Oracle® Retail Markdown Optimization

Installation Guide

Release 13.2

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ORACLE®

Oracle® Retail Markdown Optimization Installation Guide, Release 13.2

Value-Added Reseller (VAR) Language

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Preface

This guide enables you to install the Oracle Retail Markdown Optimization application, along with the server-side components required for the application.

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.

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Related Documents

For more information about using the Markdown Optimization application, the following documents are available in the Oracle Retail Markdown Optimization Release 13.2 documentation set:

- *Oracle Retail Markdown Optimization Release Notes*

- *Oracle Retail Markdown Optimization Administration Guide*

- *Oracle Retail Markdown Optimization Implementation Guide*

- *Oracle Retail Markdown Optimization Configuration Guide*

- *Oracle Retail Markdown Optimization Operations Guide*

- *Oracle Retail Markdown Optimization User Guide*

- *Oracle Retail Markdown Optimization Licensing Information*

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- Product version and program/module name

- Functional and technical description of the problem (include business impact)

- Detailed step-by-step instructions to re-create

- Exact error message received

- Screen shots of each step you take

Review Patch Documentation

When you install the application for the first time, you install either a base release (for example, 13.1) or a later patch release (for example, 13.1.2). If you are installing the base release, additional patch, and bundled hot fix releases, read the documentation for all releases that have occurred since the base release before you begin installation. Documentation for patch and bundled hot fix releases can contain critical information related to the base release, as well as information about code changes since the base release.

Oracle Retail Documentation on the Oracle Technology Network

Documentation is packaged with each Oracle Retail product release. Oracle Retail product documentation is also available on the following Web site:

http://www.oracle.com/technology/documentation/oracle_retail.html

(Data Model documents are not available through Oracle Technology Network. These documents are packaged with released code, or you can obtain them through My Oracle Support.)

Documentation should be available on this Web site within a month after a product release.

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	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.

1

Overview

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

- Overview of Markdown Optimization
- Overview of Oracle Configuration Manager
- Roadmap for Implementing Markdown Optimization

Overview of Markdown Optimization

Markdown Optimization is a web-based application that enables retailers to attain maximum gross profit margins and clear inventory at specified outdates.

What Are the Markdown Optimization Components?

Markdown Optimization contains the following components:

- Markdown Optimization - includes application logic and a Web interface to user management, the business rules manager, and to the Markdown Optimization console. It is deployed on a J2EE-based application server. You can install and run multiple instances of the application server or application server machines, based on your business need.

- Calculation Engine - processes the weekly model run as a batch process. It generates forecasts and pricing recommendations that are displayed later on the user interface. The real time What-If request from Markdown Optimization is also processed by the Calculation Engine through the RMI server.

How Does Markdown Optimization Turn My Data Into Business Information?

Once a week (or any other defined time interval), a system administrator uploads a set of your business data, which include your relevant business data (for example, your business policies, specified effective dates, ticket prices, full prices, and so forth) and relevant historical data (for example, new sales, inventory, price levels, planned promotions, and other relevant data). This data load process is called the standard load. The only data that is gathered is what you have specified in your business rules.

The Calculation Engine analyzes this data and generates forecasts that calculate all possible price trajectories for applicable items. Markdown Optimization saves the best forecast trajectory as a recommendation, which you can view from the Markdown Optimization user interface. You can either accept these recommendations or modify them if you prefer an alternative markdown strategy.

At the end of the week, or any other more granular time interval, (such as daily) you generate a sendback file, which contains any changes that have been made using the Markdown Optimization user interface. This keeps your data up to date.

For detailed information about configuring and implementing your specific business rules, data configuration, and Markdown Optimization user interface, see the *Markdown Optimization Configuration Guide*.

How Does Markdown Optimization Help Me Reach My Business Goals?

During the week, retailers use the Markdown Optimization web interface to conduct day-to-day markdown planning to achieve two goals:

- Attain maximum gross margins - by applying the pricing recommendations calculated for in-season merchandise

- Clear inventory - to specified levels at specified outdates

For example, the Markdown Optimization What If feature enables you to create and test possible scenarios in order to forecast demand and select alternative prices. For information on using What If and other aspects of the Markdown Optimization user interface, refer to the *Markdown Optimization User Guide*. You can also access online help by clicking Help from the Markdown Optimization user interface.

Markdown Optimization enables you to customize the way the user interface displays information, sorts and filters data, and generates reports. For information on customizing the Markdown Optimization user interface, see the *Markdown Optimization Configuration Guide*.

Markdown Optimization Enterprise Components

The Markdown Optimization application 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

- Middleware 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 1–1   Markdown Optimization Network Diagram

Legend

External Components
(Appears in rounded rectangles)

Markdown Optimization Components
(Appears in rectangles)

Client System Tier

Operating System: Microsoft® Windows® XP
Professional SP3
Client System Requirements:
·   Microsoft® Office 2003
·   Microsoft® Internet Explorer 7.0

Middleware Tier

Application Server

Application Server

Markdown Optimization

Calculation Engine

Calculation Engine Server

RMI Server

Calculation Engine

Application Server

Reporting Server

Business Intelligence
Suite Enterprise Edition
(BI EE)

Database Server Tier

Oracle 11g
Database

Markdown Optimization Database

Retail Data Mart

Client System Tier

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

- Microsoft Windows

- Microsoft Office

- Microsoft Internet Explorer 7.0, with ActiveX control

Middleware Tier

The Middleware tier consists of application servers, Calculation Engine instances, and RMI servers. Application Server contain application server domains, clusters, and managed servers set up as a platform used by the Markdown Optimization application. Calculation Engine instances process forecast and optimization requests.

RMI servers provide a remote interface for calling the Calculation Engine for What-If requests.

The Markdown Optimization application is installed in a domain configured on the J2EE-based application server. You can install and run multiple instances of the application server or multiple application server machines, based on your business needs. Application modules include Worksheet Grids, What-If, Maintain Merchandise Grids, Seasonality Manager, Business Rule Property Manager, and User Management.

The Calculation Engine is installed outside of the J2EE-based application server. It processes the weekly model runs as part of a batch process. To improve performance, you can install and run multiple engines, and move them to any other production server within your environment as needed. An RMI server provides an interface to the Calculation Engine for processing the What-If requests.

> **Note:** You can choose to set up a single host for the application and Calculation Engine.

Database Server Tier

The Database Server tier contains the systems configured with the database management systems (Oracle 11*g* Database) along with the necessary database software.

The following essential schemas are created during the Markdown Optimization installation:

- Markdown Optimization Database – contains historical sales and other business information that originates from systems external to Markdown Optimization.

- The database also contains the Retail Data Mart (RDM), a set of data generated that can be used with Oracle Business Intelligence Suite Enterprise Edition (BI EE).

Optional Components

- Additional computational servers for implementing the Calculation Engine in a large-scale environment.

- Additional application server machines for implementing Markdown Optimization 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://support.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

> **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.

Roadmap for Implementing Markdown Optimization

This guide explains how you can install and set up the Markdown Optimization application, 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 Markdown Optimization for production, you must perform the following tasks in a sequence:

Table 1–1   Roadmap for Implementing Markdown Optimization

Task	Description
Pre-installation Tasks	
1.	Plan your environment, based on your business needs. For more information on the planning process and the supported configurations, see Chapter 2, "Planning Your Installation".
2.	Set up your application database. For more information, see Chapter 3, "Setting Up the Database".
3.	Set up your application server. For more information, see Chapter 4, "Setting Up Your Application Server".
4.	Set up a password store. For more information, see Chapter 5, "Setting Up Password Stores".
Installation Task	
5.	Access the Markdown Optimization installation software, set up the install.properties file, and run the Oracle installer. For more information, see Chapter 6, "Installing Markdown Optimization".
Post-installation Tasks	
6.	Configure your business rules and user accounts. For more information, see the *Oracle Retail Markdown Optimization Configuration Guide*.
7.	Load data and evaluate the results. For more information, see the *Oracle Retail Markdown Optimization Configuration Guide*.
8.	Set up your reporting tool, Oracle Business Intelligence Suite Enterprise Edition (BI EE). For more information, see Chapter 7, "Setting Up BI Infrastructure".
9.	If you want to integrate the Markdown Optimization as part of the Oracle Application Server Single Sign-On implemented with Oracle Retail Workspace, see Chapter 8, "Setting Up Single Sign-On".

Table 1–1   (Cont.) Roadmap for Implementing Markdown Optimization

Task	Description
10.	Modify the Markdown Optimization user interface to accommodate your business needs, as described in the *Oracle Retail Markdown Optimization Configuration Guide*. Concurrent with this activity, complete the remaining steps in this roadmap. You can continue refining the user interface iteratively, as needed (optional).
11.	Set up user accounts and introduce the end users to the application.
12.	Maintain the application as described in the *Oracle Retail Markdown Optimization Configuration Guide*.

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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.

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

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
- Supported Oracle Retail Products

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 11*g* Release 2, Enterprise Edition (11.2.0.1.0) RAC or Single Instance				
Database Features	Oracle Partitioning **Important:** 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 *Oracle Database Licensing Information 11g Release 2*.				
Operating System (64-bit)	Oracle Enterprise Linux 5.0 Update 3	Oracle Solaris 10 (SPARC) timezone patch 122032-01 or later and libc patch 119689-07 or later	HP-UX 11i v3 Update 1 (11.31), Itanium-based	IBM AIX 6.1 Technology Level (TL) 4	Red Hat Enterprise Linux 5 Update 3
Utilities	file transfer protocol utility (ftp or ssh/scp/rsync) sudo utility				

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 WebLogic Server 11g Release 1 (10.3.2). 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 WebLogic Server 11*g* Release 1 (10.3.2)				
Database Client	Oracle Database 11*g* Client Release 2 (11.2.0.1.0)				
Operating Systems (64-bit)	Oracle Enterprise Linux Release 5.0 Update 3	IBM AIX 6.1 Technology Level (TL) 4	Oracle Solaris 10 8/07 (Update 4)	HP-UX 11i v3 Update 1 (11.31), Itanium-based	Red Hat Enterprise Linux 5 Update 3
JVM (64-bit)	JDK 1.6 Update 18	IBM JDK 1.6 SR6	JDK 1.6 Update 18	HP UX JDK 1.6.0.07	JDK 1.6 Update 18

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 Professional SP3 (with Office 2003)	▪ Microsoft Office 2003 ▪ Microsoft Internet Explorer 7.0

Miscellaneous Utilities

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

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

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.
GNU m4	Version 1.4 or higher. You must use the *GNU m4* for the Clearance Optimization Engine installation. Other *m4* implementations may not be supported.
GNU tar	Version 1.13 or higher.
Open SSH	Version 3.6 or higher. You may choose to use another SSH implementation.

Supported Oracle Retail Products

The following Oracle Retail product is supported:

Table 2–5   Supported Oracle Retail Product

Product	Version
Oracle Retail Item Planning Configured for Clearance Optimization Engine (COE)	13.2
Oracle Retail Analytic Parameter Calculator for Markdown Optimization (APC-MDO)	13.2

Clearance Optimization Engine is part of the Oracle Retail Fashion Planning Bundle.

Overview of the Fashion Planning Bundle

The Fashion Planning Bundle is the integration of Item Planning (IP), Clearance Optimization Engine (COE), Assortment Planning (AP), Merchandise Financial Planning (MFP), and Size Profile Optimization (SPO) as a full-suite planning solution for fashion retailers.

3

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 Markdown Optimization Database
- Creating the Database Links

Installing the Database

The application requires the use of the Oracle® Database 11*g* Release 2 (11.2.0.1.0) 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 relevant Oracle Database 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 and Oracle Database Companion CD Installation Guide.

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 Markdown Optimization Database

Once you have the Markdown Optimization 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. In addition to other parameters that you need set up for your specific environment, following is the list of the recommended parameters for Markdown Optimization:

```
db_block_size = 8192
pga_aggregate_target = 1000M
workarea_size_policy = AUTO ( Oracle default)
undo_management = AUTO
global_names = FALSE  (Oracle default)
cursor_sharing = SIMILAR
query_rewrite_enabled = TRUE
query_rewrite_integrity = TRUSTED
db_file_multiblock_read_count = 32
log_checkpoints_to_alert = TRUE
session_cached_cursors = 900
timed_statistics = TRUE
star_transformation_enabled = FALSE
open_cursors    1500
parallel_max_servers = (set to 3 * number of cpus)
processes   =     450
recyclebin   =    off
DEFERRED_SEGMENT_CREATION = 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   Markdown Optimization Tablespaces

Tablespace	Description
DATA_01	Required. Default tablespace for Markdown Optimization table.
INDEX_01	Required. Tablespace for indexes of Markdown Optimization, STG, and ASH.
ITEM_DATA_PIN	Required. Tablespace for ITEM_DATA table of the Markdown Optimization 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 Markdown Optimization, 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 two default database user accounts that will be used during the installation to access the application database and Retail Data Mart (RDM).

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 <MDO USERNAME> IDENTIFIED BY <MDO PASSWORD>
DEFAULT TABELESPACE DATA_01;
CREATE USER <RDM USERNAME> IDENTIFIED  BY <RDM PASSWORD>
DEFAULT TABLESPACE DATA_01;
```

   Ensure that you replace `<MDO USERNAME>`, `<MDO PASSWORD>`, `<RDM USERNAME>`, and `<RDM PASSWORD>` with the relevant user names and passwords.

2. Once the users are created, use the Oracle 11*g* Database Configuration Assistant and grant the relevant access privileges to both the users. The following table lists the access privileges you must assign to both the users:

Table 3–2   Access Privileges for the Users

Type	Privileges
Roles	CONNECT
	RESOURCE
	SELECT_CATALOG_ROLE
Privileges	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

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

Type	Privileges
Java Runtime Privileges	exec dbms_java.grant_permission('<USERNAME>','SYS:java.lang.RuntimePermission', 'getClassLoader', '')
	exec dbms_java.grant_permission('<USERNAME>','SYS:java.lang.RuntimePermission', 'Verifier', '')
	Important: Replace <USERNAME> with the relevant user name.

> **Note:**   During the installation, all the RDM database objects are created on a separate schema (for example, the `<RDM USERNAME>` schema).

Creating the Database Links

It is recommended to have the RDM schema on the same database instance as the application database schema. If the RDM schema is on a separate database instance, before proceeding with the application installation, you must create a database link between the RDM and application database (for example, *rdmoakdblink*) instances.

To create the database link:

- At the SQL prompt, connect to the RDM schema, and then run the following command to create the database link for the RDM database to access the application database:

```
create database link rdmoakdblink connect to <MDO_Schema> identified by <MDO
USERNAME> using <MDO PASSWORD>;
```

Where,

- `<MDO_Schema>` – indicates the name of the application database schema.

- `<MDO USERNAME>` – indicates the user name associated with the application schema.

- `<MDO PASSWORD>` – indicates the password associated with the user name.

> **Important:**   Keep a note of the database link name. When you set up the install.properties file or run the Installer in graphical mode, you must specify this database link name for the *rdm.oak.dblink* property.

4

Setting Up Your Application Server

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

Markdown Optimization supports the use of Oracle WebLogic Server 11g Release 1 (10.3.2). This chapter provides instructions on setting up the application server selected for your business. It contains the following section:

- Setting Up the Oracle WebLogic Server

> **Note:** This chapter includes specific instructions required for Markdown Optimization. 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.

If you plan to use clusters for the Markdown Optimization installation, Oracle recommends that you specify the managed servers and clusters when you set up the 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, refer to the Oracle WebLogic Server documentation.

Setting Up the Oracle WebLogic Server

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
- Enabling SSL in the WebLogic Server

Installing the WebLogic Server

Install the Oracle WebLogic Server Release 11gR1 (10.3.2) referring to the Oracle WebLogic Server Documentation for guidance.

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

Setting Up a WebLogic Domain

Use the 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 introduces the steps to configure the managed servers and clusters on the application server. For more information on the WebLogic Configuration Wizard and customizing the domain environments with managed servers and clusters, refer to the *Oracle Fusion Middleware 11g Creating Domains Using the Configuration Wizard*.

To set up a WebLogic domain:

1. In order to run the WebLogic Configuration Wizard in the graphical mode, export DISPLAY and have cygwin with X11 or other X windows system.

2. Navigate to the **<WLS_HOME>/common/bin** directory, and run the following command to start the WebLogic Configuration Wizard in the graphical mode:

   ```
   bash config.sh
   ```

   > **Note:** In order to run the WebLogic Configuration Wizard in the graphical mode, export DISPLAY and have cygwin with X11 or other X windows system.

3. On the 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 **Create a new WebLogic domain** option, and then click **Next**.
2.	*Select Domain Source Screen*	
		Click the **Generate a domain configured automatically to support the following products** option, and then click **Next**.
		Note that the **Basic WebLogic Server Domain - 10.3.2.0 [wlserver_10.3]** check box is automatically selected and greyed out.
3.	*Specify Domain Name and Location Screen*	
		Enter a domain name in the **Domain Name** field.
		In the **Domain location** field, specify the location where you want to install the domain.
4.	*Configure Administrator User Name and Password Screen*	
		Set up an administrative user name and password.
		Important: Please keep a note of the user name and password. You must set up an alias in a password store using this user name and password. The Oracle Installer uses the alias name for this user account to connect to the WebLogic Server during the application installation. For more information on setting up a password store and an alias, see Setting Up a Password Store for the Application Installation.
5.	*Configure Server Start Mode and JDK Screen*	
		Under **WebLogic Domain Startup Mode**, click **Production Mode**.
		Under **JDK Selection**, select the relevant JDK.

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

Step	Screen	Task
		Click **Next**.
6.	*Select Optional Configuration Screen*	
		Select the configurations you want to customize and click **Next**. Go to Step 7.
		OR
		To proceed directly to creating your domain. Skip the following steps and go to Step 15.
7.	*Configure the Administration Server Screen*	
		Enter relevant information in the following fields:
		■ **Name** – Valid server name. (String of characters that can include spaces.)
		■ **Listen address** – Listen address for a server instance.
		■ **Listen port** – Valid value for the listen port.
		■ **SSL listen port** – Valid value to be used for secure requests.
		■ **SSL enabled** – Select this check box to enable SSL. You can enter values in the SSL listen port field once you select this check box.
		Click **Next**.
8.	*Configure Managed Servers Screen*	
		Click **Add**, and then enter relevant information in the following fields:
		■ **Name** – Valid server name. (String of characters that can include spaces.)
		■ **Listen address** – Listen address for a server instance.
		■ **Listen port** – Valid value for the listen port.
		■ **SSL listen port** – Valid value to be used for secure requests.
		Repeat this step to add more managed servers.
		Click **Next**.
9.	*Configure Clusters Screen*	
		This window appears, once you specify the managed servers.
		Click **Add**, and then enter relevant information in the following fields:
		■ **Name** – Valid cluster name. (String of characters that can include spaces.)
		■ **Multicast address** – Address used by the cluster members to communicate with each other.
		■ **Multicast port** – Port used by the cluster members to communicate with each other.
		■ **Cluster address** – Address that identifies the Managed Servers in the cluster.
		Repeat this step to specify more clusters.
		Click **Next**.

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

Step	Screen	Task
10.	*Assign Servers to Clusters Screen*	
		Use the arrow buttons and assign the servers to the clusters specified in the domain.
		Click **Next**.
11.	*Configure Machines Screen*	
		Click **Add**, and then add the machine (Unix-based) information.
		Click **Next**.
12.	*Assign Servers to Machines Screen*	
		Use the arrow buttons and assign the managed servers to the machines specified in the domain.
		Click **Next**.
13.	Target Deployments to Clusters or Servers	
		In the left pane, select the clusters or servers, and then select the relevant application check boxes in the right pane to target them to the specific cluster or managed server.
		For each cluster and managed server, select the **Library** check box. The WebLogic domain must be set up in such a manner that all the clusters and the relevant managed servers include all the libraries included with the WebLogic server.
14.	Target Services to Clusters or Servers	
		In the left pane, select the clusters or servers, and then select the relevant services check boxes in the right pane to target them to the specific cluster or managed server.
15.	*Configuration Summary Screen*	
		Review and confirm the configuration summary, and then click **Next**.
16.	*Creating Domain Screen*	
		Displays the domain configuration progress.
		Once the configuration is complete, click **Done**.

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.

    - **JAVA_VENDOR** – The Java Development Kit (JDK) installed for the WebLogic Server. You can specify 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>"
PRODUCTION_MODE="true"
JAVA_VENDOR="<name of the JDK>"
JAVA_HOME="<location where JDK is installed>"
. ${WL_HOME}/common/bin/commEnv.sh
SERVER_NAME="admin"
CONFIGROOT=<Markdown Optimization INSTALLATION DIRECTORY>/config
JAVA_OPTIONS=$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}:<Markdown Optimization 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 &
```

Enabling SSL in the WebLogic Server

You can choose to install the application over HTTP or HTTPS protocol. Before you start the application installation, you must choose and set up the HTTP protocol for the application. This section highlights how you can enable Secure Sockets Layer (SSL) protocol for your server using the WebLogic Server Administration Console.

For more information on SSL in WebLogic Server, refer to the Oracle WebLogic Server documentation.

To enable SSL in the WebLogic:

1. Log on to the WebLogic Server Administration Console by typing the following address in a Web browser:

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

2. In the **Domain Configurations** section, under the **Environment** section, click **Servers**. The **Summary of Servers** page appears.

   You can also click **Environment** under the **Domain Structure** section in the left navigation pane.

3. On the **Summary of Servers** page, select the server you want for enabling SSL. The **Settings for <servername>** page appears.

4. In the **Settings for <servername>** page, under **Configuration**, click the **General** tab.

5. Click **Lock & Edit**.

6. Select the **SSL Listen Port Enabled** check box, and then enter a relevant port number in the **SSL Listen Port** field. By default, the port number is set to **7002**.

7. Click **Save**.

8. Click **Activate Changes**.

Setting Up Identity and Trust Keystores

SSL can be configured as a one-way or two-way implementation. In a one-way SSL, the server presents a certificate to the client and the client is not required to present a certificate to the server. In a two-way SSL, the server presents a certificate to the client and the client presents a certificate to the server.

In case you enable SSL for your application, PriceAdmin utility requires that you set up a identity and trust keystore on the WebLogic server. Once set, the WebLogic server presents a certificate to the client. Once the client system verifies the certificate from the server, the server then verifies the client by authenticating the user credentials from the wallet.

For more information on setting up trust keystore, refer to the *Oracle Fusion Middleware Securing Oracle WebLogic Server* documentation.

You can use the WebLogic Server Administration Console to configure the identity and trust keystores. For more information, refer to the *Oracle WebLogic Server Administration Console Help*.

> **Note:** Keep a note of the location where the trust store is installed and the alias name for the trust store. You will need to specify these when you use the PriceAdmin utility. For more information, refer to the *Oracle Retail Markdown Optimization Operations Guide*.

5

Setting Up Password Stores

Before you start the application installation, you must set up a password store for the database user accounts using Oracle Wallet on the application database side. You must also set up another password store for the application and application server user accounts using the Credential Storage Manager (CSM). Once the CSM password store is set up, you must also set up the same database credentials (including the alias name, stored in the Oracle Wallet) in the CSM password store.

This chapter describes the steps you must use to set up the relevant password stores. It includes the following sections:

- About Password Stores
- Setting Up a Password Store for the Database User Accounts
- Setting Up a Password Store for the Application Installation

About Password Stores

As part of the Oracle Software Security Assurance (OSSA) program, sensitive information such as user credentials must be encrypted and stored in a secure location called as the password stores. The password stores are secure software containers that store the encrypted user credentials.

You can retrieve the credentials using aliases that were set up when encrypting and storing the user credentials in the password store.

Once configured, the application installation and the other relevant scripts no longer need to use embedded user names and password. This reduces any security risks that may exist because user names and passwords are no longer exposed.

When the installation starts, all the necessary user credentials will be retrieved from the Oracle Wallet based on the alias name associated with the user credentials.

Setting Up a Password Store for the Database User Accounts

Once the database is installed and the default database user accounts set up, you must set up a password store using the Oracle Wallet. This involves assigning an alias for the user name and associated password for each database user account. The alias will later be used during the application installation. This password store must be created on the system where the application server and database client are installed.

This section highlights the steps you must take to set up a wallet and then the aliases for the database user accounts. For more information on configuring authentication and password stores, refer to the *Oracle Database Security Guide*.

> **Note:** In this section, <wallet_location> is a placeholder text for illustration purposes. Before running the command, ensure that you specify the path to the location where you want to create and store the wallet.

To set up a password store for the database user accounts:

1. Create a wallet using the following command:

```
mkstore -wrl <wallet_location> -create
```

Once you run the command, a prompt appears to enter a password for the Oracle Wallet.

> **Note:** The *mkstore* utility is included in the Oracle Database Client installation.

The wallet is created with the auto-login feature enabled. This feature enables the database client to access the wallet contents without using the password. For more information, refer to the *Oracle Database Advanced Security Administrator's Guide*.

2. Create the database connection credentials in the wallet using the following command:

```
mkstore -wrl <wallet_location> -createCredential <alias-name>
<database-user-name>
```

Once you run the command, a prompt appears to enter the password associated with the database user account.

3. Repeat step 2 for all the database user accounts.

4. Update the **sqlnet.ora** file to include the following statements:

```
WALLET_LOCATION = (SOURCE = (METHOD = FILE) (METHOD_DATA = (DIRECTORY =
<wallet_location>)))
SQLNET.WALLET_OVERRIDE = TRUE
SSL_CLIENT_AUTHENTICATION = FALSE
```

5. Update the **tnsnames.ora** file to include the following entry for each alias name to be set up.

```
<alias-name> =
    (DESCRIPTION =
     (ADDRESS_LIST =
            (ADDRESS = (PROTOCOL = TCP) (HOST = <host>) (PORT = <port>))
        )
        (CONNECT_DATA =
            (SERVICE_NAME = <service>)
        )
    )
```

In the statement above, `<alias-name>`, `<host>`, `<port>`, and `<service>` are placeholder text for illustration purposes. Ensure that you replace these with the relevant values.

Setting Up a Password Store for the Application Installation

Before starting the application installer, you must set up the user credentials for the application server and the database user accounts.

> **Note:** In this section `<MDO_CD_IMAGE>` refers to the location where you extract the Markdown Optimization installation media. To proceed ahead, you must first access and extract the installation media.For more information, see Accessing the Installation Software.

The application installation includes a Credential Storage Manager that you can use to set up a password store for the application installation.

To set up a password store for the application installation using the Credential Storage Manager:

1. Navigate to the following subfolder in the `<MDO_CD_IMAGE>` folder:

   ```
   <MDO_CD_IMAGE>/CSM/lib/
   ```

   For more information on the `<MDO_CD_IMAGE>` folder, see Accessing the Installation Software.

2. Run the following command:

   ```
   java -jar retail-public-security-api.jar <alias-name> <user-name>
   <locationofwalletDir>
   ```

   Once you run this command, you will be prompted to enter the password associated with the user name.

   > **Note:** In the command above, `<alias-name>`, `<user-name>`, and `<locationofwalletDir>` are placeholder text for illustration purposes. For each set of user name and associated password, you must specify an unique alias name.
   >
   > For the `<locationofwalletDir>` argument, you must specify the location where you want to store the wallet file that contains the encrypted user credentials. Keep a note of this location. You will need to set this location as the value for the `CSM_HOME` before starting the application installation. For more information, see Installing Markdown Optimization.

3. Repeat step 2 to set up aliases for all the database and application server administrative user accounts.

Example

To set up an alias with a name **MDOAdminAlias** for the user **mdo-admin** and store the wallet file at **/u00/product/oracle/mdo/wallet/**, specify the following:

```
java -jar retail-public-security-api.jar MDOAdminAlias mdo-admin
/u00/product/oracle/mdo/wallet/
```

Important Considerations

- For database user accounts, ensure that you set up the same alias names between the password stores (Oracle Wallet and Credential Store Manager).

- Keep a note of all the aliases you have set up. During the application installation, you will need to enter the alias names for the application installer to connect to the database and application server.

6

Installing Markdown Optimization

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

- Overview of the Installation Process
- Installing Markdown Optimization
- Post-Installation Tasks
- Upgrading to the Latest Release of Markdown Optimization
- Troubleshooting Installation Issues

Overview of the Installation Process

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

In order to install Markdown Optimization, 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 Markdown Optimization installation 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 Markdown Optimization.

Installing Markdown Optimization

Installing Markdown Optimization consists of the following tasks:

- Accessing the Installation Software
- Setting Up Your Installation Properties File
- Installing Markdown Optimization in Silent Mode
- Installing Markdown Optimization Using the Graphical Oracle Installer

Accessing the Installation Software

In order to install Markdown Optimization, 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 Markdown Optimization software ZIP file from the Oracle E-Delivery site.

To download the Markdown Optimization software:

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

   http://edelivery.oracle.com/

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

   > **Note:** Installation media files for an Enterprise release (13.2) are available on the *Oracle Electronic Delivery* Web site (http://edelivery.oracle.com) and Patch releases (13.2.x) and Hot Fixes (13.2.x.y) are available on the *My Oracle Support* Web site (https://support.oracle.com).

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 Markdown Optimization 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 <MDO_CD_IMAGE> directory.

   Now you can set up your Markdown Optimization installation properties file.

> **Note:** Before you proceed with setting up the installation properties file, ensure that you have set up the password stores. For more information, see Setting Up Password Stores.

Setting Up Your Installation Properties File

In order to install Markdown Optimization, 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 <MDO_CD_IMAGE> directory exists and is populated as described in Accessing the Installation Software, on page 6-2.

2. Navigate to the <MDO_CD_IMAGE> directory and copy the reference.price.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 Markdown Optimization, using either of the following modes:

- Installing Markdown Optimization in Silent Mode
- Installing Markdown Optimization 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 the Markdown Optimization application:

Table 6–1   Install.properties Parameters Reference

Parameter	Description
Architecture Properties	
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 the Markdown Optimization application.
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.

Table 6–1   (Cont.) Install.properties Parameters Reference

Parameter	Description
delphi.rmi.port	The port associated with the host name specified in the *delphi.rmi.host* parameter where the Delphi RMI server will run.
Database Properties	
install.database	Use this parameter to specify the installed database.
Oracle Properties	
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.
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 (`<MDO USERNAME>`). For more information, see Creating the Default User Accounts.
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.
Properties for databases with Real Application Clusters (RAC)	
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	Optional. Use this parameter to specify the database URL for JDBC connectivity.
	
	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.
	
	Syntax:
	For non RAC database,
	`jdbc:oracle:thin:@<host name>:<dbport>:<dbname>`
	For RAC database,
	`jdbc:oracle:thin:@(DESCRIPTION = (ADDRESS_LIST = (ADDRESS = (PROTOCOL = TCP)(HOST = <host name1>)(PORT = <dbport1>)) (ADDRESS = (PROTOCOL = TCP)(HOST = <host name2>)(PORT = <dbport2>)) (ADDRESS = (PROTOCOL = TCP)(HOST = <host name3>)(PORT = <dbport3>)) (ADDRESS = (PROTOCOL = TCP)(HOST = <host name4>)(PORT = <dbport4>)))(CONNECT_DATA = (SERVICE_NAME = <dbname>) (failover_mode = (type=select) (method=basic) (retries=60)(delay=5))))`

database.commondb.oracle.create	Use this parameter to specify that a new database schema must be created. Valid values are Yes or No.
database.commondb.oracle.upgrade	Use this parameter to specify that the existing database schema be upgraded. Valid values are Yes or No.

Table 6–1 (Cont.) Install.properties Parameters Reference

Parameter	Description
RDM database connection information for Oracle database	
Note: Ensure that the RDM database objects are created on a separate schema.	
RDM Database Information	
database.rdmdb.oracle.dbname	Use this parameter to specify the RDM database name.
database.rdmdb.oracle.dbalias	Use this parameter to specify the RDM database alias name.
database.rdmdb.oracle.address	Use this parameter to specify the host name or IP address where the RDM database is installed.
database.rdmdb.oracle.dbport	Use this parameter to specify the port to connect to the RDM database.
Database Schema Name for OAK and FE schemas	
rdm.oakschema	Use this parameter to specify the database name for the OAK schema.
rdm.feschema	Use this parameter to specify the database name for the front end schema.
Properties for databases with Real Application Clusters (RAC)	
database.rdmdb.oracle.racenabled	Use this parameter to indicate that the database is set up with Real Application Clusters (RAC).
database.rdmdb.oracle.dbhostlist	Use this parameter to specify the host names (with port numbers) of the servers hosting the database.

database.rdmdb.oracle.dburl	Optional. Use this parameter to specify the database URL for JDBC connectivity.
	
	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.
	
	Syntax:
	
	For non RAC database,
	
	`jdbc:oracle:thin:@<host name>:<dbport>:<dbname>`
	
	For RAC database,
	
	`jdbc:oracle:thin:@(DESCRIPTION = (ADDRESS_LIST = (ADDRESS = (PROTOCOL = TCP)(HOST = <host name1>)(PORT = <dbport1>)) (ADDRESS = (PROTOCOL = TCP)(HOST = <host name2>)(PORT = <dbport2>)) (ADDRESS = (PROTOCOL = TCP)(HOST = <host name3>)(PORT = <dbport3>)) (ADDRESS = (PROTOCOL = TCP)(HOST = <host name4>)(PORT = <dbport4>)))(CONNECT_DATA = (SERVICE_NAME = <dbname>) (failover_mode = (type=select) (method=basic) (retries=60)(delay=5))))`

Properties to create or upgrade RDM database	
database.rdmdb.oracle.create	Use this parameter to indicate that a new RDM database be created. Valid values are Yes or No.
database.rdmdb.oracle.upgrade	Use this parameter to indicate that the existing RDM database be upgraded. Valid values are Yes or No.
Application Server Properties	
install.appserver	The default application server for the application.
database.commondb.oracle.dbdriver	Use this parameter to specify the database driver that provides connection to the database.

Table 6–1   (Cont.) Install.properties Parameters Reference

Parameter	Description
WebLogic Properties	
weblogic.server	Use this parameter to specify the name of the server instance.
weblogic.admin.port	Use this parameter to specify the port to connect to the WebLogic application server.
weblogic.admin.alias	Use this parameter to specify the alias name set up for the WebLogic Server administrative user account. For more information, see Setting Up a Password Store for the Application Installation.
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 installation.
WebLogic JNDI Properties	
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 <Markdown Optimization_Installation>/modules/tools/conf directory). 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. For example, 7001,7002,7003.

Note:

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.

Parameter	Description
WebLogic Cluster Properties	
scope.fetarget.serverobject	Use this parameter to specify the name of the server or cluster where the Markdown Optimization database is installed.
scope.fetarget.type	Use this parameter to specify the type of the server object. You can specify cluster or server.
WebLogic Cluster (Calc Engine) Properties	
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. <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).
Post-installation Properties Files	
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.

Table 6–1   (Cont.) Install.properties Parameters Reference

Parameter	Description
RDM Roll-Up information	
rdm.MviewsYN	Use this parameter to indicate whether you want roll-ups created as part of the installation.
rdm.numOrigMviews	Use this parameter to indicate the number of roll-ups already created before installing the application.
	When you install the application for the first time, set the value to '0'. In case you want to add more roll-ups, include the existing number of roll-ups.
rdm.merchOptLvl	Use these parameters to indicate the merchandise and location hierarchy levels of an item, at which the optimization occurs.
rdm.locOptLvl	The level number are located in the LEVEL_SQC column of CLIENT_ HIERARCHY_LEVELS_TBL for merchandise and location hierarchies.
rdm.mview1MerchLvl	Use these parameters to indicate the merchandise and location hierarchy levels at which the roll-ups must be created to enhance performance.
rdm.mview1LocLvl	You can specify a set of four roll-ups only.
rdm.mview2MerchLvl	
rdm.mview2LocLvl	The level number are located in the LEVEL_SQC column of CLIENT_ HIERARCHY_LEVELS_TBL for merchandise and location hierarchies.
rdm.mview3MerchLvl	
rdm.mview3LocLvl	
rdm.mview4MerchLvl	
rdm.mview4LocLvl	
Audit Database Connection Information for Oracle	
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.
Properties for databases with Real Application Clusters (RAC)	
database.auditdb.oracle.racenabled	Use this parameter to indicate that the database is set up with Real Application Clusters (RAC).
database.auditdb.oracle.dbhostlist	Use this parameter to specify the host names (with port numbers) of the servers hosting the database.
database.auditdb.oracle.dburl	Use this parameter to specify the database URL for JDBC connectivity.
	Syntax:
	jdbc:oracle:thin:@<host name>:<dbport>:<dbname>
AUDIT property for Creating the Database	
database.auditdb.oracle.create	Use this parameter to indicate that a new Audit database must be created.
AUDIT property for Upgrading the Database	
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 *none*.

Table 6–1   (Cont.) Install.properties Parameters Reference

Parameter	Description
rdm.oak.dblink	Use this parameter to specify the database link used by the RDM and optimized history schemas to access the BASE schema. Although this link can be a public or private link in each schema, ensure that the link name is the same. If the schemas exist in the same instance, you can leave the value blank. In case the schema exists in a different instance, you must specify the database link name.
Oracle Configuration Manager (OCM) Properties	
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 *no* 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: ■ 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. ■ Disconnected – to skip the OCM configuration.
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 *yes* or *no*.
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.
Internationalization Properties	
dataset.load.characterset	Use this parameter to 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.

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)

- LD_LIBRARY_PATH_64 (applies to Linux, HP-UX, Solaris based systems)

- LIBPATH (applies to IBM AIX based systems)

- TNS_ADMIN

- CSM_HOME

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/jdk1.6

export ORACLE_HOME=<path where the Oracle database is installed>
For example, /u01/app/oracle/product/11.2.0/db_1

export PATH=$ORACLE_HOME/bin:$PATH

export LD_LIBRARY_PATH=<MDO InstallDir>/modules/Engine/lib/;$LD_LIBRARY_PATH
For example,
 - For a HP-UX based system, export LD_LIBRARY_PATH
=/u01/app/mdo/modules/Engine/lib/hpux_ia64;$LD_LIBRARY_PATH

export LIBPATH=<MDO InstallDir>/modules/Engine/lib/;$LIBPATH
{LIBPATH applies to IBM AIX systems only}
For example, export LIBPATH=/u01/app/mdo/modules/Engine/lib/aix_powerpc;$LIBPATH

export LD_LIBRARY_PATH_64=<MDO InstallDir>/modules/Engine/lib/;$LD_LIBRARY_PATH_64
For example,
 - For a HP-UX based system, export LD_LIBRARY_PATH_64
=/u01/app/mdo/modules/Engine/lib/hpux_ia64;$LD_LIBRARY_PATH_64

export TNS_ADMIN=<path where the tnsnames.ora file for the database is located.>
For example, /u01/app/oracle/product/11.2.0/db_1/NETWORK/ADMIN

export CSM_HOME=<path where the Oracle Wallet is installed>
For example, /u00/product/oracle/mdo/wallet/
```

Installing Markdown Optimization in Silent Mode

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

To install Markdown Optimization in silent mode:

1. Ensure that you have completed "Setting Up Your Installation Properties File" on page 6-3.

2. Make sure that your application server is running.

3. From your application server machine, enter the following command with the relevant arguments:

```
bash install.sh
```

install.sh

The install.sh command enables you to install Markdown Optimization.

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.
-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 Markdown Optimization installation creates the application 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 Markdown Optimization Using the Graphical Oracle Installer

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

To install Markdown Optimization using the Oracle Installer:

1. Ensure that you have completed "Setting Up Your Installation Properties File" on page 6-3.

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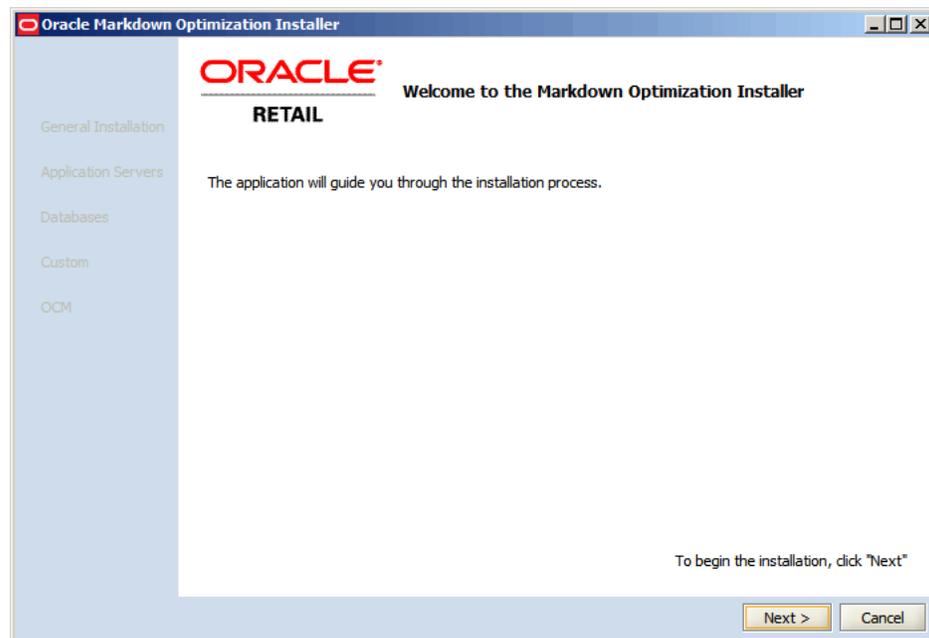
   ```
   export DISPLAY=<IP address>:0.0
   ```

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

   ```
   bash install.sh
   ```

   Note: For more information about this command, see Installing Markdown Optimization in Silent Mode.

   The **Welcome** screen appears.

Figure 6–1   Welcome Screen

5. Click **Next**. The **Markdown Optimization Installation Destination** screen appears.

Figure 6–2   Markdown Optimization Installation Destination Screen
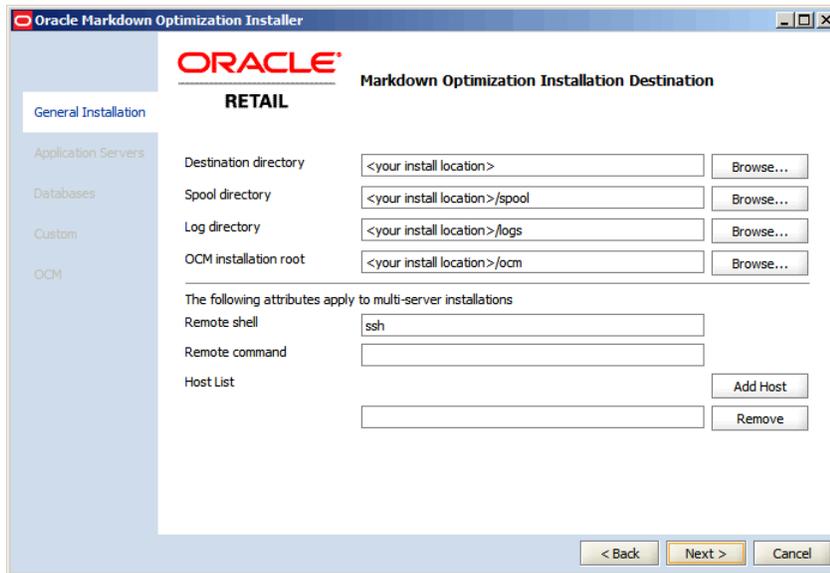
6. On the **Markdown Optimization Installation Destination** screen, specify the paths for the following:

   ■ **Destination Directory** - path to the Markdown Optimization installation target directory.

   ■ **Spool Directory** – path to the Markdown Optimization spool directory.

   ■ **Log Directory** – path to the Markdown Optimization installation log files.

   ■ **OCM installation root** – path to the location where the Oracle Configuration Manager (OCM) is installed.

7. Click **Next**. The **Markdown Optimization Selections** screen appears.

Figure 6–3   Markdown Optimization Selections Screen
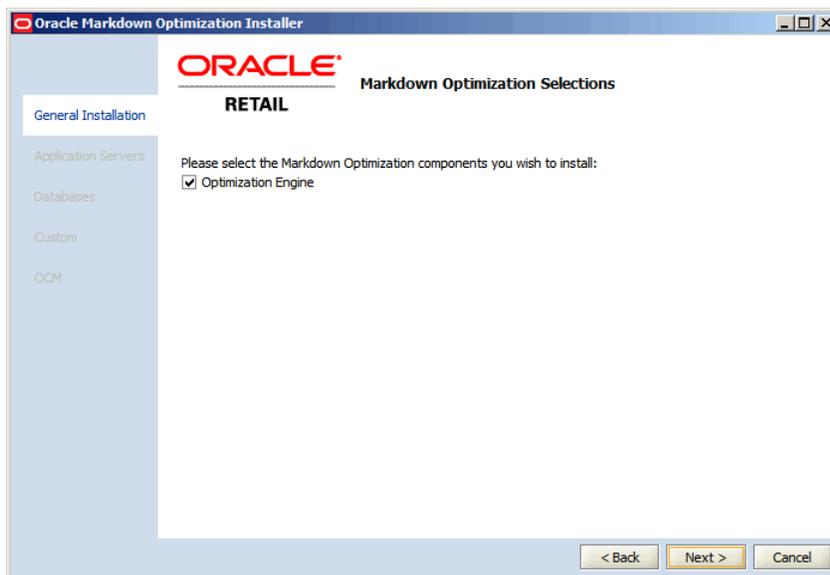
8. On the **Markdown Optimization Selections** screen, select the component you want to install, and click **Next**. The **Application Server Selections** screen appears.

Figure 6–4   Application Server Selections Screen
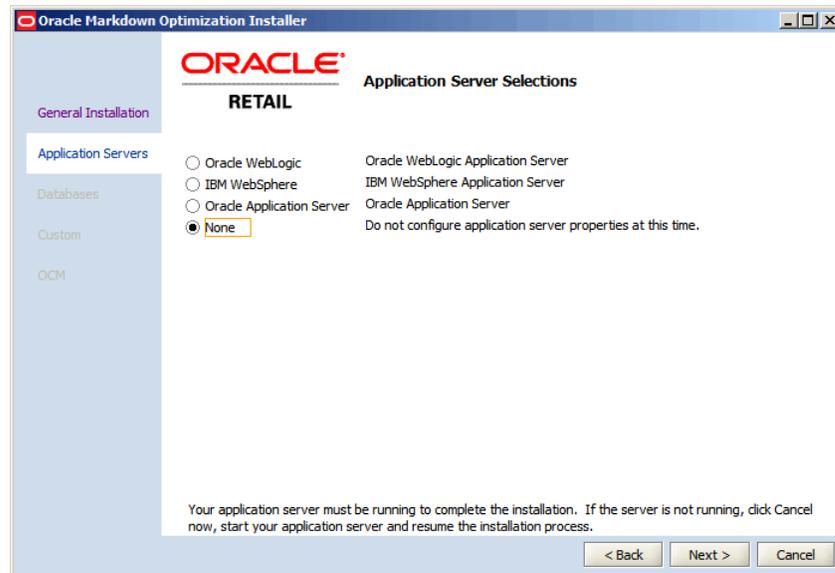
9. On the **Application Server Selections** screen, click **Oracle WebLogic Application Server**, and then click **Next**. The **WebLogic Application Server** screen appears.

Figure 6–5   Oracle Application Server Screen
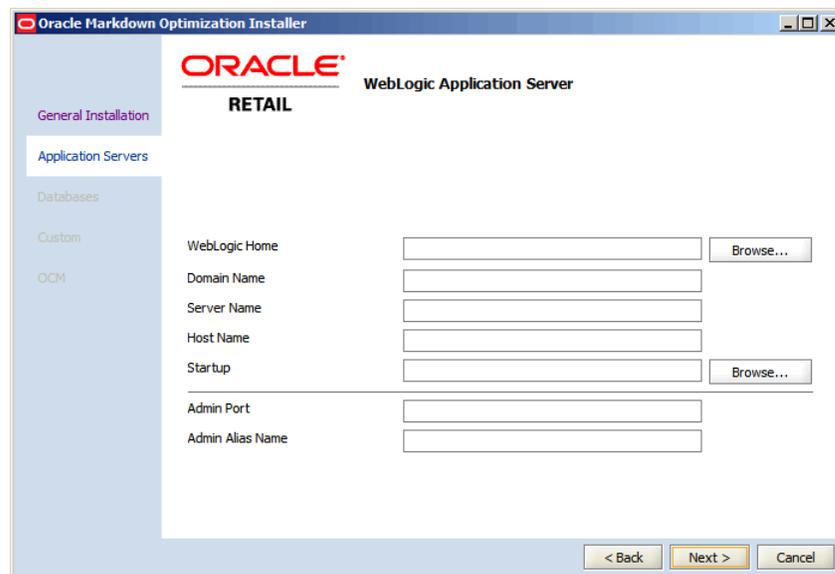
10. On the **WebLogic Application Server** screen, enter the relevant information in the following fields to connect to the application server set up for the application:

   ■ **WebLogic Home** – specify the location where the WebLogic Server is installed.

   ■ **Domain Name** – specify the name of the WebLogic domain.

   ■ **Server Name** – specify the name of the server instance where the application will be installed.

- **Host Name** – specify the host name of the system where the WebLogic server is installed.

- **Startup** – Optional. Location of the WebLogic Startup script for the WebLogic domain. You can choose to leave this field blank.

- **Admin Port** – specify the port number associated with the WebLogic Administrative Server instance.

- **Admin Alias** – specify the alias name associated with the administrative user credentials required to log on to the WebLogic server. This is the alias name you set up in the CSM password store for the application installation. For more information, see Setting Up a Password Store for the Application Installation.

> **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 6–6   Java Message Server Properties Screen
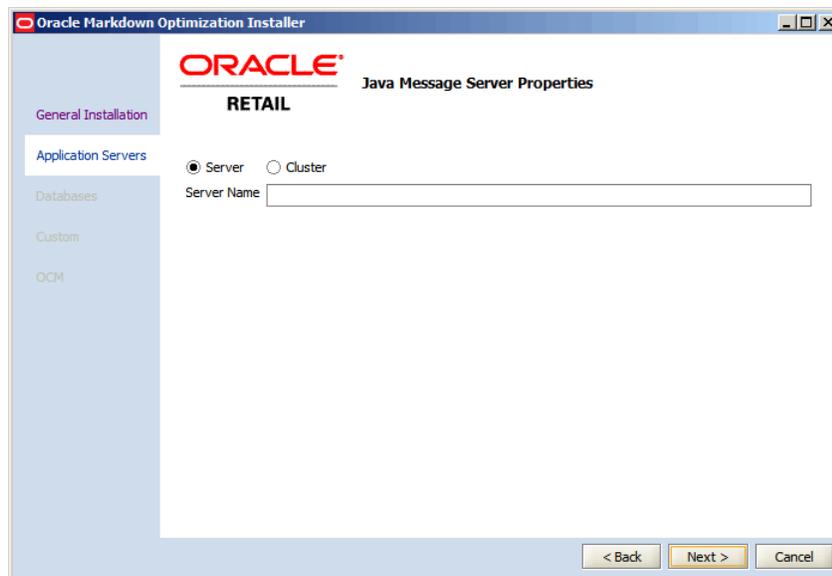
12. Markdown Optimization currently does not use a Java Message Server (JMS). Click **Next**. The **Database Selections** screen appears.

Figure 6–7   Database Selections Screen
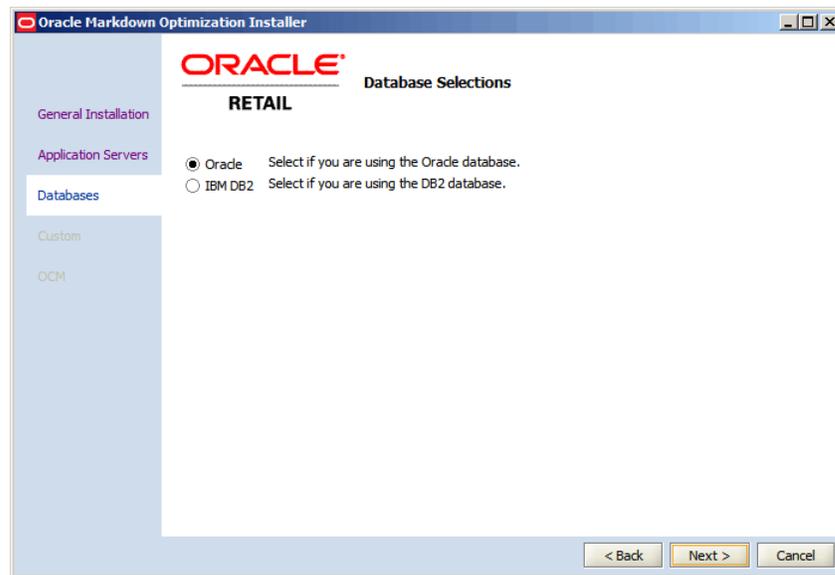
13. On the **Database Selections** screen, click **Oracle**, and then click **Next**. The **Database Properties** screen appears.

Figure 6–8   Database Properties Screen
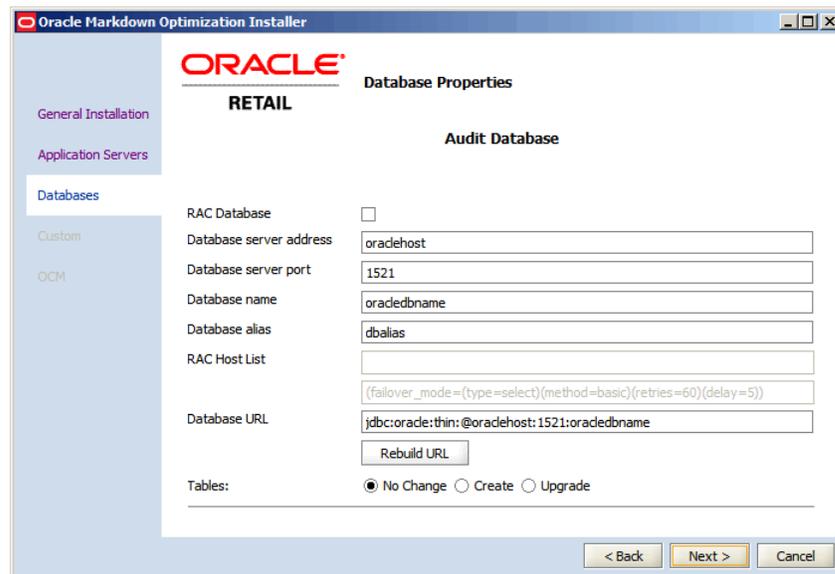
14. On the **Database Properties** screen, enter the following database information for the **Audit**, **CommonDB**, and **Retail Data Mart** databases:

- **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.

- **Database URL** – Optional. Use this parameter to specify the Audit database URL for JDBC connectivity.

  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.

  Syntax:

  For non RAC database,

  ```
  jdbc:oracle:thin:@<host name>:<dbport>:<dbname>
  ```
  For RAC database,

  ```
  jdbc:oracle:thin:@(DESCRIPTION = (ADDRESS_LIST = (ADDRESS = (PROTOCOL =
  TCP)(HOST = <host name1>)(PORT = <dbport1>)) (ADDRESS = (PROTOCOL =
  TCP)(HOST = <host name2>)(PORT = <dbport2>)) (ADDRESS = (PROTOCOL =
  TCP)(HOST = <host name3>)(PORT = <dbport3>)) (ADDRESS = (PROTOCOL =
  TCP)(HOST = <host name4>)(PORT = <dbport4>)) )(CONNECT_DATA = (SERVICE_NAME
  = <dbname>) (failover_mode = (type=select) (method=basic)
  (retries=60)(delay=5)) ))
  ```

- **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 Markdown Optimization. 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.

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

Figure 6–9   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 **RDM Materialized Views** screen appears.

Figure 6–10   RDM Materialized Views Screen

17. On the **RDM Materialized Views** screen, enter the following RDM materialized view information:

■ **Do you want to install Materialized Views now?** – Specify one of the following:

- If you do not need to optimize data and enhance database performance when creating reports, enter **N,** and click **Next.**

- If you want to improve the database performance when creating reports, enter **Y,** and specify the other options on screen.

■ **Number of Summary views (MVIEWS) already created** - Specify how many summary views you have already created. You can create up to a total of four summary views, which includes any views you may have already created.

■ **Markdown Optimization Merchandise Optimization Level** - Specify the level in the merchandise hierarchy at which you want the optimization to take place.

■ **Markdown Optimization Location Optimization Level** - Specify the level in the location hierarchy at which you want the optimization to take place.

Note: The combination of the Merchandise and Location levels specifies the ITEM level.

■ **Summary View Levels** - Specify the hierarchy level for each summary view level you want to add. The minimum number of summary levels is one, and the maximum number is four.

For example, if you only need two summary levels, you would specify the location and merchandise hierarchy values for the first four **Summary View Level**s fields, and leave the remaining four **Summary View Levels** fields blank.

The **Retail Data Mart Schema Link Properties** screen appears.

18. On the **Retail Data Mart Schema Link Properties** screen, specify the user name and the database link associated with the application schema, and then click **Next**.

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 11g 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 **Engine Properties** screen appears.

Figure 6–11   Engine Properties Screen
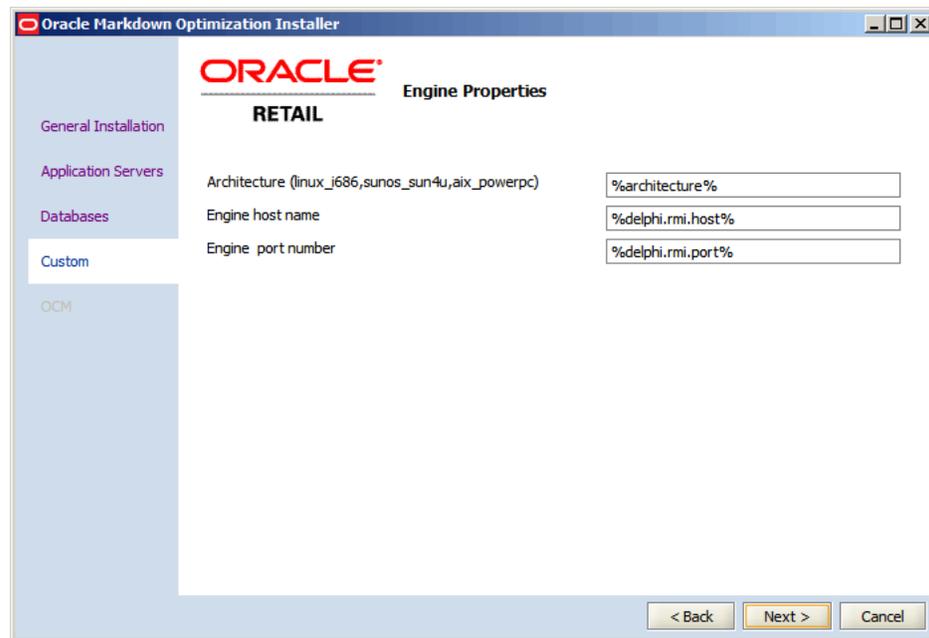
21. On the **Engine Properties** screen, specify the following information on the system hosting the Optimization Engine:

    ■ **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.

22. Click **Next**. The **Oracle Configuration Manager Registration** screen appears.

Figure 6–12   Oracle Configuration Manager Registration Screen

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

23. 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 29.

24. Accept the license agreement, and click **Next**. The **Choose OCM Distribution** screen appears.

Figure 6–13   Choose OCM Distribution Screen
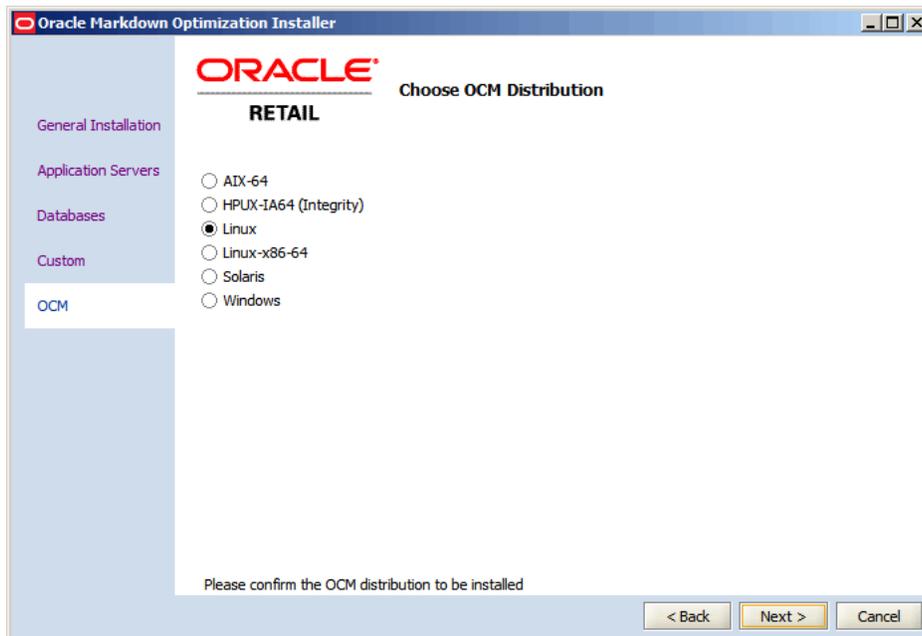
25. On the **Choose OCM Distribution** screen, select the operating system hosting the application, and click **Next**. The **Choose OCM Connection Mode** screen appears.

Figure 6–14   Choose OCM Connection Mode Screen
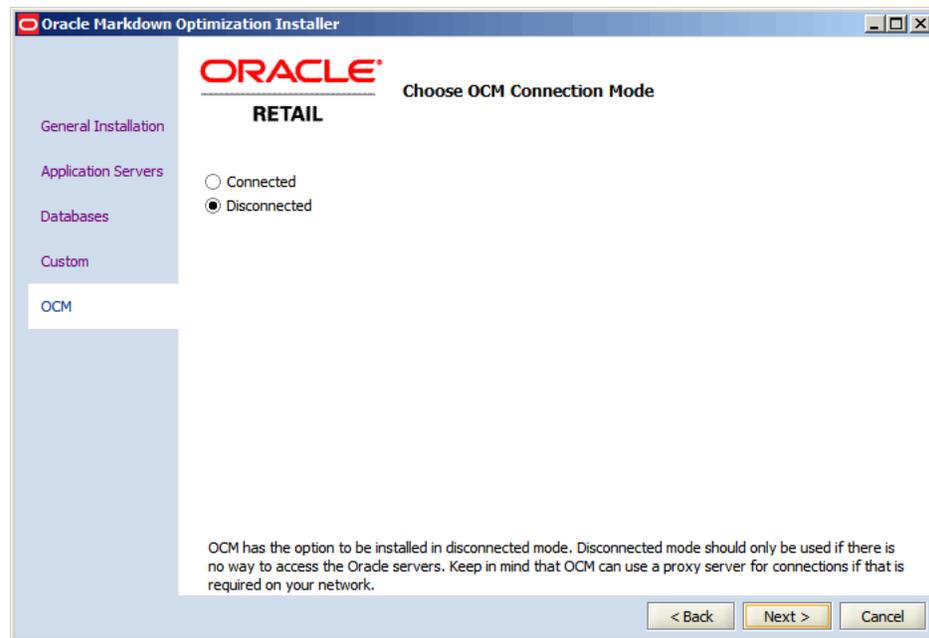
26. On the **Choose OCM Connection Mode** screen, select one of the following modes:

    ■ **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 29.

    ■ **Connected** – select this mode to continue installing OCM, and click **Next**. The **Oracle Customer Information** screen appears.

27. 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.

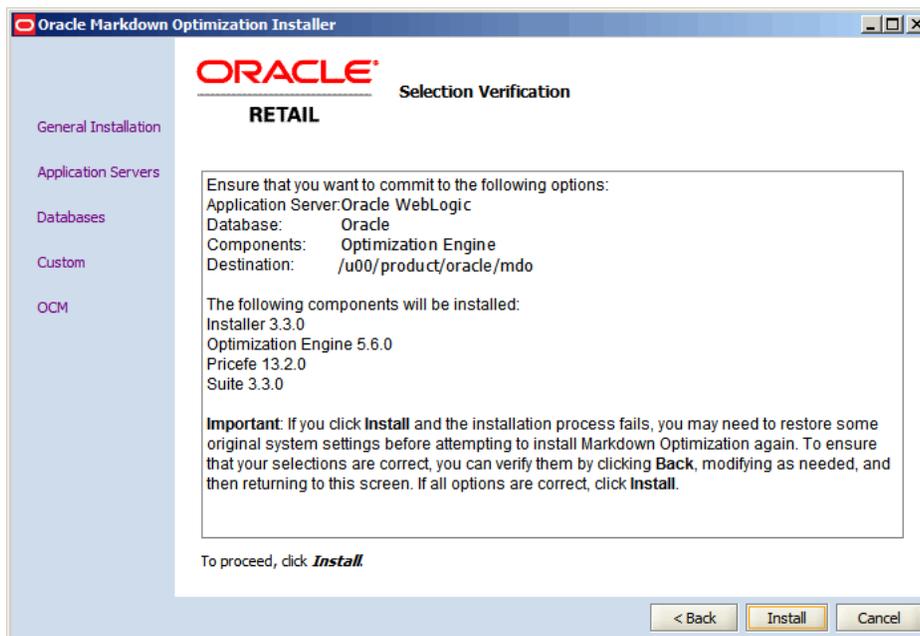28. Click **Next**. The **Proxy Server Details** screen appears.

Figure 6–15   Proxy Server Details Screen
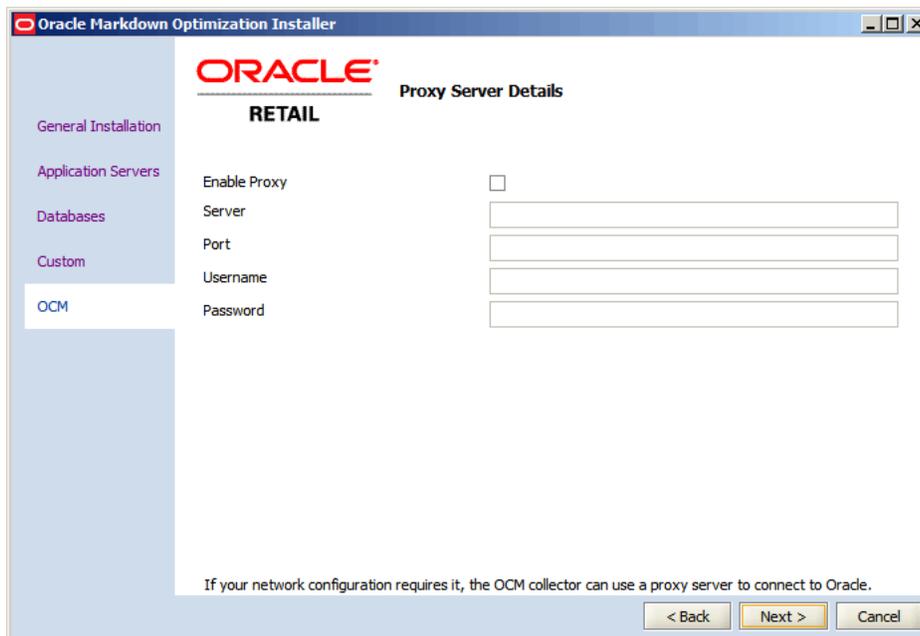
29. On the **Proxy Server Details** screen, enter the relevant proxy server details, and click **Next**. The **Select Verification** screen appears.

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

Figure 6–16   Selection Verification Screen

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

The **Installation Progress** screen appears.

31. 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.

Post-Installation Tasks

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

- Before you start working with your business data or set up user roles, you must set up aliases for the following user accounts:
  - root
  - user account for the PriceAdmin utility

  For more information, see Setting Up User Accounts and Aliases.

- 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 the Markdown Optimization application 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.

Setting Up User Accounts and Aliases

Before you run the User Management Bulk Loader script, you must set up aliases for the root user account and the user account for the PriceAdmin utility in the password store set up using the Credential Store Manager. Set up an alias (for example, **root_alias**) for the **root** user name and associated password in the password store for the application.

The PriceAdmin utility requires that you set up an user account with the PRICE_ADMIN_USER role, and then set up an alias in the password store for the application.

> **Note:** By default, the User Management Bulk Loader script automatically adds a price_admin user account (with the same password) associated to the PRICE_ADMIN_USER role. You can choose to use this user account for the PriceAdmin utility.

For more information on setting up aliases for the user accounts mentioned above, see Setting Up a Password Store for the Application Installation.

Loading Seed Data

Markdown Optimization provides a set of scripts that stage, transform, and load data into the target database tables in the Markdown Optimization 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 *Markdown Optimization Configuration Guide*.

Loading Business Rules

Use the Business Rules Management Administration shell script (brmadmin.sh) to load the business rule definitions set up for the Markdown Optimization application. 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 the Markdown Optimization application. Ensure that this file is available during the implementation.You can find a sample rules definition file, *rule_definitions.xml*, at the following location:

```
<Markdown Optimization_Installation>\modules\tools\conf\SampleRules
```

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

Loading User Roles

Use the User Management Bulk Loader script to load the user roles set up for the Markdown Optimization application. 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 the Markdown Optimization application. Ensure that this file is available during the implementation. You can find sample user roles set files at the following location:

```
<Markdown Optimization_Installation>\modules\tools\conf
```

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

Upgrading to the Latest Release of Markdown Optimization

This section describes how you can upgrade from a previous release to the latest release of Markdown Optimization. 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 Markdown Optimization Release 13.2:

1. Download the latest Markdown Optimization installation media files. For more information, see Accessing the Installation Software.

   > **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`).

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.

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

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 Markdown Optimization, see Setting Up the Database.

5. Install the supported application server (Oracle WebLogic Server) referring to the application server documentation for guidance. For more information on the application server configuration required for Markdown Optimization, 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 RDM DB, set up the following parameters to indicate an upgrade to the existing database or schema:
     - set the **database.rdmdb.oracle.upgrade** parameter to **yes**.
     - set the **database.rdmdb.oracle.create** parameter to **no**.
   - For the Audit DB, set up the following parameters to indicate an upgrade to the existing database or schema:

– set the **database.auditdb.oracle.upgrade** parameter to **yes**.

– set the **database.auditdb.oracle.create** parameter to **no**.

If a database schema did not exist before the upgrade and if you want to create them now, set the **database.<dbschema>.oracle.upgrade** parameter to **no** and the **database.<dbschema>.oracle.create** parameter to **yes** for the relevant database schema. For more information, see Setting Up Your Installation Properties File.

> **Note:** Ensure that the RDM database objects are created on a separate schema.

8. Before you run the installer, set up the environment variables required for the Markdown Optimization installation. For more information, see Setting Up Environment Variables.

9. Run the Markdown Optimization installer and install the application. For more information, see Installing Markdown Optimization in Silent Mode or Installing Markdown Optimization 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. Apply the relevant customizations that were backed up in step 2.

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 Markdown Optimization).

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 Markdown Optimization 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 Markdown Optimization-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.

7

Setting Up BI Infrastructure

Markdown Optimization supports the use of Oracle Business Intelligence (BI) Suite Enterprise Edition as the reporting tool used for the reports. Based on your business need, you can install and set up BI Server and configure the RDM repository.

This chapter describes how you can set up the Oracle BI server domain on the WebLogic server. It contains the following sections:

- Installing and Configuring BI Components
- Configuring RDM Repository
- Stopping and Starting BI Infrastructure

Installing and Configuring BI Components

The Markdown Optimization application supports the use of Oracle Business Intelligence Suite Enterprise Edition Version 10.1.3.4. To install and configure the BI Server, use these sections in the following sequence:

1. Installing Business Intelligence Components
2. Configuring the BI Infrastructure

Installing Business Intelligence Components

Install the Oracle Business Intelligence (BI) Suite Enterprise Edition, referring to the Oracle BI documentation for guidance.

> **Note:** It is recommended that the BI EE infrastructure is installed on the server where the database is installed.

Pre-requisities

Before you run the BI installer, ensure that you have Sun JDK 15.0 (or higher) and Oracle Database 11*g* Client Release 2 installed on your system.

Oracle BI EE requires the 32-bit libraries of the Oracle Database 11*g* Client. In case you are using the 64-bit version of the Oracle Database 11*g* Client, complete the following steps:

1. Download and install the 32-bit version of the client at a temporary location.
2. Once installed, copy the contents of the lib folder to the ORACLE_HOME/lib32 folder in the 64-bit version of the client.
3. Ensure that you set the following environment variables:

- ORACLE_HOME – must point to the location where the Oracle Database Client (64-bit) is installed.

- OBIEE_HOME – must point to the location where Oracle BI is installed.

- LD_LIBRARY_PATH – must include `$ORACLE_HOME/lib32` along with the other values.

- SHLIB_PATH – must point to `$ORACLE_HOME/lib32`

For more information on setting up the environment variables, see Configuring the BI Infrastructure.

BI Components

During the installation, select a complete installation, and install all the BI components. Once installed, review the list of the installed components and ensure that the following BI components are installed:

- BI Server

- BI Presentation Services

- BI Presentation Services Plug-in

- BI Scheduler

- BI Administration Tool*

- BI Cluster Controller

- BI Client

- BI ODBC Driver*

- BI JDBC Driver

- BI Systems Management

- BI Catalog Manager*

- BI Job Manager*

- BI Publisher

In this list, components marked with an asterisk (*) are compatible on the Microsoft Windows based systems only.

> **Note:** In this chapter, the BI installation directory is referred to as the *<BI_HOME>* directory.

Configuring the BI Infrastructure

Once you install the BI infrastructure, you must set up the *user.sh* file in the BI setup directory to include the right environment settings for the Oracle database client.

To set up the user.sh:

1. Navigate to the *<BI_HOME>/setup* directory, and run the following command to stop the OC4J process:

   ```
   oc4j -shutdown -port <portnumber> -password <password>
   ```

   Where,

- - <portnumber> – indicates the ORMI port number. You can find this value as the port attribute specified for the rmi-server tag in the rmi.xml file (in the *<BI_HOME>/oc4j_bi/j2ee/home/config/* directory).

  - <password> – indicates the password associated with the OC4J administrative user (set during the BI installation).

2. Edit the **user.sh** file to include the following parameters:

Parameter	Description
set +u	You may need to uncomment this line.
ORACLE_HOME	Specify the location of the home directory of Oracle Database Client.
TNS_ADMIN PATH LD_LIBRARY_PATH	Uncomment this line to accept the default path. OR Add this parameter and specify the path you want. **Note:** For the *LD_LIBRARY_PATH* parameter, follow the directions in the **user.sh** file. In case you are using a 64-bit version of the Oracle Database Client and have set up the 32-bit libraries, ensure that the LD_LIBRARY_PATH value includes `$ORACLE_HOME/lib32`. For more information, see Pre-requisities.
SHLIB_PATH	Specify `$ORACLE_HOME/lib32`. This parameter applies when you are using a 64-bit version of the Oracle Database Client and have set up the 32-bit libraries. Oracle BI EE requires the 32-bit libraries of the Oracle Database Client. For more information, see Pre-requisities.

3. Save and close the file.

> **Note:** For this setting to work, the server hosting the BI EE infrastructure must also have the Oracle Database 11*g* client installed on it.

4. Start the OC4J instance using the following command:

```
oc4j –start&
```

Configuring RDM Repository

This section describes how you can configure the RDM repository on the BI server using the BI Administration tool. It includes the following tasks:

- Configuring the Connection Pool

- Configuring the BI Server

- Setting Up Connection to the Database

- Configuring User Access to the Repository and BI Presentation Server

> **Note:** To proceed with configuring the RDM repository, ensure that Markdown Optimization is installed and running on the server.

Before You Begin

Before you begin the configuration, you must run certain scripts and also gain access to the Metadata source archive file. After the weekly batch script (weeklyBatch.sh) is run, follow these steps:

1. Navigate to the following location in the Markdown Optimization installation directory:

   ```
   <MDOInstallation>\modules\Database\REDWOODSchema\install\oracle\REDWOODSchema\
   scripts
   ```

2. Run the following scripts to load the data in the RDM database schema:

   ```
   bash pl_init_load_rdm.sh /path/to/configroot
   bash pl_load_rdm.sh /path/to/configroot
   ```

3. Navigate to the following location in the installation directory:

   ```
   <MDOInstallation>\modules\Database\POPLARSchema\install\oracle\POPLARSchema\
   scripts
   ```

4. Copy the **OBIEE_MDOMetadata.zip** file to a local directory, and extract the contents to a temporary location.

Configuring the Connection Pool

Use the BI Administration tool to configure the *rdm_data* and *rdm_connect* connection pools. This configures the repository to connect to the RDM database schema.

To configure the connection pool:

1. In the BI Administration Tool, open the **rdm.rpd** file using the Offline method of opening the repository.

2. Once the repository file is opened, right-click **rdm_data** in the **Physical** layer, and click **Properties**. The **Connection Pool** window appears.

Figure 7–1   Connection Pool Window

3. On the **Connection Pool** window, in the **General** tab, enter appropriate information in the following fields:

   ■ **Call interface** – set the value to **OCI 10g/11g**.

   ■ **Maximum connections** – set the value to **10**.

   ■ **Data source name** – name of the database where the RDM schema resides.

   ■ **Shared logon** – select this check box.

   ■ **User name** – user name or schema name to log on to the RDM schema.

   ■ **Password** – password associated with the user name to log on to the RDM schema.

   ■ **Enable connection pooling** – select this check box.

   ■ **Timeout** – set the value to **5 minutes**.

   ■ **Use multithreaded connections** – select this check box.

   ■ **Execute queries asynchronously** – select this check box.

   ■ **Parameters supported** – select this check box.

   ■ **Isolation level** – set to **Default**.

4. Repeat step 3 for **rdm_connect** connection pool.

5. Save the changes to the **rdm.rpd** file.

Configuring the BI Server

Once you set up the connection pools, you must copy the repository specific files to the server, and configure the BI server.

To configure the BI server:

1. Copy the **rdm.rpd** file to the *<BI_HOME>/server/Repository* directory.

2. Navigate to the *<BI_HOME>/server/config* directory, and edit the **NQSConfig.ini** file to include the following:

```
[ REPOSITORY ]
#Star=paint.rpd, DEFAULT;
Star=rdm.rpd, DEFAULT;
```

3. Copy the RDM metadata folder you extracted from the **OBIEE_MDOMetadata.zip** file to the following location:

```
<BI_DATA_HOME>/web/catalog
```

4. Navigate to the *<BI_DATA_HOME>/web/config* directory, and in the **instanceconfig.xml** file, comment out the existing "<CatalogPath>" entry and include the following entry:

```
<CatalogPath><BI_DATA_HOME>/web/catalog/rdm</CatalogPath>
```

> **Note:** *<BI_DATA_HOME>* indicates the location where you chose to save the data for the BI Server during installation.

5. Stop and start the BI infrastructure. For more information, see Stopping and Starting BI Infrastructure.

Setting Up Connection to the Database

Edit the *odbc.ini* to enable the BI Server to connect to the database using the OCI client.

To set up this connection:

1. Navigate to the *<BI_HOME>/setup* directory, and edit the **odbc.ini** file to include the following entries in the "[AnalyticsWeb]" section:

```
[AnalyticsWeb]
Driver=<BI_HOME>/server/Bin/libnqsodbc.so
Description=Oracle BI Server
ServerMachine=local
Repository=Star
Catalog=rdm
UID=
PWD=
Port=9703
```

2. Save and close the file.

Configuring User Access to the Repository and BI Presentation Server

The BI server installs with a default *administrator* user account (with the password *SADMIN*). This user account has the following privileges:

■ Edit the repository files.

■ Create new reports.

- Edit and save the pre-defined reports in the Shared and Private folders section of the Presentation server.

For the administrator user to run the pre-defined reports, a similar administrator user account must be created (with the same user name and password) in the Markdown Optimization schema with the PRICE_VIEWER role.

To access the BI Presentation Server as a non-administrative user, user accounts must be set up with the PRICE_VIEWER role. For more information on assigning roles to the user accounts, see the *Oracle Retail Markdown Optimization Administration Guide*.

Stopping and Starting BI Infrastructure

When you update any BI configuration files (such as *NQSConfig.ini*) or repository files, you must stop and start the following BI infrastructure components for the changes to take effect:

- OC4J Process

- BI Server

- BI Presentation Services

Stopping the BI Infrastructure Components

To stop the BI infrastructure components:

1. In the *<BI_HOME>/setup* directory, run the following commands to stop the BI Server (run-sa.sh) and Presentation Services (run-saw.sh):

```
./run-saw.sh stop

./run-sa.sh stop
```

2. Run the following command to stop the OC4J process:

```
oc4j -shutdown -port <portnumber> -password <password>
```

Where,

- <portnumber> – indicates the ORMI port number. You can find this value as the port attribute specified for the rmi-server tag in the rmi.xml file (in the *<BI_HOME>/oc4j_bi/j2ee/home/config/* directory).

- <password> – indicates the password associated with the OC4J administrative user (set during the BI installation).

Starting the BI Infrastructure Components

To start the BI Infrastructure components:

1. In the *<BI_HOME>/setup* directory, run the following command to start the OC4J process:

```
oc4j -start&
```

The ampersand (&) after the *start* command runs the process in the background, so it continues to run even when the terminal window is closed.

2. Run the following commands to start the BI Server (run-sa.sh) and Presentation Services (run-saw.sh):

```
./run-sa.sh start
```

```
./run-saw.sh start
```

3. Once the server is started, in a Web browser, verify that the following URL works:

```
http://<oc4j_host>:<port>/analytics
```

where,

- `<oc4j_host>` is the host name of the server where Oracle BI EE is installed.

- `<port>` is the port number associated with the host name.

The host name and port number information can also be retrieved from the Application Server Control for the Oracle BI EE (under OC4J:Home>Application:analytics).

8

Setting Up Single Sign-On

This chapter describes how you can set up the Single Sign-On plugin and integrate Markdown Optimization 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 Markdown Optimization. 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 Markdown Optimization URL directly. If you access Markdown Optimization 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 *$ORACLE_HOME/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 (Markdown Optimization and OSSO) and is more specific than a top-level domain name (such as *.com*).
>
> For example, if the Markdown Optimization system is hosted on **mdo.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 Markdown Optimization URL available through Workspace:

1. In the *retail-workspace-page-config.xml* file, create a **secure-work-item id** entry with the value **Markdown Optimization**, and set the **rendered** parameter value to **true**.

2. Specify the application URL within the **<url>** tags as illustrated in the example below.

For Markdown Optimization, there are no other application configuration parameters.

Example

Suppose Markdown Optimization is installed on **mycomputer.mycompany.com**, port **7777**, using a standard install and Markdown Optimization is configured with the application name of **Markdown Optimization**. If you were to access Markdown Optimization 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="Markdown Optimization"
  display-string="Launch Markdown Optimization"
  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 Markdown Optimization URL in the Workspace page configuration file (*retail-workspace-page-config.xml*), you must also enable the Markdown Optimization 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 *<Markdown Optimization_ 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 Markdown Optimization Configuration Guide*.

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