

Oracle® Fusion Middleware

Upgrade Guide for Oracle WebCenter Interaction for UNIX and Linux

10g Release 3 (10.3.0.1)

E14550-02

September 2009

This book describes how to upgrade to Oracle WebCenter Interaction for UNIX and Linux 10g Release 3 (10.3.0.1) from previous versions. It is designed to be a quick reference for users with installation or upgrade experience, while also providing detailed instructions for users upgrading for the first time.

1 Audience

This documentation is written for the user responsible for upgrading this product. This user must have strong knowledge of the platform operating system, database, web and application servers, and any other third-party software required for upgrade.

2 Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible to all users, including users that are disabled. To that end, our documentation includes features that make information available to users of assistive technology. This documentation is available in HTML format, and contains markup to facilitate access by the disabled community. Accessibility standards will continue to evolve over time, and Oracle is actively engaged with other market-leading technology vendors to address technical obstacles so that our documentation can be accessible to all of our customers. For more information, visit the Oracle Accessibility Program Web site at <http://www.oracle.com/accessibility/>.

Accessibility of Code Examples in Documentation

Screen readers may not always correctly read the code examples in this document. The conventions for writing code require that closing braces should appear on an otherwise empty line; however, some screen readers may not always read a line of text that consists solely of a bracket or brace.

Accessibility of Links to External Web Sites in Documentation

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

Deaf/Hard of Hearing Access to Oracle Support Services

To reach Oracle Support Services, use a telecommunications relay service (TRS) to call Oracle Support at 1.800.223.1711. An Oracle Support Services engineer will handle technical issues and provide customer support according to the Oracle service request process. Information about TRS is available at

<http://www.fcc.gov/cgb/consumerfacts/trs.html>, and a list of phone numbers is available at <http://www.fcc.gov/cgb/dro/trsphonebk.html>.

3 Related Documents

For more information, see the following documents in the Oracle WebCenter Collaboration 10g Release 3 (10.3.0.1) documentation set:

- *Oracle WebCenter Interaction Release Notes*
- *Oracle Fusion Middleware Administrator's Guide for Oracle WebCenter Interaction*
- *Oracle Fusion Middleware User's Guide for Oracle WebCenter Interaction*

4 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.

5 Prerequisites

This chapter describes the prerequisites that must be met before you upgrade Oracle WebCenter Interaction.

5.1 Software Requirements

The following sections list the software requirements for Oracle WebCenter Interaction.

- [Section 5.1.1, "Requirements for RedHat Linux Environments"](#)
- [Section 5.1.2, "Requirements for Oracle Enterprise Linux Environments"](#)
- [Section 5.1.3, "Requirements for Novell SuSE Linux Environments"](#)
- [Section 5.1.4, "Requirements for Sun Solaris Environments"](#)
- [Section 5.1.5, "Requirements for IBM AIX Environments"](#)
- [Section 5.1.6, "Requirements for HP-UX Environments"](#)
- [Section 5.1.7, "Supported Web Browsers"](#)

For the most current platform support information, see the BEA AquaLogic User Interaction spreadsheet on the Oracle Product Supported Configurations page at http://download.oracle.com/docs/cd/E13196_01/platform/suppconfigs/index.html.

For more information on recommended configurations based on the size of your implementation, see the section about provisioning computers in the *Oracle Fusion Middleware Deployment Planning Guide for Oracle WebCenter Interaction*.

For client requirements for using Oracle WebCenter Collaboration's Bulk Upload feature, see *Oracle Fusion Middleware Administrator's Guide for Oracle WebCenter Collaboration*.

Caution: IPv6 is not supported. You should verify that IPv6 is not enabled prior to upgrading this product.

5.1.1 Requirements for RedHat Linux Environments

This section lists the requirements for RedHat Linux environments.

- Operating System:
 - RedHat Enterprise Linux ES 4.0 update 3 on x86
 - RedHat Enterprise Linux ES 5.2 on x86
- Application Servers:
 - Apache Tomcat 6.0.14 with Sun JDK 1.5.0.1 or BEA jRockit 1.5.0.12
 - Oracle-BEA WebLogic Server 9.2 MP1 with Sun JRE 1.5.0.1 or BEA jRockit 1.5.0.12
 - Oracle-BEA WebLogic Server 10.0 MP1, MP2, or MP3 with Sun JRE 1.5.0.1 or BEA jRockit 1.5.0.12
 - Oracle WebLogic Server 10gR3 (10.3.0) with Oracle JRockit
- Databases:
 - Oracle 9i Database (9.2.0.7) in default or Oracle Real Application Clusters (RAC) configuration
 - Oracle Database 10g (10.1.0.3) or Oracle Database 10gR2 (10.2.0.x and above) in default or Oracle Real Application Clusters (RAC) configuration
 - Oracle 11g (11.1.0.6 and above) in default or Oracle Real Application Clusters (RAC) configuration

When running Oracle WebCenter Interaction with Oracle 11g with the provided `initPLUM10.ora` file, make the following modification: change `compatible = 10.2.0.0.0` to `compatible = 11.0.0`. Also, to prevent problems with "group by" optimizations when using Oracle WebCenter Interaction with Oracle Database 11g, you must add the following parameter to the bottom of the `init$ORACLE_SID.ora` file: `_optimizer_group_by_placement=false`

Note: If you are upgrading Oracle Database from 10.1.x to 10.2.x, you should perform this upgrade before upgrading Oracle WebCenter Interaction.

- Virtualization Systems:
 - VMWare ESX 3 and above

5.1.2 Requirements for Oracle Enterprise Linux Environments

This section lists the requirements for Oracle Enterprise Linux environments.

- Operating System:
 - Oracle Enterprise Linux 4.7 or 5.2
- Application Servers:
 - Apache Tomcat 6.0.14 with Sun JDK 1.5.0.1 or BEA jRockit 1.5.0.12
 - Oracle-BEA WebLogic Server 9.2 MP1 with Sun JRE 1.5.0.1 or BEA jRockit 1.5.0.12
 - Oracle-BEA WebLogic Server 10.0 MP1, MP2, or MP3 with Sun JRE 1.5.0.1 or BEA jRockit 1.5.0.12
 - Oracle WebLogic Server 10gR3 (10.3.0) with Oracle JRockit
- Databases:
 - Oracle 9i Database (9.2.0.7) in default or Oracle Real Application Clusters (RAC) configuration
 - Oracle Database 10g (10.1.0.3) or Oracle Database 10gR2 (10.2.0.x and above) in default or Oracle Real Application Clusters (RAC) configuration
 - Oracle 11g (11.1.0.6 and above) in default or Oracle Real Application Clusters (RAC) configuration

When running Oracle WebCenter Interaction with Oracle 11g with the provided initPLUM10.ora file, make the following modification: change `compatible = 10.2.0.0.0` to `compatible = 11.0.0`. Also, to prevent problems with “group by” optimizations when using Oracle WebCenter Interaction with Oracle Database 11g, you must add the following parameter to the bottom of the init\$ORACLE_SID.ora file: `_optimizer_group_by_placement=false`

Note: If you are upgrading Oracle Database from 10.1.x to 10.2.x, you should perform this upgrade before upgrading Oracle WebCenter Interaction.

- Virtualization Systems:
 - None

5.1.3 Requirements for Novell SuSE Linux Environments

This section lists the requirements for Novell SuSE Linux environments.

- Operating System:
 - SuSE Enterprise Linux SLES 9 or 10 on x86
- Application Servers:
 - Apache Tomcat 6.0.14 with Sun JDK 1.5.0.1 or BEA jRockit 1.5.0.12
 - Oracle-BEA WebLogic Server 9.2 MP1 with Sun JRE 1.5.0.1 or BEA jRockit 1.5.0.12
 - Oracle-BEA WebLogic Server 10.0 MP1, MP2, or MP3 with Sun JRE 1.5.0.1 or BEA jRockit 1.5.0.12
 - Oracle WebLogic Server 10gR3 (10.3.0) with Oracle JRockit

- Databases:
 - Oracle 9i Database (9.2.0.7) in default or Oracle Real Application Clusters (RAC) configuration
 - Oracle Database 10g (10.1.0.3) or Oracle Database 10gR2 (10.2.0.x and above) in default or Oracle Real Application Clusters (RAC) configuration
 - Oracle 11g (11.1.0.6 and above) in default or Oracle Real Application Clusters (RAC) configuration

When running Oracle WebCenter Interaction with Oracle 11g with the provided initPLUM10.ora file, make the following modification: change `compatible = 10.2.0.0.0` to `compatible = 11.0.0`. Also, to prevent problems with “group by” optimizations when using Oracle WebCenter Interaction with Oracle Database 11g, you must add the following parameter to the bottom of the init\$ORACLE_SID.ora file: `_optimizer_group_by_placement=false`

Note: If you are upgrading Oracle Database from 10.1.x to 10.2.x, you should perform this upgrade before upgrading Oracle WebCenter Interaction.

- Virtualization Systems:
 - VMWare ESX 3 and above

5.1.4 Requirements for Sun Solaris Environments

This section lists the requirements for Sun Solaris environments.

- Operating System:
 - Solaris 9** or 10 on 64-bit SPARC

Solaris 9 requires the following patch: 111711-15 (32-bit Shared library patch for C++) or 111712-15 (64-bit Shared library patch for C++).
- Application Servers:
 - Apache Tomcat 6.0.14 with Sun JDK 1.5.0.1 or BEA jRockit 1.5.0.12
 - Oracle-BEA WebLogic Server 9.2 MP1 with Sun JRE 1.5.0.1 or BEA jRockit 1.5.0.12
 - Oracle-BEA WebLogic Server 10.0 MP1, MP2, or MP3 with Sun JRE 1.5.0.1 or BEA jRockit 1.5.0.12
 - Oracle WebLogic Server 10gR3 (10.3.0) with Oracle JRockit
- Databases:
 - IBM DB2 UDB 9.5
 - Oracle 9i Database (9.2.0.7) in default or Oracle Real Application Clusters (RAC) configuration
 - Oracle Database 10g (10.1.0.3) or Oracle Database 10gR2 (10.2.0.x and above) in default or Oracle Real Application Clusters (RAC) configuration
 - Oracle 11g (11.1.0.6 and above) in default or Oracle Real Application Clusters (RAC) configuration

When running Oracle WebCenter Interaction with Oracle 11g with the provided initPLUM10.ora file, make the following modification: change `compatible = 10.2.0.0.0` to `compatible = 11.0.0`. Also, to prevent problems with “group by” optimizations when using Oracle WebCenter Interaction with Oracle Database 11g, you must add the following parameter to the bottom of the init\$ORACLE_SID.ora file: `_optimizer_group_by_placement=false`

Note: If you are upgrading Oracle Database from 10.1.x to 10.2.x, you should perform this upgrade before upgrading Oracle WebCenter Interaction.

- Virtualization Systems:
 - Solaris 10 Containers (Zones)

5.1.5 Requirements for IBM AIX Environments

This section lists the requirements for IBM AIX environments.

- Operating System:
 - IBM AIX 5.3 on 64-bit POWER

IBM AIX requires the following patches: AIX 5.3 Service pack 5300-05-06 and July 2007 IBM C++ Runtime Environment Component for AIX.
- Application Servers:
 - WebSphere 6.1 with IBM JDK 1.5.0
- Databases:
 - IBM DB2 UDB 9.5
 - Oracle 9i Database (9.2.0.7) in default or Oracle Real Application Clusters (RAC) configuration
 - Oracle Database 10g (10.1.0.3) or Oracle Database 10gR2 (10.2.0.x and above) in default or Oracle Real Application Clusters (RAC) configuration
 - Oracle 11g (11.1.0.6 and above) in default or Oracle Real Application Clusters (RAC) configuration

When running Oracle WebCenter Interaction with Oracle 11g with the provided initPLUM10.ora file, make the following modification: change `compatible = 10.2.0.0.0` to `compatible = 11.0.0`. Also, to prevent problems with “group by” optimizations when using Oracle WebCenter Interaction with Oracle Database 11g, you must add the following parameter to the bottom of the init\$ORACLE_SID.ora file: `_optimizer_group_by_placement=false`

Note: If you are upgrading Oracle Database from 10.1.x to 10.2.x, you should perform this upgrade before upgrading Oracle WebCenter Interaction.

- Virtualization Systems:

- IBM Dynamic Logical Partitioning (LPAR)

5.1.6 Requirements for HP-UX Environments

This section lists the requirements for HP-UX environments.

- Operating System:
 - HP-UX 11i v2 or v3 on 64-bit Itanium
- Application Servers:
 - Oracle-BEA WebLogic Server 9.2 MP1 with Sun JRE 1.5.0.1 or BEA jRockit 1.5.0.12
 - Oracle-BEA WebLogic Server 10.0 MP1, MP2, or MP3 with Sun JRE 1.5.0.1 or BEA jRockit 1.5.0.12
 - Oracle WebLogic Server 10gR3 (10.3.0) with Oracle JRockit
- Databases:
 - Oracle 9i Database (9.2.0.7) in default or Oracle Real Application Clusters (RAC) configuration
 - Oracle Database 10g (10.1.0.3) or Oracle Database 10gR2 (10.2.0.x and above) in default or Oracle Real Application Clusters (RAC) configuration
 - Oracle 11g (11.1.0.6 and above) in default or Oracle Real Application Clusters (RAC) configuration

When running Oracle WebCenter Interaction with Oracle 11g with the provided initPLUM10.ora file, make the following modification: change `compatible = 10.2.0.0.0` to `compatible = 11.0.0`. Also, to prevent problems with “group by” optimizations when using Oracle WebCenter Interaction with Oracle Database 11g, you must add the following parameter to the bottom of the init\$ORACLE_SID.ora file: `_optimizer_group_by_placement=false`

Note: If you are upgrading Oracle Database from 10.1.x to 10.2.x, you should perform this upgrade before upgrading Oracle WebCenter Interaction.

- Virtualization Systems:
 - None

5.1.7 Supported Web Browsers

This section lists web browser support.

- Mozilla Firefox 2.0 and 3.0
- Microsoft Internet Explorer 6.0 or 7.0
- Apple Safari 2.0 or 3.0 (Mac and Windows)

5.2 User and Group Requirements

This section describes the user and group requirements for Oracle WebCenter products on UNIX and Linux platforms.

We recommend that you create a user and group that will own the portal installation. The following table lists recommended values for a user, a group, and Oracle WebCenter directories.

Preinstall Setting	Standard Value	Notes
ALI Group Name	ali	Local group with a fixed ID
ALI User	ali	Local group with a fixed ID
PT_HOME	/opt/bea/alui	Owned by ALI user and group

5.2.1 Important Information

The same values for these users, groups, and directories should be used across all computers hosting portal components. Local users and groups with fixed IDs are recommended. Secure deployments should avoid NIS users for computer security. Using the same local user and group for all Oracle WebCenter services allows an administrator to lock down host computers and audit activity.

For convenience, `preinstall.sh`, a script to create users, groups and directories, is provided with the distribution. For details on running the preinstall script, see [Section 5.3, "Running the UNIX Preinstall Script."](#)

You must also grant this user and group access rights to the Oracle Inventory directories. For details, see [Section 5.4, "Granting User and Group Access Rights to Oracle Inventory Directories."](#)

5.3 Running the UNIX Preinstall Script

This section describes how to use the preinstall script to create users and groups for Oracle WebCenter Interaction on UNIX and Linux.

The `preinstall.sh` script creates a user, a group and directories with permissions appropriate for a Oracle WebCenter Interaction installation on UNIX. The script is interactive, asking you a series of questions about the values to be configured.

1. Review the `preinstall.sh` script.
2. Log in as root to become **superuser**.
3. Make a temporary directory for the files and allow all users to access these files by typing:

```
# mkdir /tmp/plumtree# chmod 777 /tmp/plumtree
```

4. Copy the preinstall file by typing:

```
# cd /tmp/plumtree# cp /install_dir/scripts/preinstall.sh .
```

5. Run the `preinstall.sh` script by typing:

```
# ./preinstall.sh
```

Be sure to carefully review any output from the script.

6. Change the password of the newly created user by typing:

```
# passwd ali
```

7. Enter the login password.

8. Log out as **superuser**.

5.4 Granting User and Group Access Rights to Oracle Inventory Directories

Oracle Inventory contains files that provide the Oracle Universal Installer with the locations of the ORACLE_HOME directories on a particular computer. For Oracle Inventory to function properly, the user that installs Oracle WebCenter Interaction must have access rights to the directories that contain Oracle Inventory's files. You can set the user and group access rights for these directories by running the ouais.sh shell script.

1. Log in to the remote server host computer as the root user.
2. Copy the ouais.sh script to the computer onto which you will be installing Oracle WebCenter Interaction.

This script is located in the same location as the Oracle WebCenter Interaction installer file.

3. Change the current directory (cd) to be the directory to which you copied the ouais.sh script.
4. Run the ouais.sh shell script.

As arguments to the script, specify the ALI user and group you created that will run the Oracle WebCenter Interaction installer. For details, see [Section 5.2, "User and Group Requirements."](#) For example, you would use the following command to run the ouais.sh script from the root shell:

```
./ouais.sh -u <oracleuser> -g <oraclegroup>
```

The ouais.sh script creates the Oracle Inventory directory if it did not exist before you ran the script. Additionally, the script grants user and group ownership to the directories that contain the files that are used by Oracle Inventory.

5.5 Oracle Environment Variables

This table describes the Oracle Environment variables that must be set when installing Oracle WebCenter products to UNIX or Windows instances of Oracle 9i or 10g.

Environment Variable	Description	Example Values
ORACLE_BASE	Must be set to the root directory of your Oracle installation.	<ul style="list-style-type: none">▪ (UNIX) /opt/oracle▪ (Windows) C:\oracle
ORACLE_HOME	Must be set to the home directory of your Oracle installation.	<ul style="list-style-type: none">▪ (UNIX) /opt/oracle/ora92▪ (Windows) C:\oracle\ora92
ORACLE_SID	Must be set to the system ID (SID) of the portal database instance.	<ul style="list-style-type: none">▪ (Oracle 9i) PLUM▪ (Oracle 10g) PLUM10 <p>Note: PLUM or PLUM10 are expected by the SQL scripts. If you set your SID to a value other than these example values, you must edit the SQL scripts to reflect this change.</p>

6 Upgrading from Oracle WebCenter Interaction 10.3 to Oracle WebCenter Interaction 10.3.0.1

This section provides an outline of the tasks required to upgrade Oracle WebCenter Interaction 10.3 to Oracle WebCenter Interaction 10.3.0.1 on UNIX and Linux platforms.

1. If you have multiple search nodes in a search cluster, purge the contents of your search cluster.

For details, see [Section 6.1, "Purging the Search Cluster."](#)

2. Shut down your search node(s).

```
Run install_dir/ptsearchserver/10.3.0/bin/searchserverd.sh
stop.
```

Note: This must be done on each computer that hosts a search node.

3. Shut down your application server.
4. Upgrade your portal servers, automation servers, document repository, and search server components using the Oracle WebCenter Interaction 10.3.0.1 installer (WebCenterInteraction_Patch_10.3.0.1.0).

For details, see [Section 6.2, "Oracle WebCenter Interaction 10.3.0.1 Installer Wizard Pages on UNIX and Linux."](#)

Note: You must run the installer as a user that has access rights to the Oracle Inventory directories. If you have not granted these rights to the installing user, complete the steps described in [Section 5.4, "Granting User and Group Access Rights to Oracle Inventory Directories."](#)

5. Restart portal and start your search node(s).
Do not start the automation servers.
6. Rebuild your portal search index.
For details, see [Section 6.3, "Rebuilding the Search Index."](#)
7. Upgrade any other Oracle WebCenter products you have installed using the associated 10.3.0.1 installers.

For example, if you use identity services, content services, Oracle WebCenter Collaboration, Oracle WebCenter Analytics, or any other Oracle WebCenter products, you must also upgrade those products. For details, see the upgrade guides for the associated products.

8. If you are using Oracle WebCenter Collaboration or Oracle-BEA AquaLogic Interaction Publisher, rebuild the associated indexes.

To rebuild the indexes, access the administration utility for each product through your portal. For details, see the following administrator guides:

- *Oracle Fusion Middleware Administrator's Guide for Oracle WebCenter Collaboration*

- *Administrator Guide for AquaLogic Interaction Publisher*

9. Start your automation servers.

6.1 Purging the Search Cluster

This section describes how to use the `cadmin` tool to purge the search cluster.

All nodes in the cluster must be running to purge cluster contents.

1. Log in to any of the computers hosting a cluster node.
2. Change to the directory containing the cluster administration utility.
The directory is `install_dir/ptsearchserver/10.3.0/bin`
3. Execute `cadmin purge --remove`

6.2 Oracle WebCenter Interaction 10.3.0.1 Installer Wizard Pages on UNIX and Linux

This section provides a table describing the wizard pages of the Oracle WebCenter Interaction 10.3.0.1 installer for UNIX and Linux installations.

Wizard Page	Description
Introduction	This installer wizard page provides a brief description of the installer and describes how to run the installer in silent mode.
Installation Folder	Accept the default installation folder or select a different folder in which to install Oracle WebCenter Interaction. Default: <code>/opt/bea</code>
Choose Install Set	Select either Complete or Custom . If you select Complete , a full set of Oracle WebCenter Interaction components is installed. If you select Custom , you can select individual portal components to install according to your deployment plan.
Configuration Manager - Update	This page is displayed if an existing installation of Oracle WebCenter Configuration Manager 2.0 is detected. Select if you want to update the password or port information for Oracle WebCenter Configuration Manager or use the existing settings.
Configuration Manager - Port and Password	Enter the port and password for the Configuration Manager web tool. The Configuration Manager is used to complete the installation of Oracle WebCenter Interaction.
Stand-alone or Cluster	Select whether you would like to install a Single Stand-alone Search Node or add or replace a Search Cluster Node . Selecting to install the stand-alone search node installs a single node on the local computer. If you want to support failover, add or replace search cluster nodes.
Search Nodes	Select to add a new search node or replace an existing node. Note: Selecting to replace an existing node removes all information about the node that you are replacing from the system.

Wizard Page	Description
Adding New Search Node	Enter the name and port number of the new search node. The search node is installed into <code>install_dir/ptsearchserver/10.3.0</code> .
Search Cluster Files	Select the location of the search cluster files. You must have permission to access and write to the location where you want to install these files. Search cluster files are only installed if they do not exist in the location that you select. Example: <code>install_dir/ptsearchserver/10.3.0/cluster/</code>
Pre-Installation Summary	Review the list of components to be installed. Click Install .
Launch Configuration Manager	Launch the Configuration Manager. The Configuration Manager is located at: <code>https://host:port/</code> Where <i>host</i> is the host you are installing on and <i>port</i> is the port you specified. Log in to the Configuration Manager using the user name <code>administrator</code> and the password you specified on the Configuration Manager – Port and Password page. The Configuration Manager displays a list of all recently installed components. Clicking the link next to each component leads you through the settings you need to configure to complete the installation. For information on the settings in the Configuration Manager, refer to the Configuration Manager online help or to the <i>Oracle Fusion Middleware Administrator's Guide for Oracle WebCenter Interaction</i> . When you have completed all Configuration Manager tasks, return to the installer and click Done .

6.3 Rebuilding the Search Index

This section describes the proper procedure for rebuilding your Search index.

Note: We do not recommend clicking **Run Once** from the administrative folder or selecting **Run Once** from the Job Editor. If you click **Run Once** from the administrative folder, the job log is not available in the Job Editor, which may inhibit troubleshooting if the rebuild fails. If you select **Run Once** from within the Job Editor, the **Search Update Agent** is not scheduled to run again in the future.

1. Log in to the portal as the administrator.
2. Click **Administration**.
3. From the **Select Utility** drop-down menu, select **Search Service Manager**.
4. Schedule the next search repair to occur either in the past or in the very near future.
5. Click **Finish**.

6. Navigate to the administrative folder that contains the search update agents that are registered with the Automation Service.
7. Schedule a search update agents to run in the past or in the very near future.
8. Click **Finish**.

The next search update agent that runs rebuilds the search index.

Oracle Fusion Middleware Upgrade Guide for Oracle WebCenter Interaction for Unix and Linux, 10g Release 3 (10.3.0.1)
E14550-02

Copyright © 2009, Oracle and/or its affiliates. All rights reserved.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this software or related documentation is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, the following notice is applicable:

U.S. GOVERNMENT RIGHTS Programs, software, databases, and related documentation and technical data delivered to U.S. Government customers are "commercial computer software" or "commercial technical data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, duplication, disclosure, modification, and adaptation shall be subject to the restrictions and license terms set forth in the applicable Government contract, and, to the extent applicable by the terms of the Government contract, the additional rights set forth in FAR 52.227-19, Commercial Computer Software License (December 2007). Oracle USA, Inc., 500 Oracle Parkway, Redwood City, CA 94065.

This software is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications which may create a risk of personal injury. If you use this software in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure the safe use of this software. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software in dangerous applications.

Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.

This software and documentation may provide access to or information on content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services.

