - Rack Mounted Identity Management*
- The Identity Management instances you are upgrading must be 10g (9.0.4) instances; previous releases of OracleAS are not supported for this configuration.
- The Metadata Repository must have been created in an Oracle9i Release 2 (9.2.0.1) or greater database, using the 10g (9.0.4) OracleAS Metadata Repository Creation Assistant (MRCA).

9.3.2.2 Requirements for Colocated Versus Distributed OracleAS Identity Management

OracleAS Identity Management consists of components that can also be installed separately:

- Oracle Internet Directory (OID)
- OracleAS Single Sign-On (SSO)

- Oracle Delegated Administration Services (DAS)
- Oracle Directory Integration and Provisioning (DIP)

This procedure does not include support for Oracle Application Server Certificate Authority (OCA).

In this procedure, the primary focus is on installations where all Identity management components are installed in one Oracle home. This is known as a **colocated** OracleAS Infrastructure, which includes Oracle Internet Directory, Oracle Delegated Administration Services, and OracleAS Single Sign-On, all installed within the same Oracle home.

To upgrade a distributed OracleAS Identity Management configuration where the Identity Management components are separated into two tiers, see [Section 9.3.9, "About Upgrading a Distributed OracleAS Cluster \(Identity Management\) Environment"](#). Such a configuration might be required, for example, where an organization needs the OracleAS Single Sign-On and Oracle Delegated Administration Services components running in a the DMZ and the Oracle Internet Directory running on the internal network inside the firewall.

9.3.2.3 OracleAS Metadata Repository Storage Requirements

This procedure assumes the database that hosts the OracleAS Metadata Repository is an Oracle Real Application Clusters (RAC) Database. Specifically, the procedure described in this section was tested on a two-node RAC environment. However, it is assumed that this procedure also applies to:

- A single-instance database
- A Real Application Clusters database consisting of more than two nodes

The requirement for Real Application Clusters is a shared-storage configuration. The implementation of the shared volume is vendor-specific. The procedures in this section should be applicable to all Operating systems and clusters but were developed and tested in a Linux environment. Specifically, the following shared storage options are supported:

- Raw devices
- Cluster filesystem (for example, OCFS on Linux)
- Network filesystem (for example, supported NAS devices)

Although cluster and volume management software is vendor-specific, the steps and considerations provided in this section apply specifically to customers wishing to optionally implement Oracle's Automated Storage Management (ASM).

9.3.2.4 OracleAS Cluster (Identity Management) Backup Requirements

Before you begin this transformation procedure, take a complete, full software backup of everything in the Oracle Home and related directories for the OracleAS Metadata Repository and the OracleAS Identity Management instances.

In addition, shut down all processes and perform a full cold database backup of the middle tiers and Infrastructure Oracle homes.

9.3.3 Overview of the OracleAS Cluster (Identity Management) Transformation Process

The General steps for transforming an OracleAS 10g (9.0.4) Identity Management implementation to an OracleAS 10g (10.1.2.0.2) Clusters (Identity Management) implementation are shown in [Table 9-5](#).

Table 9–5 Summary of the OracleAS Cluster (Identity Management) Transformation

Step No.	Description	More Information
1	Upgrade the Database to a supported version, if required.	Section 9.3.4, "Upgrading the Database That Hosts the OracleAS Metadata Repository"
2	Upgrade any existing middle tiers to 10g Release 2 (10.1.2).	Section 9.3.5, "Upgrading the Middle Tiers"
3	Upgrade one of the Identity Management instances from 9.0.4 to 10.1.2 using the Oracle Universal Installer (OUI)	Section 9.3.6, "Upgrading the First OracleAS Identity Management Instance"
4	Upgrade the existing 10g (9.0.4) OracleAS Metadata Repository to 10g Release 2 (10.1.2) Metadata Repository using the Metadata Repository Upgrade Assistant (MRUA).	Section 9.3.7, "Using Metadata Repository Upgrade Assistant to Upgrade the Component Schemas in the OracleAS Metadata Repository"
5	Install new Identity Management instances against the upgraded Metadata Repository and Identity Management schemas	Section 9.3.8, "Installing Subsequent OracleAS Cluster (Identity Management) Instances"

9.3.4 Upgrading the Database That Hosts the OracleAS Metadata Repository

Before you can upgrade to OracleAS Cluster (Identity Management), you must upgrade the database that hosts the OracleAS Metadata Repository to a supported database.

For detailed instructions on upgrading the database that hosts the OracleAS Metadata Repository, see [Section 7.1, "Task 1: Upgrade the Database That Hosts the OracleAS Metadata Repository"](#).

Note: When applying database patchsets, be sure to carefully review the patchset README for your specific platform. The instructions for installing patchsets can vary significantly from platform to platform. For example, some platforms, such as Linux, might require you to install a specific version of Oracle Universal Installer before proceeding with the patchset installation.

9.3.5 Upgrading the Middle Tiers

After you upgrade the database that hosts the OracleAS Metadata Repository, you should upgrade any middle-tier installations that use the Rack-Mounted Identity Management Infrastructure.

Refer to [Chapter 4, "Upgrading the Middle Tier"](#) for more information.

9.3.6 Upgrading the First OracleAS Identity Management Instance

After the database that hosts the OracleAS Metadata Repository has been upgraded to a supported version, and after the middle tiers have been upgraded to 10g Release 2 (10.1.2), you can now upgrade the first OracleAS Identity Management Oracle home in the Rack-Mounted Identity Management configuration.

When you upgrade the first OracleAS Identity Management Oracle home, you also upgrade the OracleAS Identity Management schemas in the OracleAS Metadata Repository.

Note that in an OracleAS Cluster (Identity Management), the Identity Management instances are clustered together in a Distributed Configuration Management (DCM) Cluster. This ensures synchronization between the configurations of the different Identity Management components on all of the Identity Management instances.

To upgrade the first OracleAS Identity Management Oracle home, use the following steps.

1. Make sure that the other OracleAS Identity Management Instances in the Rack-Mounted Identity Management environment are down.

Only the OracleAS Identity Management instance that you are upgrading first should be up and running. If necessary, shut down the other OracleAS Identity Management instances.

2. Configure the Load Balancer to direct traffic only to the OracleAS Identity Management instance you are about to upgrade

All Requests should be directed only to the OracleAS Identity Management instance you are about to upgrade. The other OracleAS Identity Management instances in the Rack-Mounted Identity Management environment should be shut down.

3. Use the Oracle Application Server 10g Release 2 (10.1.2) installation procedure to upgrade the OracleAS Identity Management instance.

Refer to [Section 5.5.2, "Upgrading OracleAS Identity Management in a Non-Colocated 10g \(9.0.4\) Infrastructure"](#) for complete instructions on upgrading the first OracleAS Identity Management Oracle home.

4. Perform any post-upgrade procedures that apply to your OracleAS Identity Management environment.

Refer to [Section 5.6, "Task 5: Complete the OracleAS Identity Management Upgrade"](#) for more information.

5. Make sure that the Oracle HTTP Server listener is configured correctly.

Edit the following Oracle HTTP Server configuration file and make sure that the `ServerName` directive is set to the virtual host (for example, `imhost.domain.com`) and not to the physical host:

```
ORACLE_HOME/Apache/Apache/conf/httpd.conf
```

6. Configure OracleAS Single Sign-On to accept authentication requests.

Run the following command to verify that OracleAS Single Sign-On is configured correctly:

```
ORACLE_HOME/sso/bin/ssocfg.sh http imhost.domain.com 7777
```

In this example, *imhost.domain.com* is the address configured at the load balancer for HTTP requests. The default HTTP Listener port is 7777, but this port may differ for your specific installation.

7. Re-register the instance with OracleAS Single Sign-On:

Run the following command:

```
ORACLE_HOME/sso/bin/ssoreg.sh  
-oracle_home_path orcl_home_path
```

```
-site_name instance_name_you_specified_during_upgrade
-config_mod_osso TRUE
-mod_osso_url effective_URL_of_the_partner_application
-u userid
```

In this example:

- The *effective_URL_of_the_partner_application* is in this URL format:

```
http://virtual_servername:port
```

- Replace *userid* with the Oracle owner.

Note that at this point in the procedure, the upgraded OracleAS Identity Management Oracle home should be a fully working 10g Release 2 (10.1.2) OracleAS Identity Management instance running against the Real Application Clusters database. The load balancer is still pointing to only this new, upgraded instance.

8. Create a Distributed Configuration Management (DCM) cluster that the other OracleAS Identity Management instances can join:

- a. Enter the DCM command-line shell:

```
ORACLE_HOME/dcm/bin/dcmctl shell
```

- b. Create a new Cluster:

```
DCM> createcluster -cl IMcluster
```

In this example, *IMcluster* is the name you assign to the cluster.

- c. Join the DCM cluster as the first instance:

```
DCM> joincluster -cl IMcluster
```

At this point the instance will be stopped.

- d. Restart the instance:

```
opmnctl startall
```

A new cluster has now been created with the upgraded IM instance as its sole member.

9.3.7 Using Metadata Repository Upgrade Assistant to Upgrade the Component Schemas in the OracleAS Metadata Repository

1. Make sure that the OracleAS Identity Management instance (including Oracle Internet Directory) that you upgraded in [Section 9.3.6, "Upgrading the First OracleAS Identity Management Instance"](#) is up and running.

If it is not running, start the Identity Management instance (including Oracle Internet Directory) as follows:

```
ORACLE_HOME/opmn/bin/opmnctl startall
```

2. Upgrade the Metadata Repository in the newly upgraded database as described in [Section 7.4, "Task 4: Run the Metadata Repository Upgrade Assistant \(MRUA\)"](#), with the following exception:

On the MRUA command line, enter the address of the load balancer in place of the *oid_host* and *oid_ssl_port* arguments.

Note that the values you enter for the `-oid_host` argument and `-oid_ssl_port` arguments must match the value of the corresponding properties defined in following configuration file in the Identity Management Oracle home:

`IDENTITY_MANAGEMENT_HOME/config/ias.properties`

For example:

```
OIDhost=sys42.acme.com
OIDsslport=636
```

3. When MRUA finishes processing, verify that the schemas have been upgraded, as described in [Section 7.4.9, "Using a SQL Query to Verify the Success of the OracleAS Metadata Repository Upgrade"](#)
4. Complete the OracleAS Metadata Repository upgrade using the instructions in the following sections:
 - [Section 7.5.1, "Completing the OracleAS Portal Schema Upgrade Process"](#)
 - [Section 7.5.2, "Completing the OracleAS Wireless Schema Upgrade Process"](#).

9.3.8 Installing Subsequent OracleAS Cluster (Identity Management) Instances

After you upgrade the first OracleAS Identity Management instance in the cluster, and after you upgrade the OracleAS Metadata Repository, you can then install the additional OracleAS Identity Management instances in the OracleAS Cluster (Identity Management):

1. Make sure that the Oracle Internet Directory is up and running on the first OracleAS Identity Management instance.
2. Make sure that the OracleAS Metadata Repository database and listener are up and running.
3. Make sure that the Load Balancer is configured to direct traffic only to the first Identity Management instance.
4. Install the new 10g Release 2 (10.1.2) OracleAS Identity Management Oracle home by following the instructions in the section "Installing OracleAS Cluster (Identity Management) on Subsequent Nodes," in the *Oracle Application Server Installation Guide*.
5. Reconfigure Load Balancer and test the installation.

After a successful installation of the subsequent OracleAS Identity Management Oracle home, configure the Load Balancer to route requests to the new instance.

6. Repeat this procedure for any additional and subsequent OracleAS Identity Management installations that will be part of the cluster.

9.3.9 About Upgrading a Distributed OracleAS Cluster (Identity Management) Environment

In a distributed OracleAS Cluster (Identity Management) environment, the Oracle Internet Directory is installed in a separate Oracle home from the other OracleAS Identity Management components.

The procedure for upgrading a distributed OracleAS Identity Management components is the same as that for upgrading colocated OracleAS Identity Management installations, with the following exception:

1. Upgrade the Internet Directory (OID) Oracle Home as described in Steps 1-5 of [Section 9.3.6, "Upgrading the First OracleAS Identity Management Instance"](#).
2. Create the Distributed Configuration Management cluster, as described in step 8 of [Section 9.3.6, "Upgrading the First OracleAS Identity Management Instance"](#).
3. Verify that the OID has been upgraded and works successfully.
4. Upgrade the OracleAS Single Sign-On and Oracle Delegated Administration Services Oracle Home, as described in [Section 9.3.8, "Installing Subsequent OracleAS Cluster \(Identity Management\) Instances"](#).
5. Re-associate OracleAS Single Sign-On as described in Step 7 of [Section 9.3.6, "Upgrading the First OracleAS Identity Management Instance"](#).

Component Upgrade Process Reference

This appendix provides details on the upgrade process for each component of the middle tier and the Infrastructure installations. The OracleAS Upgrade Assistant does the middle tier upgrade processing only; the Infrastructure upgrade processing is done by individual scripts for the components that require upgrades. This appendix has two major sections:

- [Middle Tier Upgrade Processes](#)
- [Infrastructure Upgrade Processes](#)

A.1 Middle Tier Upgrade Processes

This section describes the processing actions of the OracleAS Upgrade Assistant for each component upgrade. The order in which the actions are presented is not necessarily the order in which they are actually performed. When the order is known, or significant, the processing sequence is presented as numbered steps. Depending on installation type (that is, the components included), not all of these processes are performed.

- [The Oracle Process Manager and Notification Server \(OPMN\) Upgrade Process](#)
- [The Instance Configuration Data Upgrade Process](#)
- [The Oracle Application Server Containers for J2EE \(OC4J\) Upgrade Process](#)
- [The Oracle HTTP Server Upgrade Process](#)
- [The Oracle Application Server Web Cache Upgrade Process](#)
- [The mod_plsql Upgrade Process](#)
- [The Oracle Enterprise Manager 10g Upgrade Process](#)
- [The Oracle Application Server Web Services UDDI Registry Upgrade Process](#)
- [The Oracle Ultra Search Upgrade Process](#)
- [The OracleAS Portal Middle Tier Upgrade Process](#)
- [The Oracle Application Server Wireless Upgrade Process](#)
- [The Oracle Application Server Forms Services Upgrade Process](#)
- [The Oracle Application Server Reports Services Upgrade Process](#)

A.1.1 The Oracle Process Manager and Notification Server (OPMN) Upgrade Process

The OracleAS Upgrade Assistant performs these steps when upgrading the Oracle Process Manager and Notification Server:

1. Converts the following file to the 10g Release 2 (10.1.2) format:

`SOURCE_ORACLE_HOME\opmn\conf\opmn.xml`

2. Merges the converted `opmn.xml` file with the `opmn.xml` file in the destination Oracle home.

During the merge, OracleAS Upgrade Assistant moves all custom nodes into `opmn.xml`, except the node containing `gid="dcm-daemon"`.

A.1.1.1 Oracle Process Manager and Notification Server (OPMN) Upgrade Items

The following files are changed or copied in the OPMN upgrade process:

- `DESTINATION_ORACLE_HOME\opmn\conf\opmn.xml`
- Custom process binaries defined in `opmn.xml`
- Oracle wallets

Notes: Port values of particular interest for OPMN are the notification server ports (local, remote, request) and OC4J ports (ajp, rmi, jms).

The OPMN upgrade process does not upgrade any changes that were made to Oracle Application Server Containers for J2EE instances in `opmn.xml`. This includes the instances created by the installer (home, OC4J_WIRELESS, OC4J_DEMOS, OC4J_PORTAL OC4J_BI_FORMS) and instances created by users. The OC4J upgrade process upgrades the home instance and any user-defined instances with applications deployed in the source Oracle home. The other installer-created OC4J instances adopt the Oracle Application Server 10g Release 2 (10.1.2) settings in `opmn.xml`. If you want to preserve settings from Oracle9iAS Release 2 (9.0.2), you must create them manually.

See [Section 4.6.4.4, "Completing the Upgrade of User-Created OC4J Instances"](#).

A.1.2 The Instance Configuration Data Upgrade Process

The OracleAS Upgrade Assistant performs these steps when upgrading instance configuration data:

1. Loads the following file from the source Oracle home:
`SOURCE_ORACLE_HOME\config\asschema.xml`
2. Compares the version of this file in the source Oracle home with the version in the destination Oracle home.
3. Writes any differences found in the source Oracle home file to the destination Oracle home file.

A.1.2.1 Instance Configuration Upgrade Items

The following file is changed in the instance configuration data upgrade process:

`DESTINATION_ORACLE_HOME\config\iasschema.xml`

A.1.3 The Oracle Application Server Containers for J2EE (OC4J) Upgrade Process

The Oracle Application Server Containers for J2EE (OC4J) upgrade process consists of these steps:

1. The OracleAS Upgrade Assistant creates a separate process, which connects to the source Oracle home.
2. The process uses its Distributed Configuration Management version to examine the instances selected for upgrade.
3. Distributed Configuration Management creates a list of the instances in the source Oracle home in which the applications are deployed. It ignores Oracle-specific OC4J instances, such as OC4J_Portal, defined in the following file:

```
SOURCE_ORACLE_HOME\j2ee\deploy.ini*
```

The instances are the OC4J upgrade candidates.

4. Distributed Configuration Management builds a list of EAR files for the applications listed.
5. The OracleAS Upgrade Assistant creates a backup of upgraded files, appending a preUpgrade suffix. If necessary, to create a unique file name, it appends an integer, for example, *filename.preUpgrade.1*.
6. The OracleAS Upgrade Assistant copies *principals.xml*, *data-sources.xml*, *jazn-data.xml*, and *jazn.xml* to the destination Oracle home.
7. Adds properties defined in the *oc4j.properties* file to the *opmn.xml* file, using the SMI API.
8. The OracleAS Upgrade Assistant rebuilds, and then redeploys the EAR files to the destination Oracle home. In this step, the OracleAS Upgrade Assistant searches for all orion-specific files in the *application-deployments* directory of the applications. It also searches for application-specific configuration files, such as *principals.xml* and *jazn-data.xml*.
9. Distributed Configuration Management updates *mod_oc4j.conf* with the mount points associated with each deployed application.

A.1.3.1 OC4J Upgrade Items

The following files are changed in the OC4J upgrade process:

```
DESTINATION_ORACLE_HOME\j2ee\<name of OC4J instance>\config\principals.xml
DESTINATION_ORACLE_HOME\j2ee\<name_of_OC4J_instance>\config\data-sources.xml
DESTINATION_ORACLE_HOME\j2ee\<name of OC4J instance>\config\jazn.xml
DESTINATION_ORACLE_HOME\j2ee\<name of OC4J instance>\config\jazn-data.xml
DESTINATION_ORACLE_HOME\Apache\Apache\conf\mod_oc4j.conf
```

In addition:

- Properties from the *oc4j.properties* files in the source Oracle home are added to the *opmn.xml* file, which is stored in the following directory of the destination Oracle home:

```
DESTINATION_ORACLE_HOME\opmn\conf\opmn.xml
```

- EAR files for applications discovered in OC4J instances in the source Oracle home are also modified

Note: Manual procedures may be required to complete the Oracle Application Server Containers for J2EE upgrade. See [Section 4.6.4, "Completing the Oracle Application Server Containers for J2EE \(OC4J\) Upgrade"](#) on page 4-20.

A.1.4 The Oracle HTTP Server Upgrade Process

The OracleAS Upgrade Assistant performs these steps when upgrading Oracle HTTP Server (OHS):

- Copies the `httpd.conf` file from the source Oracle home to the destination Oracle home, replacing the `SOURCE_ORACLE_HOME` path with `DESTINATION_ORACLE_HOME`, then applies 10g Release 2 (10.1.2) file changes, and customizations made since Release 2 (9.0.2), to the corresponding file in the destination Oracle home.
- Searches the `mod_oc4j.conf` file in `SOURCE_ORACLE_HOME` for `Oc4jMount` directives and copies the `Oc4jMount` directives that contain the string `ajp13://`, `cluster://` or `instance://` to the `mod_oc4j.conf` file in `DESTINATION_ORACLE_HOME`.
- Copies the `mod_osso.conf` file from the source Oracle home to the destination Oracle home, replacing the source Oracle home path with the destination Oracle home path. The `osso.conf` file referenced by the `OsoConfigFile` directive will be copied and converted into 10g Release 2 (10.1.2) obfuscated files.
- Copies the `moddav.conf` file from the source Oracle home to the destination Oracle home, replacing the source Oracle home path with the destination Oracle home path.
- Searches `Include` directives in the `httpd.conf` file recursively to locate user-defined configuration files; copies these files from the source Oracle home to the destination Oracle home. If the files were found in the source Oracle home, the OracleAS Upgrade Assistant replaces the source Oracle home path with the destination Oracle home path. If the files were found outside of the source Oracle home, the OracleAS Upgrade Assistant saves a copy of the original file with a `.preUpgrade` extension in the destination Oracle home, then replaces the source Oracle home file with the new file.
- Searches the `LoadModule` directives recursively to find related module dynamic libraries; copies the libraries from the source Oracle home to the destination Oracle home.
- Searches the `SSLWallet` directives recursively to find Oracle wallets; copies the wallets from the source Oracle home to the destination Oracle home.
- Locates CGI and fastcgi scripts by searching all configuration files for directories and files named in `ScriptAlias` or `ScriptAliasMatch` directives, and the `ExecCGI` option in `Options` directives (defined in `Directory` or `File` containers). Copies the directories and files from the source Oracle home to the destination Oracle home.
- Copies static document directories found in the (non-default) location specified by the `DocumentRoot` directive from the source Oracle home to the destination Oracle home. If the `DocumentRoot` directive is the default, static documents are not upgraded.

Notes: Web sites are often configured with Web Cache as the first listener; in these cases, the Oracle HTTP Server's Listen port may need to be synchronized with equivalent Web Cache port values after upgrade. The settings are shown in [Table 4-6, "Oracle HTTP Server and Oracle Application Server Web Cache Port Settings"](#) on page 4-19.

The OracleAS Upgrade Assistant does not upgrade the `oracle_apache.conf` and `mod_plsql.conf` files.

Static files referenced by the `Alias` or `mod_rewrite` directives are not upgraded. Any such files in an Oracle home must be upgraded manually.

A.1.4.1 OHS Upgrade Items

The following files are changed or copied in the OHS upgrade process:

```
DESTINATION_ORACLE_HOME\Apache\Apache\conf\httpd.conf
DESTINATION_ORACLE_HOME\Apache\Apache\conf\mod_oc4j.conf
DESTINATION_ORACLE_HOME\Apache\Apache\conf\mod_osso.conf
DESTINATION_ORACLE_HOME\Apache\Apache\oradav\conf\moddav.conf
DESTINATION_ORACLE_HOME\Apache\Apache\conf\osso\osso.conf
```

In addition, the following files are changed in the following ways:

- User-defined configuration files named in `Include` directives (found in recursive search of all configuration files starting with `httpd.conf`)
- `.dll` files (module dynamic libraries) named in `LoadModule` directives in all configuration files
- Oracle wallets named in `SSLWallet` directives in all configuration files
- CGI and fastcgi programs named in `ScriptAlias`, `ScriptAliasMatch` or `Options (ExecCGI)` directives in all configuration files
- Static documents and directories

Note: Manual procedures may be required to complete the Oracle HTTP Server upgrade. See [Section 4.6.3, "Completing the Oracle HTTP Server Upgrade"](#).

A.1.5 The Oracle Application Server Web Cache Upgrade Process

The OracleAS Upgrade Assistant performs these steps when upgrading Oracle Application Server Web Cache:

1. Locates `webcache.xml` and `internal.xml` in the source Oracle home.
2. Moves configuration data from the `webcache.xml` in the source Oracle home to the `webcache.xml` file in the destination Oracle home. The `webcache.xml` file is located in the following directory of the Oracle home:

```
ORACLE_HOME\webcache\webcache.xml
```

3. Copies error pages and wallet files from the source Oracle home to the destination Oracle home.

Note: If you customized the directory location of the event log (specified by `ACCESSLOG LOGDIR` property in the `webcache.xml` file) in Oracle9iAS Release 2 (9.0.2), be aware that this customization will not be upgraded.

A.1.5.1 Oracle Application Server Web Cache Upgrade Items

The following files and directories are involved in the Oracle Application Server Web Cache upgrade process:

```
DESTINATION_ORACLE_HOME\webcache\webcache.xml
DESTINATION_ORACLE_HOME\webcache\docs\
DESTINATION_ORACLE_HOME\webcache\wallets\
```

A.1.5.1.1 Wallet File Upgrades The OracleAS Upgrade Assistant upgrades wallets by copying them from the source Oracle home to the destination Oracle home. Wallets outside of the source Oracle home need not be copied.

Oracle Application Server Web Cache can have multiple listening ports, and each port can have a different wallet. When connecting to the origin server, it can use another wallet (OSWALLET in the example below).

Example A–1 Oracle Application Server Web Cache Wallet Configuration after Upgrade

```
<LISTEN IPADDR="ANY" PORT="4445" PORTTYPE="NORM" SLENABLED="SSLV3_V2H">
  <WALLET>DESTINATION_ORACLE_HOME\webcache\wallets\subdir1</WALLET>
</LISTEN>
<LISTEN IPADDR="ANY" PORT="4447" PORTTYPE="NORM" SLENABLED="SSLV3_V2H">
  <WALLET>\some\other\path\wallets\default</WALLET>
</LISTEN>
.....
.....
<OSWALLET>DESTINATION_ORACLE_HOME\webcache\wallets\default</OSWALLET>
```

In this example, Oracle Application Server Web Cache is using three wallets. The first and third are in the source Oracle home. The first wallet will be copied to the following directory:

```
DESTINATION_ORACLE_HOME\webcache\wallets\subdir1
```

The third wallet will be copied to this directory:

```
DESTINATION_ORACLE_HOME\webcache\wallets\default
```

The second wallet will not be copied, since it does not reside in the Oracle home. After upgrade, the wallet in `webcache.xml` will be pointing to the original directory.

Note: Web sites are often configured with Web Cache as the first listener; in these cases, the Oracle HTTP Server's Listen port may need to be synchronized with equivalent Web Cache port values after upgrade. See [Section 4.6.3, "Completing the Oracle HTTP Server Upgrade"](#) on page 4-18.

A.1.6 The mod_plsql Upgrade Process

The OracleAS Upgrade Assistant performs these steps when upgrading mod_plsql:

- Locates dads.conf, cache.conf, plssql.conf and oradav.conf in the source Oracle home.
- Copies all the above configuration files from the source Oracle home to the destination Oracle home.
- Parses cache.conf and plssql.conf in destination Oracle home and replaces all the occurrences of *SOURCE_ORACLE_HOME* with *DESTINATION_ORACLE_HOME*.

A.1.6.1 mod_plsql Upgrade Items

The following files are modified in the mod_plsql upgrade process:

```
DESTINATION_ORACLE_HOME\Apache\modplsql\conf\dads.conf
DESTINATION_ORACLE_HOME\Apache\modplsql\conf\cache.conf
DESTINATION_ORACLE_HOME\Apache\modplsql\conf\plssql.conf
DESTINATION_ORACLE_HOME\Apache\oradav\conf\oradav.conf
```

A.1.7 The Oracle Enterprise Manager 10g Upgrade Process

The OracleAS Upgrade Assistant performs these steps when upgrading Oracle Enterprise Manager 10g:

1. Examines the following file in the following directory for port entries related to the targets in the file:

```
SOURCE_ORACLE_HOME\sysman\emd\targets.xml
```

2. Replaces the corresponding port entries in the targets.xml file in the destination Oracle home.

A.1.7.1 Oracle Enterprise Manager 10g Upgrade Items

The following files is changed in the Oracle Enterprise Manager 10g upgrade process:

```
DESTINATION_ORACLE_HOME\sysman\emd\targets.xml
```

A.1.8 The Oracle Application Server Web Services UDDI Registry Upgrade Process

The Oracle Universal Installer and the OracleAS Upgrade Assistant perform these steps during installation of the Portal and Wireless installation type:

1. The OracleAS Upgrade Assistant extracts the uddiserver.config file from the following directory of the source Oracle home for later use:

```
SOURCE_ORACLE_HOME\ds\uddi\config
```

2. The OracleAS Upgrade Assistant extracts properties from the uddiserver.config file and applies them to the uddiserver.config file in the destination Oracle home.

A.1.8.1 Oracle Application Server Web Services UDDI Registry Upgrade Items

The following file is changed in the Oracle Application Server Web Services Registry upgrade process:

```
SOURCE_ORACLE_HOME\ds\uddi\config\uddiserver.config
```

Notes: If the repository database schema was not upgraded before the Oracle Application Server Web Services upgrade, the UDDI registry for Oracle Application Server Web Services will run in 9.0.2.3 compatibility mode.

You must restart UDDI applications after the upgrade so that the new configuration takes effect.

The path for the `uddiserver.config` file in 10g Release 2 (10.1.2) is different from the path in Oracle9iAS Release 2 (9.0.2).

In Oracle9iAS Release 2 (9.0.2), it was:

```
\ds\uddi\config\uddiserver.config
```

In Oracle Application Server 10g Release 2 (10.1.2), it is:

```
\uddi\config\uddiserver.config
```

A.1.9 The Oracle Ultra Search Upgrade Process

The OracleAS Upgrade Assistant performs these steps when upgrading Oracle Ultra Search:

1. Discover the `data-sources.xml` file in the source Oracle home.
2. Copy the `data-sources.xml` file from the `SOURCE_ORACLE_HOME` to `DESTINATION_ORACLE_HOME`.

A.1.9.1 Oracle Ultra Search Upgrade Items

The following files are changed in the Oracle Ultra Search upgrade process:

```
DESTINATION_ORACLE_HOME\j2ee\OC4J_Portal\config\data-sources.xml
```

A.1.10 The OracleAS Portal Middle Tier Upgrade Process

The OracleAS Upgrade Assistant performs these steps when upgrading the OracleAS Portal middle tier:

- Parses the `dads.conf` file in the source Oracle home and creates configuration entries for each portal in the Portal dependency file (`iasconfig.xml`).
- Enables monitoring of a OracleAS Portal Release 2 (9.0.2) with the 10g Release 2 (10.1.2) Application Server Control Console.
- Upgrades PPE settings in destination `web.xml`.
- Copies `data-sources.xml` from the source Oracle home to the destination Oracle home.
- Upgrades user specific applications deployed in source OC4J_Portal instance to destination OC4J_Portal instance. This includes Portal Development Kit Services for Java (JPDK) applications commonly deployed in that instance.
- Upgrades the JPDK web providers. This includes migrating:
 - Extra user-created web providers created in the JPDK application under the OC4J_Portal instance.
 - Provider Groups, Providers, and URL Portlets that have been built using the OracleAS Portal user interface.

- Configuration changes, customizations, or extensions that have been made to web provider applications in the OC4J_Portal instance.
- Upgrades customizations made to the Omni Portlet and Web Clipping providers. The upgrade process automatically migrates current configurations and portlet customizations to the new installation. The upgrade process also updates the Web Clipping repository schema if upgraded from 9.0.2.4.0. The following are migrated to the new installation:
 - Proxy settings
 - Repository settings
 - Preference Store settings
 - Locale personalization level setting
 - Trusted certificate location setting
 - Portlet customizations
- Retrieves Oracle Enterprise Manager target data from the source Oracle home. Applies these details to the destination Oracle home.
- Updates the Monitoring Services Link on the OracleAS Portal Administer Tab for all the portals being monitored by the middle tier

A.1.10.1 OracleAS Portal Upgrade Items

The following files are changed in the OracleAS Portal upgrade process.

- *DESTINATION_ORACLE_HOME\portal\conf\iasconfig.xml*
- *DESTINATION_ORACLE_HOME\portal\conf\cache.xml*
- *DESTINATION_ORACLE_HOME\portal\pdkjava\providerGroups\iasProviders.xml*
- *DESTINATION_ORACLE_HOME\sysman\emd\targets.xml*
- *DESTINATION_ORACLE_HOME\j2ee\OC4J_Portal\config\data-sources.xml*
- *DESTINATION_ORACLE_HOME\j2ee\OC4J_Portal\applications\portal\portal\WEB-INF\web.xml*
- *DESTINATION_ORACLE_HOME\j2ee\OC4J_Portal\applications\portalTools\omniPortlet\WEB-INF\providers\omniPortlet\provider.xml*
- *DESTINATION_ORACLE_HOME\j2ee\OC4J_Portal\applications\portalTools\omniPortlet\WEB-INF\providers\omniPortlet\vaultIdMappings.properties*
- *DESTINATION_ORACLE_HOME\j2ee\OC4J_Portal\applications\portalTools\webClipping\WEB-INF\providers\webClipping\provider.xml*
- *DESTINATION_ORACLE_HOME\j2ee\OC4J_Portal\applications\portalTools\providerBuilder\WEB-INF\deployment_providerui\progrp.xml*
- *DESTINATION_ORACLE_HOME\j2ee\OC4J_Portal\applications\portalTools\providerBuilder\WEB-INF\deployment_providerui\provideruiacIs.xml*

- `DESTINATION_ORACLE_HOME\j2ee\OC4J_Portal\applications\jpd\jpd\WEB-INF\providers\PORTLETBLDGTOOLS\provider.xml`
- `DESTINATION_ORACLE_HOME\j2ee\OC4J_Portal\applications\jpd\jpd\WEB-INF\deployment_providerui\progrp.xml`
- `DESTINATION_ORACLE_HOME\j2ee\OC4J_Portal\applications\jpd\jpd\WEB-INF\deployment_providerui\provideruiacis.xml`
- `DESTINATION_ORACLE_HOME\j2ee\OC4J_Portal\application-deployments\jpd\jpd\orion-web.xml`
- `DESTINATION_ORACLE_HOME\j2ee\OC4J_Portal\applications\jpd\jpd\WEB-INF\providers\seeded_provider\providers.xml`
- `DESTINATION_ORACLE_HOME\j2ee\OC4J_Portal\applications\portalTools\providerBuilder\WEB-INF\providers.xml`

All subdirectories created under the following directory in the source middle-tier Oracle home are copied to the destination midtier Oracle home:

```
j2ee\OC4j_PORTAL\applications\portalTools\omniPortlet\
WEB-INF\providers\omniPortlet
```

In addition, all files and directories created under the following directories in the source Oracle home that are not part of the installation process are copied to the destination Oracle home:

- `DESTINATION_ORACLE_HOME\j2ee\OC4J_Portal\applications\jpd`
- `DESTINATION_ORACLE_HOME\j2ee\OC4J_Portal\applications\portalTools\providerBuilder`

A.1.11 The Oracle Application Server Wireless Upgrade Process

The Oracle Application Server Wireless upgrade process consists of the steps below.

1. If you are upgrading a Release 2 (9.0.2) instance of Oracle Application Server that is using a Release 2 (9.0.2) OracleAS Metadata Repository, the OracleAS Wireless Configuration Assistant upgrades the OracleAS Wireless schema to 10g (9.0.4) in the OracleAS Metadata Repository during installation of the first OracleAS Wireless middle tier.

You can then use the Metadata Repository Upgrade Assistant (MRUA) to upgrade the OracleAS Wireless 10g (9.0.4) schema to 10g Release 2 (10.1.2) as described in [Chapter 7](#).

2. The OracleAS Upgrade Assistant copies runtime customization classes such as listener hooks and customized folder renderers from the source Oracle home to the destination Oracle home.

See [Section A.1.11.1, "Oracle Application Server Wireless Upgrade Items \(List A\)"](#).

3. The OracleAS Upgrade Assistant copies the process configuration information for the OracleAS Wireless standalone processes from the Oracle Application Server Wireless source middle tier to the OracleAS Wireless 10g Release 2 (10.1.2) middle tier, and configures the 10g Release 2 (10.1.2) middle tier accordingly.

See [Section A.1.11.2, "Oracle Application Server Wireless Upgrade Items \(List B\)"](#).

The configuration information for the OracleAS Wireless Java processes is stored in the OracleAS Wireless schema in the OracleAS Metadata Repository. During the upgrade to 10g Release 2 (10.1.2), the OracleAS Upgrade Assistant copies the process configuration information from the source middle tier to the 10g Release 2 (10.1.2) middle tier by creating additional entries in the OracleAS Wireless schema.

Because these processes are managed by Oracle Process Manager and Notification Server (OPMN) in 10g Release 2 (10.1.2), the OPMN configuration for the OracleAS Wireless middle tier is also upgraded.

Notes: Regarding upgrade of OracleAS Wireless Java processes:

In Release 2 (9.0.2), process information was node-specific. In 10g Release 2 (10.1.2), it is Oracle home-specific. Thus, if you have multiple Release 2 (9.0.2) middle tiers on one node, you will notice that the upgrade process copies the information for all Release 2 (9.0.2) to the 10g Release 2 (10.1.2) instance being upgraded,

Instance names within a Web site must be unique. During upgrade, the names of copied processes are made unique by appending a number to the name.

In addition to the Release 2 (9.0.2) processes, the upgraded 10g Release 2 (10.1.2) will contain new process types introduced in 10g Release 2 (10.1.2).

The process type "Alert Engine" has been renamed to "Notification Engine". The "Industrial Device Portal (Release 2 (9.0.2))" and "PIM Notification Dispatcher" (Oracle Collaboration Suite v. 1) processes are obsolete and therefore not upgraded.

A.1.11.1 Oracle Application Server Wireless Upgrade Items (List A)

The following files are changed in the first phase of the Oracle Application Server Wireless upgrade process:

```
DESTINATION_ORACLE_HOME\wireless\server\classes\*.class
DESTINATION_ORACLE_HOME\wireless\server\classes\*.properties
```

In addition, if you are upgrading from 10g (9.0.4), the following additional file is also changed during the upgrade:

```
DESTINATION_ORACLE_HOME\wireless\config\iaswcfg.xml
```

A.1.11.2 Oracle Application Server Wireless Upgrade Items (List B)

The following file is changed in the second phase of the Oracle Application Server Wireless upgrade process:

```
DESTINATION_ORACLE_HOME\opmn\conf\opmn.xml
```

A.1.12 The Oracle Business Intelligence Discoverer Upgrade Process

The OracleAS Upgrade Assistant performs these steps when upgrading Oracle Business Intelligence Discoverer:

- Merges the changes made to the `Pref.txt` and `.reg_key.dc` files in the Release 2 (9.0.2) instance to the equivalent files in the 10g Release 2 (10.1.2) instance.

- Merges the changes made to the *.xml files in the Release 2 (9.0.2) instance to the equivalent files in the 10g Release 2 (10.1.2) instance.
- Creates a backup copy of each configuration file, named as follows:

file_name_upgrade_backup.file_suffix

A.1.12.1 Oracle Business Intelligence Discoverer Upgrade Items

The following files are changed in the Oracle Business Intelligence Discoverer upgrade process:

- *DESTINATION_ORACLE_HOME\util\Pref.txt*
- *DESTINATION_ORACLE_HOME\discoverer\.reg_key.dc*
- *DESTINATION_ORACLE_HOME\j2ee\OC4J_BI_Forms\applications\discoverer\web\WEB-INF\configuration.xml*
- *DESTINATION_ORACLE_HOME\j2ee\OC4J_BI_Forms\applications\discoverer\web\common\xsl\ui_config.xml*
- *DESTINATION_ORACLE_HOME\j2ee\OC4J_BI_Forms\applications\discoverer\web\plus_files\xsl\plus_config.xml*

Note: The OracleAS Upgrade Assistant does not upgrade *.xsl (style sheet) files. If any of these are customized in the Release 2 (9.0.2) installation, and you want these customizations in the 10g Release 2 (10.1.2) installation, you must re-apply the customizations manually.

A.1.13 The Oracle Application Server Forms Services Upgrade Process

The OracleAS Upgrade Assistant performs the following tasks during the upgrade of OracleAS Forms Services:

1. Extracts the user-defined configuration from the user deployment of the OracleAS Forms Services EAR file (described in [Section A.1.13.1, "OracleAS Forms Services Upgrade Items \(List A\)"](#)), generates a new EAR file based on this configuration from the source Oracle home and the OracleAS Forms Services servlet contents from the destination Oracle home. The OracleAS Upgrade Assistant then deploys the newly generated EAR file to the destination Oracle home.
2. Extracts the user information from the files described in [Section A.1.13.2, "OracleAS Forms Services Upgrade Items \(List B\)"](#) from the source Oracle home, makes a backup of the files in the destination Oracle home (with a .preUpgrade suffix), and then merges the extracted user information into items in the destination Oracle home.
3. Copies the files described in [Section A.1.13.3, "OracleAS Forms Services Upgrade Items \(List C\)"](#) from the source Oracle home to the destination Oracle home with a suffix that identifies them as originating in the source Oracle home.
4. Makes a backup of the files described in [Section A.1.13.4, "OracleAS Forms Services Upgrade Items \(List D\)"](#) in the destination Oracle home (with a .preUpgrade suffix), copies the files from the source Oracle home to the destination Oracle home, and then modifies the path in the files to point to the destination Oracle home.

The following sections describe the OracleAS Forms Services items that are upgraded by the Oracle Application Server Upgrade Assistant:

- Section A.1.13.1, "OracleAS Forms Services Upgrade Items (List A)"
- Section A.1.13.2, "OracleAS Forms Services Upgrade Items (List B)"
- Section A.1.13.3, "OracleAS Forms Services Upgrade Items (List C)"
- Section A.1.13.4, "OracleAS Forms Services Upgrade Items (List D)"
- Section A.1.13.5, "Parameters in the formsweb.cfg Files That Are Not Upgraded"
-

A.1.13.1 OracleAS Forms Services Upgrade Items (List A)

User deployments of the OracleAS Forms Services EAR file (`forms90app.ear`) in the OC4J_BI_Forms OC4J instance in the source Oracle home.

A.1.13.2 OracleAS Forms Services Upgrade Items (List B)

- `SOURCE_ORACLE_HOME/j2ee/OC4J_BI_Forms/applications/forms90app/forms90web/WEB-INF/web.xml`
- `SOURCE_ORACLE_HOME/j2ee/OC4J_BI_Forms/applications/USER_APP_NAME/forms90web/WEB-INF/web.xml`

In this path name, `USER_APP_NAME` refers to the customized name used to redeploy the OracleAS Forms Services EAR file (`forms90app.ear`) in the user configuration.

- `SOURCE_ORACLE_HOME/j2ee/properties/oc4j_bi_forms.properties`
Upgrades the OracleAS Forms Services deployment entries.
- `SOURCE_ORACLE_HOME/j2ee/OC4J_BI_Forms/config/oc4j.properties`
Upgrades the OracleAS Forms Services deployment entries.
- `SOURCE_ORACLE_HOME/forms90/server/formsweb.cfg`
- `SOURCE_ORACLE_HOME/forms90/server/default.env`
- `SOURCE_ORACLE_HOME/forms90/server/forms90.conf`
- `SOURCE_ORACLE_HOME/tools/jvm/jvmconrollers.cfg`
- `SOURCE_ORACLE_HOME/bin/g90runm.sh`
- User-defined Oracle Application Server Forms Services configuration file replacements and additions for `formsweb.cfg`, `forms90.conf` and `default.env`.

A.1.13.3 OracleAS Forms Services Upgrade Items (List C)

`SOURCE_ORACLE_HOME/forms90/search_replace.properties`

`SOURCE_ORACLE_HOME/forms90/converter.properties`

A.1.13.4 OracleAS Forms Services Upgrade Items (List D)

- `SOURCE_ORACLE_HOME/forms90/fttrace.cfg`
- `SOURCE_ORACLE_HOME/forms90/java/oracle/forms/registry/Registry.dat`
- User-defined OracleAS Forms Services template `htm` files used by the Forms Servlet to render the Forms client `html` page.

A.1.13.5 Parameters in the formsweb.cfg Files That Are Not Upgraded

When you upgrade OracleAS Forms Services, the OracleAS Upgrade Assistant upgrades the contents of the `formsweb.cfg` file, but it does not upgrade the following entries in the file:

```
jinit_download_page
jinit_classid
jinit_exename
jinit_mimetype
jpi_download_page
jpi_classid
jpi_codebase
jpi_mimetype
```

A.1.13.6 OracleAS Forms Services File Name, Directory Name, URL, and Variable Name Changes in 10g Release 2 (10.1.2.0.2)

The names of many OracleAS Forms Services files, environment variables, paths, and directories have changed in OracleAS Forms Services 10g Release 2 (10.1.2.0.2).

[Table A–1](#) the name changes. The OracleAS Upgrade Assistant takes care of replacing the older names with new names in the user-defined configurations during the upgrade.

Table A–1 OracleAS Forms Services File Name, Directory Name, URL, and Variable Name Changes in 10g Release 2 (10.1.2.0.2)

Release 2 (9.0.2) and 10g (9.0.4) Name	10g Release 2 (10.1.2.0.2) Name	Description
<code>http://host.port/forms90</code>	<code>http://host.port/forms</code>	Default URL for accessing OracleAS Forms Services
<code>ORACLE_HOME\forms90</code>	<code>ORACLE_HOME\forms</code>	Default directory for OracleAS Forms Services configuration files
<code>forms90app.ear</code>	<code>formsapp.ear</code>	OracleAS Forms Services EAR file
<code>forms90.conf</code>	<code>forms.conf</code>	OracleAS Forms Services Oracle HTTP Server configuration file
<code>f90all.jar</code>	<code>frmall.jar</code>	OracleAS Forms Services client jar file
<code>f90all_jinit.jar</code>	<code>frmall.jinit.jar</code>	OracleAS Forms Services client jar file
<code>f90generic_laf.jar</code>	<code>frmgeneric.jar</code>	OracleAS Forms Services client jar file
<code>f90main.jar</code>	<code>frmmain.jar</code>	OracleAS Forms Services client jar file
<code>f90oracle_laf.jar</code>	<code>frmoracle_laf.jar</code>	OracleAS Forms Services client jar file
<code>f90resources.jar</code>	<code>frmresources.jar</code>	OracleAS Forms Services client jar file
<code>f90srv.jar</code>	<code>frmsrv.jar</code>	OracleAS Forms Services servlet jar file
<code>i90servlet</code>	<code>Iservlet</code>	Listener servlet alias
<code>f90servlet</code>	<code>frmservlet</code>	OracleAS Forms Services default alias
<code>g90runm.sh</code>	<code>graphicsrun.sh</code>	Graphics integration script.

A.1.14 The Oracle Application Server Reports Services Upgrade Process

The OracleAS Upgrade Assistant performs these steps when upgrading Oracle Application Server Reports Services:

- Copies all configuration files except `jdbcpds.conf` from the source Oracle home to the destination Oracle home.
- Copies all resource files from the source Oracle home to the destination Oracle home.
- Copies reports server persistent files from the source Oracle home to the destination Oracle home.

A.1.14.1 Oracle Application Server Reports Services Upgrade Items

The following files are changed in the Oracle Application Server Reports Services upgrade process:

- `DESTINATION_ORACLE_HOME\reports\conf*.conf` (except `jdbcpds.conf`)
- `DESTINATION_ORACLE_HOME\reports\conf*.xml`
- `DESTINATION_ORACLE_HOME\reports\plugins\resource*.*`
- `DESTINATION_ORACLE_HOME\reports\conf\cgicmd.dat`
- `DESTINATION_ORACLE_HOME\reports\server*.dat`
- `DESTINATION_ORACLE_HOME\reports\conf\rwervlet.properties`

A.2 Infrastructure Upgrade Processes

This section describes the upgrade processing of the Infrastructure. Infrastructure components and functionality are described in [Chapter 7, "Upgrading the OracleAS Metadata Repository"](#) and [Chapter 5, "Upgrading Identity Management Services"](#).

It contains the following subsections:

- [The Metadata Repository Container Schema Upgrade Process](#)
- [The Process Connect Upgrade Process](#)
- [The Oracle Application Server Certificate Authority Upgrade Process](#)
- [The Oracle Ultra Search Schema Upgrade Process](#)
- [The OracleAS Portal Schema Upgrade Process](#)
- [The Oracle Application Server Web Services UDDI Registry Schema Upgrade Process](#)
- [The Web Clipping Upgrade Process](#)
- [The Oracle Application Server Wireless Schema Upgrade Process](#)

A.2.1 The Identity Management Upgrade Process

The Identity Management components Oracle Application Server Single Sign-On and Oracle Internet Directory are upgraded by the Oracle Universal Installer. There are two possible configurations upgraded: distributed, in which Oracle Application Server Single Sign-On and Oracle Internet Directory reside on different computers, each with its own metadata repository, and non-distributed, in which they share a metadata repository on one computer.

The upgrade processing is interactive, and performed by the Oracle Universal Installer in each scenario. The Oracle Universal Installer is aware of the configuration being

upgraded, and prompts for the necessary information and launches the appropriate configuration tools.

The source and destination configurations are depicted in:

- [Figure 5–1, "Non-Distributed Identity Management"](#)
- [Figure 5–2, "Distributed Identity Management in Release 2 \(9.0.2\)"](#)
- [Figure 5–3, "Distributed Identity Management in 10g \(9.0.4\) - Example 1"](#)

A.2.2 The Metadata Repository Container Schema Upgrade Process

The Metadata Repository Container schema upgrade is performed by the Metadata Repository Upgrade Assistant (MRUA). This part of the Metadata Repository Upgrade Assistant procedure adds support for new schemas in the metadata repository, and updates the Oracle Internet Directory entry. The script performs one or both functions, depending on the credentials supplied when it is executed.

During the Metadata Repository Container schema phase of the upgrade, MRUA performs these steps:

1. Checks to determine whether the Oracle home is a Release 2 (9.0.2) or 10g (9.0.4) Infrastructure; if it is not, the process reports an error and exits.
2. Connects to the metadata repository database; if unable to connect, the process exits.
3. Checks to determine whether the database version is a supported version; if not, the process reports an error and exits.
4. Creates these schemas: `wcrsys`, `oca`, `oraoca_public`, `ip`, `wk_test` and `internet_appserver_registry` (with the same password as the user name and corresponding tablespace) and these tablespaces: `ias_meta`, `wcrsys_ts`, `ocats`, `ip_dt`, `ip_rt`, `ip_idx`, `ip_lob` `OLTS_SVRMGSTORE`, `oltsbattrstore`. If the creation of any tablespace or user fails, the process reports an error and continues.
5. Writes message to standard output "Creation of new schemas successful" if all schemas were created successfully.

The Metadata Repository Container Oracle Internet Directory entry upgrade process performs these steps:

1. Checks to determine whether the `ORACLE_HOME` environment variable is set; if not, the process reports an error and exits.
2. Checks to determine whether the Oracle home is a Release 2 (9.0.2) or 10g (9.0.4) Infrastructure; if it is not, the process reports an error and exits.
3. Connects to the metadata repository database using the following user names and passwords: `oca/oca`, `oraoca_public`, and `wcrsys/wcrsys`. (These should have been created by the first phase of the schema creation process performed by MRUA, which preceded the Oracle Internet Directory entry update.) If unable to connect to all of these users, the process reports an error and exits.
4. Randomizes the password for the users.
5. Creates all required security entries in Oracle Internet Directory and new schema entry, using randomized password.
6. Changes the password of users in metadata repository.

7. Writes message to standard output "Update of new OID entries successful" if creation of Oracle Internet Directory entries and update of randomized passwords was successful.

A.2.3 The Process Connect Upgrade Process

The Process Connect upgrade process creates Process Connect schema.

A.2.4 The Oracle Application Server Certificate Authority Upgrade Process

Oracle Application Server Certificate Authority (OCA) is an OracleAS Identity Management component.

The OCA files are upgraded by Oracle Universal Installer as part of the OracleAS Identity Management upgrade procedure and the Oracle Application Server Certificate Authority.

When you use Oracle Universal Installer to upgrade OCA as a part of a 10g (9.0.4) OracleAS Identity Management upgrade, the password store, wallets, customized email and screen templates, and custom policies are copied from the source Oracle home to the new Oracle home.

In addition, the upgraded OCA is registered with OracleAS Single Sign-On, added to Oracle HTTP Server, and registered with Distributed Configuration Management (DCM). The certificate usage types for all the certificates ever issued by OCA are changed to the new 10.1.2 certificate usage types, and some new OCA configuration parameters are added.

If you are upgrading from Release 2 (9.0.2), you can use the Metadata Repository Upgrade Assistant (MRUA) to create the OCA schema from scratch. This is because OCA was not available as a Release 2 (9.0.2) Oracle Application Server component.

A.2.5 The Oracle Ultra Search Schema Upgrade Process

The Oracle Ultra Search schema upgrade process performs these steps. Note that most of these steps are performed by the Database Upgrade Assistant (DBUA) when you upgrade the database:

- Copies the Oracle Ultra Search 10g Release 2 (10.1.2) binaries to the Infrastructure database directories.
- Connects to repository database as SYS.
- Performs existence check for the WKSYS schema. Gets version number stored in the schema. If the version number is not 9.0.2 (or its patch release version), an error occurs and the process stops.
- Runs the SQL*Plus script `wkdbmig.sql` to upgrade the schema and data in WKSYS.
- Executes a `loadjava` command to load Java stored packages into the WKSYS schema.
- Runs the SQL*Plus script to create the demo schema and create an Ultra Search instance based on the demo schema.
- Updates the version number in the component registry.
- If you are upgrading from Release 2 (9.0.2), configures the Oracle Ultra Search schema information stored in the Oracle Internet Directory.

A.2.5.1 Oracle Ultra Search Schema Upgrade Items

The following is changed in the Oracle Ultra Search schema upgrade process:

- WKSYS schema
- Any schema holding an Oracle Ultra Search instance will also be upgraded. For example, `wk_test` for the default schema `WK_INST`.

A.2.6 The OracleAS Portal Schema Upgrade Process

The OracleAS Portal schema upgrade process (the `upgrade.pl` script) performs these steps:

1. Runs a series of prechecks to ensure that the upgrade should proceed.
2. Exports a subset of the OracleAS Portal tables to a dump file.
3. Displays all invalid objects before the upgrade starts. (All OracleAS Portal packages must be valid at this stage.)
4. Disables all provisioning profiles so that synchronizations between OracleAS Portal and Oracle Internet Directory are suspended.
5. Disables the DBMS jobs in the OracleAS Portal schema. These will be re-enabled at the end of the upgrade.
6. Drops statistics gathered on all tables in the OracleAS Portal schema. The statistics supported by the OracleAS Portal will be gathered near the end of the upgrade.
7. Installs OWA packages, if necessary.

Note: This step is executed only the current version of the OWA packages is not the latest expected version. This step causes invalidation of all packages in the instance that depend on the OWA packages. In particular, most OracleAS Portal packages in all OracleAS Portal schemas on the instance will become invalid. For this reason, after upgrade, you may need to recompile packages on other affected schemas after the upgrade. The upgrade script only recompiles packages in the Portal schema being upgraded.

8. Loads new versions of OracleAS Portal Java objects into the schema.
9. Deletes all product messages in all languages.
10. Loads all of the latest product messages in all languages that were previously installed.

Note: If any product messages were altered before the upgrade, you must manually re-apply the changes.

11. Changes the schema and compiles all OracleAS Portal packages.
12. Exports temporary tables created during the upgrade.
13. Recompiles any invalid non-OracleAS Portal objects. Warnings are issued if any invalid non-Oracle9iAS Portal objects remain after this step.
14. Updates the OracleAS Portal version if there are no fatal compilation errors.

15. Enables all provisioning profiles so that synchronizations between OracleAS Portal and Oracle Internet Directory resume.
16. Searches for errors and warnings in the upgrade log file and displays those encountered; if there were no errors, the process displays a success message.

A.2.6.1 OracleAS Portal Schema Upgrade Items

The following schemas are part of OracleAS Portal. During the upgrade, only the Portal schema is changed:

- PORTAL (Portal schema)
- PORTAL_DEMO (Portal demonstration schema)
- PORTAL_PUBLIC (Portal public schema)
- PORTAL_APP (Portal JSP Access)

A.2.7 The Oracle Application Server Web Services UDDI Registry Schema Upgrade Process

The Oracle Application Server Web Services schema upgrade script `wuru9023.sql` (used for Oracle Application Server Release 2 (9.0.2) with the UDDI 9.0.2.3 patch) performs these steps:

- Connects to repository database.
- Performs pre-upgrade validations (such as proper UDDI version) to determine whether the upgrade can proceed. If any of the checks fail, the upgrade stops.
- Performs initial structural changes, such as creating and dropping tables, columns, and indexes.
- Performs upgrades to the UDDI server properties and configuration, inserting new rows and updating existing rows in the configuration tables.

The Oracle Application Server Web Services schema upgrade helper script `wuru9020.sql` (used for Oracle Application Server Release 2 (9.0.2)) performs these steps:

- Performs pre-upgrade validations (such as proper UDDI version) to determine whether the upgrade can proceed. If any of the checks fail, the upgrade stops.
- Destroys all schema contents, such as tables, PL/SQL packages, and so on, in the UDDI database schema.
- Invokes the 9.0.4 installation script to install the 10g Release 2 (10.1.2) database schema.

A.2.7.1 Oracle Application Server Web Services Schema Upgrade Items

The following is changed in the Oracle Application Server Web Services schema upgrade process:

- UDDISYS schema

Note: The UDDI middle tier upgrade must precede the UDDI schema upgrade.

A.2.8 The Web Clipping Upgrade Process

Web Clipping is a new component, so there are no dependencies on other upgrade processes in the middle tier or Infrastructure. The upgrade process creates new tables and constraints, defines a package with functions and procedures, and seeds the tables with randomized data.

A.2.8.1 Web Clipping Schema Upgrade Items

The WCRSYS schema is created in the Web Clipping schema upgrade process.

A.2.9 The Oracle Application Server Wireless Schema Upgrade Process

MRUA upgrades the OracleAS Wireless schema from 10g (9.0.4) to 10g Release 2 (10.1.2), but it cannot upgrade the OracleAS Wireless schema from Release 2 (9.0.2).

As a result, if you are upgrading from 10g (9.0.4), or if you are upgrading Release 2 (9.0.2) and you did not configure OracleAS Wireless, then MRUA upgrades the OracleAS Wireless schema successfully.

However, if you are upgrading from Release 2 (9.0.2) and you configured OracleAS Wireless in a Release 2 (9.0.2) middle tier, then you must install and configure OracleAS Wireless 10g Release 2 (10.1.2) before running MRUA to upgrade the OracleAS Metadata Repository to 10g Release 2 (10.1.2).

See Also: [Section 7.3.3, "About Upgrading the OracleAS Wireless Schema"](#)

Files Reference

This appendix lists and describes files that contain settings and configuration data that are transferred from the source to the destination Oracle home during an upgrade.

This appendix contains the following sections:

- [Upgraded Files Sorted By File Name](#)
- [Upgraded Files Sorted By Directory Path](#)
- [Descriptions of the Upgraded Files](#)

B.1 Upgraded Files Sorted By File Name

[Table B–1](#) contains an alphabetical list, by file name, of the Oracle Application Server files that are modified when you upgrade your Oracle Application Server environment to 10g Release 2 (10.1.2).

Table B–1 Files Containing Upgrade Data (Sorted by File)

File	Path from Oracle Home	Upgrade Type
,	webcache\wallets	OracleAS Upgrade Assistant
,	reports\plugins\resource	OracleAS Upgrade Assistant
*.class	wireless\server\classes	OracleAS Upgrade Assistant
*.conf (except jdbcpds.conf)	reports\conf	OracleAS Upgrade Assistant
*.dat	reports\server	OracleAS Upgrade Assistant
*.htm	forms\server	OracleAS Upgrade Assistant
*.properties	wireless\server\classes	OracleAS Upgrade Assistant

Table B-1 (Cont.) Files Containing Upgrade Data (Sorted by File)

File	Path from Oracle Home	Upgrade Type
*.xml	reports\conf	OracleAS Upgrade Assistant
.reg_key.dc	discoverer902\bin\.reg_key.dc (which upgrades to discoverer\.reg_key.dc)	OracleAS Upgrade Assistant
application-client.xml	j2ee\<name of OC4J instance>\config\application-client.xml	Manual
application.xml	j2ee\<name of OC4J instance>\config\application.xml j2ee\home\applications\<name of OC4J application>\META-INF\application.xml	Manual
cache.conf	Apache\modplsql\conf\cache.conf	OracleAS Upgrade Assistant
cgicmd.dat	reports\conf\cgicmd.dat	OracleAS Upgrade Assistant
configuration.xml	j2ee\OC4J_BI_Forms\applications\discoverer\web\WEB-INF\configuration.xml	OracleAS Upgrade Assistant
converter.properties	forms\converter.properties	OracleAS Upgrade Assistant
dads.conf	Apache\modplsql\conf\dads.conf (ORASSO DAD upgrade)	Manual
dads.conf	Apache\modplsql\conf\dads.conf	OracleAS Upgrade Assistant
data-sources.xml	j2ee\OC4J_Portal\config\data-sources.xml and j2ee\<name of OC4J instance>\config\data-sources.xml	OracleAS Upgrade Assistant
default.env (or user-defined environment file)	forms\server\default.env	OracleAS Upgrade Assistant
default-web-site.xml	j2ee\<name of OC4J instance>\config\default-web-site.xml	Manual
dms.conf	Apache\Apache\conf\dms.conf	Manual
EAR files for applications defined in the server.xml file in the source instance	j2ee\<name of OC4J instance>\applications*.ear	OracleAS Upgrade Assistant
forms.conf	forms\server\forms.conf	OracleAS Upgrade Assistant
formsweb.cfg (or user-defined servlet configuration file)	forms\server\formsweb.cfg	OracleAS Upgrade Assistant
ftrace.cfg	forms\trace\ftrace.cfg	OracleAS Upgrade Assistant

Table B–1 (Cont.) Files Containing Upgrade Data (Sorted by File)

File	Path from Oracle Home	Upgrade Type
global-web-application.xml	j2ee\<name of OC4J instance>\config\global-web-application.xml	Manual
http-web-site.xml	j2ee\<name of OC4J instance>\config\http-web-site.xml	Manual
httpd.conf	Apache\Apache\conf\httpd.conf	OracleAS Upgrade Assistant
ias.properties	config\ias.properties	Manual
iasproviders.xml	portal\pdkjava\providerGroups\iasProviders.xml	
iaschema.xml	config\iaschema.xml	OracleAS Upgrade Assistant
index.html	Apache\Apache\htdocs\index.html	Manual
internal.xml	webcache\internal.xml	Manual
jazn-data.xml	j2ee\home\config\jazn-data.xml and j2ee\home\application-deployments\<name of application>\jazn-data.xml	OracleAS Upgrade Assistant
jazn-data.xml	sysman\j2ee\config\jazn-data.xml	Manual
jazn.xml	j2ee\home\config\jazn.xml	OracleAS Upgrade Assistant
jdbcpds.conf	reports\conf	Manual
jms.xml	j2ee\home\config\jms.xml	Manual
mod_oc4j.conf	Apache\Apache\conf\mod_oc4j.conf	OracleAS Upgrade Assistant
mod_osso.conf	Apache\Apache\conf\mod_osso.conf	OracleAS Upgrade Assistant
moddav.conf	Apache\Apache\oradav\conf\moddav.conf	OracleAS Upgrade Assistant
oc4j.properties	j2ee\oc4j.properties	OracleAS Upgrade Assistant
oc4j_bi_forms.properties	j2ee\properties\oc4j_bi_forms.properties	OracleAS Upgrade Assistant
opmn.xml	opmn\conf\opmn.xml	OracleAS Upgrade Assistant
oracle_apache.conf	Apache\Apache\conf\oracle_apache.conf	Manual
oradav.conf	Apache\oradav\conf\oradav.conf	OracleAS Upgrade Assistant
orion-application.xml	j2ee\home\application-deployments\<name of application>\orion-application.xml	Manual

Table B–1 (Cont.) Files Containing Upgrade Data (Sorted by File)

File	Path from Oracle Home	Upgrade Type
orion-web.xml	j2ee\home\application-deployments\ <name of application>\orion-web.xml	OracleAS Upgrade Assistant
osso.conf	Apache\Apache\conf\osso\osso.conf	OracleAS Upgrade Assistant
plsql.conf	Apache\modplsql\conf\plsql.conf	OracleAS Upgrade Assistant
plus_config.xml	j2ee\OC4J_BI_Forms\applications\discoverer\web\ plus_files\xsl\plus_config.xml	OracleAS Upgrade Assistant
Pref.txt	discoverer902\util\Pref.txt (which upgrades to discoverer\util\Pref.txt)	OracleAS Upgrade Assistant
principals.xml	j2ee\<name of OC4J instance>\ config\principals.xml	OracleAS Upgrade Assistant
progrp.xml	j2ee\OC4J_Portal\applications\jpd\jpd\WEB-INF\ deployment_providerui\progrp.xml AND j2ee\OC4J_ Portal\applications\portalTools\providerBuilder\ WEB-INF\deployment_providerui\progrp.xml	OracleAS Upgrade Assistant
provider.xml	j2ee\OC4J_Portal\applications\portalTools\omniPortlet\ WEB-INF\providers\omniPortlet\provider.xml j2ee\OC4J_Portal\applications\portalTools\webClipping\ WEB-INF\providers\webClipping\provider.xml j2ee\OC4J_Portal\applications\jpd\jpd\WEB-INF\ providers\PORTLETBLDGTTOOLS\provider.xml j2ee\OC4J_Portal\applications\jpd\jpd\WEB-INF\ providers\<seeded_provider>\providers.xml j2ee\OC4J_Portal\applications\portalTools\providerBuilder\ WEB-INF\providers.xml	OracleAS Upgrade Assistant
provideruiaccls.xml	j2ee\OC4J_Portal\applications\jpd\jpd\ WEB-INF\deployment_providerui\provideruiaccls.xml AND j2ee\OC4J_Portal\applications\portalTools\ providerBuilder\WEB-INF\ deployment_providerui\provideruiaccls.xml	OracleAS Upgrade Assistant
Registry.dat	forms\java\oracle\forms\registry\Registry.dat	OracleAS Upgrade Assistant
reports.bat	reports\samples\scripts	Manual
rmi.xml	j2ee\home\config\rmi.xml	Manual
rw*.bat	reports\samples\scripts\	Manual

Table B–1 (Cont.) Files Containing Upgrade Data (Sorted by File)

File	Path from Oracle Home	Upgrade Type
rwserver.template	reports\conf	Manual
rwservlet.properties	reports\conf	OracleAS Upgrade Assistant
server.xml	j2ee\home\config\server.xml	Manual
targets.xml	sysman\emd\targets.xml	OracleAS Upgrade Assistant
tnsnames.ora	network\admin\tnsnames.ora	OracleAS Upgrade Assistant
uddiserver.config	ds\uddi\config\uddiserver.config (which upgrades to uddi\config\uddiserver.config)	OracleAS Upgrade Assistant
ui_config.xml	j2ee\OC4J_BI_Forms\applications\discoverer\web\common\xsl	OracleAS Upgrade Assistant
vaultIdMappings.properties	j2ee\OC4J_Portal\applications\portalTools\omniPortlet\WEB-INF\providers\omniPortlet\vaultIdMappings.properties	OracleAS Upgrade Assistant
web.xml	j2ee\home\default-web-app\WEB-INF\web.xml	Manual
web.xml	j2ee\OC4J_Portal\applications\portal\portal\WEB-INF\web.xml	OracleAS Upgrade Assistant
webcache.xml	webcache\webcache.xml	OracleAS Upgrade Assistant

B.2 Upgraded Files Sorted By Directory Path

[Table B–1](#) contains an alphabetical list, by directory path, of the Oracle Application Server files that are modified when you upgrade your Oracle Application Server environment to 10g Release 2 (10.1.2).

Table B–2 Files Containing Upgrade Data (Sorted by Path)

File	Path from Oracle Home	Upgrade Type
dms.conf	Apache\Apache\conf\dms.conf	Manual
httpd.conf	Apache\Apache\conf\httpd.conf	OracleAS Upgrade Assistant
mod_oc4j.conf	Apache\Apache\conf\mod_oc4j.conf	OracleAS Upgrade Assistant
mod_osso.conf	Apache\Apache\conf\mod_osso.conf	OracleAS Upgrade Assistant
oracle_apache.conf	Apache\Apache\conf\oracle_apache.conf	Manual

Table B–2 (Cont.) Files Containing Upgrade Data (Sorted by Path)

File	Path from Oracle Home	Upgrade Type
plsql.conf	Apache\Apache\conf\osso\osso.conf	OracleAS Upgrade Assistant
index.html	Apache\Apache\htdocs\index.html	Manual
moddav.conf	Apache\Apache\oradav\conf\moddav.conf	OracleAS Upgrade Assistant
cache.conf	Apache\modplsql\conf\cache.conf	OracleAS Upgrade Assistant
dads.conf	Apache\modplsql\conf\dads.conf	OracleAS Upgrade Assistant
dads.conf	Apache\modplsql\conf\dads.conf (ORASSO DAD upgrade)	Manual
plsql.conf	Apache\modplsql\conf\plsql.conf	OracleAS Upgrade Assistant
oradav.conf	Apache\oradav\conf\oradav.conf	OracleAS Upgrade Assistant
ias.properties	config\ias.properties	Manual
iasschema.xml	config\iasschema.xml	OracleAS Upgrade Assistant
.reg_key.dc	discoverer902\bin\.reg_key.dc (which upgrades to discoverer\.reg_key.dc)	OracleAS Upgrade Assistant
Pref.txt	discoverer902\util\Pref.txt (which upgrades to discoverer\util\Pref.txt)	OracleAS Upgrade Assistant
uddiserver.config	ds\uddi\config\uddiserver.config (which upgrades to uddi\config\uddiserver.config)	OracleAS Upgrade Assistant
converter.properties	forms\converter.properties	OracleAS Upgrade Assistant
Registry.dat	forms\java\oracle\forms\registry\Registry.dat	OracleAS Upgrade Assistant
search_replace.properties	forms\search_replace.properties	OracleAS Upgrade Assistant
*.htm	forms\server	OracleAS Upgrade Assistant
default.env (or user-defined environment file)	forms\server\default.env	OracleAS Upgrade Assistant
forms.conf	forms\server\forms.conf	OracleAS Upgrade Assistant

Table B–2 (Cont.) Files Containing Upgrade Data (Sorted by Path)

File	Path from Oracle Home	Upgrade Type
formsweb.cfg (or user-defined servlet configuration file)	forms\server\formsweb.cfg	OracleAS Upgrade Assistant
ftrace.cfg	forms\trace\ftrace.cfg	OracleAS Upgrade Assistant
EAR files for applications defined in the server.xml file in the source instance	j2ee\<name of OC4J instance>\applications*.ear	OracleAS Upgrade Assistant
application-client.xml	j2ee\<name of OC4J instance>\config\application-client.xml	Manual
default-web-site.xml	j2ee\<name of OC4J instance>\config\default-web-site.xml	Manual
global-web-application.xml	j2ee\<name of OC4J instance>\config\global-web-application.xml	Manual
http-web-site.xml	j2ee\<name of OC4J instance>\config\http-web-site.xml	Manual
principals.xml	j2ee\<name of OC4J instance>\config\principals.xml	OracleAS Upgrade Assistant
orion-application.xml	j2ee\home\application-deployments\<name of application>\orion-application.xml	Manual
orion-web.xml	j2ee\home\application-deployments\<name of application>\orion-web.xml	Manual
rmi.xml	j2ee\home\config\rmi.xml	Manual
jazzn-data.xml	j2ee\home\config\jazzn-data.xml and j2ee\home\application-deployments\<name of application>\jazzn-data.xml	OracleAS Upgrade Assistant
jazzn.xml	j2ee\home\config\jazzn.xml	OracleAS Upgrade Assistant
jms.xml	j2ee\home\config\jms.xml	Manual
server.xml	j2ee\home\config\server.xml	Manual
web.xml	j2ee\home\default-web-app\WEB-INF\web.xml	Manual
oc4j.properties	j2ee\oc4j.properties	OracleAS Upgrade Assistant
ui_config.xml	j2ee\OC4J_BI_Forms\applications\discoverer\web\common\xsl	OracleAS Upgrade Assistant
plus_config.xml	j2ee\OC4J_BI_Forms\applications\discoverer\web\plus_files\xsl\plus_config.xml	OracleAS Upgrade Assistant
configuration.xml	j2ee\OC4J_BI_Forms\applications\discoverer\web\WEB-INF\configuration.xml	OracleAS Upgrade Assistant

Table B–2 (Cont.) Files Containing Upgrade Data (Sorted by Path)

File	Path from Oracle Home	Upgrade Type
progrp.xml	j2ee\OC4J_Portal\applications\jpd\jpd\WEB-INF\deployment_providerui\progrp.xml AND j2ee\OC4J_Portal\applications\portalTools\providerBuilder\WEB-INF\deployment_providerui\progrp.xml	OracleAS Upgrade Assistant
provideruiacls.xml	j2ee\OC4J_Portal\applications\jpd\jpd\WEB-INF\deployment_providerui\provideruiacls.xml AND j2ee\OC4J_Portal\applications\portalTools\providerBuilder\WEB-INF\deployment_providerui\provideruiacls.xml AND j2ee\OC4J_Portal\applications\jpd\jpd\WEB-INF\providers\PORTLETBLDGTOOLS\provider.xml	OracleAS Upgrade Assistant
provider.xml	j2ee\OC4J_Portal\applications\portalTools\omniPortlet\WEB-INF\providers\omniPortlet\provider.xml AND j2ee\OC4J_Portal\applications\portalTools\webClipping\WEB-INF\providers\webClipping\provider.xml	OracleAS Upgrade Assistant
vaultIdMappings.properties	j2ee\OC4J_Portal\applications\portalTools\omniPortlet\WEB-INF\providers\omniPortlet\vaultIdMappings.properties	OracleAS Upgrade Assistant
provider.xml	j2ee\OC4J_Portal\applications\portalTools\webClipping\WEB-INF\providers\webClipping\provider.xml j2ee\OC4J_Portal\applications\jpd\jpd\WEB-INF\providers\<seeded_provider>\providers.xml j2ee\OC4J_Portal\applications\portalTools\providerBuilder\WEB-INF\providers.xml	OracleAS Upgrade Assistant
web.xml	j2ee\OC4J_Portal\applications\portal\portal\WEB-INF\web.xml	OracleAS Upgrade Assistant
data-sources.xml	j2ee\OC4J_Portal\config\data-sources.xml and j2ee\<name of OC4J instance>\config\data-sources.xml	OracleAS Upgrade Assistant
application.xml	j2ee\<name of OC4J instance>\config\application.xml j2ee\home\applications\<name of OC4J application>\META-INF\application.xml	Manual
tnsnames.ora	network\admin\tnsnames.ora	Manual
opmn.xml	opmn\conf\opmn.xml	OracleAS Upgrade Assistant
iasproviders.xml	portal\pd\java\providerGroups\iasProviders.xml	

Table B–2 (Cont.) Files Containing Upgrade Data (Sorted by Path)

File	Path from Oracle Home	Upgrade Type
*.conf (except jdbcpds.conf)	reports\conf	OracleAS Upgrade Assistant
*.xml	reports\conf	OracleAS Upgrade Assistant
cgicmd.dat	reports\conf	OracleAS Upgrade Assistant
rwervlet.properties	reports\conf	OracleAS Upgrade Assistant
rwserver.template	reports\conf	Manual
proxyinfo.xml	reports\conf	OracleAS Upgrade Assistant
rwervlet.properties	reports\conf	OracleAS Upgrade Assistant
.	reports\plugins\resource	OracleAS Upgrade Assistant
reports.bat	reports\samples\scripts	
rw*.bat	reports\samples\scripts	OracleAS Upgrade Assistant
*.dat	reports\server	OracleAS Upgrade Assistant
targets.xml	sysman\emd\targets.xml	OracleAS Upgrade Assistant
jazn-data.xml	sysman\j2ee\config\jazn-data.xml	Manual
internal.xml	webcache\internal.xml	Manual
.	webcache\wallets	OracleAS Upgrade Assistant
webcache.xml	webcache\webcache.xml	OracleAS Upgrade Assistant
*.class	wireless\server\classes	OracleAS Upgrade Assistant
*.properties	wireless\server\classes	OracleAS Upgrade Assistant

B.3 Descriptions of the Upgraded Files

This section provides brief descriptions of the Oracle Application Server files that are modified during the upgrade to 10g Release 2 (10.1.2). Refer to the component documentation for more details about the purpose of each file.

.

The contents of the `reports\plugins\resource` directory. These files are resource files for Oracle Application Server Reports Services.

.

The contents of the `webcache\wallets` directory. These files are wallet files for Oracle Application Server Web Cache.

***.class**

These files are class files for Oracle Application Server Wireless applications.

***.conf**

These files are configuration files for Oracle Application Server Reports Services. Includes the [textpds.conf](#) file and [xmlpds.conf](#) file.

***.dat**

These files are server persistent files for Oracle Application Server Reports Services.

***.htm**

These files are user-defined files for deploying Forms applet clients.

***.properties**

These files are properties files for Oracle Application Server Wireless applications.

***.xml**

These files are user-defined files for Oracle Application Server Reports Services. Includes the [proxyinfo.xml](#) file, which contains information about the proxy server, if one is used.

.reg_key.dc

The `.reg_key.dc` file is the internal registry for storing default user preferences and system preferences for Oracle Business Intelligence Discoverer. The preferences stored in `Pref.txt` are applied to this registry.

application-client.xml

The `application-client.xml` file contains configuration information used across all J2EE servers.

application.xml

The `application.xml` file is the deployment descriptor for enterprise application archives.

cache.conf

The `cache.conf` file specifies the characteristics of the `mod_plsql` caching system. There are two types of caches in use:

PLSQL Cache: Caches dynamically generated content that doesn't change often. Applications using the OWA_CACHE package, such as OracleAS Portal, use this feature to improve performance and reduce the overhead associated with database requests.

Session cookie cache: Caches the cookie value generated by the Oracle Application Server Single Sign-On server for a particular session, thereby increasing performance by avoiding a round trip to the database to obtain user credentials. Applications using Oracle Application Server Single Sign-On benefit from this feature.

cgicmd.dat

The `cgicmd.dat` file is the the key map file for Oracle Application Server Reports Services.

configuration.xml

The `configuration.xml` file contains configuration information for the Oracle Business Intelligence Discoverer Viewer and Portlet Provider servlets.

converter.properties

The `converter.properties` file is a Forms configuration file that defines such options as log file name, Reports servlet directory, and Reports server host.

dads.conf

The `dads.conf` file is a `mod_plsql` configuration file that contains Database Access Descriptor (DAD) entries.

data-sources.xml

The `data-sources.xml` file contains data source configuration information for databases used by OC4J applications.

dms.conf

The `dms.conf` file is the configuration file for the Dynamic Monitoring Service.

default-web-site.xml

The `default-web-site.xml` file contains the configuration for the default OC4J Web site for Oracle Application Server.

default.env

The `default.env` file contains environment variables used by an Oracle Application Server Forms Services runtime process. A user-defined environment file may be used instead of `default.env`.

forms.conf

The `forms.conf` file contains the Oracle Application Server Forms Services configuration settings for the Oracle HTTP Server.

formsweb.cfg

The `formsweb.cfg` file is the Oracle Application Server Forms Services servlet default configuration file. It defines the parameter values used by the servlet. A user-defined servlet configuration file may be used instead of `formsweb.cfg`.

ftrace.cfg

The ftrace.cfg file specifies event groups for use with the Forms Trace feature in Oracle Application Server Forms Services.

global-web-application.xml

The global-web-application.xml file is the main Oracle Application Server Containers for J2EE (OC4J) deployment file. It is a global configuration file for web applications; it contains settings that are inherited by other deployments.

http-web-site.xml

The http-web-site.xml file is the default web site configuration file for Oracle Application Server Containers for J2EE (OC4J).

httpd.conf

The httpd.conf file is the main configuration file for the Oracle HTTP Server.

ias.properties

The ias.properties file contains settings for the Oracle Application Server instance. The component configuration section lists the components and their launch success value. The installation data section lists the version, installation type, components included, instance name, and infrastructure host and port information. The infrastructure database section lists database names.

iasproviders.xml

An OracleAS Portal configuration file that defines the iAS Providers provider group.

The iasproviders.xml file contains information about the registered Provider Groups and the Providers under each Provider Group. These Provider Groups and the Providers can be the seeded providers or the ones registered or created using the Provider builder user interface.

It contains the configuration information for each Provider.

iasschema.xml

The iasschema.xml file contains a schema configuration entry for each Oracle Application Server components. The entry contains component names, schema name and database connection information.

index.html

The index.html file is the default home page for Oracle Application Server. It provides links to documentation, demonstrations, and summaries of new features.

internal.xml

The internal.xml file contains internal configuration settings for Oracle Application Server Web Cache.

internal_admin.xml

The internal_admin.xml file contains internal configuration settings for Oracle Application Server Web Cache.

jazn-data.xml

The jazn-data.xml file is a configuration file for the Java Authentication and Authorization Service (JAAS). It contains JAAS data on users, roles, policies, and LoginModules. It is used only when the XML provider type is specified.

jazn.xml

The jazn.xml file is a configuration file for the Java Authentication and Authorization Service (JAAS). It is used when the LDAP/OID or XML provider type is specified.

jdbcpds.conf

The jdbcpds.conf file is a Oracle Application Server Reports Services configuration file for JDBC drivers. It is pre-configured for the drivers provided with the installation, but you can add entries for any other drivers you want to use.

jms.xml

The jms.xml file contains configuration for the Java Messaging Service subsystem, such as: the hostname or IP address and port the JMS server binds to, queues and topics to be bound in the JNDI tree, and log settings.

moddav.conf

The moddav.conf file configures and loads the mod_oradav module, which enables distributed authoring and versioning of Web documents.

mod_oc4j.conf

The mod_oc4j.conf file contains mount points for routing requests from the Oracle HTTP Server to OC4J instances.

mod_osso.conf

The mod_osso.conf file is the configuration file for Oracle Application Server Single Sign-On.

oc4j_bi_forms.properties

The oc4j_bi_forms.properties file is the Oracle Application Server Containers for J2EE deployment file for the Business Intelligence and Forms installation type.

oc4j.properties

The oc4j.properties file contains application-specific properties for an OC4J instance.

opmn.xml

The opmn.xml file is the Oracle Process Management and Notification Service (OPMN) configuration file. It identifies the Oracle Application Server Containers for J2EE (OC4J) and Oracle HTTP Server (OHS) processes that OPMN will start and manage.

oracle_apache.conf

The oracle_apache.conf file contains custom configuration settings for the Oracle HTTP Server.

oradav.conf

The oradav.conf file contains the OraDAV configuration parameters for Portal access. The httpd.conf file contains an Include directive for the oradav.conf file.

orion-application.xml

The orion-application.xml file is the Oracle Application Server Containers for J2EE (OC4J) application deployment file. It is generated during deployment, and specifies whether to automatically create and delete tables for Container-Managed Persistence (CMP) beans, the default data source for CMP beans, security role mappings, the user manager, and Java Naming and Directory Interface (JNDI) namespace access.

orion-web.xml

The orion-web.xml file is the Oracle Application Server Containers for J2EE (OC4J) web application deployment file. It is generated during deployment, and contains settings such as buffering, character sets, document root, locales, session tracking, and Java Naming and Directory Interface (JNDI) mappings.

osso.conf

The osso.conf file is the configuration file for the Oracle Application Server Single Sign-On server.

plsql.conf

The plsql.conf file is the configuration file for Oracle HTTP Server module mod_plsql.

plus_config.xml

The plus_config.xml file contains user interface customizations information for the Oracle Business Intelligence Discoverer Plus client, including transports for communication between the applet and the RMI server.

Pref.txt

The pref.txt file contains default user preferences and system preferences for Oracle Business Intelligence Discoverer.

principals.xml

The principals.xml file contains a set of users, groups permissions and certificates.

progrp.xml

A configuration file that tracks all locally created provider groups.

provider.xml

A declarative, XML-based configuration file that describes a Web provider, its portlets, and the location of the content to be displayed in the portlets. This configuration file also describes the behavior of the provider and its portlets.

provideruiacls.xml

The provideruiacls.xml file contains security settings for Portal Development Kit Services for Java (JPDK) web providers.

proxyinfo.xml

The proxyinfo.xml file is an Oracle Application Server Reports Services file that contains information on a proxy server, if one is used. This file is specified in the `destination` element in the main Oracle Application Server Reports Services configuration file.

Registry.dat

The Registry.dat file contains customizations for font mapping and the icon images path in Oracle Application Server Forms Services.

reports.bat

The reports.bat file is an Oracle Application Server Reports Services script.

[Removed references to reports.bat, which is not upgraded in the Windows version, based on bug #4398211.]

rmi.xml

The rmi.xml file contains configuration that allows Remote Method Invocation (RMI), allowing other servers to access the server for RMI requests.

rw*.bat

The rw*.bat files in the `reports/samples/scripts` directory are Oracle Application Server Reports Services scripts.

rwserver.template

The rwserver.bat file is an Oracle Application Server Reports Services script.

rwervlet.properties

The rwserver.bat file contains configuration properties for Oracle Application Server Reports Services.

search_replace.properties

The search_replace.properties file contains search and replace strings and built-in classes for the Oracle Application Server Forms Services Migration Assistant.

server.xml

The server.xml file contains the configuration for the Oracle Application Server Containers for J2EE (OC4J) instance.

targets.xml

The targets.xml file contains representations of resources accessed from the Oracle Enterprise Manager, such as Oracle Application Server Single Sign-On and OracleAS Portal.

textpds.conf

The textpds.conf file is an Oracle Application Server Reports Services file that contains configuration information for the text pluggable data source. It is used to configure the format (delimiter, columns, data type) of text files used as data sources for reports.

tnsnames.ora

The tnsnames.ora file contains entries that describe the locations of Oracle databases, Application server components and other Oracle products use the entries in this file to connect to databases.

uddiserver.config

The uddiserver.config file contains configuration for the Web Services registry.

ui_config.xml

The ui_config.xml file contains user interface customizations information for Oracle Business Intelligence Discoverer Viewer.

vaultIdMappings.properties

An internal file that tracks the changes to the OmniPortlet Secured Data Repository.

web.xml

The web.xml file is the J2EE deployment descriptor for a web application.

webcache.xml

The webcache.xml file is the configuration file for Web Cache.

xmlpds.conf

The xmlpds.conf file is an Oracle Application Server Reports Services file that contains configuration information for the XML pluggable data source.

Upgrade and Compatibility Error Messages

This appendix provides information about the error messages you may encounter when upgrading your Oracle Application Server installations or when running multiple versions Oracle Application Server.

The following sections provide information about error messages that may appear in the OracleAS Upgrade Assistant, Metadata Repository Upgrade Assistant, or Oracle Universal Installer log files when you are upgrading your Oracle Application Server instances to 10g Release 2 (10.1.2):

- [Section C.1, "Error Messages Common to All Components"](#)
- [Section C.2, "Error Messages When Upgrading Instance Configuration Components"](#)
- [Section C.3, "Error Messages When Upgrading Oracle Application Server Containers for J2EE"](#)
- [Section C.4, "Error Messages When Upgrading Oracle HTTP Server"](#)
- [Section C.5, "Error Messages When Upgrading Oracle Application Server Web Services UDDI Registry"](#)
- [Section C.6, "Error Messages When Upgrading mod_plsql"](#)
- [Section C.7, "Error Messages When Upgrading Oracle Application Server Portal"](#)
- [Section C.8, "Error Messages When Upgrading OracleAS Wireless"](#)
- [Section C.9, "Error Messages When Upgrading Oracle Ultra Search"](#)
- [Section C.10, "Error Messages Generated By the Metadata Repository Upgrade Assistant"](#)
- [Section C.11, "Error Messages When Upgrading OracleAS Forms Services"](#)

C.1 Error Messages Common to All Components

This section contains upgrade error messages that are common to all Oracle Application Server components.

Unable to upgrade file *filename*

Cause: The file was not found in the source Oracle home, or you do not have sufficient permissions to copy the file.

Action: Determine the permissions for the file in the source Oracle home and the destination Oracle home, and adjust them as necessary.

C.2 Error Messages When Upgrading Instance Configuration Components

This section contains error messages that are specific to the upgrade of your Oracle Application Server instance configuration.

INVALID_XML_CONFIG_FILE

Cause: The `iaschema.xml` file is corrupted.

Action: Provide an uncorrupted version of the file.

IOEXCEPTION

Cause: The `iaschema.xml` file could not be accessed in the source or destination Oracle home.

Action: Ensure that the file is accessible in both locations.

C.3 Error Messages When Upgrading Oracle Application Server Containers for J2EE

This section contains error messages that are specific to Oracle Application Server Containers for J2EE (OC4J).

J2EEDeploymentException

Cause: An application EAR file is not 100% J2EE compliant.

Action: Use the `validateEarFile` utility to identify the noncompliant characteristics, and correct them. Instructions for using the utility are provided in [Section 4.5.1.3.3, "Validating EAR Files for J2EE Compliance"](#).

C.4 Error Messages When Upgrading Oracle HTTP Server

This section contains error messages that are specific to Oracle HTTP Server.

java.io.FileNotFoundException

Cause: This error indicates that a particular file that is required for the Oracle HTTP Server upgrade is not available in the expected location. For example, additional information provided with the error will usually indicate which files are missing.

Action: You can fix this problem by manually copying the file from the source Oracle home (or from some other known location) to the destination Oracle home.

C.5 Error Messages When Upgrading Oracle Application Server Web Services UDDI Registry

This following sections contains error messages that are specific to the Oracle Application Server UDDI Registry:

- [UDDI Registry Middle Tier Upgrade Error Messages](#)
- [UDDI Registry OracleAS Metadata Repository Upgrade Error Messages](#)

C.5.1 UDDI Registry Middle Tier Upgrade Error Messages

UDDI plug-in does not support upgrade from version {0}. No upgrade will be done.

Cause: The version of the application server in the source mid-tier cannot be upgraded directly to 10g Release 2 (10.1.2).

Action: Check the version of your source AS mid-tier.

See Also: [Chapter 1, "Things You Should Know Before Upgrading"](#)

UDDI plug-in does not support upgrade to version {0}. No upgrade will be done.

Cause: The version of the application server in the destination Oracle home is not supported for this upgrade.

Action: Make sure you are starting the Upgrade Assistant from the correct destination Oracle home.

Source configuration file not found at {0}. No upgrade will be done for version 9.0.2.

Cause: In Release 2 (9.0.2), there was no configuration file for UDDI registry. Therefore upgrade is not applicable.

Action: No action required.

Destination configuration file not found at {0}. Looking for backup at {1}.

Cause: The UDDI registry configuration file is not found in the destination application server middle tier Oracle home.

Action: No action required. A backup configuration file will be used instead.

Destination configuration file not found at {0}, and its backup not found at {1}. Upgrade cannot proceed.

Cause: Neither the UDDI registry configuration file nor its backup can be found in the destination middle tier Oracle home.

Action: Check the installation log file for the destination middle tier.

ErrorMsg: Destination configuration file restored from its backup at {0}.

Cause: The UDDI registry configuration file is not found in the destination Oracle home. However the configuration file was restored from a backup.

Action: No action required.

ErrorMsg: Backup of destination configuration file is made at {0}.

Cause: A backup copy was made of the original UDDI registry configuration file in the destination Oracle home.

Action: Action: No action required.

ErrorMsg: UDDI plug-in did not expect item {0}.

Cause: The item to be upgraded is a directory.

Action: Check the source Oracle home. For UDDI middle-tier upgrades, this item should represent a configuration file.

ErrorMsg: Unknown URL prefix for UDDI: {0}.

Cause: The JDBC URL prefix is incorrect.

Action: The UDDI plug-in will use a JDBC thin driver prefix as a defensive measure. However, you need to double check the setting in the source configuration file.

ErrorMsg: Missing URL prefix definition for UDDI.

Cause: The JDBC URL prefix is absent from the UDDI registry configuration file.

Action: Check the source Oracle home or configuration file.

ErrorMsg: Unknown property for UDDI: {0}.

Cause: Unknown property exists in the UDDI registry configuration file.

Action: Check each item in the UDDI registry configuration file.

C.5.2 UDDI Registry OracleAS Metadata Repository Upgrade Error Messages

Error: Current UDDI Component has wrong version {0}.

Cause: UDDI database schema version is incorrect.

Action: Manually inspect the VERSION table in UDDISYS schema. You may need help from a system administrator or a database administrator.

Error: UDDI Upgrade is having problem with DB.

Cause: Some generic database exceptions have been thrown and caught.

Action: Contact the system administrator, the database administrator, or contact Oracle Support Services with the full error message.

Error: UDDI Upgrade is having problem closing DB Connection.

Cause: Exception generated while closing a database connection.

Action: Contact the system administrator, the database administrator, or contact Oracle Support Services with the full error message.

Error: UDDI Upgrade sql script execution failed.

Cause: Exception during UDDI upgrade-related SQL execution.

Action: Contact the system administrator, the database administrator, or contact Oracle Support Services with the full error message.

Error: UDDI Upgrade sqlldr execution failed.

Cause: Exception during Oracle SQL*Loader execution.

Action: Contact the system administrator, the database administrator, or contact Oracle Support Services with the full error message.

C.6 Error Messages When Upgrading mod_plsql

This section describes the error messages, their causes, and suggested actions that are specific to the mod_plsql upgrade in the 10.1.2 Middle-tier upgrade.

Exception in the mod_plsql plug-in.

Cause: An error occurred while upgrading mod_plsql during the middle-tier upgrade.

Action: Try to fix the error based on the additional details in this message and restart the upgrade.

Exception while backing up: <file>

Cause: An error occurred while backing up the file <file> during the middle-tier upgrade.

Action: Verify that <file> exists in the source Oracle home, that the disk is not full, and that you have write permission in the directory where <file> is to be backed up.

C.7 Error Messages When Upgrading Oracle Application Server Portal

This section describes the error and warning messages, their causes, and suggested actions that you may encounter when upgrading OracleAS Portal. The messages have

been listed in numeric or alphabetical order in each subsection for easy location. For more information, refer to the Upgrade documentation, available on OracleAS Portal Center at <http://portalcenter.oracle.com/upgrades>. This section contains the following subsections:

- [Middle-tier Upgrade Error Messages for OracleAS Portal](#)
- [Portal Repository Upgrade Messages](#)

C.7.1 Middle-tier Upgrade Error Messages for OracleAS Portal

The following public error messages are specific to the OracleAS Portal upgrade in the 10.1.2 Middle-tier upgrade.

A failure occurred during the portal target upgrade process.

Cause: Failed to migrate portal target entries from the source to the destination.

Action: Try to fix the error based on the additional details in this message and restart the upgrade.

Cannot determine which Oracle home is running the 9.0.2 Oracle Enterprise Manager Website.

Cause: The upgrade process could not determine which Oracle home is running the active Oracle Enterprise Manager process. This information is retrieved from the `emtab` file on Solaris and Linux platforms, or from the registry on Windows platforms.

Action: Depending on your platform, verify that a valid entry for the Oracle Enterprise Manager home exists:

- For Solaris, `/var/opt/oracle/emtab` file.
- For Linux, `/etc/emtab` file.
- For Windows, check the `em_loc` subkey under the `HKEY_LOCAL_MACHINE\SOFTWARE\ORACLE` key in the registry.

Cannot re-deploy application <app_name>.

Cause: Failed to migrate user application <app_name> to the destination OC4J_Portal instance.

Action: Try to fix the error based on the additional details in this message and re-deploy the user application manually to the destination OC4J_Portal instance after fixing the problem.

Cannot retrieve portal targets from the Oracle Enterprise Manager home.

Cause: Target entries for one or more portals were missing or invalid in the `targets.xml` file.

Action: Verify that `targets.xml` exists in the Oracle home running the Oracle Enterprise Manager Services. In release 9.0.4, the Oracle Enterprise Manager Oracle home will be the same as the source Oracle home. In release 9.0.2, the active Oracle Enterprise Manager home location is specified in the `emtab` file on UNIX and in the `em_loc` subkey in the registry on Windows under the `HKEY_LOCAL_MACHINE\SOFTWARE\ORACLE` key.

Cannot retrieve the emtab file used to determine which Oracle home running the Oracle Enterprise Manager 9.0.2 Website.

Cause: This error is specific to 9.0.2 to 10.1.2 upgrades on the UNIX platform. It occurs when the `emtab` file, which is used to determine which Oracle home is running the Oracle Enterprise Manager services, is not found.

Action: Verify that this file exists in the correct location (/var/opt/oracle on Solaris and /etc on Linux) and that the "DEFAULT" property refers to the correct Oracle home.

Cannot retrieve the registry key value for the Oracle home running the Oracle Enterprise Manager 9.0.2 Website.

Cause: An error occurred when the upgrade process tried to retrieve Oracle Enterprise Manager location from the registry during a 9.0.2 to 10.1.2 upgrade on the Windows platform.

Action: Verify that the value of the em_loc subkey exists under the HKEY_LOCAL_MACHINE\SOFTWARE\ORACLE key in the registry.

Exception in the OracleAS Portal plug-in

Cause: An error occurred while upgrading OracleAS Portal during the middle-tier upgrade.

Action: Try to fix the error based on the additional details in this message and restart the upgrade.

OmniPortlet: Unable to migrate customizations.

Cause: Could not access the source or target OmniPortlet customization directories.

Action: You can manually copy all subdirectories under the following directory from the source installation to the target installation:

```
SOURCE_ORACLE_HOME\j2ee\OC4J_  
Portal\applications\portalTools\omniPortlet\WEB-INF\providers\omniPortlet\
```

OmniPortlet: Unable to migrate encodeHtmlField Setting.

Cause: Could not access the source or target OmniPortlet configuration file, provider.xml, or the file contained an invalid encodeHtmlField Setting.

Action: You can manually copy the <encodeHtmlField> tag in the following configuration file from the source installation to the target installation:

```
SOURCE_ORACLE_HOME\j2ee\OC4J_  
Portal\applications\portalTools\omniPortlet\WEB-INF\providers\omniPortlet\provi  
der.xml
```

OmniPortlet: Unable to migrate exportConnectionInfo Setting.

Cause: Could not access the source or target OmniPortlet configuration file, provider.xml, or the file contained an invalid exportConnectionInfo Setting.

Action: You can manually copy the <exportConnectionInfo> tag in following configuration file from the source installation to the target installation:

```
SOURCE_ORACLE_HOME\j2ee\OC4J_  
Portal\applications\portalTools\omniPortlet\WEB-INF\providers\omniPortlet\provi  
der.xml
```

OmniPortlet: Unable to migrate Locale Personalization Level.

Cause: Could not access the source or target OmniPortlet configuration file, provider.xml, or the file contained an invalid Local Personalization Level.

Action: You can manually copy the <localePersonalizationLevel> tag in the following configuration file from the source installation to the target installation:

```
SOURCE_ORACLE_HOME\j2ee\OC4J_
Portal\applications\portalTools\omniPortlet\WEB-INF\providers\omniPortlet\provider.xml
```

OmniPortlet: Unable to migrate Preference Store Settings.

Cause: Could not access the source or target OmniPortlet configuration file, `provider.xml`, or the file contained invalid Preference Store Settings.

Action: You can manually copy the `<preferenceStore>` tag in the following configuration file from the source installation to the target installation:

```
SOURCE_ORACLE_HOME\j2ee\OC4J_
Portal\applications\portalTools\omniPortlet\WEB-INF\providers\omniPortlet\provider.xml
```

OmniPortlet: Unable to migrate Proxy Settings.

Cause: Could not access the source or target OmniPortlet configuration file, `provider.xml`, or the file contained invalid Proxy Settings.

Action: You can manually copy the `<proxyInfo>` tag in following source file from the source installation to the target installation:

```
SOURCE_ORACLE_HOME\j2ee\OC4J_
Portal\applications\portalTools\omniPortlet\WEB-INF\providers\omniPortlet\provider.xml
```

OmniPortlet: Unable to migrate Security Repository Settings.

Cause: Could not access the source or target OmniPortlet configuration file, `provider.xml`, or the file contained invalid Security Repository Settings.

Action: You can manually copy the `<vaultId>` tag in following configuration file from the source installation to the target installation:

```
SOURCE_ORACLE_HOME\j2ee\OC4J_
Portal\applications\portalTools\omniPortlet\WEB-INF\providers\omniPortlet\provider.xml
```

OmniPortlet: Unable to migrate Trusted Certificate Location Setting.

Cause: Could not access the source or target OmniPortlet configuration file, `provider.xml`, or the file contained an invalid Trusted Certificate Location.

Action: You can manually copy the `<trustedCertificateLocation>` tag in the following configuration file from the source installation to the target installation:

```
SOURCE_ORACLE_HOME\j2ee\OC4J_
Portal\applications\portalTools\omniPortlet\WEB-INF\providers\omniPortlet\provider.xml
```

There are incomplete target entries in the destination targets.xml.

Cause: Target entries were missing or incomplete in the destination `targets.xml` file.

Action: Verify that target entries for OracleAS (target type `oracle_ias`) and Oracle HTTP server (target type `oracle_apache`) exist in the following configuration file, and verify that valid entries exist for the various properties of these targets:

```
DESTINATION_ORACLE_HOME\sysman\emd\targets.xml
```

There are incomplete target entries in the source targets.xml file.

Cause: Target entries were missing or incomplete in the source `targets.xml` file.

Action: Verify that target entries for OracleAS (target type `oracle_ias`) and Oracle HTTP server (target type `oracle_apache`) exist in the following configuration file, and verify that valid entries exist for the various properties of these targets:

```
SOURCE_ORACLE_HOME\sysman\emd\targets.xml
```

Unable to copy file: <file name>

Cause: An error occurred while copying the file, from the source to the destination middle tier during jpdK upgrade.

Action: Verify that the file exists in the source Oracle home, that the disk is not full, and that you have write permission in the directory. After fixing the problem, manually copy the file from the source to the destination middle tier.

Unable to create the directory: <directory name>

Cause: An error occurred while creating the directory during jpdK upgrade.

Action: Verify that the directory exists in the source Oracle home, that the disk is not full, and that you have write permission. After fixing the problem, copy the directory manually from the source to the destination middle tier.

For example, if the source directory is:

```
SOURCE_ORACLE_HOME\j2ee\OC4J_  
Portal\applications\jpdK\jpdK\WEB-INF\PORTLETBLDGTOOLS\provider\myprovider.
```

Then the corresponding target directory is:

```
DESTINATION_ORACLE_HOME\j2ee\OC4J_  
Portal\applications\jpdK\jpdK\WEB-INF\PORTLETBLDGTOOLS\provider\myprovider.
```

Note: Special care should be taken if the directory to be copied contains the file `provider.xml`. The source file can contain multiple `<preferenceStore>` entries. If this is the case, perform one of the following two steps, depending on whether a `<prefStoreName>` tag is defined in the source `provider.xml` file:

- If it is defined, select, the tag whose name attribute value matches the `<prefStoreName>` tag out of all the `<preferenceStore>` tags in that file and migrate that `<preferenceStore>` tag to the destination `provider.xml` file.
- If it is not defined, copy the first `<preferenceStore>` tag of all the `<preferenceStore>` tags from the source `provider.xml` file, to the destination `provider.xml` file.

If there is only one occurrence of the `<preferenceStore>` tag in the source `provider.xml` file, copy this tag to the destination `provider.xml` file.

Unable to migrate JNDI entries from source to destination orion-web.xml file: <file name>

Cause: During jpdK upgrade, an error occurred while copying the `<env-entry-mapping>` tags from the `orion-web.xml` file in the source Oracle home to the `orion-web.xml` file in the destination Oracle home.

The `orion-web.xml` file is located in the following directory of the source Oracle home and the destination Oracle home:

- `SOURCE_ORACLE_HOME\j2ee\OC4J_Portal\application-deployments\jpdK\source\orion-web.xml`
- `DESTINATION_ORACLE_HOME\j2ee\OC4J_Portal\application-deployments\jpdK\source\orion-web.xml` file

Action: Manually copy the `<env-entry-mapping>` tags from the source to the destination `orion-web.xml` file.

Unable to migrate Provider Group changes from source to destination

iasProviders.xml file: <file name>

Cause: Migration of the `<providerGroup>` tags to the target `iasProviders.xml` file failed during jpdK upgrade.

Action: Copy the `<providerGroup>` tags under the `<providerGroups>` tag from the source `iasProviders.xml` file to the destination. Copy only the `<providerGroup>` tag if it does not start with 'oracle', Paste it under the root `<providerGroups>` tag. The source and the target file will be at the following locations:

- `SOURCE_ORACLE_HOME\portal\pdKjava\providerGroups\iasProviders.xml`
- `DESTINATION_ORACLE_HOME\portal\pdKjava\providerGroups\iasProviders.xml`

Unable to migrate the `<preferenceStore>` tag from the providers.xml file: <file name>

Cause: An error occurred while migrating the `<preferenceStore>` tag from the source to the destination `provider.xml` file during jpdK upgrade. The exact location of the `provider.xml` file is provided in the error message.

Action: The source file can contain multiple `<preferenceStore>` entries. If this is the case, perform one of the following two steps, depending on whether a `<prefStoreName>` tag is defined in the source `provider.xml` file:

- If it is defined, select, the tag whose name attribute value matches the `<prefStoreName>` tag out of all the `<preferenceStore>` tags in that file and migrate that `<preferenceStore>` tag to the destination `provider.xml` file.
- If it is not defined, copy the first `<preferenceStore>` tag of all the `<preferenceStore>` tags from the source `provider.xml` file, to the destination `provider.xml` file.

If there is only one occurrence of the `<preferenceStore>` tag in the source `provider.xml` file, copy this tag to the destination `provider.xml` file.

Unable to migrate the Provider UI Security Settings Registry file: <file name>

Cause: Failed to migrate the `<providerGroup>` tag from the source to the destination `<provider_registry>` file during jpdK upgrade. The `<provider_registry>` file could be `progrp.xml` or `provideruiacIs.xml`.

Action: The `progrp.xml` file can be located in the following places:

- `SOURCE_ORACLE_HOME\j2ee\OC4J_Portal\applications\jpd\jpd\WEB-INF\deployment_providerui\progrp.xml`.
- `SOURCE_ORACLE_HOME\j2ee\OC4J_Portal\applications\portalTools\providerBuilder\WEB-INF\deployment_providerui\progrp.xml`.

The `provideruiacis.xml` file can be located in one of the following places:

- `SOURCE_ORACLE_HOME\j2ee\OC4J_Portal\applications\jpd\jpd\WEB-INF\deployment_providerui\provideruiacis.xml` or
- `SOURCE_ORACLE_HOME\j2ee\OC4J_Portal\applications\portalTools\providerBuilder\WEB-INF\deployment_providerui\provideruiacis.xml`.

Manually copy the `<providerGroup>` tag, located under the `<providerGroups>` tag to the destination `progrp.xml` file.

Note: If you are upgrading from version 9.0.2, you will see that all the `<providerGroups>` tags are located under the `<webNode>` tag, instead of under the `<providerGroups>` tags (version 9.0.4 and up). In this case, select all the `<providerGroup>` tags located under the `<webNode>` tag from the source and migrate them to the `<providerGroups>` node tag in the destination `progrp.xml` file.

For `provideruiacis.xml` file, manually copy the file from the source to the destination location and add the following entry to the corresponding target file:

```
<user name="portal" privilege="500"/>
```

under the `<object name="ANY_PROVIDER" owner="providerui">` tag, if this tag is present.

and under the `<object name="ANY_PORTLET" owner="providerui">` tag, if this tag is present.

Web Clipping: Unable to migrate Proxy Settings.

Cause: Could not access the source or target Web Clipping configuration file, `provider.xml`, or the file contained invalid Proxy Settings.

Action: You can manually copy the `<proxyInfo>` tag in the following configuration file from the source installation to the target installation:

```
SOURCE_ORACLE_HOME\j2ee\OC4J_Portal\applications\portalTools\webClipping\WEB-INF\providers\webClipping\provider.xml
```

Web Clipping: Unable to migrate Security Repository Settings.

Cause: Could not access the source or target Web Clipping configuration file, `provider.xml`, or the file contained invalid Security Repository Settings.

Action: You can manually copy the `<repositoryInfo>` tag in the following configuration file from the source installation to the target installation:

```
SOURCE_ORACLE_HOME\j2ee\OC4J_Portal\applications\portalTools\webClipping\WEB-INF\providers\webClipping\provider.xml
```

Web Clipping: Unable to migrate Trusted Certificate Location Setting.

Cause: Could not access the source or target Web Clipping configuration file, `provider.xml`, or the file contained an invalid Trusted Certificate Location Setting.

Action: You can manually copy the `<trustedCertificateLocation>` tag in the following configuration file from the source installation to the target installation.

```
SOURCE_ORACLE_HOME\j2ee\OC4J_
Portal\applications\portalTools\webClipping\WEB-INF\providers\webClipping\provi
der.xml
```

Web Clipping: Unable to update Repository Schema.

Cause: A database access failure occurred while upgrading the Web Clipping Repository Schema from 9.0.2.4.0 to latest version.

Action: You can manually invoke the Schema Upgrade Script from the Web Clipping Welcome page. The database connection you provide has to have the privileges to create/modify tables.

C.7.2 Portal Repository Upgrade Messages

This section contains error messages that are specific to the OracleAS Portal Repository upgrade. Error messages that are generated after the upgrade has progressed past the precheck stage indicate that the OracleAS Portal schema has had modifications. If you receive any error messages after the precheck step, you must fix the problem, restore your database from its backup, and then run the upgrade again. This section contains the following subsections:

- [Numbered Error Messages \(WWU-00001 to WWU-24999\)](#)
- [Numbered Warning Messages \(WWU-25000 to WWU-49999\)](#)
- [Unnumbered Error Messages](#)
- [Unnumbered Warning Messages](#)

C.7.2.1 Numbered Error Messages (WWU-00001 to WWU-24999)

WWU-00001: An unexpected exception was raised during the upgrade prechecks:

Cause: An unexpected error caused the upgrade to abort.

Action: Based on the details in the message, correct the problem and run the upgrade again.

WWU-00002: The value of the `shared_pool_size` database parameter was not high enough for the upgrade.

Cause: The value of the `shared_pool_size` database parameter is too low.

Action: Increase the value of the `shared_pool_size` database parameter to 20 MB or greater. Run the upgrade again.

WWU-00003: The value of the `java_pool_size` database parameter was not high enough for the upgrade.

Cause: The value of the `java_pool_size` database parameter is too low.

Action: Increase the value of the `java_pool_size` database parameter to 20 MB or greater. Run the upgrade again.

WWU-00004: The optimizer_mode database parameter was incorrectly set to RULE.

Cause: The optimizer_mode database parameter is incorrectly set to RULE.

Action: Change the optimizer_mode database parameter to CHOOSE. Run the upgrade again.

WWU-00005: There was insufficient free space in the default tablespace.

Cause: There is less than 20 MB of free default tablespace.

Action: Create at least 20 MB of free default tablespace. Run the upgrade again.

WWU-00006: There was insufficient free space in the temporary tablespace.

Cause: There is less than 10 MB of free temporary tablespace.

Action: Create at least 10 MB of free temporary tablespace. Run the upgrade again.

WWU-00007: The _system_trig_enabled database parameter was incorrectly set to FALSE.

Cause: The _system_trig_enabled database parameter is incorrectly set to FALSE.

Action: Set the value for the _system_trig_enabled database parameter to TRUE, or do not set it. Run the upgrade again.

WWU-00008: There were jobs running in the DBMS jobs queue during the upgrade.

Cause: The upgrade cannot progress because there are DBMS jobs running.

Action: Either kill the DBMS jobs, or wait for them to finish before restarting the upgrade. Check the "Analyze Product Schema" step in the upgrade log for more information on the running jobs.

WWU-00009: The DBMS job queue was disabled. There were jobs that would have run immediately if it were enabled.

Cause: Jobs submitted for the current repository may not run properly under the upgraded version.

Action: You have two options: 1. Remove the jobs from the queue. 2. Re-enable the job queue by raising the job_queue_processes database parameter to a value greater than 0, and allow the jobs to complete. For a list of all jobs, look under the "Analyze Product Schema" step in the upgrade log.

WWU-00010: Some jobs in the DBMS job queue were incorrectly configured.

Cause: There are OracleAS Portal jobs in the DBMS job queue that were either incorrectly submitted as another user, or submitted as the OracleAS Portal user with another default schema or default privilege.

Action: Remove these jobs from the job queue. The upgrade correctly resubmits any jobs that are missing. For a list of all jobs, look under the "Analyze Product Schema" step in the upgrade log.

WWU-00011: Concurrent sessions were running for the schema you are upgrading.

Cause: Other sessions are running on the OracleAS Portal schema.

Action: Make sure the OracleAS 10g middle-tier is shut down and there are no other connections to the schema being upgraded. Look under "Open Sessions" in the upgrade log for a list of open sessions for the schema.

WWU-00012: Not all components of the JVM installation were present in the database or valid.

Cause: SYS Java objects are not present in the database or are invalid.

Action: Recompile the invalid Java objects in SYS. If this fails, reinstall the JVM in the database following the instructions found in the Oracle database documentation.

WWU-00013: Tables with UPG_ prefix were found in the OracleAS Portal schema.

Cause: The upgrade is aborted when UPG_ prefix tables are present in the OracleAS Portal schema.

Action: Back up all tables with the UPG_ prefix, then delete them from the OracleAS Portal schema.

WWU-00014: Obtaining Oracle Text information failed.

Cause: An error occurred during the attempt to retrieve information about the Oracle Text installation.

Action: Ensure that the Oracle Text component is correctly installed. If necessary, reinstall the Oracle Text component. For installation instructions, refer to the *Oracle Application Server Portal Configuration Guide*.

WWU-00015: Oracle Text schema (CTXSYS) does not exist.

Cause: The database does not contain the CTXSYS schema. This indicates that Oracle Text is not installed.

Action: Install the Oracle Text component in the database. For installation instructions, refer to the *Oracle Application Server Portal Configuration Guide*.

WWU-00016: Oracle Text indextype is invalid or does not exist.

Cause: The Oracle Text context indextype is not valid or does not exist. This may indicate a problem with the Oracle Text installation.

Action: Ensure the Oracle Text context indextype is present and valid. If necessary, reinstall the Oracle Text component. For installation instructions, refer to the *Oracle Application Server Portal Configuration Guide*.

WWU-00017: Some Oracle Text packages are invalid.

Cause: Packages in the Oracle Text schema (CTXSYS) that begin with DRI or CTX_ are invalid.

Action: Revalidate the Oracle Text invalid packages. If necessary, reinstall the Oracle Text component. For installation instructions, refer to the *Oracle Application Server Portal Configuration Guide*.

WWU-00018: Oracle Text version does not match the database version.

Cause: The version of the database is more recent than the Oracle Text component. This may indicate that the Oracle Text component upgrade was not successful. Oracle Text manual upgrade steps may have failed or been omitted. On some platforms, this may also indicate that patch 2658339 was not applied.

Action: Depending on the situation, either rerun the Oracle Text upgrade or download and apply the patch.

WWU-00019: Could not find the schema(s) on which Portlet Builder (Web View) applications are based.

Cause: The schema on which the Portlet Builder application is based is missing.

Action: There are two ways to fix this issue: 1. Drop the applications that are using the schema. 2. Recreate the missing schema and all objects in it.

WWU-00020: One or more one-off patches with schema changes have been applied.

Cause: One or more one-off patches that include schema changes have been applied to the OracleAS Portal schema. The upgrade cannot proceed because these changes have not been tested with this release of the upgrade scripts.

Action: See if a version of the upgrade based on the next patchset has been released on Metalink. If so, download and run the new version. If not, wait until it is released.

WWU-00021: The following mandatory object(s) are missing or invalid:

Cause: Mandatory objects that OracleAS Portal relies on are invalid or are not present in the database. If they are missing due to a faulty upgrade of the database, this could also cause failures in the OracleAS Portal upgrade.

Action: Review the database installation and upgrade procedures. If the object is present but invalid, run the `rdbms/admin/utlrp.sql` script under the database Oracle home to recompile all invalid objects.

WWU-00022: Version %0 of Oracle Portal/WebDB is not supported for upgrade.

Cause: The OracleAS Portal version being upgraded is not supported by this upgrade installation.

Action: If your OracleAS Portal instance is version 9.0.2, 9.0.2.3, or 9.0.2.6, be sure you have followed the instructions for applying Patch 2778342 mentioned in the Oracle Application Server 10g Upgrading to 10g Release 2 (10.1.2) upgrade guide. If you are starting with version 3.0.9, follow the instructions on <http://portalcenter.oracle.com/updates> to upgrade to version 9.0.4. If you are running a different version, it is not supported by this upgrade installation. Contact Oracle support.

WWU-00023: Version %0 of Oracle Database is not supported for upgrade.

Cause: The version of the database against which the upgrade was run is not supported for this upgrade.

Action: Upgrade to the minimum database version of Oracle9i Database 9.0.1.5 Enterprise or Standard edition.

WWU-00024: The compatible database parameter is less than 9.0.0.

Cause: The compatible database parameter is set to less than 9.0.0.

Action: Set the value of the compatible database parameter to at least 9.0.0.

WWU-00025: VPD was not installed properly.

Cause: One of the VPD checks has failed.

Action: This error is followed by a detailed message. Resolve the issue by examining the information provided in the message.

WWU-00026: VPD context value is not set.

Cause: The OracleAS Portal login trigger that sets the VPD context is disabled or is not installed.

Action: Verify that the OracleAS Portal login trigger was installed and enabled on the database. If you must install the trigger, run the `wwhost/logintrg.sql` script from SQL*Plus while logged in as SYS user. You'll find this script under the upgrade directory.

WWU-00027: VPD context value is incorrect.

Cause: The login trigger(s) is not setting the correct context.

Action: Verify that the login trigger is correctly installed. To install the trigger, run the wwhost/logintrg.sql script from SQL*Plus while logged in as SYS user. You'll find this script under the upgrade directory.

WWU-00028: Portal schema user is not set up to use VPD.

Cause: The OracleAS Portal schema user has the EXEMPT ACCESS POLICY system privilege.

Action: Revoke the EXEMPT ACCESS POLICY privilege from the OracleAS Portal schema user by running the following SQL command in SQL*Plus: 'REVOKE EXEMPT ACCESS POLICY FROM PORTAL_SCHEMA_NAME;'. In this command, replace PORTAL_SCHEMA_NAME with the actual OracleAS Portal schema name. Also verify that the OracleAS Portal schema user does not inherit the EXEMPT ACCESS POLICY privilege from any of its assigned roles.

WWU-00029: VPD is not being enforced in the database.

Cause: A problem occurred in the database that caused the VPD check to fail.

Action: Consult the database documentation to find possible actions.

WWU-00031: %0 Unable to bind as the application.

Cause: An error was encountered while connecting to the Oracle Internet Directory server.

Action: The error message above may provide more information about the cause. Make sure that the Oracle Internet Directory server is up and running on host %1 and port %2 and OracleAS Portal has been wired correctly against it.

WWU-01000: Back up the database before running the upgrade.

Cause: You have answered n (no) when asked if the schema has been backed up.

Action: Back up the database, and restart the upgrade.

WWU-01001: Connection to the Portal repository failed.

Cause: Incorrect OracleAS Portal schema, password, or connect string.

Action: Supply the correct OracleAS Portal schema, password, and connect string.

WWU-01002: Connection as SYS to the Portal repository failed.

Cause: An invalid SYS password was supplied, or the orapw file is missing.

Action: Supply the correct SYS password. If the password is correct, verify that you can connect remotely to SYS as SYSDBA using an orapwSID file. Refer to the Oracle database documentation for instructions on creating an orapw file.

WWU-01003: An unexpected exception was raised:

Cause: An unexpected error caused the upgrade to abort.

Action: Based on the details in the message, correct the problem, restore the database from backup, and run the upgrade again.

WWU-01004: Missing strings reported in %0 file:

Cause: The sqlldr utility encountered issues when trying to load message translation data.

Action: Look for specific issues in the .bad file and the corresponding .log file in the upgrade tmp directory. Give these to Oracle Customer Support along with the upgrade logs.

WWU-01005: Version not updated, fatal errors found in upgrade log.

Cause: This message indicates that the earlier version of OracleAS Portal will not be updated to the new version. Errors have occurred in the upgrade that will prevent OracleAS Portal from functioning properly. A summary of the errors is listed at the end of the upgrade log.

Action: Search through the errors in the log and apply any fixes mentioned. Then restore the database from backup and run another upgrade. If this fails, or if unexpected errors are encountered, contact Oracle Customer Support.

WWU-01007: Unable to create directory %0.

Cause: You do not have the required permissions to create the directory.

Action: Change the permissions on the parent directory.

WWU-01008: Write permission not available for directory %0.

Cause: You do not have the required permissions to write to the directory.

Action: Change the permissions on the directory, or specify a different temporary directory, then rerun the upgrade.

WWU-01009: Unable to create %0. Check permissions on the directory.

Cause: The permissions on the temporary directory do not allow the creation of a login.sql script for the user profile.

Action: Change the permissions on the temporary directory, and run the upgrade again.

WWU-01010: SQL*Plus version %0 not supported for upgrade.

Cause: The version of SQL*Plus you are trying to execute is not supported for this upgrade.

Action: Verify that the version of bin/sqlplus under the Oracle Home is at least 9.0.1.

WWU-01011: Restart the upgrade.

Cause: You have answered n (no) when asked if input details are correct.

Action: Correct the input details, and restart the upgrade.

C.7.2.2 Numbered Warning Messages (WWU-25000 to WWU-49999)

WWU-25000: Removed session cleanup job: %0 from the SYS schema.

Cause: The session cleanup job usually exists in the OracleAS Portal schema. However, an earlier operation, such as the database upgrade, has resulted in removing this job as a part of the upgrade.

Action: If the database instance where the upgrade is being performed does not contain any other OracleAS Portal schema, then no action is required. This is because the session clean-up job gets created in the OracleAS Portal schema during upgrade. However, if there are other OracleAS Portal schemas in the database instance, then verify that they all have their respective session clean-up jobs. Run the script wwc/ctxjget.sql under the upgrade directory from SQL*Plus in an OracleAS Portal schema to check whether the session clean-up job exists. If this job is missing in any OracleAS Portal schema, then you can create it by running the script wwc/ctxjsub.sql in that schema from SQL*Plus.

WWU-25001: VPD check found some issues.

Cause: One of the VPD checks has failed.

Action: This warning is followed by a detailed message. Resolve the issue by examining the information provided in the message.

WWU-25003: Portlet Builder (WebView) components have unknown issues.

Cause: The Portlet Builder components (packages) are invalid.

Action: Try resolving the cause of the errors when compiling the packages that are listed in the log. For example, a report may be based on a table that has been dropped. In this case, the report is no longer valid, so you can drop the report.

WWU-25004: Only %0% of the components in the wwv_modules\$ table are production components.

Cause: This informational message indicates that there is a relatively large number of archive versions of Portlet Builder components (formerly WebView). This may be because in Oracle9iAS Portal 3.0.9, a new version of a component was created each time the component was edited and saved.

Action: Delete as many of the archive versions of components as possible. This reduces the size of the tables where attributes for all the archive versions are stored.

WWU-25005: Table without VPD policy: %0

Cause: The VPD policy on the table indicated in the message was not installed properly in the OracleAS Portal schema.

Action: If the table indicated in the message is not part of the OracleAS Portal product, it is safe to ignore the warning.

WWU-26000: Component %0 has errors. Check that all the objects it is based on are present.

Cause: The component is based on one or more missing objects. For example, a Query By Example report was based on table MY_TABLE. Then MY_TABLE is dropped.

Action: Supply the missing object. If the component is no longer being used, delete it using the OracleAS Portal Navigator.

WWU-26001: Non-Portal objects have errors. See %0 for details.

Cause: Non-OracleAS Portal objects in the OracleAS Portal schema cannot be compiled and have errors.

Action: Find out what is causing the object not to compile, and rectify it.

C.7.2.3 Unnumbered Error Messages**An unexpected exception was raised: <exception and where it occurred>**

Cause: An unexpected error caused the script to abort.

Action: Based on the details in the message, correct the problem, restore your database from its backup and run the upgrade script again.

An unexpected exception was raised during the upgrade prechecks: <exception where it occurred>

Cause: An unexpected error caused the script to abort.

Action: Based on the details in the message, correct the problem and run the upgrade script again. For example:

If the following lines are found in the log, then the error may be because Oracle Text is not installed correctly.

```
### PHASE I STEP 8: Perform pre upgrade checks
Upgrade step started at Fri Apr 4 02:28:18 2003
Running upg/common/utlchvpd.sql
```

```
Connected
Calling DoPreChecks()
Starting precheck at Fri Apr 4 02:28:21 2003
Calling upg/common/sysuppre.sql
Connected.
```

ERROR: An unexpected exception was raised during the upgrade prechecks:

```
ORA-00942: table or view does not exist
----- PL/SQL Call Stack -----
object handle line number object name
80bc68c4 76 anonymous block
80bc68c4 380 anonymous block
```

Verify if the Oracle Text component is installed and reinstall it if it does not exist. Refer to the Oracle Application Server Portal Configuration Guide.

Back up your database before running the upgrade.

Cause: You have answered n (no) when asked if the schema has been backed up.

Action: Back up the database and restart the script.

Connection as SYS to the Portal repository failed.

Cause: An invalid SYS password was supplied or the orapw file is missing.

Action: Supply the correct SYS password. If the password is correct, make sure you can connect to SYS as sysdba by creating a orapw<SID> file in the database Oracle Home's dbs directory by running orapwd with the same password used by the SYS database account.

Connection to the Portal repository failed.

Cause: Incorrect Oracle9iAS Portal schema, password or connect string.

Action: Supply the correct Oracle9iAS Portal schema, password or connect string.

Dropping Oracle Text Indexes has failed, upgrade cannot continue.

Cause: Dropping the Oracle Text indexes, or removing the synchronization or optimization jobs has failed. Find the output of the uptxtdrp script in the upgrade log to see what should be done. The entire uptxtdrp.log is appended to the error message output in the upgrade log.

Action: If the error was encountered while dropping the Oracle Text indexes, make sure that all the Oracle Text indexes are dropped before restarting the upgrade. For information about dropping Oracle Text indexes, refer to the *Index Maintenance* chapter of the *Oracle Text Application Developer's Guide*.

If the error was encountered while removing the synchronization or optimization jobs, make sure that these jobs are removed from the job queue before restarting the upgrade. For information about breaking or removing jobs, refer to the *Managing Job Queues* chapter of the *Oracle9i Database Administrator's Guide*.

After upgrading, manually recreate the Oracle Text indexes and the synchronization and optimization jobs if you wish to use Oracle Text searching in your OracleAS Portal. Refer to the Oracle Application Server Portal Configuration Guide for complete instructions.

Environment variable ORACLE_HOME is not set.

Cause: The ORACLE_HOME environment variable is not set.

Action: Review your environment and set the Oracle Home environment variable.

Error: Could not determine the version of OracleAS Portal

Cause: An error occurred while determining the version of OracleAS Portal.

Action: This message is followed by the actual exception, which occurred. Resolve the error by examining the information provided and run MRUA again.

Error: OracleAS Portal version {0} is not supported for upgrade on Oracle Database 10g

Cause: The OracleAS Portal version must be at least 9.0.2.3.

Action: Download the Oracle9iAS 9.0.2.3 patchset from Metalink and apply it on your application server infrastructure and middle-tier. Then run the upgrade again.

Failed to rename <file/directory>

Cause: You do not have the required permissions on the parent directory.

Action: Change the permissions on the parent directory.

Getting password of <schema-name> schema

Cause: Failed to retrieve the password of the schema <schema-name>.

Action: The error is followed by the actual exception which occurred. Try to fix the error and restart the upgrade.

granting execute on <schema>.<procedure> to <application_schema> as <schema>--ORA-01001:invalid cursor

Cause: The schema or procedure is missing. For example:

```
ERROR: granting execute on SCHEMA1.CHECK_SAL to SCHEMA1B as
SCHEMA1--ORA-01001:invalid cursor
```

In this case, there is a form in a database provider based on SCHEMA1B, on the procedure SCHEMA1 .CHECK_SAL and either the procedure CHECK_SAL is missing or one of the schemas SCHEMA1 or SCHEMA1B is missing. Therefore, the form will not run. However, it would not have run before the upgrade either.

Action: Determine if the form or database provider is obsolete. If it is obsolete, delete it. If not, supply the missing schema or procedure.

GUID and/or DN are not available for %string% subscriber.

Cause: Could not get the globally unique identifier and/or the distinguished name for the named identity management realm from the Portal repository.

Action: Make sure that the identity management realm has been configured properly.

Invalid profile status value: %string%

Cause: The value specified for profile status is invalid.

Action: Please use only ENABLED or DISABLED for the profile status.

Missing strings reported in <filename> file: <strings>

Cause: SQLLDR encountered issues when trying to load the languages.

Action: Look at the corresponding log and the .log and .bad files from <upgrade_tmp_dir> for specific issues. Give these to Oracle Support along with the upgrade logs.

Obtaining Oracle Text information failed. Please check Oracle Text has been correctly installed. Reinstall Oracle Text schema (CTXSYS) if necessary.

Cause: An error has occurred whilst attempting to retrieve information about the Oracle Text installation.

Action: Ensure the Oracle Text component is correctly installed. If necessary, reinstall the Oracle Text component. Refer to the *Oracle Application Server Portal Configuration Guide* for complete instructions.

ORA-04031: unable to allocate <n> bytes of shared memory ("shared pool","unknown object","session heap","frame segment") (WWC-44847)

Cause: The shared pool size database parameter is too small.

Action: The value for this parameter depends on the size of your Oracle9iAS Portal. It may need to be several hundred megabytes for large Oracle9iAS Portals to avoid encountering this problem. Increase the shared pool size in your database and restart your upgrades after restoring from a backup.

ORA-1031: insufficient privileges

Cause: The sysdba connection to the database has failed due to insufficient privileges.

Action: To connect to SYS as sysdba, create the `orapw<SID>` file in the database Oracle Home's `db` directory by running `orapwd` with the same password used by the SYS database account.

ORA-29521: referenced name javax/ejb/<class> could not be found

Cause: The instructions contained in Metalink Note 222437 to facilitate Oracle9iAS Portal working on an Oracle 9.2 database have not yet been applied. Here is an example of the error:

```
Loading Java Classes - soap.jar
errors : class oracle/soap/providers/ejbprov/<class>
ORA-29521: referenced name javax/ejb/<name> could not be found
The following operations failed
class oracle/soap/providers/ejbprov/<provider>: resolution
exiting : Failures occurred during processing
```

Action: Restore your repository back to its Oracle9iAS Portal 9.0.2 state and follow the instructions contained in the Metalink Note 222437.1 available from the Oracle Metalink Web site at <http://metalink.oracle.com>. Run the upgrade again after the steps have been completed.

Oracle Text indextype is invalid or does not exist. Revalidate the invalid indextype. If necessary, reinstall the Oracle Text schema (CTXSYS).

Cause: The Oracle Text context indextype is not valid or does not exist. This may indicate a problem with the Oracle Text installation.

Action: Ensure the Oracle Text context indextype is present and valid. If necessary, reinstall the Oracle Text component. Refer to the Oracle Application Server Portal Configuration Guide.

Oracle Text schema (CTXSYS) does not exist, please install it.

Cause: The database does not contain the CTXSYS schema. This indicates that Oracle Text is not installed.

Action: Install the Oracle Text component in the database. Refer to the Oracle Application Server Portal Configuration Guide.

Oracle Text version does not match the database version. Check that Oracle Text has been correctly upgraded. Reinstall the Oracle Text schema (CTXSYS) if necessary.

Cause: The database version is more recent than the Oracle Text component. This may indicate that the Oracle Text component was not upgraded correctly. The Oracle Text manual upgrade steps may have been omitted or failed. However, on certain platforms, this may also indicate that patch 2658339 has not been applied.

Action: Run the Oracle Text upgrade again or download and apply the patch depending on your situation.

OracleAS Portal 9.0.2 -> 9.0.4 upgrade failed. See <upgrade-log-file> for details.

Cause: Errors were encountered in the 9.0.2 to 9.0.4 portion of the upgrade.

Action: Search through the errors in the log file and make a note of any fixes mentioned. Then restore the database from backup, apply the fixes, and run the upgrade again.

OracleAS Portal 9.0.2 -> 9.0.4 upgrade precheck failed. See <precheck-log-file> for details.

Cause: Errors were encountered during the precheck run of the 9.0.2 to 9.0.4 portion of the upgrade.

Action: Search through the errors in the log file and apply any fixes mentioned. Then run the upgrade again.

OracleAS Portal 9.0.4 -> 10.1.2 upgrade completed with errors. See <upgrade-log-file> for details.

Cause: Errors were encountered in the 9.0.4 to 10.1.2 portion of the upgrade.

Action: Search through the errors in the log file and make a note of any fixes mentioned. Then restore the database from backup, apply the fixes, and run the upgrade again.

OracleAS Portal 9.0.4 -> 10.1.2 upgrade precheck failed. See <precheck-log-file> for details.

Cause: Errors were encountered during the precheck run of the 9.0.4 to 10.1.2 portion of the upgrade.

Action: Search through the errors in the log file and apply any fixes mentioned. Then run the upgrade again.

Patch Failed with status code: <status>

Cause: A patch installation has failed.

Action: Look at the upgrade log file for details.

Please delete all tables with UPG_ prefix from the Portal schema.

Cause: UPG_ prefix tables exist in the Oracle9iAS Portal schema. The upgrade is aborted.

Action: Delete all tables with the UPG_ prefix from the Oracle9iAS Portal schema. Backup the tables before removing them.

Portal schema user is not set up to use VPD.

Cause: The Oracle9iAS Portal schema user has the EXEMPT ACCESS POLICY system privilege.

Action: Revoke the EXEMPT ACCESS POLICY privilege from the Oracle9iAS Portal schema user by running the following SQL command in SQL*Plus:

```
revoke exempt access policy from <portal_schema_user>;
```

Also verify the Oracle9iAS Portal schema user does not inherit the EXEMPT ACCESS POLICY privilege from any of its assigned roles.

Portal version not supported by VPD check utility.

Cause: The VPD check does not support your current version of Oracle9iAS Portal.

Action: Verify your Oracle9iAS Portal version is supported by this upgrade.

Post-Upgrade tasks not done, fatal errors found in upgrade log.

Cause: This message indicates that the post upgrade scripts have not been executed. These tasks require a completed upgrade and your upgrade has errors. A summary of the errors are listed at the end of the upgrade log.

Action: Attempt to fix any errors listed. Search through this chapter and apply any fixes mentioned. Then restore from your backup and run another upgrade. If this fails, contact Oracle Support.

An example of a post-upgrade task is checking whether VPD is enabled correctly. Another example of a post-upgrade task is verifying if the SSO Partner Configuration has been run.

Problem running sqlplus.

Cause: The upgrade script was unable to execute the SQL*Plus command.

Action: Make sure that `bin/sqlplus` exists under your Oracle Home, and that you have permissions to execute it.

Restart the upgrade script.

Cause: You have answered n (no) when asked if input details are correct.

Action: Correct the perceived problem and restart the upgrade script.

Simultaneous upgrades cannot be run from the same location.

Cause: You are trying to run multiple simultaneous upgrades from the same location.

Action: Wait until the upgrade you started earlier finishes before starting another one. If a previous upgrade (run using `upgrade.csh`) terminated abnormally (for example, with `Ctrl+C`), the lock file created during upgrade (`upgcsh.lock`) is not deleted. Therefore, if you attempt to start another upgrade, you will see this message. In this case you will need to manually delete the lock file. You should delete this lock file only when an upgrade has abnormally terminated, not if an upgrade is actually running. You can find the lock file in the location from where you ran the upgrade script.

Some Oracle Text packages are invalid. Revalidate the invalid packages. If necessary, reinstall the Oracle Text schema (CTXSYS).

Cause: Packages in the Oracle Text schema (CTXSYS) beginning with `DRI` or `CTX_` are invalid.

Action: Revalidate the Oracle Text invalid packages. If necessary, reinstall the Oracle Text component. Refer to the Oracle Application Server Portal Configuration Guide.

SQL Error: %string% LDAP Error: %string%. Unexpected Error occurred while connecting to the Oracle Internet Directory as Application entry.

Cause: An attempt was made to connect to the Oracle Internet Directory using the application credentials stored in the OracleAS Portal repository. However, this attempt failed. Some possible reasons for this failure are given below:

- OracleAS Portal has not been configured correctly for the Oracle Internet Directory.
- Oracle Internet Directory server is not running.
- An unexpected error was encountered.

Action: Make sure that the Oracle Internet Directory is up and running. Reconfigure OracleAS Portal for the Oracle Internet Directory. Also review the message logged before this error message and take appropriate action.

SQL*Plus version <version> not supported for upgrade.

Cause: The version of SQL*Plus you are trying to execute is not current enough.

Action: Verify that the version of bin/sqlplus under your Oracle Home is at least 9.0.1.

System triggers are disabled in the database.

Cause: System triggers are disabled in your database configuration file.

Action: Verify that the `_system_trig_enabled` parameter is set to TRUE in your database's `init.ora` file. If it is not, set it to TRUE and restart your database.

The allocated java_pool_size parameter for the database is not sufficient for the Installation/Upgrade. Increase the java_pool_size and run the upgrade again.

Cause: The java pool size parameter is too small.

Action: Increase the java pool size parameter to 20 MB or greater. Refer to the documentation, if necessary, then run the upgrade again.

The allocated shared_pool_size parameter for the database is not sufficient for the Installation/Upgrade. Increase the shared_pool_size and run the upgrade again.

Cause: The shared pool size parameter is too small.

Action: Increase the shared pool size to 20 MB or greater. Refer to the documentation, if necessary, then run the upgrade again.

The compatibility level of the database is not supported for upgrade.

Cause: If the compatible init parameter is not set to at least 9.0.0, then the upgrade aborts.

Action: Set the compatible init parameter to at least 9.0.0 in your `init.ora` file.

The database blocksize is less than the recommended value.

Cause: The database blocksize is less than 8K.

Action: Create a new Oracle9i database with a minimum blocksize of 8K. Use the database import/export utilities to move your Oracle9iAS Portal from your prior database to the new one.

The DBMS job queue is disabled, and there are jobs which would run immediately if it were enabled. Please re-enable the job queue and wait for these jobs to complete, or remove them, before restarting the upgrade.

Cause: Jobs submitted under a previous version of Oracle9iAS Portal may not run properly under OracleAS Portal 9.0.4 and higher.

Action: Re-enable the job queue and allow the jobs to complete, or remove them.

The following invalid Portal objects exist in the Portal schema:

Cause: There are invalid Oracle9iAS Portal objects in the Portal schema.

Action: Investigate the invalid Oracle9iAS Portal objects in the Oracle9iAS Portal schema and fix the source of the problem. Run the upgrade again.

The following mandatory object(s) are missing or invalid: <[obj_type]owner.obj_name>

Cause: Mandatory objects which Oracle9iAS Portal relies on are not present in the database or are invalid. If they are missing due to a faulty upgrade of the database, it could cause failures in the Oracle9iAS Portal upgrade as well.

Action: Review your database installation and upgrade procedures. If the object is present but invalid, run the utlrp.sql script located in rdbms/admin of your database Oracle Home in an installation to recompile all invalid objects in the database.

The Java Option is not enabled in the chosen database. This product installation requires the Java option of the database to be enabled. Enable the Java Option and run the upgrade again.

Cause: Java is not installed in the database or there was a problem during the Java portion of the database upgrade.

Action: Enable the Java Option and run the upgrade again.

The JVM installation is not proper. Please check if you have the JVM installed or if there are invalid java objects in SYS

Cause: SYS java objects are not present in the database or are invalid.

Action: Recompile the invalid java objects in SYS. If this fails, reinstall the JVM in the database.

The LDAP parameters stored in the preference store are either incorrect or missing.

Cause: The OracleAS Portal repository has not been configured correctly for the Oracle Internet Directory.

Action: Please reconfigure OracleAS Portal repository for the Oracle Internet Directory.

The Optimizer Mode should not be set to RULE.

Cause: The optimizer mode is incorrectly set as RULE.

Action: Change the optimizer mode to CHOOSE and run the upgrade again.

The system triggers are not enabled. Set the _system_trig_enabled flag in the Oracle parameters file to TRUE and run the upgrade again.

Cause: The system triggers are not enabled.

Action: Set the system triggers enabled flag in the Oracle parameters file to TRUE and run the upgrade again.

There are concurrent sessions running for the schema you are upgrading. Verify that there are no other sessions running during the upgrade.

Cause: There are other sessions running on the Oracle9iAS Portal schema.

Action: Make sure your OracleAS 10g Release 2 (10.1.2) middle tier is shut down and no other connections are made to the schema being upgraded. Check the Analyze Product Schema step in the upgrade log for more information on the concurrent sessions.

There are currently jobs running in the DBMS jobs queue. Either kill them or wait for them to finish before restarting the upgrade.

Cause: There are DBMS jobs running.

Action: Either kill the DBMS jobs or wait for them to finish before restarting the upgrade. Check the Analyze Product Schema step in the upgrade log for more information on the running jobs.

There are currently jobs in the DBMS job queue which are incorrectly configured. Please remove these jobs before restarting the upgrade.

Cause: There are Oracle9iAS Portal jobs in the DBMS job queue which were either incorrectly submitted as another user, or submitted as the Oracle9iAS Portal user with another default schema or default privilege user.

Action: Remove these jobs from the job queue. The upgrade correctly resubmits any jobs that are missing.

There is not sufficient free space in the default tablespace.

Cause: There is less than 20MB of free default tablespace.

Action: Create at least 20MB of free default tablespace. Run the upgrade again.

There is not sufficient free space in the temporary tablespace.

Cause: There is less than 10M of free temporary tablespace.

Action: Create at least 10M of free temporary tablespace. Run the upgrade again.

Unable to bind as the application. LDAP Error: %string%

Cause: An error was encountered while connecting to the Oracle Internet Directory Server.

Action: The line following the error may provide more information about the cause. Make sure that the Oracle Internet Directory Server is up and running and the Portal has been wired correctly against it.

Unable to create directory <upgrade_tmp_dir>

Cause: You do not have permissions to create the temporary directory.

Action: Change your permissions on the parent directory.

Unable to create <log_file_name>. Check permissions on the directory.

Cause: The upgrade log file could not be created.

Action: Change your permissions on the directory where the upgrade log is written or specify a different log file location and run the upgrade again.

Unable to create <user_profile>. Check permissions on the directory.

Cause: The permissions on the temporary directory do not allow the creation of a login.sql script for the user profile.

Action: Change your permissions on the temporary directory and run the upgrade again.

Unable to get the application GUID. LDAP Error: %string%

Cause: Could not get the globally unique identifier for the application entry stored in the Oracle Internet Directory.

Action: The line following the error may provide more information about the cause. Make sure that the Oracle Internet Directory Server is up and running and the Portal has been wired correctly against it.

Unable to unbind. LDAP Error: %string%

Cause: An error was encountered while closing the connection with the Oracle Internet Directory.

Action: The line following the error may provide more information about the cause. Take corrective action as appropriate.

Updating External Application IDs: <string>

Cause: This is an internal error that may occur when converting the external application identifiers.

Action: Report this error to Oracle Support and provide them the output files for upgrade.

Updating provisioning profile: %string%

Cause: An error was encountered while updating the provisioning profile.

Action: The string may provide more information about the cause of error. Take appropriate action to resolve the error.

Unknown error happened in VPD check utility: <check_step>

Cause: An unexpected error happened during the specified step. A subsequent message following this one will contain details about the error.

Action: If the situation described in the details can be corrected, do so.

Version not updated, fatal errors found in upgrade log.

Cause: This message indicates that the version of Oracle9iAS Portal will not be updated to the new version. Errors have occurred in the upgrade which will prevent Oracle9iAS Portal from functioning properly. A summary of the errors is listed at the end of the upgrade log.

Action: Attempt to fix any errors listed. Search through this chapter and apply any fixes mentioned. Then restore from your backup and run another upgrade. If this fails, contact Oracle Support.

Note: Only certain fatal errors are detected in this check. It is possible for the version to be updated even if other fatal errors are encountered.

Version <version> not supported for upgrades in this release.

Cause: Unsupported Oracle9iAS Portal version.

Action: Make sure you are running the upgrade on a supported Oracle9iAS Portal version (9.0.2.0, 9.0.2.2, 9.0.2.3, or 9.0.2.6).

Version <version> of Oracle Database is not supported for upgrade.

Cause: Incorrect RDBMS version.

Action: Upgrade to the minimum database version of Oracle9i Database 9.0.1.4 Enterprise or Standard editions.

Version <version> of Oracle Portal/WebDB is not supported for upgrade.

Cause: Incorrect Oracle9iAS Portal version.

Action: Make sure you are running on a supported Oracle9iAS Portal version (9.0.2.0, 9.0.2.2, 9.0.2.3, or 9.0.2.6).

VPD has not been installed properly.

Cause: One of the VPD checks has failed.

Action: This error is followed by a detailed message. Resolve the issue by examining the information provided in the message.

VPD is not being enforced in database.

Cause: A problem occurred in the database that caused the VPD check to fail.

Action: Consult your database documentation to find possible actions.

Write permission not available for directory <upgrade_tmp_dir>.

Cause: You do not have permissions to write to the temporary directory.

Action: Change your permissions on the temporary directory or specify a different temporary directory location and run the upgrade again.

C.7.2.4 Unnumbered Warning Messages**<n> session cleanup job(s) detected in the SYS schema.**

Cause: The session cleanup job is a job that usually exists in the Oracle9iAS Portal schema. However, an earlier operation such as the database upgrade resulted in creating this job in the SYS schema. For example:

```
WARNING: 1 session cleanup job(s) detected in the SYS schema.
```

Action: This message is informational only. No action is required.

Component <APPLICATION_SCHEMA>.<COMPONENT_NAME> has errors. Please check that all the objects it is based on are present.

Cause: The component is based on one or more missing objects. For example, a QBE is created based on table MY_TABLE. Then MY_TABLE is dropped. For example:

```
WARNING: Component SCOTT.MY_QBE has errors. Please check that all the objects it is based on are present.
```

Action: Supply the missing object. If the component is no longer being used, delete it using the OracleAS Portal Navigator.

Could not parse <select_statement> as <schema_name>

Cause: An object on which a Portlet Builder calendar is based is missing. This happens when:

- The table on which the calendar is based is missing.
- The schema on which the database provider containing the calendar is based on is missing.

Examples:

```
WARNING: Could not Parse select a1.HIREDATE the_date, a1.ENAME the_name, null the_name_link, null the_date_link, null the_target from test_1.EMP_1 a1 order by a1.HIREDATE as TEST_1.
```

```
WARNING: Could not Parse select b2.HIREDATE the_date, b2.ENAME the_name, null the_name_link, null the_date_link, null the_target from test_2.EMP_2 b2 order by b2.HIREDATE as TEST_2.
```

This warning usually occurs while upgrading a Oracle9iAS Portal which was created using Oracle export/import. Not all of the schemas on which the Portlet Builder components are based were imported. Calendars which show this warning cannot be used unless the missing objects are supplied, and the calendar component is regenerated.

Action: Supply the missing objects and regenerate the component.

Could not refresh OMNIPORTLET provider.

Cause: The refresh of the OminPortlet provider failed because the provider is not accessible.

Action: Verify that the OmniPortlet Web provider is accessible on the portal's middle-tier. After verification, refresh this provider from the Portlet Repository.

Default JPDK instance URL is not present. So, provider is registered using url `http://host:port/`.

Cause: At the time of upgrade, when the seeded OmniPortlet, Web Clipping, and OracleAS Portal Building Tools providers are registered, it is assumed that these providers are deployed on the same middle-tier as identified in the Default JPDK Instance URL. You can view this value by completing the following steps:

1. Log on to your OracleAS Portal.
2. Click the **Administer** tab.
3. In the Services portlet, click the **Global Settings** link.
4. Click the **Configuration** tab.
5. Locate the **Default JPDK Instance URL** field. Usually this value is `<portal_middle_tier_protocol>://<portal_middle_tier_host>:<portal_middle_tier_port>/jpdk/servlet/soaprouter/`. If there is no value in this field, you will receive the warning mentioned above in your upgrade log.

Action: Run the following script to update the URLs for these providers:

```
ORACLE_HOME\portal\upg\plsql\upg\9025-9026\wws\updmturl.sql
```

The script updates the middle-tier URL for the PORTLETBLDGTOOLS, OMNIPORTLET, and WEBCLIPPING providers in the providers table. This script is not run from the upgrade script. Run it in standalone mode to update the URLs. For example:

```
@updmturl.sql http my.domain.com 80
```

where:

- `http` is the middle-tier's protocol
- `my.domain.com` is the middle-tier's host
- `80` is the middle-tier's port

Document size for file `<file_path>` is null

Cause: The upgrade found an item on a page which appears to have a document attached but this document does not actually exist. This indicates a data inconsistency in the data for the item. The item will be upgraded but its document will not be accessible. It is unlikely that the document was accessible in Oracle9iAS Portal 9.0.2 either.

Action: Delete the item and recreate it.

External Application IDs have been updated. However, some customizations have been lost because of the large number of applications. Please reduce the number of external applications and ask the users to customize again.

Cause: You have a very large number of external applications. The customizations for these applications have exceeded the maximum physical limit for their storage. As a result, some customizations may have been lost.

Action: Reduce the number of external applications on the SSO server. Edit the defaults for the external applications portlet and advise the users to check their customizations.

Non Portal Objects have errors. See <upgrade_tmp_dir>/nonportal.log for details.

Cause: Non-Oracle9iASPortal objects in the Oracle9iAS Portal schema cannot be compiled and have errors.

Action: Find out what is causing the object not to compile and rectify it. One reason these errors could occur is because deprecated or changed Oracle9iAS Portal APIs are being referenced and these APIs do not work in the latest release. Refer to the PDK information on <http://portalcenter.oracle.com>.

Only <n> % of components in wwv_modules\$ table are production components.

Cause: This informational message indicates there are too many archive versions of Portlet Builder (formerly WebView) components. This may be because in Oracle9iAS Portal 3.0.9 a new version of a component was created each time the component was edited and saved. For example:

WARNING: Only 38 % of components in wwv_modules\$ table are production components.

Action: Delete as many of the archive versions of components as possible. This reduces the size of the tables where attributes for all the archive versions are stored.

Portlet Builder (WebView) components have unknown issues.

Cause: The Portlet Builder components (packages) are invalid.

Action: Try resolving the cause of the errors when compiling the packages listed in the log. For example, a report may be based on a table and the table has been dropped. In this case, the report is no longer valid, so you can drop the report.

Region ID = <region ID> on page ID = <page ID> and site ID = <site ID> was not converted to a sub-page links region

Cause: The region on the page was not successfully converted to a sub-page links region during the upgrade, since it contained items other than just the sub-page display items.

Action: The user must first move all the existing items in the region to a different region on the page. After making this change, the user can edit the region properties to convert it to a sub-page links region. Alternatively, a sub-page links region can also be created on the page.

Region ID = <region ID> on template ID = <template ID> and site ID = <site ID> was not converted to a sub-page links region

Cause: The region on the template was not successfully converted to a sub-page links region during the upgrade, either because there were items other than just the sub-page display items on the template itself, or on the pages based on the template. In this case, there were far too many items found in the region, so individual warnings for all pages based on the template could not be reported.

Action: The user must first move all the existing items in the region to a different region on the template/page. After making this change, the user can edit the region properties to convert it to a sub-page links region. Alternatively, a sub-page links region can also be created on the template.

Removed session cleanup job: <job_id> from the SYS schema.

Cause: The session cleanup job is a job that usually exists in the Oracle9iAS Portal schema. However, an earlier operation such as the database upgrade has resulted in removing this job as a part of the upgrade. For example:

WARNING: Removed session cleanup job: 63 from the SYS schema.

Action: If the database instance where the upgrade is being performed does not contain any other Oracle9iAS Portal schema, then no action is required. This is because the session cleanup job gets created in the Oracle9iAS Portal schema during upgrade. However, if there are other Oracle9iAS Portal schemas in the database instance, then it must be verified that they all have their respective session cleanup jobs. Run the following script from `sqlplus` in a Oracle9iAS Portal schema to check whether the session cleanup job exists:

```
ORACLE_HOME\portal\upg\plspl\wwc\ctxjget.sql
```

If this job is missing in any Oracle9iAS Portal schema then you can create it by running the script `ctxjsub.sql` from `sqlplus` in that schema, located in the same directory.

Subpage item (title: <item title>) on site id <site_id> and page <page_name> was not upgraded because other items exist in the same region.

Cause: The subpage item was obsoleted but could not be replaced by a subpage region type because there were other items in the same region.

Action: Create a new subpage type region on the page where the warning message appears.

Table without VPD policy: <table_name>

Cause: The VPD policy on the table indicated in the message was not installed properly in your Oracle9iAS Portal schema.

Action: If the table indicated in the message is not part of the Oracle9iAS Portal product, it is safe to ignore the warning. If the table is one of the following, it is also safe to ignore this warning:

- WWPRO_OFFLINE_PRO_PORTLET\$
- WWPRO_OFFLINE_PRO_PORTLET_NLS\$
- WWPRO_PORTLET_METADATA_USER\$

In all other cases, there may have been a problem with a previous installation or upgrade procedure. Contact Oracle Support for more information.

Template region ID = <region ID> on page ID = <page ID> and site ID = <site ID> was not converted to a Sub-Page Links region

Cause: The region on the template was not successfully converted to a sub-page links region during the upgrade, either because there were items other than just the sub-page display items on the template itself, or on the pages based on the template.

Action: The user must first move out all the existing items in the region to a different region on the template/page. After making this change, the user can edit the region properties to convert it to a sub-page links region. Alternatively, a sub-page links region can also be created on the template.

The DBMS job queue is currently disabled. It must be re-enabled for proper Portal operation.

Cause: The DBMS job queue must be enabled for proper operation. It may have been disabled by setting the system parameter `job_queue_processes` to 0, or by restricting logins.

Action: Make sure `job_queue_processes` is set to one or greater, and that logins are not restricted by changing the system disable restricted session.

The following invalid non-Portal objects exist in the Portal Schema

Cause: Oracle9iAS Portal and non-Oracle9iAS Portal objects are compiled separately. For Oracle9iAS Portal objects, compilation problems are reported as errors. However, for non-Oracle9iAS Portal objects, compilation problems are reported as warnings, since they should not cause the upgrade to be considered a failure.

Action: Examine the generated file `<upgrade_tmp_dir>/nonportal.log` and fix the compilation problems associated with your objects. Compilation errors in your packages may cause your portlets to render incorrectly.

User/Role <schema> does not exist. Applications based on <schema> will have errors.

Cause: A database provider (formerly called application) schema is missing. For example:

```
WARNING User/Role SCOTTB does not exist. Application based on SCOTTB will have errors.
```

In this case, the database provider would not have been accessible before the upgrade either.

Action: Determine if the database provider is obsolete. If it is, delete it. If not, supply the missing schema.

VPD precheck found some issues.

Cause: One of the VPD checks has failed.

Action: This warning is followed by a detailed message. Resolve the issue by examining the information provided in the message.

C.8 Error Messages When Upgrading OracleAS Wireless

This section contains error messages that are specific to the Oracle Application Server Wireless.

Could Not Copy File or Create Directory

Cause: This error indicates that the disk is full, or you do not have sufficient permissions to copy the file.

Action: Determine the available disk space and permissions for the following directory and adjust as necessary:

```
DESTINATION_ORACLE_HOME\wireless\server\classes
```

Failed to send LocalCfgChangeEvnet due to the following DB Access Error

Cause: Whenever there is configuration data change, OracleAS Wireless tries to broadcast a configuration data change event to all the working Wireless Processes. During the middle-tier upgrade, the middle tier is down. As a result, OracleAS Wireless generates the following error:

```
[TIMESTAMP] NOTIFICATION:1 Wireless: LocalCfgSession: Failed to send LocalCfgChangeEvnet due to the following DB Access Error:
```

```
[TIMESTAMP] NOTIFICATION:1 Wireless: LocalCfgSession: SQLCODE is -20001  
[TIMESTAMP] NOTIFICATION:1 Wireless: LocalCfgSession: SQLERROR is NO INSTANCE  
UNDER [MID-OH] ON [MACHINE] HAS BEEN STARTED
```

Action: None. This is an expected warning message and no action is required.

ERROR: Provisioning Profile Already Exists.

The Provisioning Profile for the Application could not be created.

Cause: Oracle Internet Directory is not responding or there is a problem with a process created or maintained by Oracle Internet Directory.

Action: Restart the processes in the OracleAS Infrastructure Oracle home.

C.9 Error Messages When Upgrading Oracle Ultra Search

This section contains error messages that are specific to the Oracle Ultra Search.

WKG-100 Error: Current Ultra Search Component has wrong version {0}

Cause: The version of Ultra Search is incorrect for upgrade

Action: Make sure the Ultra Search version satisfies upgrade requirement

WKG-101 Error: Ultra Search Upgrade is having problem with database: {0}

Cause: An Oracle exception has been raised while performing the upgrade

Action: Check the specific Oracle exception for the nature of the problem

WKG-102 Error: Ultra Search Upgrade is having problem closing DB Connection

Cause: An Oracle exception has been raised while disconnecting from the database

Action: Check the specific Oracle exception for the nature of the problem

WKG-103 Error: Unable to connect to database as {0}: {1}

Cause: Ultra Search MRUA plugin is unable to connect to the MR database

Action: Check the specific Oracle exception for the nature of the problem

WKG-104 Error: upgrade not performed due to previous error"

Cause: An earlier error has been encountered

Action: Check and resolve the error that comes before this message

WKG-105 Error: Unknown upgrade scenario, DB version = {0}, Ultra Search version = {1}

Cause: Ultra Search plugin does not know to upgrade this Ultra Search configuration

Action: Make sure the database version and Ultra Search version satisfies upgrade requirement

WKG-106 Error: Upgrade error: {0}

Cause: An Ultra Search upgrade specific error has been encountered during upgrade

Action: Check the specific error message for more information

WKG-199 Error: Unexpected internal error: {0}

Cause: An unexpected upgrade error has been encountered

Action: Check the specific error message for more information.

C.10 Error Messages Generated By the Metadata Repository Upgrade Assistant

This section describes the error messages generated by the Metadata Repository Upgrade Assistant.

Error: MRUA was unable to connect to SSL port of OID

Cause: When MRUA prompted you for the password for the Oracle Internet Directory superuser (cn=orcladmin) account, you entered an incorrect password.

Action: Check to be sure that you entered the password correctly. Run MRUA again and enter the correct the value when prompted for the cn=orcladmin password.

Cause: The Oracle Internet Directory instance is down or not available, or you entered the wrong Oracle Internet Directory host name or secure port on the MRUA command line.

Action: Check to be sure that the host name and SSL port you identified for the Oracle Internet Directory represent a valid Oracle Internet Directory instance that is up and running.

The value of the `-oid_host` argument and `-oid_ssl_port` arguments must match the value of the corresponding properties defined in following configuration file in the Identity Management Oracle home:

```
IDENTITY_MANAGEMENT_HOME\config\ias.properties
```

For example:

```
OIDhost=sys42.acme.com
OIDsslport=636
```

Error: MRUA was unable to open XML file: *xml_file_name*

Cause: The Metadata Repository Upgrade Assistant was unable to open a required XML file specific for one of the Oracle Application Server components. As a result, the schema for that component cannot be upgraded in the OracleAS Metadata Repository.

Action: Note the name of the file and make sure that you are running MRUA from an account with access rights to the file referenced in the error message.

Specifically, be sure you are logged in to the computer where the OracleAS Metadata Repository is running as the same user who installed the Release 2 (9.0.2) or 10g (9.0.4) OracleAS Metadata Repository.

If you are logged in as the appropriate user, note the name of the problem file and contact Oracle support.

Error: MRUA was unable to dynamically load plugins

Cause: The Metadata Repository Upgrade Assistant was unable to load a required plugin, which is part of the MRUA software designed upgrade a specific component schema.

Action: Contact Oracle Support.

Error initializing plug-in

Cause: The Metadata Repository Upgrade Assistant was unable to initialize a required plugin, which is part of the MRUA software designed upgrade a specific component schema.

Action: Contact Oracle Support.

Error: Component upgrade failed

Cause: The Metadata Repository Upgrade Assistant was unable to upgrade one of the Oracle Application Server components.

Action: Review the MRUA log files to determine which component upgrade failed and then contact Oracle Support.

For more information, see [Section 7.4.7, "Reviewing the MRUA Log Files"](#).

Error: Component upgrade returned improper status

Cause: The Metadata Repository Upgrade Assistant was unable to determine whether or not one of the Oracle Application Server components was upgraded successfully.

Action: Review the MRUA log files to determine which component generated the improper status and then contact Oracle Support.

SQL script *script_name* does not exist!

Cause: A required file is missing or cannot be read by the Metadata Repository Upgrade Assistant.

Action: Be sure you are logged in to the computer as the same user who installed the Release 2 (9.0.2) or 10g (9.0.4) OracleAS Metadata Repository. The account you are using to run MRUA must have access rights to all the upgrade files.

If you are running from the OracleAS Metadata Repository Upgrade Assistant and Utilities CD-ROM, be sure the CD is mounted properly.

Contact Oracle Support.

Error: Database version must be *minimum_9i_database_version* or *minimum_10g_database_version*

Cause: You are attempting to run the Metadata Repository Upgrade Assistant against a database that does not meet the minimum version requirements.

Action: Review [Section 7.1, "Task 1: Upgrade the Database That Hosts the OracleAS Metadata Repository"](#) for detailed information about the database version requirements.

Unable to load PL/SQL package DBMS_IAS_UPGRADE

Cause: The Metadata Repository Upgrade Assistant was unable to load a required PL/SQL package.

Action: Be sure you are logged in to the computer as the same user who installed the Release 2 (9.0.2) or 10g (9.0.4) OracleAS Metadata Repository. The account you are using to run MRUA must have access rights to all the upgrade files.

If you are running from the OracleAS Metadata Repository Upgrade Assistant and Utilities CD-ROM, be sure the CD is mounted properly.

Contact Oracle Support.

Unable to load PL/SQL package DBMS_IAS_VERSION

Cause: The Metadata Repository Upgrade Assistant was unable to load a required PL/SQL package.

Action: Be sure you are logged in to the computer as the same user who installed the Release 2 (9.0.2) or 10g (9.0.4) OracleAS Metadata Repository. The account you are using to run MRUA must have access rights to all the upgrade files.

If you are running from the OracleAS Metadata Repository Upgrade Assistant and Utilities CD-ROM, be sure the CD is mounted properly.

Contact Oracle Support.

MRC.PL encountered an error

Cause: A key component of the Metadata Repository Upgrade Assistant has encountered an error and the upgrade was not successful.

Action: Review the MRUA log files for any additional information; then, contact Oracle Support.

For more information, see [Section 7.4.7, "Reviewing the MRUA Log Files"](#).

Protocol error: Plug-in raised an exception:

Cause: A software error has occurred while upgrading one of the Oracle Application Server component schemas.

Action: Review the MRUA log files to determine which component failed, and then contact Oracle Support.

For more information, see [Section 7.4.7, "Reviewing the MRUA Log Files"](#).

FAILURE: Some OracleAS plug-ins report failure during upgrade.

Cause: One or more Oracle Application Server component upgrades have failed.

Action: Review the MRUA log files to determine which components failed. For more information, see [Section 7.4.7.1, "Guidelines for Using the MRUA Log Files"](#).

Error: Upgrade from OracleAS release *release_number* is not allowed

Cause: You attempted to upgrade from a release that is not supported for this upgrade operation.

Action: Review [Chapter 1, "Things You Should Know Before Upgrading"](#) for information about the supported upgrade paths.

Error: Some OracleAS components not set to VALID status in app_registry. Check *mrua.log* file

Cause: One or more of the Oracle Application Server components returned a status that is not valid.

Action: Review the MRUA log files to determine which component failed; then, contact Oracle Support.

For more information, see [Section 7.4.7, "Reviewing the MRUA Log Files"](#).

Error: *component_name* component version is: *release_version*

Cause: The Metadata Repository Upgrade Assistant cannot upgrade the schema for the Oracle Application Server component referenced in the error message because the the version number for the component is invalid.

Action: Review the MRUA log files for any additional information; then, contact Oracle Support.

For more information, see [Section 7.4.7, "Reviewing the MRUA Log Files"](#).

Error: SQL version and status query failed for component *component_name*

Cause: The Metadata Repository Upgrade Assistant encountered an error when it attempted to verify the version number of the schema for the referenced component.

Action: Review the MRUA log files for any additional information; then, contact Oracle Support.

For more information, see [Section 7.4.7, "Reviewing the MRUA Log Files"](#).

C.11 Error Messages When Upgrading OracleAS Forms Services

This section contains error messages that you might encounter while upgrading the OracleAS Forms Services component of Oracle Application Server.

ERROR:1 Forms: Error deploying Forms ear file for the user application

Cause: The OracleAS Forms Services upgrade failed while upgrading user deployed Forms ear file, which is part of the OC4J_BI_Forms OC4J instance. This error occurs when the both the source and the destination Oracle Home were installed using the Business Intelligence and Forms installation type.

The complete error message appears in the `iasua.log` file, as follows:

```
Forms: Caught exception
oracle.ias.sysmgmt.deployment.j2ee.exception.J2eeDeploymentException: Nested
exception
Resolution:
Base Exception:
This DCM Client Session has been invalidated due to DCM Daemon restart. All
unsaved changes will be lost.
Forms: Caught exception oracle.ias.upgrade.config.oc4j.Oc4jUpgradeException:
Caught exception
ERROR:1 Forms: Error deploying Forms ear file for the user application
application_name
NOTIFICATION:1 Framework: Finished upgrading Forms with status: Failure.
```

Action: Run the OracleAS Upgrade Assistant again. The OracleAS Forms Services component should upgrade successfully the second time you run the OracleAS Upgrade Assistant.

Forms is not configured in Destination Oracle Home <destination Oracle Home version>, Forms upgrade cannot proceed

Cause: OracleAS Forms Services is not configured in the destination Oracle Home.

Action: Configure OracleAS Forms Services in the destination Oracle Home and then perform the Upgrade.

Error adding item < configuration file name > to the upgrade list. Invalid or missing Forms configuration file <configuration File Name>

Cause: The default or user-defined OracleAS Forms Services configuration file has been deleted from the default or specified location.

Action: Verify that the configuration file does not exist. The default configuration files should not be deleted. If a user-defined configuration file was deleted, then make sure that any references to the file is deleted from the referencing configuration file.

Forms plug-in does not support upgrade to version <Version>

Cause: You are trying to run the upgrade on an unsupported source or destination Oracle Application server version.

Action: Refer to the [Chapter 1, "Things You Should Know Before Upgrading"](#) for information on the supported versions.

Invalid section in the `formsweb.cfg` file

Cause: The application section entry specified in the `formsweb.cfg` or the user defined equivalent of `formsweb.cfg` is in an invalid format (missing trailing closing bracket('))

Action: Modify the configuration file specified in the error message and make sure the application section entry is in the correct format.

Context root mapping not found for application <application name> in `SOURCE_ORACLE_HOME\j2ee\OC4J_BI_Forms\config\default-web-site.xml`

Cause: The application mapping entry for the customized OracleAS Forms Services ear file in `default-web-site.xml` does not exist.

Action: Open `default-web-site.xml` with a text editor and add the missing application mapping entry, or re-deploy the OracleAS Forms Services ear file with the user customizations in the source Oracle Home, and then rerun the upgrade.

Error deploying Forms ear file for the user application.

Cause: An error occurred while the OracleAS Upgrade Assistant was re-deploying the user-customized deployment settings of the OracleAS Forms Services ear file.

Action: Run the OracleAS Upgrade Assistant again.

Error processing dcm command `DESTINATION_ORACLE_HOME\dcm\bin\dcmctl.bat`

Cause: The final step of syncing the upgraded OracleAS Forms Services configuration with the DCM repository failed due to an internal DCM error.

Action: From the destination Oracle home, execute the following command:

```
DESTINATION_ORACLE_HOME\dcm\bin\dcmctl.bat updateconfig
```

IOException checking the config file `$ORACLE_HOME/config/ias.properties`

Cause: The user running the upgrade does not have the required access privileges to the `ias.properties` configuration file.

Action: Run the upgrade as the appropriate user with required set of permissions to perform the upgrade.

Error copying `DESTINATION_ORACLE_HOME\forms\j2ee\formsapp.ear` to `DESTINATION_ORACLE_HOME\forms\j2ee\upgdTmpDIR\<appname>.ear` <Application name> deployment failed

Cause: This error can be caused by one of the following:

- The user performing the upgrade does not have permission to read the following file:

```
DESTINATION_ORACLE_HOME\forms\j2ee\formsapp.ear
```

- The user performing the upgrade does not have permission to create the updated ear file at:

```
DESTINATION_ORACLE_HOME\forms\j2ee\upgdTmpDIR\<appname>.ear
```

Action: Run the upgrade as the appropriate user with required set of permissions to perform the upgrade.

IOException while updating the earFile *DESTINATION_ORACLE_HOME\forms\j2ee\upgdTmpDIR\<appname>.ear*

Cause: The user performing the upgrade does not have permission to create the updated ear file at:

DESTINATION_ORACLE_HOME\forms\j2ee\upgdTmpDIR\<appname>.ear

Action: Run the upgrade as the appropriate user with required set of permissions to perform the upgrade.

XML parse Error while parsing <file name>.

Cause: An XML syntax error in the user-added configuration in the specified XML file modification.

Action: Modify the XML file and correct the syntax error.

IOException while parsing <xml config file name>.

Cause: The user running OracleAS Upgrade Assistant does not have permissions to read or modify the XML file.

Action: Run the upgrade as the appropriate user with required set of permissions to perform the upgrade.

Error reading the Forms Apache conf file <file name>.

Cause: An error occurred while reading the default *forms90.conf* configuration file or the user-defined configuration file from the source Oracle home due to insufficient access permissions or syntax errors in the directives in these files.

Action: Make sure that the user performing the upgrade has the required privileges for performing the upgrade, or correct the syntax errors in the directives in the configuration files.

Error parsing the Forms application xml file <web.xml configuration file>.

Cause: An error occurred while reading the OracleAS Forms Services OC4J *web.xml* configuration file from the source Oracle home due to insufficient access permissions or XML syntax errors in the configuration file.

Action: Make sure that the user performing the upgrade has the required privileges for performing the upgrade, or correct the syntax errors in the configuration file.

Troubleshooting Upgrade

This appendix describes common problems that you might encounter when upgrading to Oracle Application Server Release 2 (10.1.2) and explains how to solve them. It contains the following topics:

- [General and Middle Tier Upgrade Problems and Solutions](#)
- [OracleAS Identity Management Upgrade Problems and Solutions](#)
- [OracleAS Metadata Repository Upgrade Issues and Workarounds](#)
- [Need More Help?](#)

D.1 General and Middle Tier Upgrade Problems and Solutions

This section describes common problems and solutions. It contains the following topics:

- [Cannot Expand an Installation Type During an Upgrade](#)
- [Problems Using Middle Tier with Upgraded Infrastructure](#)
- [Cannot Upgrade to a High Availability Environment During an Upgrade](#)
- [Installing a 10g Release 2 \(10.1.2\) Middle Tier Against a Release 2 \(9.0.2\) Infrastructure](#)
- [Locating the Upgrade Documentation for Your Platform](#)
- [Decommissioned Application Server Instances Still Visible on Farm Page in Application Server Control Console](#)
- ['Could not start process' Error When Starting Oracle Application Server Services](#)
- [Enterprise Manager Web Site Port is Changed After Upgrade From Release 2 \(9.0.2\)](#)
- [OracleAS Web Cache Fails to Start Due to XML Parsing Error After Configuring Upgraded Middle Tier for SSL](#)

D.1.1 Cannot Expand an Installation Type During an Upgrade

After installing a middle tier, you may decide that you need a component that is in a larger middle tier. For example, you installed a J2EE and Web Cache middle tier, and you realize you need OracleAS Portal.

Problem

You want to expand your installation type while upgrading the middle tier to Oracle Application Server 10g Release 2 (10.1.2).

Solution

Expanding the installation type and upgrading to 10g Release 2 (10.1.2) are two separate steps. For example, to upgrade your 10g Release 2 (9.0.4) J2EE and Web Cache installation to a 10g Release 2 (10.1.2) Portal and Wireless installation, do the following:

1. Upgrade the J2EE and Web Cache instance to Oracle Application Server 10g Release 2 (10.1.2).
2. Use Oracle Universal Installer and the 10g Release 2 (10.1.2) installation procedure to expand the installation type to Portal and Wireless.

See Also: *Oracle Application Server Installation Guide* for more information about expanding a middle tier

D.1.2 Problems Using Middle Tier with Upgraded Infrastructure

Problem

After upgrading an OracleAS Infrastructure, all the middle tiers generate errors when attempting to connect to the upgraded Infrastructure.

Solution

This problem occurs when you upgrade the OracleAS Metadata Repository before you upgrade the middle tiers that depend on the repository. To fix the problem, you must do one of the following:

- Upgrade the middle tiers so they are the same version as the OracleAS Metadata Repository.
- Revert the OracleAS Metadata Repository to its original version by restoring a backup of the OracleAS Metadata Repository; then, upgrade the middle tiers before upgrading the OracleAS Metadata Repository.

See Also: [Section 1.4, "Upgrade Rules to Follow"](#)

D.1.3 Cannot Upgrade to a High Availability Environment During an Upgrade

Oracle Application Server 10g Release 2 (10.1.2) provides documentation for configuring your Oracle Application Server environment for high availability.

Problem

How do I upgrade my Oracle Application Server to a high availability environment?

Solution

Implementing a high available environment for Oracle Application Server and upgrading to 10g Release 2 (10.1.2) are two separate steps:

- To upgrade your Oracle Application Server installation to Oracle Application Server 10g Release 2 (10.1.2), use the instructions in this guide.
- To configure you environment for high availability, see the *Oracle Application Server High Availability Guide*.

D.1.4 Installing a 10g Release 2 (10.1.2) Middle Tier Against a Release 2 (9.0.2) Infrastructure

Problem

Is it possible to install a 10g Release 2 (10.1.2) middle tier against a Release 2 (9.0.2) Infrastructure?

Solution

Yes, but before you install the 10g Release 2 (10.1.2) middle tier, you must make a required change to the Release 2 (9.0.2) Oracle Internet Directory.

See: [Section 4.2.1, "Before Installing the 10g Release 2 \(10.1.2\) Middle Tier Against a Release 2 \(9.0.2\) Oracle Internet Directory"](#)

D.1.5 Locating the Upgrade Documentation for Your Platform

Problem

You cannot find the Upgrade documentation specific to your platform (for example, Sun Solaris, Linux, or Windows).

Solution

Carefully review the contents of the Oracle Application Server documentation page on OTN:

<http://www.oracle.com/technology/documentation/appserver10g.html>

Note that platform specific documentation is listed separately. For example, the Oracle Application Server documentation for the Sun Solaris platform is available in the Solaris platform-specific documentation library.

Do not attempt to use the Upgrade documentation for a different platform if the platform-specific information you are looking for is unavailable.

If the upgrade documentation for a particular platform is not available, it is likely that platform is not yet supported for the current Oracle Application Server release. You can obtain more information about supported releases on Oracle *MetaLink*, <http://metalink.oracle.com>.

D.1.6 Decommissioned Application Server Instances Still Visible on Farm Page in Application Server Control Console

Problem

After upgrading from Oracle Application Server Release 2 (9.0.2) or 10g (9.0.4) to 10g Release 2 (10.1.2), the source application server instances still appear on the Application Server Control Console Farm page.

Solution

Before you deinstall a source Oracle home that has been successfully upgrded to 10g Release 2 (10.1.2), be sure to remove the source Oracle home from its OracleAS Farm by using the instructions in [Section 4.9.3, "Removing the Source Oracle Home from the OracleAS Farm"](#).

D.1.7 'Could not start process' Error When Starting Oracle Application Server Services

Problem

After upgrade, when attempting to start the Oracle Application Server 10g Release 2 (10.1.2) services in the Windows Services Control panel, a "could not start process" error occurs and the status of the service is shown as "Starting."

Solution

In most cases you can ignore the error message because, in fact, the Application Server Control and Oracle Process Manager and Notification Server services have started successfully. Wait a few minutes, and then close and reopen the Services control panel to verify that the services have started; or, display the Application Server Control Console to verify that the Application Server Control and the Oracle Application Server components have started.

D.1.8 Enterprise Manager Web Site Port is Changed After Upgrade From Release 2 (9.0.2)

Problem

After upgrading from Oracle Application Server Release 2 (9.0.2), the URL for the Enterprise Manager Web site does not work.

Solution

After upgrading from Release 2 (9.0.2), you cannot use the same URL to manage your application server with Oracle Enterprise Manager. Instead, after upgrade to 10g Release 2 (10.1.2), you must use the new Application Server Control URL to display the Application Server Control Console.

For more information, see [Section 4.6.1, "About Port Values and the portlist.ini File After Upgrade"](#).

D.1.9 OracleAS Web Cache Fails to Start Due to XML Parsing Error After Configuring Upgraded Middle Tier for SSL

Problem

After upgrading the middle tier, if you configure the upgraded middle tier for SSL, OracleAS Web Cache fails to start. Errors in the log file indicate an XML parsing error; for example:

```
[03/Aug/2005:14:32:45 -0700] [alert 13109] XML parsing error in
@ /private/iasinst/upg/1012p2/bi/webcache/webcache.xml. Error code
@ 213: LSX-00213: only 0 occurrences of particle "HOSTREF", minimum is 1
```

Solution

This problem can be caused when an empty OracleAS Web Cache site is created in the source Oracle home. To fix this problem:

1. Locate and open the following configuration file in the destination Oracle home with a text editor:

`DESTINATION_ORACLE_HOME\webcache\webcache.xml`

2. Locate the following element in the `webcache.xml` file:

```
<VIRTUALHOSTMAP NAME="nodename.domain" PORT="4445" EXCLUDE="NONE"
QUEUESIZE="0">
```

3. Verify that each VIRTUALHOSTMAP element includes a corresponding HOSTREF entry, as in the following example:

```
<VIRTUALHOSTMAP NAME="hostname.domain" PORT="4445" EXCLUDE="NONE"
QUEUESIZE="0">
  <HOSTREF HOSTID="hostid"/>
</VIRTUALHOSTMAP>
```

4. If any of the VIRTUALHOSTMAP elements do not include a HOSTREF element, then do the following:
 - a. Locate and open the corresponding `webcache.xml` file in the source Oracle home.
 - b. Locate the equivalent VIRTUALHOSTMAP element in the file.
 - c. Copy the entire VIRTUALHOSTMAP element (including the HOSTREF element).
 - d. Paste the entire VIRTUALHOSTMAP element into the `webcache.xml` file in the destination ORACLE_HOME.
 - e. Save and close both `webcache.xml` files.
5. Try starting OracleAS Web Cache.

D.2 OracleAS Identity Management Upgrade Problems and Solutions

The following sections provide common problems and solutions when upgrading an Oracle Application Server Infrastructure:

- [Problems Encountered When Running the Oracle Internet Directory Upgrade Assistant From Oracle Universal Installer](#)
- [Problem Stopping Processes in Source Oracle Home During OracleAS Identity Management Upgrade](#)
- [Database Listener Errors When Running Configuration Assistants During OracleAS Identity Management Upgrade](#)
- [Oracle Directory Integration and Provisioning Configuration Assistant Fails with Time Synchronization Error](#)

D.2.1 Problems Encountered When Running the Oracle Internet Directory Upgrade Assistant From Oracle Universal Installer

The Oracle Internet Directory upgrade assistant is one of the assistants that run near the end of the 10g Release 2 (10.1.2) installation procedure when you are upgrading an OracleAS Identity Management installation.

You can get information about the cause of Oracle Internet Directory upgrade assistant errors by looking at the following log file:

```
ORACLE_HOME\ldap\log\oidca.log
```

Problem 1

The upgrade assistant log file (`oidca.log`) reports the following:

```
OID processes are currently running
```

This is a result of some Oracle Internet Directory or Oracle Directory Integration and Provisioning processes not being shut down properly in the source Oracle Home.

Solution

Without exiting the Installer, open another terminal window and shut down all the processes in the source Oracle Home. Then, retry the Oracle Internet Directory upgrade assistant from the Oracle Universal Installer configuration assistants page.

Without exiting the Installer, shut down all the processes in the source Oracle Home and then retry the Oracle Internet Directory configuration assistant from the Oracle Universal Installer configuration assistants page.

See Also: The corresponding version of the Oracle Internet Directory documentation to stop the Oracle Internet Directory and Oracle Directory Integration and Provisioning processes in the source Oracle Home.

If you are upgrading from 10g (9.0.4), you can ensure that the proper processes are shut down by using the Oracle Process Manager and Notification Server (OPMN) command utility to start and then stop all processes in the Oracle home.

For example, use the following procedure to start all the processes and then shut down all the processes. Note carefully whether or not any errors appear when you are starting or shutting down the processes:

1. Start all the processes in the OracleAS Identity Management 10g (9.0.4) source Oracle home using the following command:

```
SOURCE_ORACLE_HOME\opmn\bin\opmnctl startall
```

2. Make sure that no errors occurred during startup and make sure that the Oracle Internet Directory server is up and running.

To verify that Oracle Internet Directory is running, enter one of the following commands.

If you are running Oracle Internet Directory on a non-secure port:

```
SOURCE_ORACLE_HOME\bin\ldapbind -p Non-SSL_port -h
```

If you are running Oracle Internet Directory on a secure port:

```
SOURCE_ORACLE_HOME\bin\ldapbind -p SSL_port -h -U 1
```

These commands should return a "bind successful" message.

See Also: "Syntax for LDIF and Command-Line Tools" in the *Oracle Internet Directory Administrator's Guide* for more information about the ldapbind utility

3. Enter the following command to stop all the processes:

```
SOURCE_ORACLE_HOME\opmn\bin\opmnctl stopall
```

4. Use the ldapbind command again to verify that Oracle Universal Installer is down and not running.
5. Rerun the Oracle Internet Directory upgrade assistant.

Problem 2

The Oracle Internet Directory upgrade fails with "table or view does not exist" error.

Solution

This problem occurs when the Oracle Internet Directory upgrade assistant is run against a 9.2.0.x OracleAS Metadata Repository containing a 9.2.0.x Oracle Internet Directory.

The solution is to do the following:

1. Create table `imcfgregistry` in the 9.2.0.x Oracle Internet Directory database repository by running the following SQL statement as ODS schema:

```
CREATE TABLE imcfgregistry (Component VARCHAR2(255),  
instMode VARCHAR2(255),  
IASInstance VARCHAR2(255))  
TABLESPACE OLTS_DEFAULT MONITORING;
```

2. Retry the Oracle Internet Directory upgrade assistant from the Oracle Universal Installer configuration assistants screen.

Problem 3

The Oracle Internet Directory configuration assistant fails during the Configuration Assistants phase of the OracleAS Identity Management upgrade with Oracle Universal Installer.

Solution

Check the contents of the following configuration file in the destination Oracle home and verify that the file contains the correct `SERVICE_NAME` entry for your Metadata Repository. If the value assigned to this entry is incorrect, enter the correct name, save the file, and retry the assistant.

`DESTINATION_ORACLE_HOME\network\admin\tnsnames.ora`

D.2.2 Problem Stopping Processes in Source Oracle Home During OracleAS Identity Management Upgrade

Problem

When you run the Oracle Universal Installer to upgrade OracleAS Identity Management, a popup dialog notifies you that the installer will shut down some processes in the source Oracle home.

After the installer performs the shutdown, it checks that Oracle Internet Directory is stopped. If Oracle Internet Directory is not stopped for some reason, installer will display another popup dialog notifying you of the problem.

Solution

Examine the following log file to determine the cause of the problem:

`DESTINATION_ORACLE_HOME\cfgtoollogs\shutdownprocesses.log`

Resolve the problem and then manually stop Oracle Internet Directory in the source Oracle home. Once Oracle Internet Directory is stopped, continue with the OracleAS Identity Management upgrade by clicking **Continue** in Oracle Universal Installer.

See Also: Chapter "Oracle Internet Directory Process Control–Best Practices" in the *Oracle Internet Directory Administrator's Guide* for information about stopping and starting Oracle Internet Directory

D.2.3 Database Listener Errors When Running Configuration Assistants During OracleAS Identity Management Upgrade

Problem

Oracle Universal Installer invokes configuration assistants at the end of the OracleAS Identity Management upgrade. Some of the configuration assistants require an Oracle Database 10g database listener to connect to the database. If an Oracle Database 10g database listener is not available, those configuration assistants fail.

Often, when this problem occurs, one of the following errors (or a similar error) appears in the installation log files:

```
java.lang.Exception: Error: Database Listener is down. Please start listener
and make sure database is up before running this script.
```

OR

```
java.sql.SQLException: Listener refused the connection with the following
error:
ORA-12500, TNS:listener failed to start a dedicated server process
```

Solution

The installer normally starts an Oracle Database 10g database listener in the destination Oracle home. However, if an Oracle9i Database listener is already running, then the installer fails to start the Oracle Database 10g (10.1.0.2) database listener.

The most common cause of this problem is that you missed the instruction in a pop-up dialog during the installation. This pop-up message indicates during the interview phase of the installation that there is a running database listener running and that you should stop the listener manually before proceeding.

To correct the problem, stop the existing Oracle9i (9.0.1.3) listener, and then start the database listener in the destination Oracle home, as follows:

1. Set the `ORACLE_HOME` environment variable to point to the destination Oracle home of upgrade.
2. Change directory to `bin` directory of the destination Oracle home.
3. Run the `lsnrctl start` command to start the listener.

After the Oracle Database 10g database listener is running, continue with the OracleAS Identity Management upgrade by clicking **Retry** on the Configuration Assistants page in Oracle Universal Installer.

D.2.4 Oracle Directory Integration and Provisioning Configuration Assistant Fails with Time Synchronization Error

Problem

While upgrading a 10g (9.0.4) distributed OracleAS Identity Management environment, the Oracle Directory Integration and Provisioning configuration assistant fails.

When you check the following log file, you notice an error message indicating that there is time difference of at least 250 seconds between two of the OracleAS Identity Management hosts:

```
DESTINATION_ORACLE_HOME\ldap\log\oidmon.log
```

Specifically, the error message says:

```
Time Difference of at least 250 sec found between DIP_hostname and OID_hostname.  
Please sync the time between DIP_hostname and OID_hostname
```

Solution

Synchronize the system clocks on all nodes where the OracleAS Identity Management components reside so they are running within 250 seconds of each other.

When synchronizing the system clocks, make sure the clocks are set to the same time zone.

After you synchronize the clocks, rerun the Oracle Directory Integration and Provisioning configuration assistant.

D.3 OracleAS Metadata Repository Upgrade Issues and Workarounds

The following sections describe common problems and solutions when upgrading your OracleAS Metadata Repository and the database that hosts the OracleAS Metadata Repository:

- [Deciding When to Upgrade an Infrastructure Database](#)
- [Verifying the Progress of the Database Upgrade Assistant During OracleAS Identity Management Upgrade](#)
- [Performance Issues When Using the Metadata Repository Upgrade Assistant \(MRUA\) to Upgrade the OracleAS Portal Schema](#)
- [Database Upgrade Assistant Failure During OracleAS Identity Management Upgrade](#)
- [Problem Upgrading Oracle Workflow and OracleAS Portal Schemas with MRUA](#)

D.3.1 Deciding When to Upgrade an Infrastructure Database

Problem

When a newer version of Oracle Database is announced, should I upgrade the OracleAS Metadata Repository database to the new database version?

Solution

In general, use caution when upgrading your Infrastructure database to a new database version. Check Oracle *Metalink* (<http://metalink.oracle.com>) for posted articles or announcements that confirm that the database version and upgrade has been tested and is supported for an existing OracleAS Metadata Repository database.

See Also: [Section 7.1, "Task 1: Upgrade the Database That Hosts the OracleAS Metadata Repository"](#) for information about supported upgrade paths for the 10g Release 2 (10.1.2) Metadata Repository database

D.3.2 Verifying the Progress of the Database Upgrade Assistant During OracleAS Identity Management Upgrade

Problem

Oracle Universal Installer invokes Database Upgrade Assistant at the end of OracleAS Identity Management Upgrade. Database Upgrade Assistant may take a long time depending on the size and contents of the database. The installer shows progress of the Database Upgrade Assistant by displaying percentage numbers, but no details about the progress are shown on the Configuration Assistants screen in Oracle Universal Installer.

Solution

If you would like to obtain more detailed information about the progress of the Database Upgrade Assistant, examine the log files generated by the Database Upgrade Assistant. The log files reside in:

```
drive_letter_for_install_disk:\admin\SID\upgrade
```

In this example, replace *SID* with the system identifier of the database in the source Oracle home.

To obtain the timestamps of the different stages of the database upgrade, search for the string "COMP_TIME" in the log files. For example,

```
find "COMP_TIME" *.log
```

```
grep ^COMP_TIME *.log
```

The output of the command identifies each stage of the database upgrade, as well as a timestamp for each stage. For example:

```
Oracle_Server.log:COMP_TIMESTAMP DBUPG__BGN 2004-12-16 10:11:00 2453356 36660
Oracle_Server.log:COMP_TIMESTAMP UTLIP__END 2004-12-16 10:12:58 2453356 36778
Oracle_Server.log:COMP_TIMESTAMP CATALG_BGN 2004-12-16 10:27:44 2453356 37664
Oracle_Server.log:COMP_TIMESTAMP CATPROC 2004-12-16 11:18:45
Oracle_Server.log:COMP_TIMESTAMP RDBMS 2004-12-16 11:21:50
Oracle_Server.log:COMP_TIMESTAMP JAVAVM 2004-12-16 12:27:24
Oracle_Server.log:COMP_TIMESTAMP XML 2004-12-16 12:41:17
Oracle_Server.log:COMP_TIMESTAMP CATJAVA 2004-12-16 12:45:03
Oracle_Server.log:COMP_TIMESTAMP CONTEXT 2004-12-16 12:49:17
Oracle_Server.log:COMP_TIMESTAMP XDB 2004-12-16 12:56:32
Oracle_Server.log:COMP_TIMESTAMP OWM 2004-12-16 13:01:14
Oracle_Server.log:COMP_TIMESTAMP AMD 2004-12-16 13:11:04
Oracle_Server.log:COMP_TIMESTAMP ORDIM 2004-12-16 13:43:34
Oracle_Server.log:COMP_TIMESTAMP SDO 2004-12-16 13:52:30
Oracle_Server.log:COMP_TIMESTAMP WK 2004-12-16 13:56:24
Oracle_Server.log:COMP_TIMESTAMP DBUPG_END 2004-12-16 14:10:39
PostUpgrade.log:COMP_TIMESTAMP UTLRP_BGN 2004-12-16 14:12:32
PostUpgrade.log:COMP_TIMESTAMP UTLRP_END 2004-12-16 15:29:47
```

D.3.3 Performance Issues When Using the Metadata Repository Upgrade Assistant (MRUA) to Upgrade the OracleAS Portal Schema

Problem 1

The first time you run MRUA, the OracleAS Portal component (or plug-in) appears to hang or stop working while upgrading the OracleAS Portal schema.

Problem 2

If you run MRUA after the OracleAS Portal schema has already been upgraded, the OracleAS Portal MRUA plug-in, unlike other component MRUA plug-ins, does not immediately report the fact that OracleAS Portal has already been upgraded.

Solution

In most cases, no solution is necessary. Simply wait until the OracleAS Portal component of MRUA finishes processing.

The OracleAS Portal component of MRUA performs an extensive sequence of pre-checks that can take several minutes to finish.

In addition, the OracleAS Portal component of MRUA executes for a much longer period of time than any of the other plug-ins. As a result, it can take up to 40 minutes to run.

If Portal plug-in appears to be hanging, review the log files in the following directory to determine whether or not portal upgrade is progressing:

```
MRUA_HOME\temp\portal
```

Do not abort MRUA during the OracleAS Portal schema upgrade without first verifying that Portal upgrade has actually stopped processing.

D.3.4 Database Upgrade Assistant Failure During OracleAS Identity Management Upgrade

Oracle Universal Installer invokes Database Upgrade Assistant at the end of OracleAS Identity Management Upgrade. If the Database Upgrade Assistant fails, you can examine the log files generated by the Database Upgrade Assistant. The log files reside in:

```
drive_letter_for_install_disk:\admin\SID\upgrade
```

In this example, replace *SID* with the system identifier of the database in the source Oracle home.

Examine the log files and determine the cause of the failure. In most cases, it is not possible to retry the Database Upgrade Assistant. Instead, you will need to restore the source Oracle home and the database files to their state before the OracleAS Identity Management Upgrade. After the restoration, make sure that the problems which caused the Database Upgrade Assistant to fail are resolved. Then run OracleAS Identity Management Upgrade again.

D.3.5 Problem Upgrading Oracle Workflow and OracleAS Portal Schemas with MRUA

Problem

When running MRUA, both the Oracle Workflow and OracleAS Portal upgrades fail and result in invalid versions.

The following error appears in the log files:

```
EXP-00056: ORACLE error 942 encountered  
ORA-00942: table or view does not exist  
EXP-00000: Export terminated unsuccessfully  
Ending export at Mon May 30 02:59:21 2005
```

Solution

This error can be caused by providing an incorrect value for the `-oracle_home` argument on the MRUA command line. When running MRUA be sure to enter the Oracle home of the OracleAS Metadata Repository. This is especially important when upgrading a non-colocated Infrastructure where the OracleAS Metadata Repository is in its own Oracle home.

See Also: [Section 7.4.5, "Running the Metadata Repository Upgrade Assistant \(MRUA\)"](#) for more information about the MRUA command-line arguments

D.4 Need More Help?

You can find more solutions on Oracle *MetaLink*, <http://metalink.oracle.com>. If you do not find a solution for your problem, log a service request.

See Also: *Oracle Application Server Release Notes*, available on the Oracle Technology Network:

<http://www.oracle.com/technology/documentation/>

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