

# **Oracle® Clearance Optimization Engine**

Installation Guide

Release 13.1

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Primary Author: Anirudha Accanoor

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## **A Installation Order**

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# Preface

This guide enables you to install the Oracle Retail Clearance Optimization Engine, along with the server-side components.

## Audience

This guide is intended for system administrators and assumes that you are familiar with the following:

- Installing, configuring, and managing the application server software and security.
- Installing, configuring, and managing the relational database management systems. You must be familiar with the Database Administrator (DBA) level commands and tasks.
- Installing, configuring, and managing the distributed client/server applications on a UNIX-based local area network.

## Related Documents

For more information about using the Clearance Optimization Engine, the following documents are available in the Oracle Retail Clearance Optimization Engine Release 13.1 documentation set:

- *Oracle Retail Clearance Optimization Engine Release Notes*
- *Oracle Retail Clearance Optimization Engine Administration Guide*
- *Oracle Retail Clearance Optimization Engine Configuration Guide*
- *Oracle Retail Clearance Optimization Engine Operations Guide*

## Customer Support

To contact Oracle Customer Support, access My Oracle Support at the following URL:

- <https://metalink.oracle.com>

When contacting Customer Support, please provide:

- Product version and program/module name
- Functional and technical description of the problem (include business impact)
- Detailed step-by-step instructions to recreate
- Exact error message received

- Screen shots of each step you take

## Review Patch Documentation

If you are installing the application for the first time, you install either a base release (for example, 13.0) or a later patch release (for example, 13.0.2). If you are installing a software version other than the base release, be sure to read the documentation for each patch release (since the base release) before you begin installation. Patch documentation can contain critical information related to the base release and code changes that have been made since the base release.

## Oracle Retail Documentation on the Oracle Technology Network

In addition to being packaged with each product release (on the base or patch level), all Oracle Retail documentation is available on the following Web site (with the exception of the Data Model which, if available, is only included with the release packaged code):

[http://www.oracle.com/technology/documentation/oracle\\_retail.html](http://www.oracle.com/technology/documentation/oracle_retail.html)

Documentation should be available on this Web site within a month after a product release. Note that documentation is always available with the packaged code on the release date.

## Conventions

The following text conventions are used in this document:

| <b>Convention</b> | <b>Meaning</b>   |
|-------------------|--|
| <b>boldface</b>   | 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. |

This chapter provides an overview of Oracle Retail Clearance Optimization Engine and a roadmap to install Clearance Optimization Engine (COE). It contains the following sections:

- [Overview of Clearance Optimization Engine](#)
- [Overview of Oracle Configuration Manager](#)
- [Roadmap for Implementing Clearance Optimization Engine](#)

## Overview of Clearance Optimization Engine

The Clearance Optimization Engine (COE) provides remote access to the WhatIf RMI interface via an RPAS special expression. This allows the application *Oracle Retail Item Planning* (certified with COE) to produce in-season price recommendations and forecasts that account for planned promotions and future markdowns in the product life cycle. The forecast includes a sales plan and an optimal price plan.

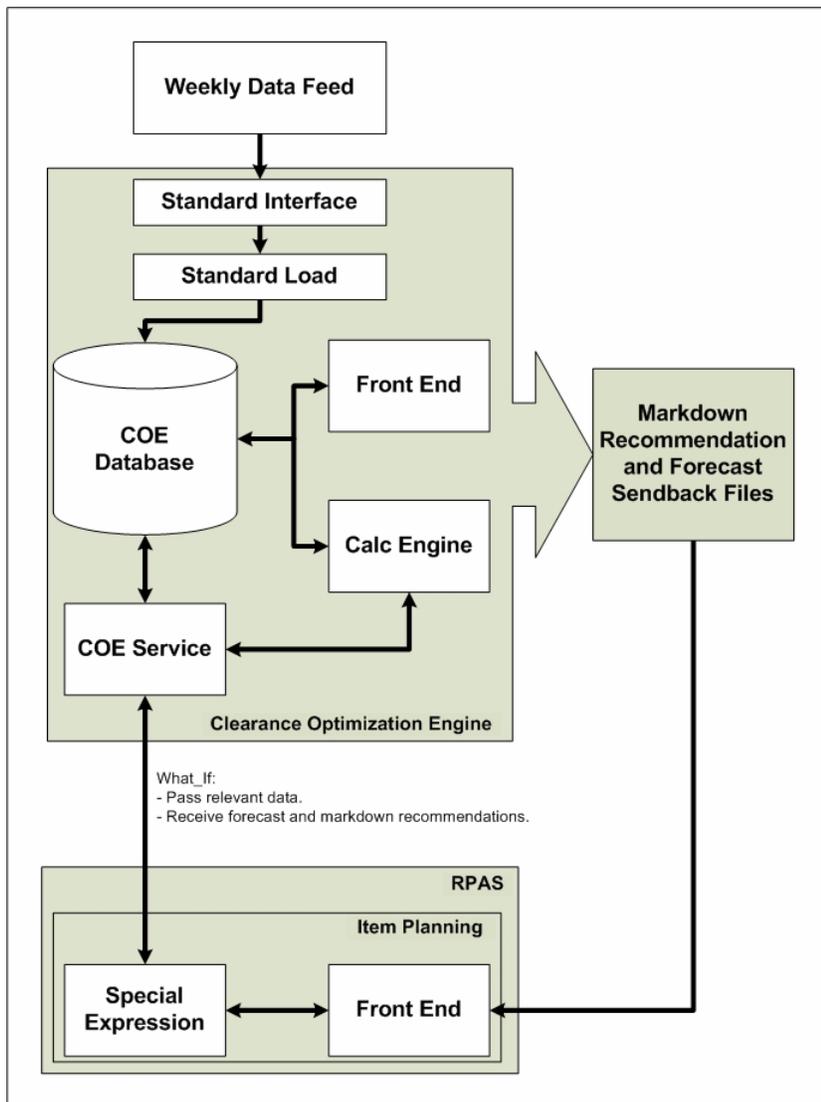
COE produces its recommendations during the weekly model run. The results of the model run are available in the sendback files that are generated from the results stored in the database.

Users have the ability to perform real-time What-If from within Item Planning and alter plans in order to see the results of those changes. The changes include changing future prices, changing an order, changing the exit date, changing the salvage value, and changing the sell-through target.

Business rules can also be imported from Item Planning into COE in a format that follows the COE standard interface. This load occurs weekly.

COE provides a sendback functionality that makes the model run results available to the Item Planning application. The relationship between COE and Item Planning is shown in [Figure 1-1, "Relationship between COE and Item Planning"](#).

**Figure 1-1 Relationship between COE and Item Planning**



**Supported Languages**

Clearance Optimization Engine is available in the following languages:

- Chinese (Simplified)
- Chinese (Traditional)
- English
- French
- German
- Italian
- Japanese
- Korean
- Portuguese (Brazilian)
- Russian

- Spanish

Clearance Optimization Engine depends on both the browser settings and the regional settings to determine which language is being supported for a specific implementation.

Clearance Optimization Engine does support multiple languages within a single installation. It does not support multiple currencies within a single installation.

### Translation

Translation is the process of interpreting and adapting text from one language into another. Although the code itself is not translated, components of the application that are translated include:

- Graphical user interface (GUI)
- Error messages

The following components are not translated:

- Documentation (Online Help, Release Notes, Installation Guide, User Guide, Operations Guide)
- Batch programs and messages
- Log files
- Configuration Tools
- Reports
- Demo data
- Training materials

For more information, refer to the chapter *Localization* in the *Oracle Retail Clearance Optimization Engine Configuration Guide*.

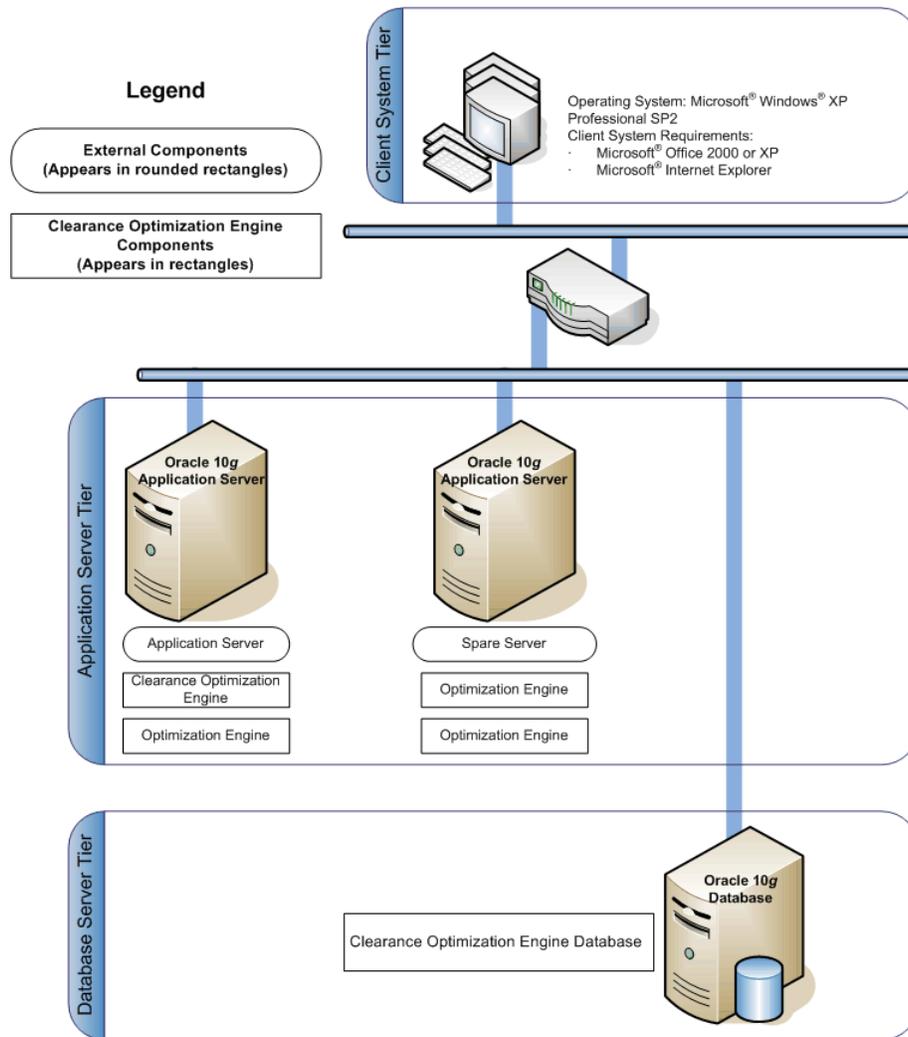
## Clearance Optimization Engine Enterprise Components

The Clearance Optimization Engine is a distributed application, using an application server as the platform for the services, a database, and several other software components. It contains the following components:

- [Client System Tier](#)
- [Application Server Tier](#)
- [Database Server Tier](#)
- [Optional Components](#)

The following diagram depicts a typical setup for a large retailer at chain level or a specialty retailer at region level:

**Figure 1–2 Clearance Optimization Engine Network Diagram**



**Client System Tier**

The Client System tier contains the systems that connect to the Clearance Optimization Engine using a Web browser. It includes systems with the following components:

- Microsoft Windows
- Microsoft Office
- Microsoft Internet Explorer 7.0, with ActiveX control

**Application Server Tier**

The Application Server tier contains the application server domains, clusters, and managed servers set up as a platform used by Clearance Optimization Engine. This tier includes the following components hosted on the application server (Oracle Application Server):

- Clearance Optimization Engine – The Clearance Optimization Engine resides on a domain configured on this application server. You can install and run multiple instances of the application server or multiple application server machines, based on your business needs.

- Calculation Engine – It also installs on a specific domain configured on the application server. To improve performance, you can install and run multiple engines, and move them to any other production server within your environment as needed.

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**Note:** Since the application and Calculation Engine are used at different times, you can choose to set up a single host for the application and Calculation Engine.

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### **Database Server Tier**

The Database Server tier contains the systems configured with the database management systems (Oracle 10g Database) along with the necessary database software.

- Relational database management system.
- Clearance Optimization Engine Database – contains historical sales and other business information that originates from systems external to Clearance Optimization Engine.

### **Optional Components**

- Additional computational servers for implementing the Calculation Engine in a large-scale environment.
- Additional application server machines for implementing Clearance Optimization Engine for a large number of users.

## **Overview of Oracle Configuration Manager**

Oracle Premier Support offers an automated support capability through the Software Configuration Manager and Oracle Configuration Manager (OCM). OCM is a configuration data collector that provides continuous tracking of key Oracle and system configuration settings for machines on which it is installed. This tool collects configuration details for customer environments and uploads it to a repository that is viewable through the My Oracle Support Web site.

The OCM Installer packaged with this release installs the latest version of OCM. The following document is available through My Oracle Support (formerly MetaLink). Access My Oracle Support at the following URL:

<https://metalink.oracle.com>

### ***Oracle Configuration Manager Installer Guide (Doc ID: 835024.1)***

This guide describes the procedures and interface of the Oracle Retail Oracle Configuration Manager Installer that a retailer runs near the completion of its installation process.

### **OCM Documentation Link**

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

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**Important:** In case you choose to install the OCM collector, ensure that you have the My Oracle Support user account name, customer support identification number, and the country code (where the support agreement was issued) for the OCM installation.

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## Roadmap for Implementing Clearance Optimization Engine

This guide explains how you can install and set up the Clearance Optimization Engine, along with the required and optional software.

The instructions in this guide assume knowledge of application servers, databases, and application installation or administration, and are intended for system administrators and experienced IT personnel. Before carrying out any of these activities, ensure that you understand UNIX commands (including shell configuration and scripting), directory operations, and symlinks.

In order to implement Clearance Optimization Engine for production, you must perform the following tasks in a sequence:

**Table 1–1 Roadmap for Implementing Clearance Optimization Engine**

| Task                           | Description   |
|--------------------------------|---|
| <i>Pre-installation Tasks</i>  |   |
| 1.                             | Plan your environment, based on your business needs. For more information on the planning process and the supported configurations, see <a href="#">Chapter 2, "Planning Your Installation"</a> .   |
| 2.                             | Set up your application database. For more information, see <a href="#">Chapter 3, "Setting Up the Database"</a> .  |
| 3.                             | Set up your application server. For more information, see <a href="#">Chapter 4, "Setting Up Your Application Server"</a> .   |
| <i>Installation Task</i>       |   |
| 4.                             | Access the Clearance Optimization Engine installation software, set up the <code>install.properties</code> file, and run the Oracle installer. For more information, see <a href="#">Chapter 5, "Installing Clearance Optimization Engine"</a> .  |
| <i>Post-installation Tasks</i> |   |
| 5.                             | Configure your business rules and user accounts. For more information, see the <i>Clearance Optimization Engine Configuration Guide</i> .   |
| 6.                             | Load data and evaluate the results. For more information, see the <i>Clearance Optimization Engine Configuration Guide</i> .  |
| 7.                             | If you want to integrate the Clearance Optimization Engine as part of the Oracle Application Server Single Sign-On implemented with Oracle Retail Workspace, see <a href="#">Chapter 6, "Setting up Single Sign-On"</a> .   |
| 8.                             | Modify the Clearance Optimization Engine user interface to accommodate your business needs, as described in the <i>Clearance Optimization Engine Configuration Guide</i> . Concurrent with this activity, complete the remaining steps in this roadmap. You can continue refining the user interface iteratively, as needed (optional). |
| 9.                             | Set up user accounts and introduce the end users to the application.  |
| 10.                            | Maintain the application as described in the <i>Clearance Optimization Engine Configuration Guide</i> .   |
| 11.                            | Perform and schedule the necessary data loads, as described in the <i>Clearance Optimization Engine Operations Guide</i> .  |

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## Planning Your Installation

Before installing Clearance Optimization Engine, you must first determine the performance and availability goals for your business, and then plan the hardware, network, and storage requirements accordingly. This chapter provides some basic considerations for the implementation. It also includes the list of hardware and software requirements.

This chapter includes the following sections:

- [Overview of the Planning Process](#)
- [Supported Configurations](#)

### Overview of the Planning Process

Planning your implementation prior to an installation also gives you a better understanding of the environment, and enables you to adapt faster to any future changes in the environment setup.

This section contains the following topics:

- [Planning Your Environment](#)
- [Planning for Optimal Clearance Optimization Engine Performance](#)

### Planning Your Environment

Use the following steps to plan and prepare the product environment:

1. Plan and design the infrastructure, based on your business needs, for the installation. This includes:
  - Meeting the hardware and associated software requirements.
  - Acquiring the prerequisite software (and licensing).
  - Setting up the load balancers and clusters.
  - Gathering the capacity data.
  - Planning the data security policies.
  - Designing the backup and recovery strategies.
2. Determine the size of the implementation.
3. Identify source systems. Identify the systems that will exchange data with Clearance Optimization Engine.

## Planning for Optimal Clearance Optimization Engine Performance

Consider the following steps to plan and prepare the product environment.

1. Determine the Clearance Optimization Engine metrics relevant to your business needs.
2. Determine your relevant business policies. The business policy is a statement of what rules govern the application processes. You need to develop a business policy based on your business rules. For more information about business rules, see the *Clearance Optimization Engine Configuration Guide*.
3. Plan the periodic batch loading of business and historical databases. This also includes the data feeds needed from the external systems for nightly, weekly, and periodic batch updates and recycling.

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**Important:** To ensure optimal performance, you must synchronize the clocks on the systems hosting the application server and database.

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## Supported Configurations

This section describes the hardware and network requirements for the Clearance Optimization Engine, and includes the following topics:

- [Network Requirements](#)
- [Database Requirements](#)
- [Application Server Requirements](#)
- [Client System Requirements](#)
- [Miscellaneous Utilities](#)

## Network Requirements

This section describes basic requirements for your network infrastructure:

- For connections between servers use the following:
  - Minimum: 100 MBps switched ethernet.
  - Recommended: 1000 MBps.
- For connections to the desktop, 100 MBps is sufficient.
- Network load balancers to provide scalability to the servers.

## Database Requirements

Clearance Optimization Engine requires the use of the Oracle database as described in the following table:

**Table 2–1 Database Requirements for Clearance Optimization Engine**

| Software                  | Requirement  |                        |  |  |
|---------------------------|--|------------------------|--|--|
| Database (64-bit)         | Oracle Database 10g Release 2, Enterprise Edition (10.2.0.4)<br>RAC or Single Instance   |                        |  |  |
| Database Features         | Oracle Partitioning<br><b>Important:</b> Although this database feature is available in the Oracle Database Enterprise Edition, you may need a separate license to use this feature. For more information, refer to the <i>Oracle Database Licensing Information 10g Release 2</i> . |                        |  |  |
| Operating System (64-bit) | Oracle Enterprise Linux 5.0 Update 2   | Sun Solaris 10 (SPARC) | HP-UX 11i v3 Update 1 (11.31), Itanium-based | IBM AIX 6.1 Technology Level (TL) 1 Service Pack 2 (SP2) |
| Utilities                 | file transfer protocol utility (ftp or ssh/scp/rsync)<br>sudo utility  |                        |  |  |

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**Important:** Although the Clearance Optimization Engine Release 13.1 supports JDK 1.5, ensure that the system that hosts the database is set to use JDK 1.4.

Oracle 10g Release 2 requires the use of JDK 1.4.

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## User Requirements

Your implementation may require you to set up multiple user accounts and user groups. Ensure that the user accounts, UIDs, user groups, GIDs, home directory, and shell are set up consistently across all the clusters and servers.

## Application Server Requirements

Clearance Optimization Engine supports the use of Oracle Application Server 10g Release 3 (10.1.3.3) or BEA WebLogic Server 10.0 MP1. The following table lists the supported operating systems and the associated application server versions:

**Table 2–2 Application Server Requirements for Clearance Optimization Engine**

| Software                   | Requirement   |  |   |  |
|----------------------------|---|--|---|--|
| Application Servers        | Oracle Application Server 10g Release 3 Patch Set 10.1.3.3 (32-bit) |  | Oracle Application Server 10g Release 3 Patch Set 10.1.3.3 (64-bit) |  |
|                            | <i>Or</i>   |  |   |  |
|                            | BEA WebLogic Server 10.0 MP1  |  |   |  |
| Database Client            | Oracle Database 10g Client Release 2 (10.2.0.4.0)                   |  |   |  |
| Operating Systems (64-bit) | Oracle Enterprise Linux Release 5.0 Update 2                        | IBM AIX 6.1 Technology Level (TL) 1 Service Pack 2 (SP2) | Sun Solaris 10 (SPARC)  | HP-UX 11i v3 Update 1 (11.31), Itanium-based |

**Table 2–2 (Cont.) Application Server Requirements for Clearance Optimization Engine**

| Software | Requirement   |   |                           |   |
|----------|---|---|---------------------------|---|
| JVM      | JRockit 5.0 R27.3.1 JDK (32-bit) for WebLogic<br><br>Sun JDK 1.5.0_6 (32-bit) for OAS | IBM JDK 1.5 (Service Refresh 9) build pap32devfix-20081129 (32-bit) | Sun JDK 1.5.0_11 (32-bit) | HP-UX JDK for the Java 2 Standard Edition 5.0.0.8 with Java HotSpot and later. (32-bit) |

For Solaris, the following timezone and libc patches are required:

- On SPARC platform, with time zone patch 122032-01 or later and libc patch 119689-07 or later.

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**Note:** For the BEA WebLogic Server 10.0 MP1 installations on the IBM AIX TL1 SP2 operating system, in case you choose to set up WebLogic multicast for clusters, you must also install the following IBM interim patch (IBM IZ33335\_6B.081030.epkg.Z) using the following command:

```
emgr -e IZ33335_6B.081030.epkg.Z
```

Before installing the patch, you must preview (`emgr -p -e`) the patch installation and verify that there are no conflicts or errors.

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### User Requirements

Your implementation may require you to set up multiple user accounts and user groups. Ensure that the user accounts, UIDs, user groups, GIDs, home directory, and shell are set up consistently across all the clusters and servers.

## Client System Requirements

The following table lists the supported client system options:

**Table 2–3 Client System Environment**

| Software                                     | Requirements   |
|--|--|
| Windows XP Pro SP2 or SP3 (with Office 2003) | <ul style="list-style-type: none"> <li>Microsoft Office 2003</li> <li>Microsoft Internet Explorer 7.0</li> </ul> |

## Miscellaneous Utilities

The following table lists some of the recommended utility packages for the application installation:

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**Important:** These packages must be installed on all the host systems.

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**Table 2–4 Miscellaneous Utilities**

| Package Name  | Required Version         |
|---------------|--------------------------|
| GNU bash      | Version 3.0 or higher.   |
| GNU findutils | Version 4.1.7 or higher. |
| GNU less      | Version 378 or higher.   |

**Table 2–4 (Cont.) Miscellaneous Utilities**

| <b>Package Name</b> | <b>Required Version</b>  |
|---------------------|--|
| <b>GNU m4</b>       | Version 1.4 or higher.<br>You must use the <i>GNU m4</i> for the Clearance Optimization Engine installation. Other <i>m4</i> implementations may not be supported. |
| <b>GNU tar</b>      | Version 1.13 or higher.  |
| <b>Open SSH</b>     | Version 3.6 or higher. You may choose to use another SSH implementation.   |



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## Setting Up the Database

This chapter describes how you can set up your database, and the various database components. It contains the following sections:

- [Installing the Database](#)
- [Setting Up the Clearance Optimization Engine Database](#)

---

---

**Note:** If your database requires multi-byte support, specify the following properties in your `init.ora` file:

```
CHARACTER_SET=AL32UTF8  
NLS_LENGTH_SEMANTICS=CHAR
```

---

---

This chapter includes specific instructions required for Clearance Optimization Engine. Since the installation instructions for the database may vary based on the operating system, Oracle recommends that you refer to the relevant installation documentation included with the database.

### Installing the Database

The application requires the use of the Oracle® 10g Database Release 2 (10.2.0.4) and the Natively Compiled Java Libraries (in the Oracle Database Companion CD).

---

---

**Note:** Before starting the installation, ensure that you have sufficient privileges to perform any database administrator (DBA) level tasks.

---

---

Install the database for the application, along with the software, referring to the *Oracle Database 10g Release 2 Documentation* included with the software.

Ensure that the Oracle Database software is installed along with the Natively Compiled Java Libraries. For more information, see the *Oracle Database Installation Guide, 10g Release 2 (10.2)* and *Oracle Database Companion CD Installation Guide, 10g Release 2 (10.2)*.

#### Time Zone Consideration

Ensure that time zone set up for the database matches the time zone set for the users. Oracle recommends that you set the TZ Unix environment variable for the database instance and TNS listener to the time zone set for the end users.

## Setting Up the Clearance Optimization Engine Database

Once you have the Clearance Optimization Engine database installed, you must set up the database using the following steps:

1. [Setting Up the Initialization Parameter File](#)
2. [Setting Up the Tablespaces](#)
3. [Setting Up the System Data Dictionary](#)
4. [Creating the Default User Accounts](#)

### Setting Up the Initialization Parameter File

Set up the init.ora file in the <ORACLE\_HOME>/dbs directory, specifying the following parameters:

```
db_block_size = 8192
large_pool_size = 20M
log_buffer = 524288
pga_aggregate_target = 1000M
workarea_size_policy = AUTO
undo_management = AUTO
global_names = FALSE
optimizer_mode = CHOOSE
cursor_sharing = SIMILAR
query_rewrite_enabled = TRUE
query_rewrite_integrity = TRUSTED
compatible = 10.2.0
optimizer_features_enable = 10.2.0.1
db_file_multiblock_read_count = 32
log_checkpoints_to_alert = TRUE
session_cached_cursors = 900
sga_target = 1000M # value is site specific
timed_statistics = TRUE
log_checkpoint_interval = 51200 # value is site specific
log_checkpoint_timeout = 7200 # value is site specific
start_transformation_enabled = FALSE
```

### Setting Up the System Data Dictionary

To create the system data dictionary, log in as the *sys* user, and run the following scripts:

```
<ORACLE_HOME>/rdbms/admin/catalog.sql
<ORACLE_HOME>/rdbms/admin/catproc.sql
<ORACLE_HOME>/sqlplus/admin/pupbld.sql
```

### Setting Up the Tablespaces

You must set up the tablespaces for each database schema. Ensure that each database schema has the following system tablespaces:

**Table 3–1 Clearance Optimization Engine Tablespaces**

| Tablespace | Description   |
|------------|---|
| DATA_01    | Required. Default tablespace for Clearance Optimization Engine table. |

**Table 3–1 (Cont.) Clearance Optimization Engine Tablespaces**

| Tablespace    | Description   |
|---------------|---|
| INDEX_01      | Required. Tablespace for indexes of Clearance Optimization Engine, STG, and ASH.  |
| ITEM_DATA_PIN | Required. Tablespace for ITEM_DATA table of the Clearance Optimization Engine schema.   |
| SYSTEM        | System tablespace used for metadata.  |
| SYSAUX        | System tablespace used for system monitoring.   |
| TEMP          | Typical but not required. System tablespace used for temporary system swap space for Clearance Optimization Engine, STG, and ASH. |
| RBS           | Typical but not required. System tablespace for resolving data write clashes.   |

---

**Note:** Tablespace size depends on your implementation. You must decide on the default tablespace sizes when you plan to install the database.

---

## Creating the Default User Accounts

You must also create the default database user account that will be used during the installation to access the application database.

To create the user accounts:

1. At the SQL prompt, type the following statement to create the users, and set the DATA\_01 as the default tablespace:

```
CREATE USER <COE USERNAME> IDENTIFIED BY <COE PASSWORD>
DEFAULT TABLESPACE DATA_01;
```

Replace the <COE USERNAME> and <COE PASSWORD> with the relevant user name and password.

2. Once the user is created, use the Oracle 10g Database Configuration Assistant and grant the relevant access privileges to both the users. The following table lists the access privileges you must assign to the user:

**Table 3–2 Access Privileges for the Users**

| Type  | Privileges          |
|-------|---------------------|
| Roles | CONNECT             |
|       | RESOURCE            |
|       | SELECT_CATALOG_ROLE |

**Table 3–2 (Cont.) Access Privileges for the Users**

| Type                           | Privileges   |
|--------------------------------|--|
| <b>Privileges</b>              | ANALYZE ANY  |
|                                | ALTER SESSION  |
|                                | QUERY REWRITE  |
|                                | UNLIMITED TABLESPACE   |
|                                | CREATE SEQUENCE  |
|                                | CREATE PUBLIC SYNONYM  |
|                                | CREATE SYNONYM   |
|                                | CREATE TABLE   |
|                                | CREATE MATERIALIZED VIEW   |
|                                | CREATE VIEW  |
|                                | SELECT ANY TABLE   |
|                                | DROP TABLE   |
|                                | EXECUTE PROCEDURE  |
|                                | CREATE DATABASE LINK   |
| DROP PUBLIC SYNONYM            |  |
| <b>Java Runtime Privileges</b> | exec dbms_java.grant_permission( '<COE USERNAME>', 'SYS:java.lang.RuntimePermission', 'getClassLoader', '' ) |
|                                | exec dbms_java.grant_permission( '<COE USERNAME>', 'SYS:java.lang.RuntimePermission', 'Verifier', '' )       |
|                                | <b>Important:</b> Replace <COE USERNAME> with the relevant user name.  |

---

---

## Setting Up Your Application Server

Before installing Clearance Optimization Engine, you must set up an instance on the application server. Based on your business need, you must set up an instance or to include one or more server instances and logically related resources and services.

Clearance Optimization Engine supports the use of Oracle Application Server 10g Release 3 (10.1.3.3) or BEA WebLogic Server 10.0 MP1. This chapter provides instructions on setting up the application server selected for your business. It contains the following sections:

- [Setting Up the Oracle Application Server](#)
- [Setting Up the BEA WebLogic Server](#)

---

---

**Note:** This chapter includes specific instructions required for Clearance Optimization Engine. Since the installation instructions for an application server may vary based on the operating system, Oracle recommends that you refer to the relevant installation documentation included with the application server.

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---

If you plan to use clusters for the Clearance Optimization Engine installation, Oracle recommends that you create the clusters before setting up the instance or domain. Otherwise, the managed servers must be added manually. When you set up the managed servers on different machines, ensure that they are set up on the same port and the installation base has the same directory structure or they use a network drive. For more information on managing clusters, see the documentation for your application server.

### Setting Up the Oracle Application Server

Clearance Optimization Engine supports the use of Oracle Application Server 10g Release 3 (10.1.3.3). To install and configure Oracle Application Server, use these sections in the following sequence:

- [Installing Oracle Application Server](#)
- [Configuring Oracle Application Server](#)

### Installing Oracle Application Server

Install the Oracle Application Server, referring to the Oracle Application Server documentation for guidance.

During the installation, accept the default values for the multicast IP address and port settings; these settings will be automatically updated, as needed, when you run the Clearance Optimization Engine Installer. If you want your OAS instance to be part of a cluster, specify the information relevant to your cluster topology.

In this guide, the Oracle Application Server installation directory is referred to as the <OAS\_HOME> directory.

Next, you need to specify properties in the Oracle Application Server configuration files.

## Configuring Oracle Application Server

To specify Oracle Application Server configuration properties:

1. Navigate to the <OAS\_Home>/j2ee/home/config directory, edit the **server.xml** file to include the *global-jndi-lookup-enabled* property. For example,

```
<application-server xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="http://xmlns.oracle.com/oracleas/schema/applicat
ion-server-10_1.xsd" localhostIsAdmin="true"
  application-directory="../applications"
  check-for-updates="adminClientOnly"
  deployment-directory="../application-deployments"
  connector-directory="../connectors"
  global-jndi-lookup-enabled="true"
  schema-major-version="10" schema-minor-version="0" >
```

2. Navigate to the <OAS\_Home>/opmn/conf directory, edit the **opmn.xml** to include the JVM start up parameters in the <ias-component id="default\_group"> section. For example,

```
<ias-component id="default_group">
.
.
.
<category id="start-parameters">
  <data id="java-options" value="-Xrs -server
    -Djava.security.policy=$ORACLE_HOME/j2ee/home/config/java2.policy
    -Dcom.profitlogic.configroot=<COE INSTALLATION DIRECTORY>/config
    -Xmx512m -Xms512m -XX:MaxPermSize=256m
    -Dhttp.webdir.enable=false"/>
</category>
.
.
.
</ias-component>
```

In the example above,

- replace the <COE INSTALLATION DIRECTORY> with the relevant location where the application is installed. In case of a clustered installation, you must set these parameters for each node.
- \$ORACLE\_HOME represents the application server home directory and NOT the environment variable. Oracle applications are installed using Oracle Universal Installer (OUI) and it manages the installation of several active Oracle homes on the same machine by maintaining an inventory and a single Oracle home as the system context in which the Oracle products run. The context contains the list of the Oracle products and their relevant home directories. When applicable, OUI automatically applies the correct system

context. For more information on the Oracle products installed and their relevant home directories, run the command `opatch lsinventory -all` from the application server or database installation.

---

**Note:** The `-Xmx512m`, `-Xms256m`, and `-XX:MaxPermSize=256m` memory arguments are recommendations for a typical configuration. You can choose to set up a different memory argument that best fits your hardware configuration.

---

3. For the changes to take effect, restart the application server.

## Setting Up the BEA WebLogic Server

Clearance Optimization Engine supports the use of BEA WebLogic Server 10.0 MP1. This section describes how you can set up a domain on the WebLogic server. It contains the following sections:

- [Installing the WebLogic Server](#)
- [Setting Up a WebLogic Domain](#)
- [Setting Up the WebLogic Startup Script](#)

### Installing the WebLogic Server

Install the Weblogic Server referring to the BEA WebLogic Server Documentation for guidance.

In this guide, the WebLogic installation directory is referred to as the `<WL_HOME>` directory.

### Setting Up a WebLogic Domain

Use the BEA WebLogic Configuration Wizard to create and set up a domain on the WebLogic Server. This section describes how you can create and set up a domain. It also includes the steps to configure the managed servers and clusters on the application server.

To set up a WebLogic domain:

1. Navigate to the `<WL_HOME>/common/bin` directory, and run the following command to start the BEA WebLogic Configuration Wizard in the graphical mode:
 

```
sh config.sh
```
2. On the BEA WebLogic Configuration Wizard, follow the steps listed in the table below:

**Table 4–1 Steps to Set Up a WebLogic Domain**

| Step | Screen         | Task   |
|------|----------------|--|
| 1.   | Welcome Screen | Click the <b>Create a new WebLogic domain</b> option, and then click <b>Next</b> . |

**Table 4–1 (Cont.) Steps to Set Up a WebLogic Domain**

| Step | Screen   | Task   |
|------|--|--|
| 2.   | <i>Select Domain Source Screen</i>                           | <p>Click the <b>Generate a domain configured automatically to support the following BEA products</b> option, and then click <b>Next</b>.</p> <p>Note that the <b>WebLogic Server (Required)</b> check box is automatically selected and greyed out.</p>  |
| 3.   | <i>Configure Administrator User Name and Password Screen</i> | <p>Set up an administrative user name and password.</p> <p><b>Important:</b> Please keep a note of the user name and password. You must specify this user name and password in the <code>install.properties</code> file. The Oracle Installer uses this user account to connect to the WebLogic Server during the Clearance Optimization Engine installation.</p>  |
| 4.   | <i>Configure Server Start Mode and JDK Screen</i>            | <p>Under <b>WebLogic Domain Startup Mode</b>, click <b>Production Mode</b>.</p> <p>Under <b>JDK Selection</b>, select the relevant JDK.</p> <p>Click <b>Next</b>.</p>  |
| 5.   | <i>Customize Environment and Services Settings Screen</i>    | <p>Select <b>Yes</b> if you want to customize the WebLogic settings further. Go to Step 6.</p> <p>OR</p> <p>Select <b>No</b> to proceed directly to creating your domain. Skip the following steps and go to Step 12.</p>  |
| 6.   | <i>Configure the Administration Server Screen</i>            | <p>Enter relevant information in the following fields:</p> <ul style="list-style-type: none"> <li>■ <b>Name</b> – Valid server name. (String of characters that can include spaces.)</li> <li>■ <b>Listen address</b> – Listen address for a server instance.</li> <li>■ <b>Listen port</b> – Valid value for the listen port.</li> <li>■ <b>SSL listen port</b> – Valid value to be used for secure requests.</li> <li>■ <b>SSL enabled</b> – Select this check box to enable SSL. You can enter values in the SSL listen port field once you select this check box.</li> </ul> <p>Click <b>Next</b>.</p> |
| 7.   | <i>Configure Managed Servers Screen</i>                      | <p>Click <b>Add</b>, and then enter relevant information in the following fields:</p> <ul style="list-style-type: none"> <li>■ <b>Name</b> – Valid server name. (String of characters that can include spaces.)</li> <li>■ <b>Listen address</b> – Listen address for a server instance.</li> <li>■ <b>Listen port</b> – Valid value for the listen port.</li> <li>■ <b>SSL listen port</b> – Valid value to be used for secure requests.</li> </ul> <p>Repeat this step to add more managed servers.</p> <p>Click <b>Next</b>.</p>  |

**Table 4–1 (Cont.) Steps to Set Up a WebLogic Domain**

| Step | Screen                                   | Task  |
|------|--|---|
| 8.   | <i>Configure Clusters Screen</i>         | <p>This window appears, once you specify the managed servers.</p> <p>Click <b>Add</b>, and then enter relevant information in the following fields:</p> <ul style="list-style-type: none"> <li>■ <b>Name</b> – Valid cluster name. (String of characters that can include spaces.)</li> <li>■ <b>Multicast address</b> – Address used by the cluster members to communicate with each other.</li> <li>■ <b>Multicast port</b> – Port used by the cluster members to communicate with each other.</li> <li>■ <b>Cluster address</b> – Address that identifies the Managed Servers in the cluster.</li> </ul> <p>Repeat this step to specify more clusters.</p> <p>Click <b>Next</b>.</p> |
| 9.   | <i>Assign Servers to Clusters Screen</i> | <p>Use the arrow buttons and assign the servers to the clusters specified in the domain.</p> <p>Click <b>Next</b>.</p>  |
| 10.  | <i>Configure Machines Screen</i>         | <p>Click <b>Add</b>, and then add the machine (unix-based) information.</p> <p>Click <b>Next</b>.</p>   |
| 11.  | <i>Assign Servers to Machines Screen</i> | <p>Use the arrow buttons and assign the managed servers to the machines specified in the domain.</p> <p>Click <b>Next</b>.</p>  |
| 12.  | <i>Review WebLogic Domain Screen</i>     | <p>Review and confirm the configuration summary, and then click <b>Next</b>.</p>  |
| 13.  | <i>Create WebLogic Domain Screen</i>     | <p>Enter a domain name in the <b>Domain Name</b> field.</p> <p>In the <b>Domain location</b> field, specify the location where you want to install the domain.</p>  |
| 14.  | <i>Creating Domain Screen</i>            | <p>Displays the domain configuration progress.</p> <p>Once the configuration is complete, click <b>Done</b>.</p>  |

## Setting Up the WebLogic Startup Script

To set up the WebLogic Startup script:

- Navigate to the `<WL_HOME>/user_projects/domains/<your domain name>/bin` directory, and ensure that the following parameters are set within the `startWebLogic.sh` script:
  - **WL\_HOME** – The location where the WebLogic Server is installed.

- **WLS\_USER** – The WebLogic administrator user name.
- **WLS\_PW** – The password associated with the WebLogic administrator user account.
- **JAVA\_VENDOR** – The Java Development Kit (JDK) installed for the WebLogic Server. You can specify BEA, IBM, HP, or Sun.
- **JAVA\_HOME** – The location where the JDK is installed.
- **CONFIGROOT** – The application configuration root directory.
- **JAVA\_OPTIONS** – Append the following to the parameter value:  
" -Dcom.profitlogic.configroot=\$CONFIGROOT"
- **CLASSPATH** – Append the location of the Engine sub folder located within the application configuration root directory.

---

---

**Note:** In case you have set up clusters or managed servers, you must also set up the **startManagedWebLogic.sh** script in the similar manner.

---

---

### For Example

```
#!/bin/sh
WL_HOME="<location where WebLogic Server is installed>"
WLS_USER="<weblogic admin user name>"
WLS_PW="<weblogic admin password>"
PRODUCTION_MODE="true"
JAVA_VENDOR="<name of the JDK>"
JAVA_HOME="<location where JDK is installed>"
. ${WL_HOME}/common/bin/commEnv.sh
SERVER_NAME="admin"
CONFIGROOT="<COE INSTALLATION DIRECTORY>/config"
JAVA_OPTIONS=${JAVA_OPTIONS} -Dcom.profitlogic.configroot=$CONFIGROOT"
CLASSPATH="${WEBLOGIC_CLASSPATH}:${POINTBASE_CLASSPATH}:${JAVA_
HOME}/jre/lib/rt.jar:${WL_HOME}/server/lib/webservices.jar:${CLASSPATH}"
CLASSPATH=${CLASSPATH}:<COE INSTALLATION DIRECTORY>/config/Engine
export CLASSPATH
${JAVA_HOME}/bin/java ${JAVA_VM} ${MEM_ARGS} ${JAVA_OPTIONS}
-Dweblogic.Name=${SERVER_NAME} -Dweblogic.ProductionModeEnabled=${PRODUCTION_MODE}
-Dweblogic.management.username=${WLS_USER} -Dweblogic.management.password=${WLS_
PW} -Djava.security.policy="${WL_HOME}/server/lib/weblogic.policy" weblogic.Server
2>> console.log >& 2 &
```

---

---

## Installing Clearance Optimization Engine

After you have set up your database management system and application server, you can install Clearance Optimization Engine (COE) as described in this chapter. This chapter contains the following sections:

- [Overview of the Installation Process](#)
- [Installing Clearance Optimization Engine](#)
- [Post-Installation Tasks](#)
- [Upgrading to the Latest Release of Clearance Optimization Engine](#)
- [Troubleshooting Installation Issues](#)

### Overview of the Installation Process

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---

**Note:** Although options for IBM DB2 and WebSphere appear in the Oracle Installer, they are not supported in this release.

---

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In order to install Clearance Optimization Engine, your first task is to obtain the installation media.

Then you should choose which installation mode you prefer. Whichever mode you use, you first need to set up the Clearance Optimization Engine properties file. The two modes are as follows:

- Graphical mode - In graphical mode, the Oracle Installer displays a graphical user interface and prompts you to enter or modify the value of properties specified in the properties file.
- Silent mode - In silent mode, the installer processes the properties file with no manual intervention required.

To begin the installation process, see [Installing Clearance Optimization Engine](#).

### Installing Clearance Optimization Engine

Installing Clearance Optimization Engine consists of the following tasks:

- [Accessing the Installation Software](#)
- [Setting Up Your Installation Properties File](#)
- [Installing Clearance Optimization Engine in Silent Mode](#)
- [Installing Clearance Optimization Engine Using the Graphical Oracle Installer](#)

## Accessing the Installation Software

In order to install Clearance Optimization Engine, you first need to obtain the software media, which is available on DVD or from a ZIP file. This section explains how to download the Clearance Optimization Engine software ZIP file from the Oracle E-Delivery site.

To download the Clearance Optimization Engine software:

1. From the application server where you will be installing Clearance Optimization Engine, open a browser and navigate to the following URL:

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

The **Oracle E-Delivery** download page displays.

2. Select a language and click **Continue**.

The **Export Validation** screen displays.

3. Respond to the following and click **Continue**.

- **Full Name** - Enter your full name.
- **Company Name** - Enter your company name.
- **E-mail Address** - Enter your e-mail address.
- **Country** - Select your country.
- **License Agreement** - Click the check box.
- **Export Restrictions** - Click the check box.

The **Media Pack Search** screen displays.

4. Respond to the following and click **Go**.

- **License List** - Review the list to determine which Product Packs you need to download.
- **Product Pack** - Select **Oracle Retail Applications**.
- **Platform** - Select the desired operating system. Optional.

The **Oracle Retail Clearance Optimization Engine Media Pack** screen displays.

5. In the **Select** column, click **Download**.

Oracle E-Delivery writes a ZIP file to the default location you have selected for downloads.

6. Unpack the ZIP file to a temporary directory. In this guide, the directory that contains the installation media is referred to as the <COE\_CD\_IMAGE> directory.

Now you can set up your Clearance Optimization Engine installation properties file.

## Setting Up Your Installation Properties File

In order to install Clearance Optimization Engine, you first need to specify the properties to use during the installation process. These properties are specified in the install.properties file.

To set up your install.properties file:

1. Ensure that your <COE\_CD\_IMAGE> directory exists and is populated as described in [Accessing the Installation Software](#), on page 5-2.

2. Navigate to the <COE\_CD\_IMAGE> directory and copy the reference.coe.install.properties file to the same directory, naming it install.properties.
3. Edit the install.properties file, specifying values as described within the file, and save it. For more information on the parameters, see [Install.properties Parameter Reference](#).

Now you can install Clearance Optimization Engine, using either of the following modes:

- [Installing Clearance Optimization Engine in Silent Mode](#)
- [Installing Clearance Optimization Engine Using the Graphical Oracle Installer](#)

### Install.properties Parameter Reference

The following table describes the parameters in the install.properties file that you must set up before you install Clearance Optimization Engine:

**Table 5–1** *Install.properties Parameters Reference*

| Parameter                      | Description  |
|--------------------------------|--|
| <b>Architecture Properties</b> |  |
| basedest.basedest.dir          | Use this parameter to specify the path to the base installation folder.  |
| basedest.baselog.dir           | Use this parameter to specify the path to the folder that contains the log files.  |
| basedest.basespool.dir         | Use this parameter to specify the path to the folder that contains the spool files.  |
| architecture                   | Use this parameter to specify the operating system for the application. Valid values are aix_powerpc, linux_i686, linux_x86_64, sunos_sun4u, or hpux_ia64. |
| http.protocol                  | The type of HTTP protocol used to host Clearance Optimization Engine.  |
| install.command.shell          | The shell command to use when you want to execute the shell scripts.   |
| suite.host                     | The host name or IP address where the application will be installed and can later be accessed by users.  |
| suite.port                     | The port associated with the host name specified in suite.host parameter where the application will run.   |
| delphi.rmi.host                | The host name or IP address where the Delphi RMI server will be installed.   |
| delphi.rmi.port                | The port associated with the host name specified in the <i>delphi.rmi.host</i> parameter where the Delphi RMI server will run.                             |
| <b>Database Properties</b>     |  |
| install.database               | Use this parameter to specify the installed database.  |
| <b>Oracle Properties</b>       |  |
| dbms.oracle.host               | The host name or IP address where the Oracle database is installed.  |
| dbms.oracle.port               | The port to connect to the Oracle database.  |
| dbms.oracle.db                 | Use this parameter to specify the Oracle database name.  |
| dbms.oracle.alias              | Use this parameter to specify the Oracle database alias name.  |

**Table 5–1 (Cont.) Install.properties Parameters Reference**

| Parameter  | Description   |
|--|---|
| dbms.oracle.user   | Use this parameter to specify the user name to connect to the Oracle database. This is the default database user account created for the application database (<COE USERNAME>). For more information, see <a href="#">Creating the Default User Accounts</a> .  |
| dbms.oracle.pass   | Use this parameter to specify the password to connect to the Oracle database. This is the password (<COE PASSWORD>) associated with the default database user account created for the application database. For more information, see <a href="#">Creating the Default User Accounts</a> .  |
| database.commondb.oracle.address                                     | Use this parameter to specify the URL (host name or IP address) where the Oracle database is installed.   |
| database.commondb.oracle.dbalias                                     | Use this parameter to specify the database alias name.  |
| database.commondb.oracle.dbname                                      | Use this parameter to specify the database name.  |
| database.commondb.oracle.dbport                                      | Use this parameter to specify the port to connect to the database.  |
| database.commondb.oracle.auth.commonOracleAuth.user                  | Use this parameter to specify the user name to connect to the database. This is the default database user account created for the application database (<COE USERNAME>). For more information, see <a href="#">Creating the Default User Accounts</a> .   |
| database.commondb.oracle.auth.commonOracleAuth.password              | Use this parameter to specify the password to connect to the database. This is the password (<COE PASSWORD>) associated with the default database user account created for the application database. For more information, see <a href="#">Creating the Default User Accounts</a> .   |
| database.commondb.oracle.user  | Use this parameter to specify the user name to connect to the database.   |
| database.commondb.oracle.password                                    | Use this parameter to specify the password to connect to the database.  |
| <i>Properties for databases with Real Application Clusters (RAC)</i> |   |
| database.commondb.oracle.racenabled                                  | Use this parameter to indicate that the database is set up with Real Application Clusters (RAC).  |
| database.commondb.oracle.dbhostlist                                  | Use this parameter to specify the host names (with port numbers) of the servers hosting the database.   |
| database.commondb.oracle.dburl                                       | <p>Optional. Use this parameter to specify the database URL for JDBC connectivity.</p> <p>When you leave this field blank, the installer will automatically build the database URL based on the values entered in the other database parameters. In case you specify the database URL, the installer will use the values specified here during the installation.</p> <p><b>Syntax:</b></p> <p>For non RAC database,</p> <pre>jdbc:oracle:thin:@&lt;host name&gt;:&lt;dbport&gt;:&lt;dbname&gt;</pre> <p>For RAC database,</p> <pre>jdbc:oracle:thin:@(DESCRIPTION = (ADDRESS_LIST = (ADDRESS = (PROTOCOL = TCP)(HOST = &lt;host name1&gt;)(PORT = &lt;dbport1&gt;)) (ADDRESS = (PROTOCOL = TCP)(HOST = &lt;host name2&gt;)(PORT = &lt;dbport2&gt;)) (ADDRESS = (PROTOCOL = TCP)(HOST = &lt;host name3&gt;)(PORT = &lt;dbport3&gt;)) (ADDRESS = (PROTOCOL = TCP)(HOST = &lt;host name4&gt;)(PORT = &lt;dbport4&gt;)) ) (CONNECT_DATA = (SERVICE_NAME = &lt;dbname&gt;) (failover_mode = (type=select) (method=basic) (retries=60) (delay=5)) ) )</pre> |
| database.commondb.oracle.create                                      | Use this parameter to specify that a new database schema must be created. Valid values are Yes or No.   |

**Table 5–1 (Cont.) Install.properties Parameters Reference**

| <b>Parameter</b>                            | <b>Description</b>  |
|---|---|
| database.commondb.oracle.upgrade            | Use this parameter to specify that the existing database schema be upgraded. Valid values are Yes or No.  |
| <b>Oracle Application Server Properties</b> |   |
| install.appserver                           | The default application server for Clearance Optimization Engine.   |
| oracle.home                                 | The default base folder for the Oracle application server.  |
| oracle.server.address                       | The base URL for the Oracle application server instance.  |
| oracle.admin.port                           | Use this parameter to specify the port to connect to the Oracle application server.   |
| oracle.admin.userid                         | Use this parameter to specify the administrative user name for the application server.  |
| oracle.admin.password                       | Use this parameter to specify the password associated with the administrative user.   |
| oracle.group.name                           | Use this parameter to specify the group name associated with the application server instance.   |
| oracle.instance.name                        | Use this parameter to specify the name of the application server instance.  |
| oracle.opmn.enabled                         | Use this parameter to specify whether you want to use the OPMN server service. Set the value to 'Yes' for Oracle Application Server, and 'No' for OC4J instance.  |
| database.commondb.oracle.dbdriver           | Use this parameter to specify the database driver that provides connection to the database.   |
| <b>WebLogic Server Properties</b>           |   |
| bea.home                                    | Use this parameter to specify the path to the BEA base directory. For example, C:\BEA.  |
| weblogic.server                             | Use this parameter to specify the name of the server instance.  |
| weblogic.domain                             | Use this parameter to specify the name of the domain created on the WebLogic application server.  |
| weblogic.admin.userid                       | Use this parameter to specify the WebLogic admin user name.   |
| weblogic.admin.password                     | Use this parameter to specify the WebLogic admin password.  |
| weblogic.admin.port                         | Use this parameter to specify the port to connect to the WebLogic application server.   |
| weblogic.server.address                     | Use this parameter to specify the URL to connect to the WebLogic application server.  |
| weblogic.home                               | Use this parameter to specify the path to the WebLogic server in the BEA base directory.<br>For example, C:\BEA\weblogic10\server.  |
| <b>WebLogic JNDI Properties</b>             |   |
| weblogic.managedserver.address              | Use this parameter to specify the host name or IP address of the managed server that will be set in the jndi.properties file (located in the <Clearance Optimization Engine_Installation>/modules/tools/conf directory).<br>For example, acme1,acme2,acme3. |
| weblogic.managedserver.port                 | Use this parameter to specify the port set up for the managed server that will be set in the jndi.properties file.<br>For example, 7001,7002,7003.  |

**Table 5–1 (Cont.) Install.properties Parameters Reference**

| Parameter   | Description   |
|---|---|
| <b>Note:</b>  |   |
| For a single server installation, you must enter the administrative server's host name and port.                                      |   |
| For a clustered installation, you must enter all the host names and associated ports separated by commas for the relevant parameters. |   |
| <b>WebLogic Cluster Properties</b>  |   |
| scope.fetarget.serverobject   | Use this parameter to specify the name of the server or cluster where the COE database is installed.  |
| scope.fetarget.type   | Use this parameter to specify the type of the server object. You can specify cluster or server.   |
| <b>WebLogic Cluster (Calc Engine) Properties</b>  |   |
| scope.cetarget.serverobject   | Use this parameter to specify the name of the server or cluster where the Calculation Engine is installed.  |
| scope.cetarget.type   | Use this parameter to specify the type of the server object. You can specify cluster or server.   |
| host.list   | This is the list of managed servers, where you want the installer to deploy an instance of Calculation Engine.<br><br><hostname1,hostname2...>, When installing in a clustered environment across multiple hosts, the install base needs to be replicated on all the hosts involved. (This is not needed if the install base is on network drive shared among the servers). |
| <b>Post-installation Properties Files</b>   |   |
| install.properties.savefile   | Use this parameter to specify the path to the folder where you want to store the properties file (last-session.properties) that contains the parameter values used in the last installation session.  |
| missing.properties.savefile   | Use this parameter to specify the path to the folder where you want to store the properties file (missing-entries.properties) that contains the parameter values the Oracle installer tried to use during installation.   |
| <b>Audit Database Connection Information for Oracle</b>   |   |
| database.auditdb.oracle.address   | Use this parameter to specify the URL where the Audit database is installed.  |
| database.auditdb.oracle.dbalias   | Use this parameter to specify the Audit database alias name.  |
| database.auditdb.oracle.dbname  | Use this parameter to specify the name of the Audit database.   |
| database.auditdb.oracle.port  | Use this parameter to specify the port to connect to the Audit database.  |
| database.auditdb.oracle.user  | Use this parameter to specify the user name to connect to the Audit database. This is the default database user account created for the application database (<COE USERNAME>). For more information, see <a href="#">Creating the Default User Accounts</a> .   |
| database.auditdb.oracle.password  | Use this parameter to specify the password to connect to the Audit database. This is the password (<COE PASSWORD>) associated with the default database user account created for the application database. For more information, see <a href="#">Creating the Default User Accounts</a> .   |
| <b>Database Authentication Credentials for AUDIT</b>  |   |
| database.auditdb.oracle.auth.auditoracleauth.user   | Use this parameter to specify the user name to connect to the Audit database. This is the default database user account created for the application database (<COE USERNAME>). For more information, see <a href="#">Creating the Default User Accounts</a> .   |

**Table 5–1 (Cont.) Install.properties Parameters Reference**

| <b>Parameter</b>                                      | <b>Description</b>   |
|---|--|
| database.auditdb.oracle.auth.auditoracleauth.password | Use this parameter to specify the password to connect to the Audit database. This is the password (<COE PASSWORD>) associated with the default database user account created for the application database. For more information, see <a href="#">Creating the Default User Accounts</a> .  |
| <b>AUDIT property for Creating the Database</b>       |  |
| database.auditdb.oracle.create                        | Use this parameter to indicate that a new Audit database must be created.  |
| <b>AUDIT property for Upgrading the Database</b>      |  |
| database.auditdb.oracle.upgrade                       | Use this parameter to specify that the existing database be upgraded to include the Audit schema.  |
| common.feschema                                       | Use this parameter to specify the user name associated with the application schema.  |
| common.dblink   | Use this parameter to specify the database link to access the common components schema through the audit schema. If the schema exists in the same instance, specify <i>none</i> .  |
| <b>Oracle Configuration Manager (OCM) Properties</b>  |  |
| basedest.baseocm.dir                                  | Use this parameter to specify the path to the folder that contain the OCM files. Oracle recommends that this path be in the base installation folder.  |
| product.ocm.install                                   | Use this parameter to accept or decline the OCM license agreement. The value defaults to <i>no</i> and indicates that OCM will not be installed (rest of the OCM properties are ignored).  |
| ocm.distribution                                      | Use this parameter to specify the architecture of the operating system on which OCM is being installed.  |
| ocm.disconnected                                      | Use this parameter to specify one of the following OCM connection mode: <ul style="list-style-type: none"> <li>■ Connected – to proceed installing OCM. You must also procure the Customer Support Identifier, My Oracle Support user account name, and the country code to install the OCM.</li> <li>■ Disconnected – to skip the OCM configuration.</li> </ul> |
| ocm.csi_id  | Use this parameter to specify the Customer Support identification number.  |
| ocm.metalink_id                                       | Use this parameter to specify the My Oracle Support user account name associated with the Customer Support identification number.  |
| ocm.country_code                                      | Use this parameter to specify the country code where the support agreement was initiated.  |
| ocm.http.proxyenabled                                 | Use this parameter to indicate that the system will connect to the Internet using proxy. Valid values are <i>yes</i> or <i>no</i> .  |
| ocm.http.proxyhost                                    | Use this parameter to specify the host name of the proxy server.   |
| ocm.http.proxyport                                    | Use this parameter to specify the port number of the proxy server.   |
| ocm.http.proxyuser                                    | Use this parameter to specify the user name to connect to the proxy server.  |
| ocm.http.proxypassword                                | Use this parameter to specify the password associated with the user name to connect to the proxy server.   |

**Table 5–1 (Cont.) Install.properties Parameters Reference**

| Parameter                              | Description   |
|--|---|
| <b>Internationalization Properties</b> |   |
| dataset.load.characterset              | <p>Use this parameter to specify the character set to be used in the data control (.ctl) files.</p> <p>For more information on the correct character set syntax, refer to the appendix <i>Locale Data</i> in the <i>Oracle Database Globalization Support Guide</i> included in the <i>Oracle Database 10g Release 2 Documentation</i>.</p> <p>In case you choose not to set the value for this parameter, the default character set (UTF8) will be used for the application.</p> |

## Setting Up Environment Variables

Before you start the installation, ensure that the following environment variables are set in the system:

- JAVA\_HOME
- ORACLE\_HOME
- PATH
- LD\_LIBRARY\_PATH (applies to Linux, HP-UX, Solaris based systems)
- LIBPATH (applies to IBM AIX based systems)

Although it is recommended that these variables be set up in relevant bash shell startup files (*.bash\_profile*) of the system, you can also set up the variables using the *EXPORT* command at the UNIX prompt. For more information on setting up these variables in the startup files, refer to the operating system documentation.

To set up the environment variables for the current session, at the UNIX prompt type the following commands in sequence:

```
export JAVA_HOME=<path where JVM is installed>
For example, /usr/lib/java/jdk1.4
```

```
export ORACLE_HOME=<path where the Oracle database is installed>
For example, /u01/app/oracle/product/10.2.0/db_1
```

```
export PATH=$ORACLE_HOME/bin:$PATH
```

```
export LD_LIBRARY_PATH=$ORACLE_HOME/lib:$LD_LIBRARY_PATH
In case of AIX, export LIBPATH=$ORACLE_HOME/lib:$LIBPATH
```

## Installing Clearance Optimization Engine in Silent Mode

This section describes how to install Clearance Optimization Engine in silent mode. Silent mode is non-interactive.

To install Clearance Optimization Engine in silent mode:

1. Ensure that you have completed "[Setting Up Your Installation Properties File](#)" on page 5-2.
2. Make sure that your application server is running.
3. From your application server machine, enter the following command:

```
bash install.sh
```

**install.sh**

The install.sh command enables you to install Clearance Optimization Engine.

**Syntax**

```
install.sh [-s] [-p <path-to-install.properties-file>]
```

**Arguments**

Use any arguments listed below as needed.

| Argument                         | Description   |
|----------------------------------|---|
| -s                               | Optional. Silent mode. If you omit this option, the Oracle Installer user interface displays.   |
| -p <path-to- install.properties> | Optional. Specifies an alternate path to the install.properties file. Defaults to ./install.properties.   |
| -l, --log-config                 | Optional. Specifies an alternate log4j configuration file (to change the verbosity level or the log file output location). Defaults to ./Install/conf/log4j.properties. The log4j log file is used for troubleshooting. |
| -y   -n                          | Optional. Specifies whether or not to overwrite existing files. Defaults to -y (overwrite).   |
| -d <XML path>                    | Optional. Specifies an alternate path to the XML install scripts. Defaults to ./InstallScripts.   |
| -x <filename.xml>                | Optional. Specifies an alternate XML install script file within the ./InstallScripts directory.   |
| -i, --websphere   -b, --weblogic | Optional. For specifying your application server.   |
| -h                               | Optional. Prints a help message.  |

**Return Value**

When run in silent mode (install.sh -s), the script displays a trace message to stdout (the console). When run in Oracle Installer mode (the default), the script displays a graphical user interface.

**Output**

The Clearance Optimization Engine installation creates the COE directory structure, populates it with appropriate files, and when the installation finishes, it generates a log file and two properties files.

If the installation resulted in issues, see [Troubleshooting Installation Issues](#).

**Installing Clearance Optimization Engine Using the Graphical Oracle Installer**

If you prefer to use a guided user interface, you can use the graphical Oracle Installer.

To install Clearance Optimization Engine using the Oracle Installer:

1. Ensure that you have completed "[Setting Up Your Installation Properties File](#)" on page 5-2.

---

**Note:** Although you can run the installation without setting up the installation properties file, ensure that you set up the installation properties file, and then start the installation.

---

2. Ensure that your application server software is running.
3. If you are viewing the installer from a Windows client:
  - On the **Windows** client, start an **Xserver** program that enables you to emulate the X terminal.
  - On the application server, set the display for the Windows client where you want the Oracle Installer to display as follows:

```
export DISPLAY=<IP address>:0.0
```

4. From your application server machine, enter the following command:

```
bash install.sh
```

---

---

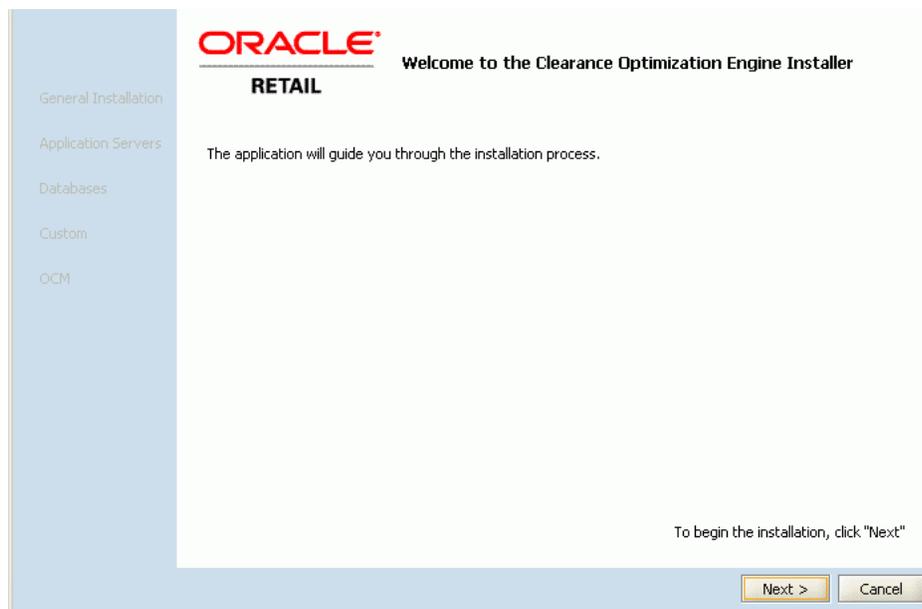
**Note:** For more information about this command, see [Installing Clearance Optimization Engine in Silent Mode](#).

---

---

The **Welcome** screen appears.

**Figure 5–1 Welcome Screen**



5. Click **Next**. The **Clearance Optimization Engine Installation Destination** screen appears.

**Figure 5–2 Clearance Optimization Engine Installation Destination Screen**

**ORACLE** Clearance Optimization Engine Installation Destination

**RETAIL**

General Installation  
Application Servers  
Databases  
Custom  
OCM

Destination directory  Browse...

Spool directory  Browse...

Log directory  Browse...

OCM installation root  Browse...

The following attributes apply to multi-server installations

Remote shell

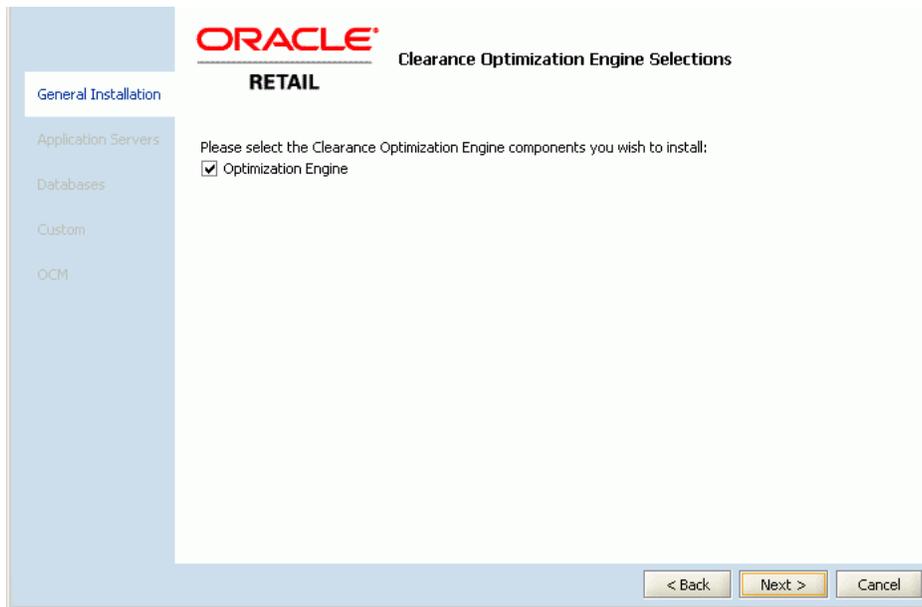
Remote command

Host List  Add Host Remove

< Back Next > Cancel

6. On the **Clearance Optimization Engine Installation Destination** screen, specify the paths for the following:
  - **Destination Directory** - path to the Clearance Optimization Engine installation target directory.
  - **Spool Directory** – path to the Clearance Optimization Engine spool directory.
  - **Log Directory** – path to the Clearance Optimization Engine installation log files.
  - **OCM installation root** – path to the location where the Oracle Configuration Manager (OCM) is installed.
7. Click **Next**. The **Clearance Optimization Engine Selections** screen appears.

**Figure 5–3 Clearance Optimization Engine Selections Screen**



8. On the **Clearance Optimization Engine Selections** screen, select the component you want to install, and click **Next**. The **Application Server Selections** screen appears.

**Figure 5–4 Application Server Selections Screen**



9. On the **Application Server Selections** screen, click **Oracle Application Server**, and then click **Next**. The **Oracle Application Server** screen appears.

**Figure 5–5 Oracle Application Server Screen**

**ORACLE** Oracle Application Server  
**RETAIL**

General Installation  
Application Servers  
Databases  
Custom  
OCM

OAS Home: <for example /10.1.3/OASForCOE/j2ee/home>

Host: <hostname or IP address>

OAS Instance Home: <instance name>  
 OPMN Enabled

Oracle Multicast Default: 45536

Oracle Group Name: default\_group

---

Admin Port: <port, for example: 12401>

Admin User Name: <your user name>

Admin Password: \*\*\*\*\*

< Back   Next >   Cancel

10. On the **Oracle Application Server** screen, enter the relevant information (such as host, port, user name, password) to connect to the application server set up for the application.

---

**Note:** In case the installation does not proceed ahead, check the application server information or the status of the application server.

---

11. Click **Next**. The **Java Message Server Properties** screen appears.

**Figure 5–6 Java Message Server Properties Screen**

**ORACLE** Java Message Server Properties  
**RETAIL**

General Installation  
Application Servers  
Databases  
Custom  
OCM

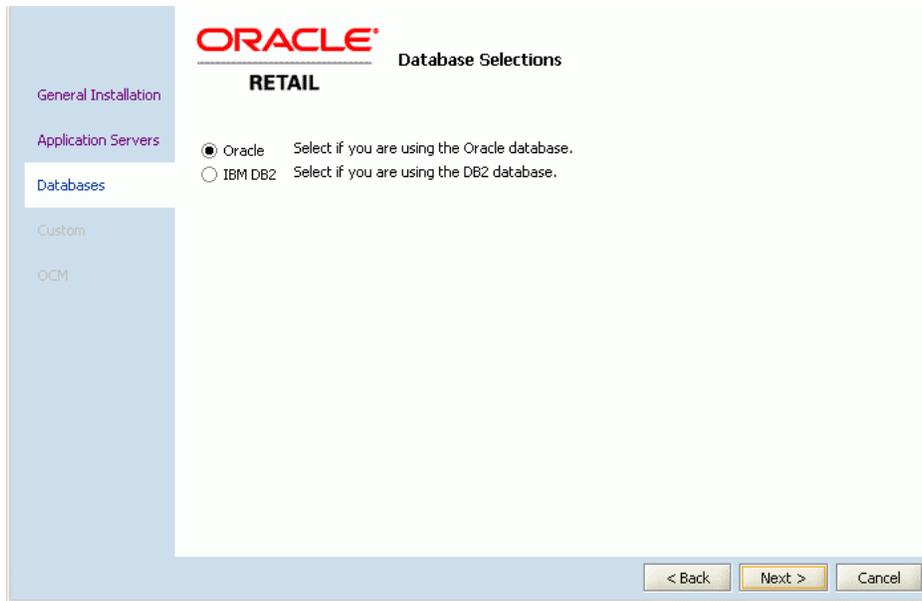
Server    Cluster

Server Name: <for example: my server>

< Back   Next >   Cancel

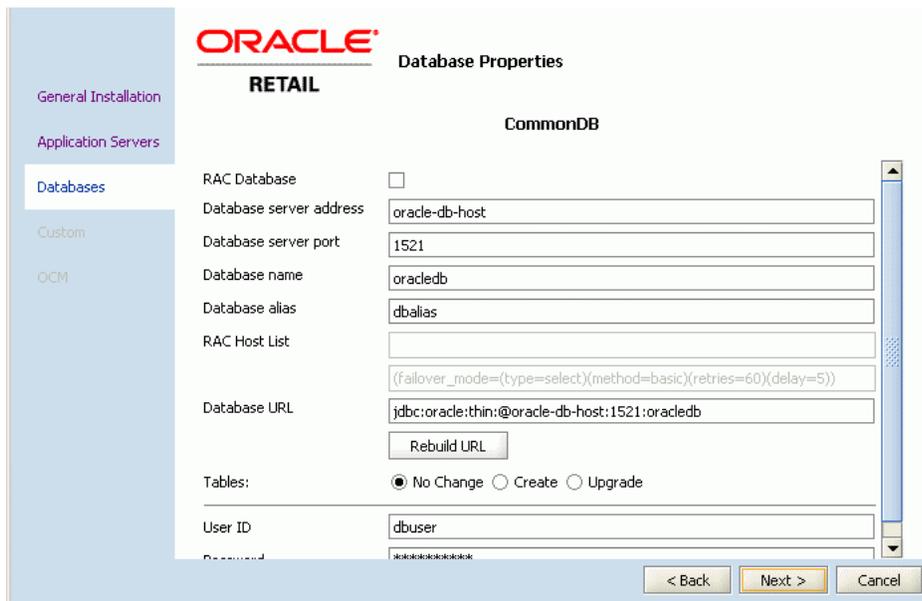
12. On the **Java Message Server Properties** screen, specify the name of the server or cluster that you may have set up as a Java Message Server (JMS), and click **Next**. The **Database Selections** screen appears.

**Figure 5–7 Database Selections Screen**



13. On the **Database Selections** screen, click **Oracle**, and then click **Next**. The **Database Properties** screen appears.

**Figure 5–8 Database Properties Screen**



14. On the **Database Properties** screen, enter the following database information for the **Audit**, and **CommonDB** databases:
  - **RAC Database** – Select this check box to indicate that the database is set up with Real Application Clusters (RAC). Once you select this check box, you

must then specify the RAC host list and properties in the **RAC Host List** and **RAC Properties** fields.

- **Database server address** – Enter the address of the database server.
- **Database server port** – Enter the server port number associated with your database.
- **Database name** – Enter the name used to identify your database.
- **Database alias** – Enter the database alias, which is typically the same name as the database.
- **Tables** – Select one of the following options:
  - **No Change** – Select this option if you have an existing database schema that you do not want to modify. This enables you to configure data sources, EAR files, and so forth, without affecting the database.
  - **Create** – Select this option if you are installing a new database schema for COE. The Oracle Installer drops all the schemas and creates new ones.
  - **Upgrade** – Select this option if you have an existing database schema that you want to update. Any existing data remains intact and modified on a row-by-row, column-by-column basis, depending on the actions specified in the database patches.
- **User ID** – Enter the user name associated with the database.
- **Password** – Enter the password associated with the database.

15. Click **Next**. The **Audit FE Schema Link Properties** screen appears.

**Figure 5–9 Audit FE Schema Link Properties Screen**

16. On the **Audit FE Schema Link Properties** screen, specify the user name and the database link associated with the application schema, and then click **Next**. The **Engine Properties** screen appears.

**Figure 5–10 Engine Properties Screen**

17. On the **Engine Properties** screen, specify the following information on the system hosting the Optimization Engine:
  - **Architecture** – operating system on which the Optimization Engine runs.
  - **Engine host name** – host name associated with the server.
  - **Engine port number** – port number associated with the server.
18. Click **Next**. The **Internationalization Properties** screen appears.
19. On the **Internationalization Properties** screen, in the **Control File Character Set** field, specify the character set to be used in the data control (.ctl) files.
 

For more information on the correct character set syntax, refer to the appendix *Locale Data* in the *Oracle Database Globalization Support Guide* included in the Oracle Database 10g Release 2 Documentation.

In case you choose not to set the value for this parameter, the default character set (UTF8) will be used for the application.
20. Click **Next**. The **Oracle Configuration Manager Registration** screen appears.

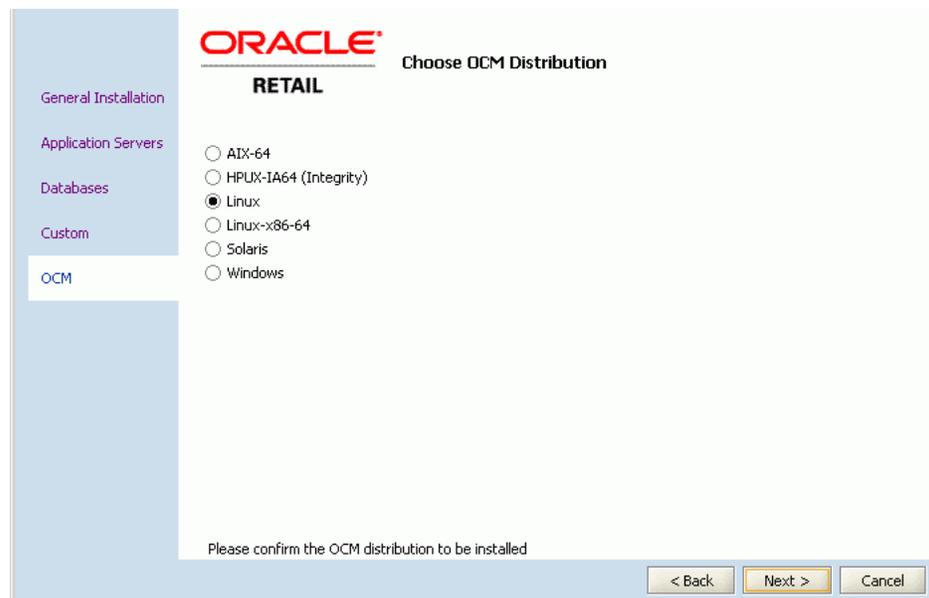
**Figure 5–11 Oracle Configuration Manager Registration Screen**


---

**Note:** For more information on Oracle Configuration Manager (OCM), see [Overview of Oracle Configuration Manager](#).

---

21. Click **Next**. The **Oracle Configuration Manager Licensing Agreement** screen appears. To skip installing the OCM, decline the license agreement, and click **Next**. The **Selection Verification** screen appears. Go to step 26.
22. Accept the license agreement, and click **Next**. The **Choose OCM Distribution** screen appears.

**Figure 5–12 Choose OCM Distribution Screen**

23. On the **Choose OCM Distribution** screen, select the operating system hosting the application, and click **Next**. The **Choose OCM Connection Mode** screen appears.

**Figure 5–13 Choose OCM Connection Mode Screen**

ORACLE®  
Choose OCM Connection Mode

RETAIL

Connected  
 Disconnected

OCM

OCM has the option to be installed in disconnected mode. Disconnected mode should only be used if there is no way to access the Oracle servers. Keep in mind that OCM can use a proxy server for connections if that is required on your network.

< Back   Next >   Cancel

24. On the **Choose OCM Connection Mode** screen, select one of the following modes:
- **Disconnected** – select this mode of OCM installation, when there is no way to access the Oracle servers or you want to keep the automatic collection of configuration data disabled. The **Selection Verification** screen appears. Go to Step 26.
  - **Connected** – select this mode to continue installing OCM, and click **Next**. The **Oracle Customer Information** screen appears.

**Figure 5–14 Oracle Customer Information Screen**

ORACLE®  
Oracle Customer Information

RETAIL

Customer Support Identifier

Metalink Account Username

Country Code: US - UNITED STATES

Provide your CSI number, Metalink account and Country Code where service agreement is initiated. This allows you to associate your configuration information with your Metalink account. When you log your service request with Oracle, you will be able to link the request with the pre-collected configuration data associated with your installation. If registration parameters are not provided or invalid, the configuration will not be performed. Follow the instructions in Release Notes to complete the installation if required.

< Back   Next >   Cancel

25. On the **Oracle Customer Information** screen, specify your Customer Support Identifier (CSI) number, My Oracle Support account user name, and the country code where the service agreement is initiated.
26. Click **Next**. The **Proxy Server Details** screen appears.

**Figure 5–15 Proxy Server Details Screen**

The screenshot displays the Oracle Proxy Server Details configuration screen. On the left, a navigation pane lists 'General Installation', 'Application Servers', 'Databases', 'Custom', and 'OCM', with 'OCM' currently selected. The main content area features the Oracle logo and 'RETAIL' branding. Below this, the title 'Proxy Server Details' is shown. The configuration options include a checkbox for 'Enable Proxy' and four text input fields for 'Server', 'Port', 'Username', and 'Password'. At the bottom of the screen, a note states: 'If your network configuration requires it, the OCM collector can use a proxy server to connect to Oracle.' Navigation buttons for '< Back', 'Next >', and 'Cancel' are located in the bottom right corner.

27. On the **Proxy Server Details** screen, enter the relevant proxy server details, and click **Next**.

---

**Note:** Skip this step if your connection to the Internet does not require a proxy server.

---

The **Select Verification** screen appears.

**Figure 5–16 Selection Verification Screen**

28. Review the **Selection Verification** screen, and click **Install**.

The **Installation Progress** screen appears.

29. Once the installation is complete, verify that the application is accessible over the network. In a Web browser, enter the following URL in the **Address** bar, and press **Enter**:

`http://<suite.host>:<suite.port>/p4pgui`

---



---

**Note:** In the URL above, `<suite.host>` and `<suite.port>` represent the host name and port you set up for the application during the installation. You must specify the relevant host name and port in the Address bar.

---



---

Before you log on to the application, you must complete the post-installation tasks. For more information, [Post-Installation Tasks](#).

If the installation resulted in issues, see [Troubleshooting Installation Issues](#) on page 5-26.

## Post-Installation Tasks

Now that you have installed Clearance Optimization Engine, restart your application server software and proceed with the following options:

- If you are ready to start working with your business data, perform the following tasks:
  1. [Loading Seed Data](#)
  2. [Loading Business Rules](#)
  3. [Loading User Roles](#)

---

---

**Note:** You must follow the above order to ensure that there are no errors when the users log on to the application.

---

---

- If you want to integrate Clearance Optimization Engine as part of the Oracle Application Server Single Sign-On implemented with Oracle Retail Workspace, see [Setting up Single Sign-On](#).
- If you want to maximize system performance, you can tune your Calculation Engine.
- If you want to implement the security for the Web Services, see [Implementing Security for the Web Services](#).

## Loading Seed Data

Clearance Optimization Engine provides a set of scripts that stage, transform, and load data into the target database tables in the Clearance Optimization Engine database. It is also referred to as the standard load.

Before starting the data load process, configure and run scripts that load the seed data. For more information, see the *Clearance Optimization Engine Configuration Guide*.

## Loading Business Rules

Use the Business Rules Management Administration shell script (brmadmin.sh) to load the business rule definitions set up for Clearance Optimization Engine. The script loads the business rule definitions specified in a rule definitions file.

The rule definitions are set up based on your business needs and includes the business rules information for Clearance Optimization Engine. Ensure that this file is available during the implementation. You can find a sample rules definition file, *rule\_definitions.xml*, at the following location:

```
<Clearance Optimization Engine_Installation>\modules\tools\conf\SampleRules
```

For more information, see the section *Loading Business Rule Definitions* in the *Clearance Optimization Engine Configuration Guide*.

## Loading User Roles

Use the User Management Bulk Loader script to load the user roles set up for Clearance Optimization Engine. The Bulk Loader script loads the user roles specified in a role set file.

The role set and role assignments are set up based on your business needs and include the user accounts and roles access information for Clearance Optimization Engine. Ensure that this file is available during the implementation. You can find sample user roles set files at the following location:

```
<Clearance Optimization Engine_Installation>\modules\tools\conf
```

For more information, see the chapter *User Management* in the *Clearance Optimization Engine Configuration Guide*.

## Implementing Security for the Web Services

Clearance Optimization Engine enables you to implement the security mechanism for the Web Service using the capabilities of the application server.

The Security mechanism is configurable and specific to your implementation. Based on your implementation, you can configure security features such as encryption, digital signature, and authentication for the Web Service using the features in the application server. For more information on configuring the application server for the security features, refer to the relevant application server documentation.

### Specifying Custom Header

Custom headers are used for specifying the remote user names (other than the Clearance Optimization Engine users) and are specified at the client side. They are used for auditing purposes only. Ensure that the request headers have the following format:

```
<appHeader:remoteUserCredentials xmlns:appHeader="MDO/appHeader">
<remoteUserName>remote_userid</remoteUserName>
</appHeader:remoteUserCredentials>
```

### Auditing Web Service Access

Auditing of the Web service access is an optional feature that you can enable or disable based on your implementation. Auditing is on by default. Once you enable auditing, the *audit\_tbl* database table will include the audit entries for every service request.

When specified with the Web service request, the remote user id will be logged in the *audit\_tbl* database table. When no user name is included, the value *anonymous* is logged for that entry. In case a user, other than the Clearance Optimization Engine users, is used or the authentication is turned off, the auditing entries are logged under the *root* user.

To enable or disable auditing the remote users that access the Web Service, you must set *audit.groupname.excluded* parameter in the *suite.properties* file.

For more information, refer to the *Oracle Retail Clearance Optimization Engine Configuration Guide*.

### Encrypting Usenametoken and Custom Header

To set up encryption for Usenametoken and custom header, you must complete the following instructions based on your application server:

- [For WebLogic Server](#)
- [For Oracle Application Server](#)

#### For WebLogic Server

Use the *wls-encrypt-usenametoken.xml* and *wls-encrypt-appheader.xml* files to set up the WS-Policy for encryptions. These files are part of the *p4pgui.ear* and are available after the application is installed. The *wls-encrypt-usenametoken.xml* file is used for the encryption of only the user name token and password. The *wls-encrypt-appheader.xml* file is used for encryption of the custom headers.

These files must be applied for the inbound message policies only. For more information on applying these files, refer to the WebLogic Server documentation.

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**Important:** If you do not plan to send the user name token as part of the Web service request, do not use *wls-encrypt-username.token.xml* file for encryption. If you do not plan to send the custom headers that contain the remote user name, do not use *wls-encrypt-appheader.xml* file for encryption.

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### For Oracle Application Server

Modify the *wsmgmt.xml* file (located in the <OAS\_HOME>/j2ee/home/config directory) to decrypt the user name and custom header on the server.

To decrypt the user name, you must add the **UsernameToken** to the *wsmgmt.xml* file. For more information, refer to the Oracle Application Server documentation.

To decrypt the custom header, add the following **tbe-element** tag in the *wsmgmt.xml* file:

```
<tbe-element name-space="MDO/appHeader" local-part="remoteUserCredentials"
mode="ELEMENT"/>
```

For example,

```
<decrypt>
.
.
<tbe-elements>
  <tbe-element name-space="MDO/appHeader" local-part="remoteUserCredentials"
mode="ELEMENT"/>
.
.
</tbe-elements>
.
.
</decrypt>
```

### User Authentication

If you are planning to use the user-based authentication for the Web Service against the COE database, you must complete the following instructions based on your application server:

- [Setting Up Authentication on the WebLogic Server](#)
- [Setting Up Authentication on the Oracle Application Server](#)

#### Setting Up Authentication on the WebLogic Server

To set up the authentication for the Web Service on the WebLogic Server:

1. Copy the **COSOWLoginModule.jar** (located in the <COE\_CD\_IMAGE>\price directory) to the <WebLogic Domain>/lib/mbeantypes directory on your application server, and restart the server for the JAR file to automatically get deployed.
2. Once deployed, you must modify the realm to use this JAR file for authentication. During this configuration of this realm, ensure that this JAR shows up second in the Authentication Providers list, and the Control Flag for the default provider is set to SUFFICIENT.
3. To perform any further configuration, refer to the WebLogic Server documentation.

### Setting Up Authentication on the Oracle Application Server

Use the Oracle Application Server Enterprise Manager to configure the security mechanism for the Web Service. Unlike the WebLogic Server, the user-based authentication mechanism gets deployed along with the application (**p4pgui.ear**). Once you log on to the application server, you must navigate to the V2 version of the Web Service, and enable or disable authentication (under the security feature) on the Administration tab.

For more information on the configuration, refer to the Oracle Application Server documentation.

### User Authorization

To enable or disable the authorization of the Clearance Optimization Engine users set up in the User Management, you must set the *coe.authorization.enabled* parameter in the *config.properties* file. For more information, refer to the *Oracle Retail Clearance Optimization Engine Configuration Guide*.

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**Important:** For this feature to work, you must first configure user authentication against the COE database. For more information, see [User Authentication](#).

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## Upgrading to the Latest Release of Clearance Optimization Engine

This section describes how you can upgrade from a previous release to the latest release of Clearance Optimization Engine. Before you start the upgrade process, Oracle recommends that you study, procure, and set up the system configuration required for the upgrade. For more information, see [Planning Your Installation](#).

To upgrade to the latest release of Clearance Optimization Engine Release 13.1:

1. Download the latest Clearance Optimization Engine installation media files. For more information, see [Accessing the Installation Software](#).

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**Note:** Installation media files for an Enterprise release (13.0) are available on the *Oracle Electronic Delivery* Web site (<http://edelivery.oracle.com>) and Patch releases (13.0.x) and Hot Fixes (13.0.x.y) are available on the *My Oracle Support* Web site (<https://metalink.oracle.com>).

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2. Back up the database, configuration root, custom scripts, and so on.
3. Upgrade the operating system referring to the operating system documentation for guidance. Also, apply the necessary patches as described in the chapter [Planning Your Installation](#).

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**Note:** Although you can upgrade an operating system from an existing version, Oracle recommends that you do a clean installation of the operating system.

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4. Once you have installed the operating system, install the Oracle database referring to the database documentation for guidance. For more information on the database configuration required for Clearance Optimization Engine, see [Setting Up the Database](#).

5. Install the supported application server (Oracle Application Server) referring to the application server documentation for guidance. For more information on the application server configuration required for Clearance Optimization Engine, see [Setting Up Your Application Server](#).
6. Verify the JVM version for the application server. The JVM versions differ based on the operating system. For more information on the compatible JVMs, see [Application Server Requirements](#).
7. Once you have set up the application server and database, edit the *install.properties* file and set up the database parameters in the following manner:
  - For the Common DB, set up the following parameters to indicate an upgrade to the existing database or schema:
    - set the **database.commondb.oracle.upgrade** parameter to **yes**.
    - set the **database.commondb.oracle.create** parameter to **no**.
  - For the Audit DB, set up the following parameters to indicate that a new database schema be created:
    - set the **database.auditdb.oracle.create** parameter to **yes**.
    - set the **database.auditdb.oracle.upgrade** parameter to **no**.

For more information, see [Setting Up Your Installation Properties File](#).
8. Before you run the installer, complete the following tasks:
  - Set up the environment variables required for the application installation. For more information, see [Setting Up Environment Variables](#).
  - If Oracle Application Server 10g is installed, ensure a specific memory argument in the *opmn.xml* and stop the applications manually to avoid an Out of Memory exception during the upgrade. For more information, see [Avoiding an Out of Memory Exception During an Upgrade](#).
9. Run the installer and install the application. For more information, see [Installing Clearance Optimization Engine in Silent Mode](#) or [Installing Clearance Optimization Engine Using the Graphical Oracle Installer](#). In case you choose to install the application in the graphical mode, ensure that you select the **Upgrade** check box in the **Database Properties** screens.
10. Replace the configuration root with the copy that was backed up in step 1.
11. Replace all other customizations and scripts that were backed up in step 1.

## Avoiding an Out of Memory Exception During an Upgrade

When you start the upgrade, the installation replaces the existing applications (deployed over the OC4J instance) with the new ones. During this operation, the OC4J instance may run out of physical memory space and generate an Out of Memory (PermGen space) exception. Once this exception occurs, the instance will no longer be available for use and a server restart will be necessary to continue operations. This has been identified as a known issue with Oracle Application Server 10g (**My Oracle Support Note 368342.1**).

To avoid an Out of Memory exception during the upgrade, you must complete the following steps:

1. Navigate to the following location in the Oracle Application Server Home directory:

<OAS\_HOME>/opmn/conf/

2. Edit the **opmn.xml** and ensure that it includes the following values within the **category id** tag (in the **ias-component id** section):

```
-Xmx512m -Xms256m -XX:MaxPermSize=256m
```

---

**Note:** The **-Xmx512m**, **-Xms256m**, and **-XX:MaxPermSize=256m** memory arguments are recommendations for a typical configuration. You can choose to set up a different memory argument that best fits your hardware configuration.

---

3. Log on to the Enterprise Manager for the application server by typing the following address in a Web browser:

```
http://mycompany.domain.com:<admin-port>/em
```

Once logged on, the **Cluster Topology** page appears.

4. On the **Cluster Topology** page, under the **Members** section, select the check box next to the following application components:
  - **BRMHelp**
  - **BusinessRuleMgr**
  - **c4p**
  - **price**
  - **PriceHelp**
  - **SuitePropertiesManager**
  - **SystemInformationTool**
  - **UMHelp**
5. Click **Stop**. The **Confirmation** page appears.
6. On the **Confirmation** page, review the components selected, and click **Yes**.
7. Restart the application server.

## Troubleshooting Installation Issues

The Oracle Installer simplifies the process of integrating and configuring multiple applications (for example, your database software, your application server software, and Clearance Optimization Engine).

Because of this complexity and the state of your own environment, there may be some situations that you need to troubleshoot and resolve. This section enables you to understand and resolve Clearance Optimization Engine installation issues.

Ensure that you thoroughly understand the messages being output by the Oracle Installer.

### Understanding Trace Output Messages

Note that the Oracle Installer displays messages that originate from multiple sources. Some messages are Clearance Optimization Engine-specific, such as the directories being created. Other messages are redirected `stderr` output from third-party applications; as a result, the message content depends on what the software vendor wants to display.

As a result, refer to the documentation associated with the relevant application when troubleshooting, which will help you determine if the error message is even valid and how to correct any existing problems.

For example, during database installation, if a error messages indicate class deployments issues, see the documentation associated with your database management software. The documentation will explain whether the message is spurious (and to be ignored) or valid. If the error is actually valid, the documentation will explain how to correct the problem.

### **Installation Does Not Complete**

If the installation process fails before the application has been completely installed, an on-screen message prompts you to review the log files to determine the cause of the errors. However, since the installation had not completed, no log file was generated.

Instead, review the on-screen trace messages to determine the origin of the error.

Before the installation was interrupted, some components may already have got installed or deployed. Once you fix the errors, you must remove any existing files in the installation base, undeploy any modules from the server, and run the installation again.

### **Installation Completes with Errors**

If the installation completes but has errors, an on-screen message prompts you to review the log. Also, you may want to review the generated log files.

The file naming convention of the log file is as follows:

```
install-<YYYYMMDD>-<HHMMSS>.log
```

where HH is in 24-hour format.

Review the log file to determine the origin of the errors. Before the installation was interrupted, some components may already have got installed or deployed. Once you fix the errors, you must remove any existing files in the installation base, undeploy any modules from the server, and run the installation again.



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## Setting up Single Sign-On

This chapter describes how you can set up the Single Sign-On plugin and integrate Clearance Optimization Engine as part of the Oracle Application Server Single Sign-On (OSSO) implemented with Oracle Retail Workspace.

It contains the following sections:

- [About the Single Sign-On Plugin](#)
- [Installing the Single Sign-On Plugin](#)
- [Integration with Oracle Retail Workspace](#)

### About the Single Sign-On Plugin

The current User Management module provides single sign-on capabilities for Clearance Optimization Engine. Once you install the Single Sign-On cookie plugin, you can achieve a one-way interoperability with other Oracle Retail applications (such as Workspace) implemented on Oracle Application Server Single Sign-On (OSSO).

When you log on to the OSSO server using a user account configured at both the systems, a User Management cookie gets registered in your browser session. This enables you to access the Clearance Optimization Engine URL directly. If you access Clearance Optimization Engine first and then later attempt to access the OSSO URL, you will need to log on to the OSSO system because the User Management module cannot create an SSO cookie.

For more information on Oracle Application Server Single Sign-On and Oracle Internet Directory, refer to the *Oracle Application Server Single Sign-On Administrator's Guide* and *Oracle Internet Directory Administrator's Guide*.

### Installing the Single Sign-On Plugin

To install the Single Sign-On plugin on the Oracle Application Server implementing Single Sign-On:

1. Copy the SSO Plugin JAR or ZIP file to the following location on the OSSO infrastructure application server:

```
$ORACLE_HOME/sso/plugin
```

2. Use one of the following commands, and extract the SSO Plugin contents:

```
jar -xvf plsso_plugin.jar
```

OR

```
unzip plsso_plugin.zip -d $ORACLE_HOME/sso/plugin
```

3. Review the `/sso/plugin` directory and verify that following classes and property files exist in this location:
  - `plsso.properties`
  - `PLSSOCustomCookie.class` (in `com/profitlogic/common/security/ssoplugin`)
  - `PLSSOPlugin.class` (in `com/profitlogic/common/security/ssoplugin`)
  - `PLSSOHelper.class` (in `com/profitlogic/common/security/util`)
  - `HexEncoder.class` (in `com/profitlogic/common/util`)
4. In the `plsso.properties` file, enter relevant information for the following properties
  - **domain** – indicates the domain within which the cookie is created for the browser session.
  - **timeout** – indicates the number of minutes the Single Sign-On plugin is valid.
  - **plssoplugin.log.file** – [Optional] indicates the location of the Single Sign-On plugin log file.
5. In the `$ORACLE_HOME/sso/conf/` directory, edit the `policy.properties` to include the following entries:

```
CustomCookie_ProviderPlugin
=com.profitlogic.common.security.ssoplugin.PLSSOCustomCookie
CustomCookieAuthLevel=MediumSecurity
```

---

**Important:** Ensure that the domain value includes both the systems (Clearance Optimization Engine and OSSO) and is more specific than a top-level domain name (such as `.com`).

For example, if the Clearance Optimization Engine system is hosted on `.mydepartment.mycompany.com` and the Oracle Single Sign-On system is hosted on `osso.mydepartment.mycompany.com`, the domain value must be specified as `mydepartment.mycompany.com`.

---

## Integration with Oracle Retail Workspace

The Oracle Retail Workspace installer prompts you to enter the URL for your supported Oracle Retail applications. However, if you install an application after the Oracle Retail Workspace installation, you must update the `retail-workspace-page-config.xml` file to reflect the new application.

The file as supplied comes with all the appropriate products configured, but the configurations for the products not installed are switched off (**rendered** parameter set to **false**).

To make the Clearance Optimization Engine URL available through Workspace:

1. In the `retail-workspace-page-config.xml` file, create a **secure-work-item id** entry with the value **COE**, and set the **rendered** parameter value to **true**.
2. Specify the application URL within the `<url>` tags as illustrated in the example below.

For Clearance Optimization Engine, there are no other application configuration parameters.

### Example

Suppose Clearance Optimization Engine is installed on **mycomputer.mycompany.com**, port **7777**, using a standard install and Clearance Optimization Engine is configured with the application name of **COE**. If you were to access Clearance Optimization Engine directly from your browser, you would type in:

```
http://mycomputer.mycompany.com:7777/p4pgui
```

The entry in the *retail-workspace-page-config.xml* file after installation would resemble the following:

```
<secure-work-item id="COE"
  display-string="Launch Clearance Optimization Engine"
  rendered="true"
  launchable="true"
  show-in-content-area="false">
<url>http://mycomputer.mycompany.com:7777/p4pgui</url>
<parameters>
</parameters>
```

## Configuring the Logout Page

Once you set up the Clearance Optimization Engine URL in the Workspace page configuration file (*retail-workspace-page-config.xml*), you must also enable the Clearance Optimization Engine Logout page. This page enables you to log out of the system completely by ending the browser session.

To enable the Logout page, in the **suite.properties** file (in the *<COE\_Installation>/config/suite* directory), set the **suite.logoutpage.show** parameter to **true**. For more information on this parameter, refer to the chapter User Management in the *Oracle Retail Clearance Optimization Engine Configuration Guide*.



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## Installation Order

This section provides the order in which the Oracle Retail applications should be installed. If a client has chosen to use some, but not all, of the applications the order is still valid less the applications not being installed.

1. Oracle Retail Merchandising System (RMS), Oracle Retail Trade Management (RTM), Oracle Retail Sales Audit (ReSA)
2. Oracle Retail Service Layer (RSL)
3. Oracle Retail Extract, Transform, Load (RETL)
4. Oracle Retail Active Retail Intelligence (ARI)
5. Oracle Retail Warehouse Management System (RWMS)
6. Oracle Retail Allocation
7. Oracle Retail Invoice Matching (ReIM)
8. Oracle Retail Price Management (RPM)

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**Note:** During the installation of RPM, you are asked for the RIBforRPM provider URL. Since RIB is installed after RPM, make a note of the URL you enter. If you need to change the RIBforRPM provider URL after you install RIB, you can do so by editing the `jndi_provider.xml` file.

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9. Oracle Retail Central Office (ORCO)
10. Oracle Retail Back Office (ORBO)
11. Oracle Retail Store Inventory Management (SIM)

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**Note:** During installation of SIM, you are asked for the AIP provider URL. Since AIP is installed after SIM, make a note of the URL you enter. If you need to change the AIP provider URL after you install AIP, you can do so by editing the `jndi_providers_ribclient.xml` file.

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12. Oracle Retail Integration Bus (RIB)
13. Oracle Retail Point-of-Service (ORPOS)
14. Oracle Retail Analytics Applications
  - Oracle Retail Markdown Optimization
  - Oracle Retail Clearance Optimization Engine

- 
- Oracle Retail Promotion Intelligence and Promotion Planning and Optimization
15. Oracle Retail Advanced Inventory Planning (AIP)
  16. Oracle Retail Predictive Application Server (RPAS)
  17. Oracle Retail Data Warehouse (RDW)
  18. Oracle Retail Workspace (ORW)

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