Oracle® Retail Markdown Optimization

Installation Guide

Release 13.1.9

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Value-Added Reseller (VAR) Language

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Oracle® Retail Markdown Optimization Installation Guide, Release 13.1.9

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Your feedback is important, and helps us to best meet your needs as a user of our products. For example:

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- Did you understand the context of the procedures?
- Did you find any errors in the information?
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- Do you need different information or graphics? If so, where, and in what format?
- Are the examples correct? Do you need more examples?

If you find any errors or have any other suggestions for improvement, then please tell us your name, the name of the company who has licensed our products, the title and part number of the documentation and the chapter, section, and page number (if available).

> **Note:** Before sending us your comments, you might like to check that you have the latest version of the document and if any concerns are already addressed. To do this, access the new Applications Release Online Documentation CD available on My Oracle Support and www.oracle.com. It contains the most current Documentation Library plus all documents revised or released recently.

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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.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at
http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit
http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info or visit
http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs if you are hearing impaired.

Related Documents

For more information about using the Markdown Optimization application, the following documents are available in the Oracle Retail Markdown Optimization Release 13.1.9 documentation set:

- *Oracle Retail Markdown Optimization Release Notes*

Customer Support

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

https://support.oracle.com

When contacting Customer Support, please provide the following:

- 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, 13.1.9). If you are installing the base release and additional patch releases, read the documentation for all releases that have occurred since the base release before you begin installation. Documentation for patch releases can contain critical information related to the base release, as well as information about code changes since the base release.

Improved Process for Oracle Retail Documentation Corrections

To more quickly address critical corrections to Oracle Retail documentation content, Oracle Retail documentation may be republished whenever a critical correction is needed. For critical corrections, the republication of an Oracle Retail document may at times not be attached to a numbered software release; instead, the Oracle Retail document will simply be replaced on the Oracle Technology Network Web site, or, in the case of Data Models, to the applicable My Oracle Support Documentation container where they reside.

This process will prevent delays in making critical corrections available to customers. For the customer, it means that before you begin installation, you must verify that you have the most recent version of the Oracle Retail documentation set. Oracle Retail documentation is available on the Oracle Technology Network at the following URL:

http://www.oracle.com/technetwork/documentation/oracle-retail-100266.html

An updated version of the applicable Oracle Retail document is indicated by Oracle part number, as well as print date (month and year). An updated version uses the same part number, with a higher-numbered suffix. For example, part number E123456-02 is an updated version of a document with part number E123456-01.

If a more recent version of a document is available, that version supersedes all previous versions.

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 for implementing the application. 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. Markdown Optimization requires only one instance, which resides on the application server machine.

- Calculation Engine - runs in the background, controlling the flow of a run process, responding to optimization requests, and generating forecasts and pricing recommendations that are displayed later on the user interface.

  The Calculation Engine may reside on any networked machine--whether it is the application server machine or its own computational machine used specifically for heavy data processing.

  Markdown Optimization requires only one instance of the Calculation Engine. However, you can install multiple Engines to boost performance. The Engine is scalable across your network: you can install all Engines on a single machine or distribute them across machines as needed.

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*.

Supported Languages

Markdown Optimization is available in the following languages:

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

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

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

Translation

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

- Graphical user interface (GUI)

- Error messages

The following components are not translated:

- Documentation (Online Help, Release Notes, Installation Guide, User Guide, Operations Guide)

- Batch programs and messages

- Log files

- Configuration Tools

- Reports

- Demo data

- Training materials

For more information, refer to the chapter *Localization* in the *Oracle Retail 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

- Application Server Tier

- Database Server Tier

- Optional Components

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

Figure 1–1   Markdown Optimization Network Diagram
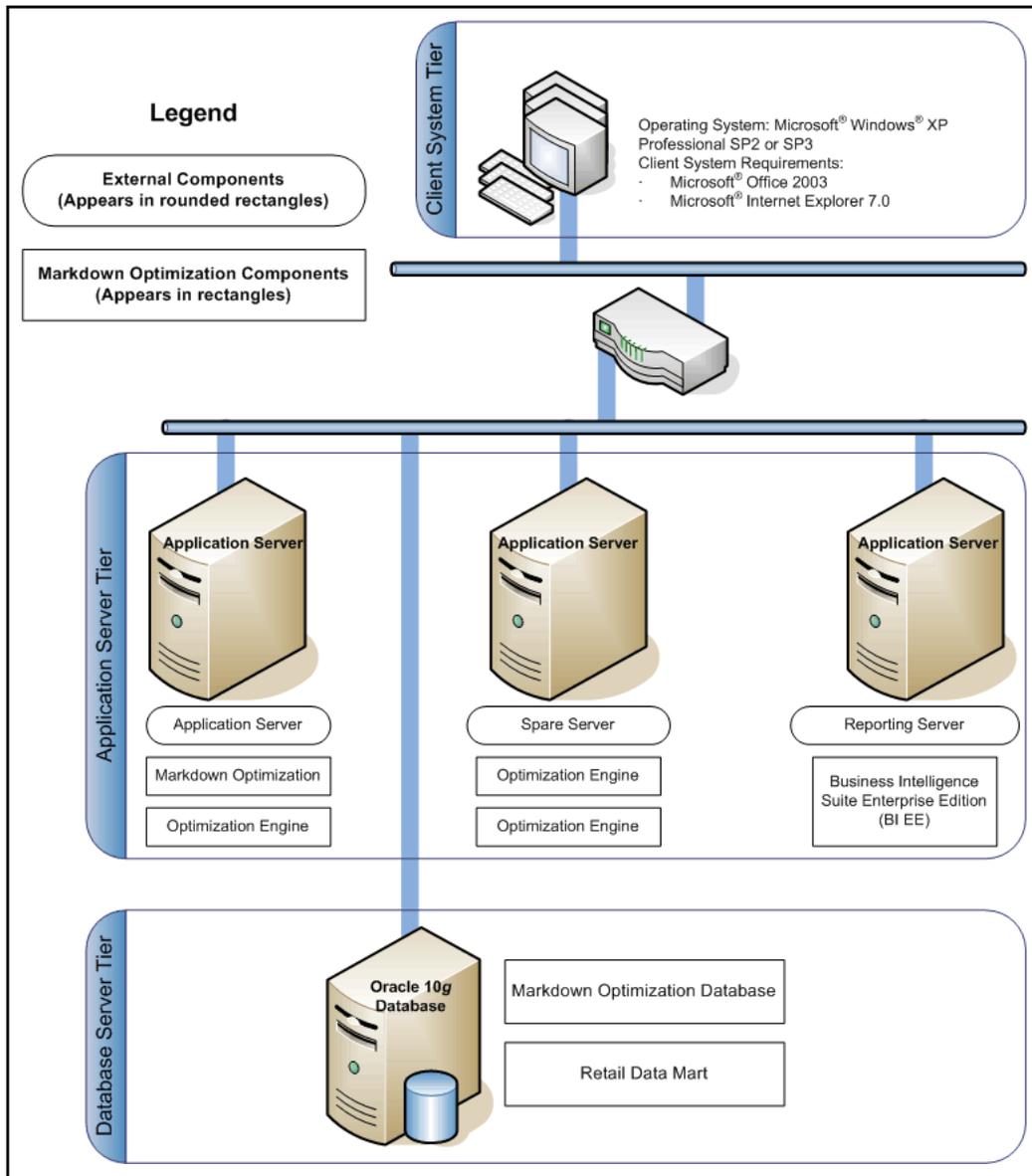
Client System Tier

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, with ActiveX control

Application Server Tier

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

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

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

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

Database Server Tier

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

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".
Installation Task	
4.	Access the Markdown Optimization installation software, set up the install.properties file, and run the Oracle installer. For more information, see Chapter 5, "Installing Markdown Optimization".
Post-installation Tasks	
5.	Configure your business rules and user accounts. For more information, see the *Markdown Optimization Configuration Guide*.
6.	Load data and evaluate the results. For more information, see the *Markdown Optimization Configuration Guide*.
7.	Set up your reporting tool, Oracle Business Intelligence Suite Enterprise Edition (BI EE). For more information, see Chapter 6, "Setting Up BI Infrastructure".
8.	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 7, "Setting up Single Sign-On".
9.	Modify the Markdown Optimization user interface to accommodate your business needs, as described in the *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).
10.	Set up user accounts and introduce the end users to the application.
11.	Maintain the application as described in the *Markdown Optimization Configuration Guide*.

2

Planning Your Installation

Before installing Markdown Optimization, 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 Markdown Optimization 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 Markdown Optimization.

Planning for Optimal Markdown Optimization Performance

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

1. Determine the Markdown Optimization 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 *Markdown Optimization 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 Markdown Optimization, and includes the following topics:

- Network Requirements
- Database Requirements
- Application Server Requirements
- Client System Requirements
- Miscellaneous Utilities

> **Note:** Before installing the Markdown Optimization application, you must install one of the following appropriate versions of the *rsync* utility:
>
> - For AIX-based operating system, use rsync version 2.6.2
> - For HP-UX-based operating system, use rsync version 2.6.9
> - For Linux-based operating system, use rsync version 2.5.7
> - For Solaris-based operating system, use rsync version 2.5.6
>
> *rsync* is a open source utility that provides fast incremental file transfer and is freely available under the GNU General Public License version 2. For more information on rsync and resources on installation, visit the rsync web page at http://samba.anu.edu.au/rsync

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

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

Table 2–1   Database Requirements for Markdown Optimization

Software	Requirement			
Database (64-bit)	Oracle Database 11*g* Release 2, Enterprise Edition (11.2.0.4) 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 8	Oracle Solaris 10 Update 8, SPARC-based)	IBM AIX 6.1 Technology Level 6 (TL6), Power processor-based	Red Hat Enterprise Linux 5 Update 8
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

The following table lists the supported operating systems and the associated application server versions:

Table 2–2   Application Server Requirements for Markdown Optimization

Software	Requirement			
Application Servers	Oracle Application Server 10*g* Release 3 Patch Set 10.1.3.5 (32-bit)			Oracle Application Server 10*g* Release 3 Patch Set 10.1.3.5 (64-bit)
	Or			
	BEA WebLogic Server 10.0 MP1			
Database Client	Oracle Database 11g Client Release 2 (11.2.0.4.0)			
Operating Systems (64-bit)	Oracle Linux Release 5.0 Update 8, x86-64 based	Oracle Solaris 10 Update 8, SPARC-based	IBM AIX 6.1 Technology Level 6 (TL6), Power processor-based	Red Hat Enterprise Linux 5 Update 8
JVM	Oracle JDK 6.0 Update 75	Oracle JDK 6.0 Update 75	IBM JDK 1.6 SR15	Oracle JDK 6.0 Update 75

User Requirements

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

Client System Requirements

The following table lists the supported client system options:

Table 2–3   Client System Environment

Software	Requirements
Windows XP Pro SP2 or SP3 (with Office 2003)	■ Microsoft Office 2003 ■ Microsoft Internet Explorer 8.0 (32 bit) ■ Microsoft Internet Explorer 9.0 (32 bit)

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 Markdown Optimization 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 Reporting Tool

Markdown Optimization supports the use of Oracle 10*g* Business Intelligence (BI) Suite Enterprise Edition for reports. The following table lists the supported configurations:

> **Important:** Oracle 10*g* Business Intelligence (BI) Suite Enterprise Edition (EE) is not a pre-requisite reporting tool for Markdown Optimization. Markdown Optimization does not include the BI EE functionality or license and can be installed without this reporting tool. In case you want to implement Markdown Optimization with BI EE, you must acquire a separate BI EE license.
>
> This Installation Guide provides basic information on setting up the BI infrastructure for use with Markdown Optimization (see Setting Up BI Infrastructure). For more detailed information on the supported platforms and installation, refer to the *Oracle Business Intelligence Enterprise Edition Documentation*.

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

> **Note:** If your database requires multi-byte support, specify the following properties in your init.ora file:
>
> ```
> CHARACTER_SET=AL32UTF8
> NLS_LENGTH_SEMANTICS=CHAR
> ```

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

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, specifying the following parameters:

```
db_block_size = 8192
large_pool_size = 20M
log_buffer = 524288
pga_aggregate_target = 1000M
workarea_size_policy = AUTO
undo_management = AUTO
global_names = FALSE
optimizer_mode = CHOOSE
```

```
cursor_sharing = SIMILAR
query_rewrite_enabled = TRUE
query_rewrite_integrity = TRUSTED
compatible = 10.2.0
optimizer_features_enable = 10.2.0.1
db_file_multiblock_read_count = 32
log_checkpoints_to_alert = TRUE
session_cached_cursors = 900
sga_target = 1000M  # value is site specific
timed_statistics = TRUE
log_checkpoint_interval = 51200 # value is site specific
log_checkpoint_timeout = 7200 # value is site specific
start_transformation_enabled = FALSE
recylebin = off
```

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 10*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
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

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

This chapter provides instructions on setting up the application server selected for your business. It contains the following sections:

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

Setting Up the Oracle Application Server

To install and configure Oracle Application Server, use these sections in the following sequence:

- Installing Oracle Application Server
- Configuring Oracle Application Server

Installing Oracle Application Server

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

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

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

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

Configuring Oracle Application Server

To specify Oracle Application Server configuration properties:

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

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

2. Navigate to the **<OAS_Home>/opmn/conf** directory, edit the **opmn.xml** to include the JVM start up parameters in the `<ias-component id="deafult_group">` section. For example,

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

In the example above,

-   replace the `<MDO INSTALLATION DIRECTORY>` with the relevant location where the application is installed. In case of a clustered installation, you must set these parameters for each node.

-   `$ORACLE_HOME` represents the application server home directory and NOT the environment variable. Oracle applications are installed using Oracle Universal Installer (OUI) and it manages the installation of several active Oracle homes on the same machine by maintaining an inventory and a single Oracle home as the system context in which the Oracle products run. The context contains the list of the Oracle products and their relevant home directories. When applicable, OUI automatically applies the correct system context. For more information on the Oracle products installed and their relevant home directories, run the command `opatch lsinventory -all` from the application server or database installation.

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

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

Setting Up the 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

Installing the WebLogic Server

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

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

Setting Up a WebLogic Domain

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

To set up a WebLogic domain:

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

   ```
   sh config.sh
   ```

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

Table 4–1   Steps to Set Up a WebLogic Domain

Step	Screen	Task
1.	*Welcome Screen*	
		Click the **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 BEA products** option, and then click **Next**.
		Note that the **WebLogic Server (Required)** check box is automatically selected and greyed out.
3.	*Configure Administrator User Name and Password Screen*	

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

Step	Screen	Task
		Set up an administrative user name and password.
		Important: Please keep a note of the user name and password. You must specify this user name and password in the install.properties file. The Oracle Installer uses this user account to connect to the WebLogic Server during the Markdown Optimization installation.
4.	*Configure Server Start Mode and JDK Screen*	
		Under **WebLogic Domain Startup Mode**, click **Production Mode**.
		Under **JDK Selection**, select the relevant JDK.
		Click **Next**.
5.	*Customize Environment and Services Settings Screen*	
		Select **Yes** if you want to customize the WebLogic settings further. Go to Step 6.
		OR
		Select **No** to proceed directly to creating your domain. Skip the following steps and go to Step 12.
6.	*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**.
7.	*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**.

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

Step	Screen	Task
8.	*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**.
9.	*Assign Servers to Clusters Screen*	
		Use the arrow buttons and assign the servers to the clusters specified in the domain.
		Click **Next**.
10.	*Configure Machines Screen*	
		Click **Add**, and then add the machine (unix-based) information.
		Click **Next**.
11.	*Assign Servers to Machines Screen*	
		Use the arrow buttons and assign the managed servers to the machines specified in the domain.
		Click **Next**.
12.	*Review WebLogic Domain Screen*	
		Review and confirm the configuration summary, and then click **Next**.
13.	*Create WebLogic Domain 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.
14.	*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.

    - **WLS_USER** – The WebLogic administrator user name.

    - **WLS_PW** – The password associated with the WebLogic administrator user account.

    - **JAVA_VENDOR** – The Java Development Kit (JDK) installed for the WebLogic Server. You can specify BEA, IBM, HP, or Sun.

    - **JAVA_HOME** – The location where the JDK is installed.

    - **CONFIGROOT** – The application configuration root directory.

    - **JAVA_OPTIONS** – Append the following to the parameter value:
      `" -Dcom.profitlogic.configroot=$CONFIGROOT"`

    - **CLASSPATH** – Append the location of the Engine sub folder located within the application configuration root directory.

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

For Example

```
#!/bin/sh
WL_HOME="<location where WebLogic Server is installed>"
WLS_USER=<weblogic admin user name>
WLS_PW=<weblogic admin password>
PRODUCTION_MODE="true"
JAVA_VENDOR="<name of the JDK>"
JAVA_HOME="<location where JDK is installed>"
. ${WL_HOME}/common/bin/commEnv.sh
SERVER_NAME="admin"
CONFIGROOT=<MDO INSTALLATION DIRECTORY>/config
JAVA_OPTIONS=$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}:<MDO 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 &
```

5

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 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 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 (13.1) are available on the *Oracle Electronic Delivery* Web site (http://edelivery.oracle.com) and Patch releases (13.1.x) and Hot Fixes (13.1.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 <MARKDOWN OPTIMIZATION_CD_IMAGE> directory.

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

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 <MARKDOWN OPTIMIZATION_CD_IMAGE> directory exists and is populated as described in Accessing the Installation Software, on page 5-2.

2. Navigate to the <MARKDOWN OPTIMIZATION_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 5–1   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.
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.

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

Parameter	Description
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.
dbms.oracle.pass	Use this parameter to specify the password to connect to the Oracle database. This is the password (`<MDO PASSWORD>`) associated with the default database user account created for the application database. 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.
database.commondb.oracle.auth. commonOracleAuth.user	Use this parameter to specify the user name to connect to the database. This is the default database user account created for the application database (`<MDO USERNAME>`). For more information, see Creating the Default User Accounts.
database.commondb.oracle.auth. commonOracleAuth.password	Use this parameter to specify the password to connect to the database. This is the password (`<MDO PASSWORD>`) associated with the default database user account created for the application database. For more information, see Creating the Default User Accounts.
database.commondb.oracle.user	Use this parameter to specify the user name to connect to the database.
database.commondb.oracle.password	Use this parameter to specify the password to connect to the database.
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.

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

Parameter	Description
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.
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.rdmdb.oracle.user	Use this parameter to specify the user name to connect to the RDM database. This is the default database user account created for RDM (`<RDM USERNAME>`). For more information, see Creating the Default User Accounts.
database.rdmdb.oracle.password	Use this parameter to specify the password to connect to the RDM database. This is the password (`<RDM PASSWORD>`) associated with the default database user account created for RDM. For more information, see Creating the Default User Accounts.
New RDM Database Definitions	
database.RdmDB.oracle.auth. rdmOracleAuth.user	Use this parameter to specify the user name to connect to the RDM database. This is the default database user account created for RDM (`<RDM USERNAME>`). For more information, see Creating the Default User Accounts.
database.RdmDB.oracle.auth. rdmOracleAuth.password	Use this parameter to specify the password to connect to the RDM database. This is the password (`<RDM PASSWORD>`) associated with the default database user account created for RDM. For more information, see Creating the Default User Accounts.

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

Parameter	Description
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.
Oracle Properties	
oracle.home	The default base folder for the Oracle application server.
oracle.server.address	The base URL for the Oracle application server instance.
oracle.admin.port	Use this parameter to specify the port to connect to the Oracle application server.
oracle.admin.userid	Use this parameter to specify the administrative user name for the application server.
oracle.admin.password	Use this parameter to specify the password associated with the administrative user.
oracle.group.name	Use this parameter to specify the group name associated with the application server instance.

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

Parameter	Description
oracle.opmn.enabled	Use this parameter to specify whether you want to use the OPMN server service. Set the value to 'Yes' for Oracle Application Server, and 'No' for OC4J instance.
database.commondb.oracle.dbdriver	Use this parameter to specify the database driver that provides connection to the database.
WebLogic Properties	
bea.home	Use this parameter to specify the path to the BEA base directory. For example, C:\BEA.
weblogic.server	Use this parameter to specify the name of the server instance.
weblogic.admin.userid	Use this parameter to specify the WebLogic admin user name.
weblogic.admin.password	Use this parameter to specify the WebLogic admin password.
weblogic.admin.port	Use this parameter to specify the port to connect to the WebLogic application server.
weblogic.server.address	Use this parameter to specify the URL to connect to the WebLogic application server.
weblogic.home	Use this parameter to specify the path to the WebLogic server in the BEA base directory. For example, C:\BEA\weblogic10\server
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.

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).

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

Parameter	Description
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.
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.
database.auditdb.oracle.user	Use this parameter to specify the user name to connect to the Audit database. This is the default database user account created for the application database (`<MDO USERNAME>`). For more information, see Creating the Default User Accounts.
database.auditdb.oracle.password	Use this parameter to specify the password to connect to the Audit database. This is the password (`<MDO PASSWORD>`) associated with the default database user account created for the application database. For more information, see Creating the Default User Accounts.
Database Authentication Credentials for AUDIT	
database.auditdb.oracle.auth.auditoracleauth.user	Use this parameter to specify the user name to connect to the Audit database. This is the default database user account created for the application database (`<MDO USERNAME>`). For more information, see Creating the Default User Accounts.

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

Parameter	Description
database.auditdb.oracle.auth. auditoracleauth.password	Use this parameter to specify the password to connect to the Audit database. This is the password (`<MDO PASSWORD>`) associated with the default database user account created for the application database. For more information, see Creating the Default User Accounts.
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*.
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, specify the database instance 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.

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

Parameter	Description
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 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.

Setting Up Environment Variables

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

- JAVA_HOME

- ORACLE_HOME

- PATH

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

- LIBPATH (applies to IBM AIX based systems)

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

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

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

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

export PATH=$ORACLE_HOME/bin:$PATH

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

Installing 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 5-3.

2. Make sure that your application server is running.

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

   ```
   bash install.sh
   ```

install.sh

The install.sh command enables you to install 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.
-i, --websphere	-b, --weblogic	Optional. For specifying your application server.
-h	Optional. Prints a help message.

Return Value

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

Output

The 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 5-3.

   > **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.

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

Figure 5–1 Markdown Optimization Installation Destination Screen
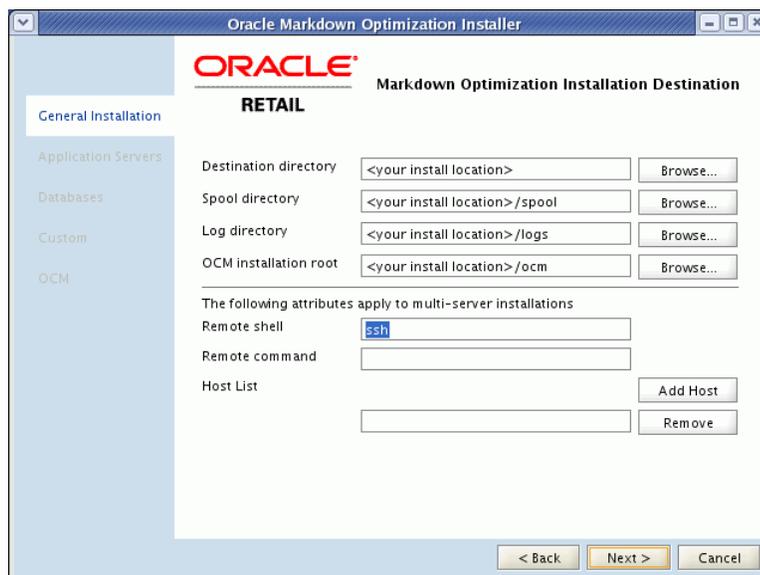
6. On the **Markdown Optimization Installation Destination** screen, specify the paths for the following:

   - **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 5–2   Markdown Optimization Selections Screen
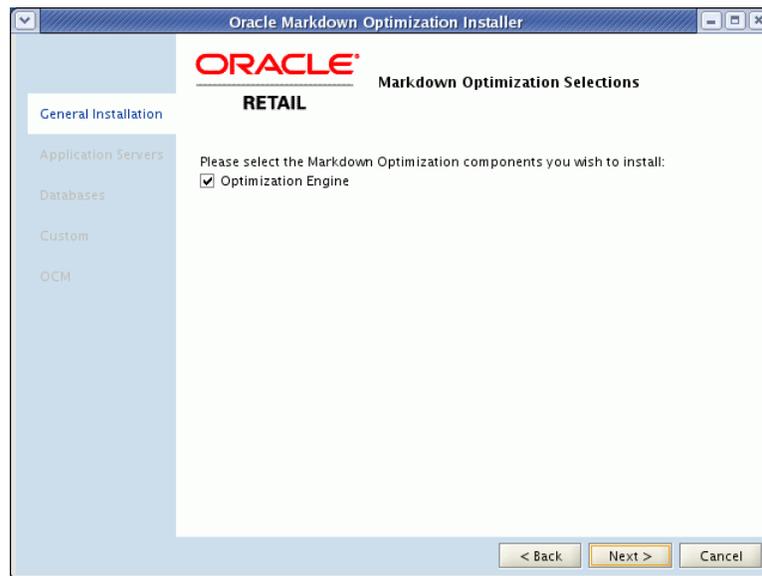
8. On the **Markdown Optimization Selections** screen, select the component you want to install, and click **Next**. The **Application Server Selections** screen appears.

*Figure 5–3   Application Server Selections Screen*

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

*Figure 5–4   Oracle Application Server Screen*
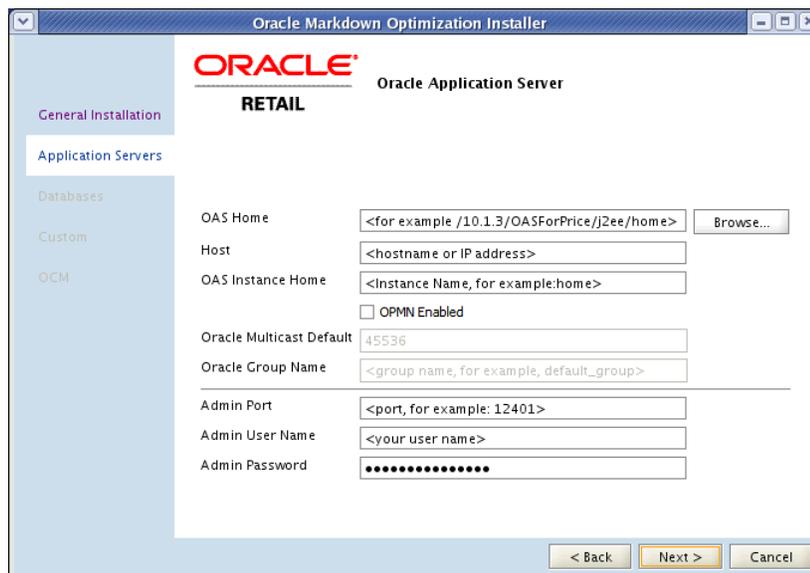
10. On the **Oracle Application Server** screen, enter the relevant information (such as host, port, user name, password) to connect to the application server set up for the application.

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

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

Figure 5–5   Java Message Server Properties Screen
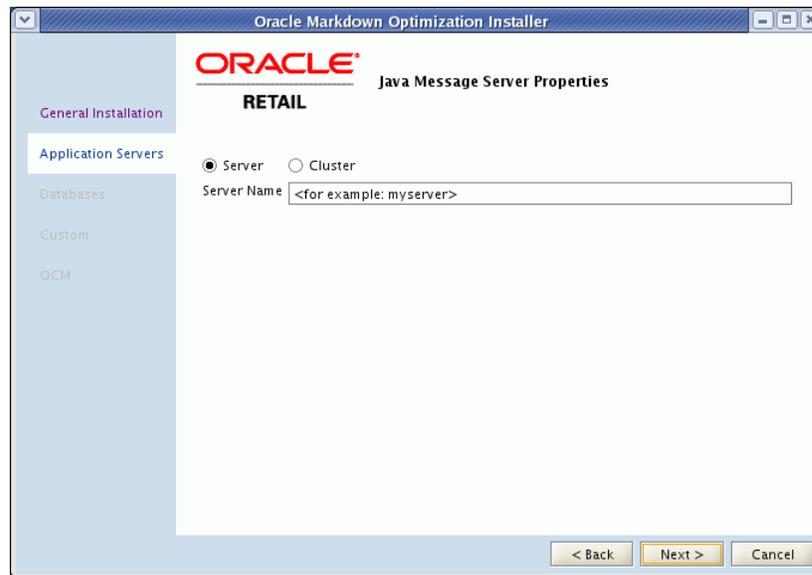
12. On the **Java Message Server Properties** screen, specify the name of the server or cluster that you may have set up as a Java Message Server (JMS), and click **Next**. The **Database Selections** screen appears.

Figure 5–6   Database Selections Screen
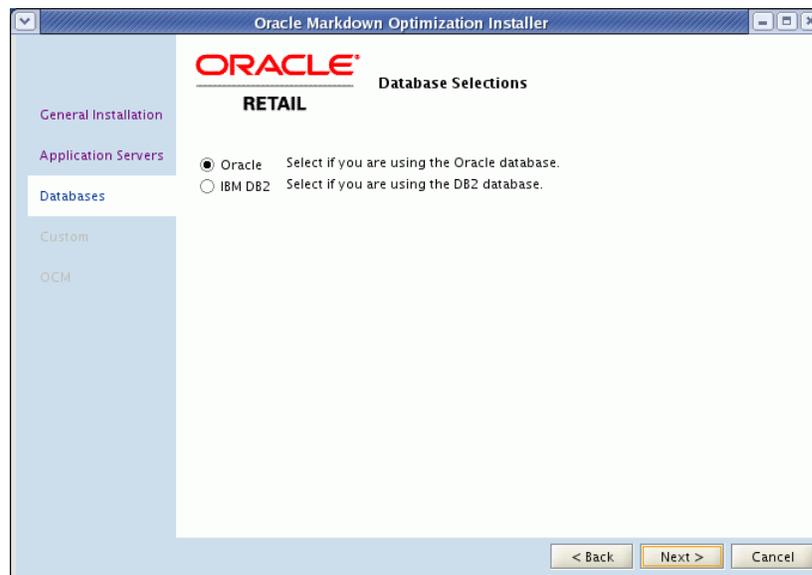
13. On the **Database Selections** screen, click **Oracle**, and then click **Next**. The **Database Properties** screen appears.

Figure 5–7   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.

   ■ **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.

   ■ **User ID** – Enter the user name associated with the database.

   ■ **Password** – Enter the password associated with the database.

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

Figure 5–8   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 5–9   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 5–10   Engine Properties Screen*
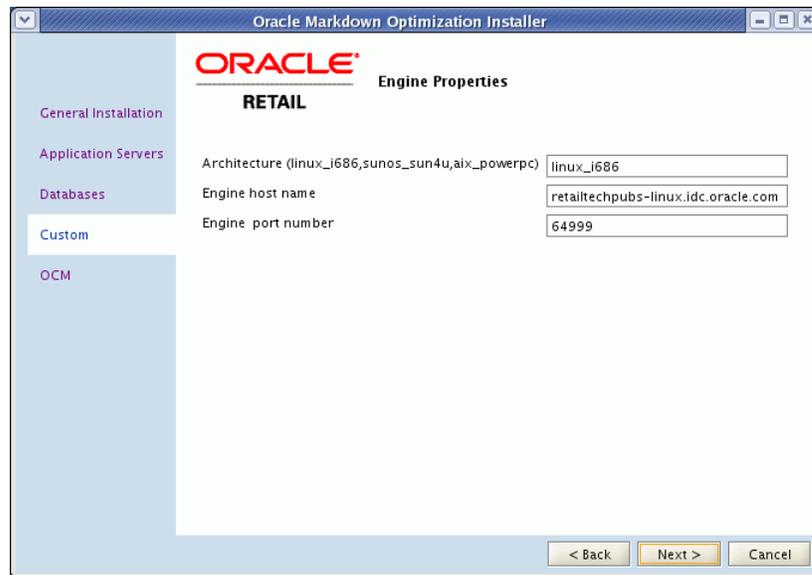
21. On the **Engine Properties** screen, specify the following information on the system hosting the Optimization Engine:

    - **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 5–11   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 5–12   Choose OCM Distribution Screen
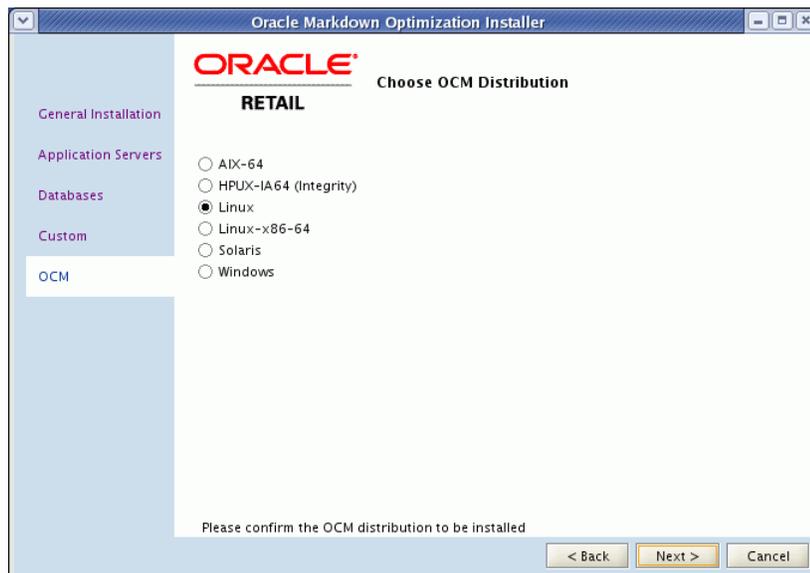
25. On the **Choose OCM Distribution** screen, select the operating system hosting the application, and click **Next**. The **Choose OCM Connection Mode** screen appears.

Figure 5–13   Choose OCM Connection Mode Screen
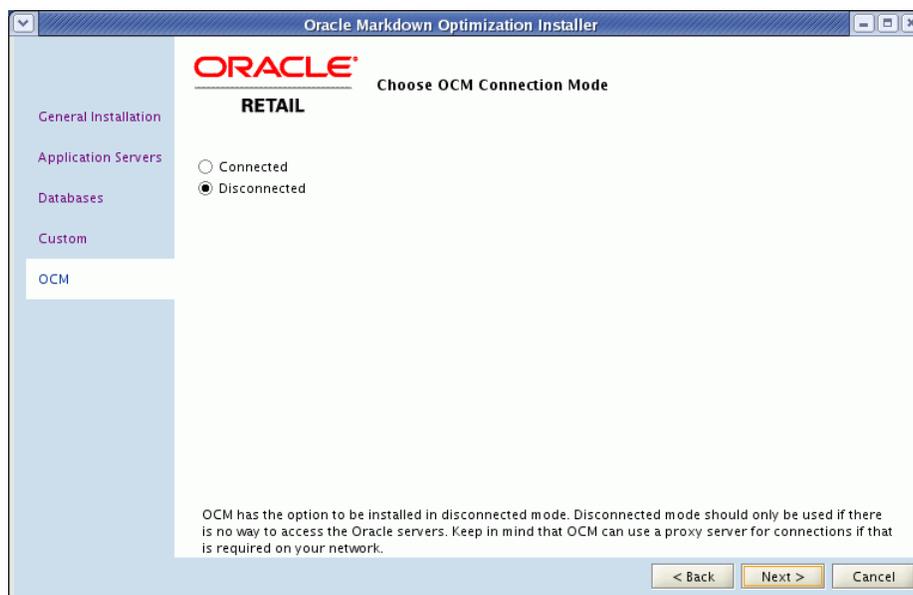
26. On the **Choose OCM Connection Mode** screen, select one of the following modes:

   ■ **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 5–14 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 5–15   Selection Verification Screen
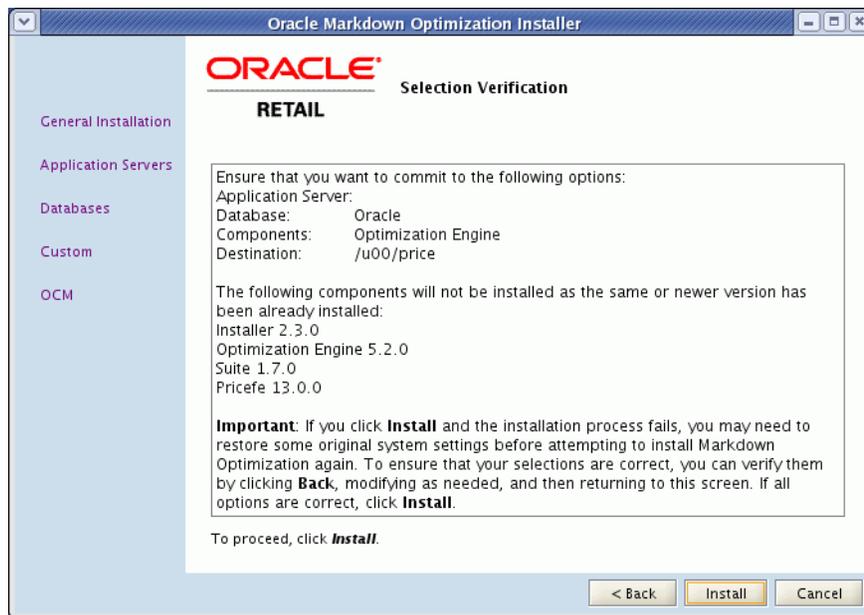
30. Review the **Selection Verification** screen, and click **Install**.

    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:

- 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.

- If you want to implement the security for the Web Services, see Implementing Security for the Web Services.

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*.

Implementing Security for the Web Services

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

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

Specifying Custom Header

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

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

Auditing Web Service Access

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

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

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

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

Encrypting Usernametoken and Custom Header

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

- For WebLogic Server
- For Oracle Application Server

For WebLogic Server

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

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

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

For Oracle Application Server

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

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

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

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

For example,

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

User Authentication

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

- Setting Up Authentication on the WebLogic Server

- Setting Up Authentication on the Oracle Application Server

Setting Up Authentication on the WebLogic Server

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

1. Copy the **COSOWLLoginModule.jar** (located in the **<MDO_CD_IMAGE>\price** directory) to the **<WebLogic Domain>/lib/mbeantypes** directory on your application server, and restart the server for the JAR file to automatically get deployed.

2. Once deployed, you must modify the realm to use this JAR file for authentication. During this configuration of this realm, ensure that this JAR shows up second in the Authentication Providers list, and the Control Flag for the default provider is set to SUFFICIENT.

3. To perform any further configuration, refer to the WebLogic Server documentation.

Setting Up Authentication on the Oracle Application Server

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

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

User Authorization

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

> **Important:** For this feature to work, you must first configure user authentication against the MDO database. For more information, see User Authentication.

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 13.1.9:

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 (13.1) are available on the *Oracle Electronic Delivery* Web site (`http://edelivery.oracle.com`) and Patch releases (13.1.x) and Hot Fixes (13.1.x.y) are available on the *My Oracle Support* Web site (`https://support.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 Application 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 that a new database schema be created:

   – set the **database.rdmdb.oracle.create** parameter to **yes**.

   – set the **database.rdmdb.oracle.upgrade** parameter to **no**.

   ■ For the Audit DB, set up the following parameters to indicate that a new database schema be created:

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

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

   For more information, see Setting Up Your Installation Properties File.

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

8. Before you run the installer, complete the following tasks:

   ■ Set up the environment variables required for the Markdown Optimization installation. For more information, see Setting Up Environment Variables.

   ■ If Oracle Application Server 10*g* is installed, ensure a specific memory argument in the *opmn.xml* and stop the applications manually to avoid an Out of Memory exception during the upgrade. For more information, see Avoiding an Out of Memory Exception During an Upgrade.

9. Run the 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. Replace the configuration root with the copy that was backed up in step 1.

11. Replace all other customizations and scripts that were backed up in step 1.

Avoiding an Out of Memory Exception During an Upgrade

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

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

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

   ```
   <OAS_HOME>/opmn/conf/
   ```

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

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

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

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

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

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

4. On the **Cluster Topology** page, under the **Members** section, select the check box next to the following application components:

   - **BRMHelp**
   - **BusinessRuleMgr**
   - **c4p**
   - **price**
   - **PriceHelp**
   - **SuitePropertiesManager**
   - **SystemInformationTool**
   - **UMHelp**

5. Click **Stop**. The **Confirmation** page appears.

6. On the **Confirmation** page, review the components selected, and click **Yes**.

7. Restart the application server.

Troubleshooting Installation Issues

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

6

Setting Up BI Infrastructure

Markdown Optimization requires 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.

- Installing and Configuring BI Components

- Configuring RDM Repository

- Stopping and Starting BI Infrastructure

Installing and Configuring BI Components

The Markdown Optimization application requires the use of Oracle Business Intelligence Suite Enterprise Edition Version 10.1.3.3.1. 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.

Before you run the BI installer, ensure that you have the following softwares installed on the system:

- Sun JDK 1.5.0 or higher.

- Oracle Database 10*g* Client Release 2.

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.
TNS_ADMIN	Uncomment this line to accept the default path.
PATH	OR
LD_LIBRARY_PATH	Add this parameter and specify the path you want. **Note:** For the *LD_LIBRARY_PATH* parameter, follow the directions in the **user.sh** file.

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 10*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 6–1 Connection Pool Window
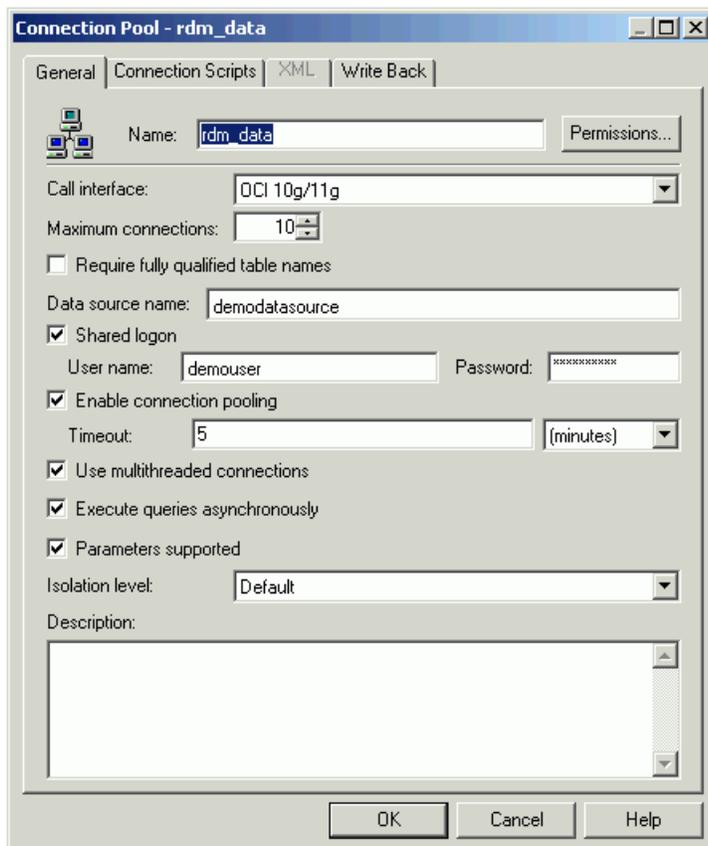
3. On the **Connection Pool** window, in the **General** tab, enter appropriate information in the following fields:

   ■ **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
```

7

Setting up Single Sign-On

This chapter describes how you can set up the Single Sign-On plug-in 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 */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

For information about Oracle Single Sign-On and Oracle Retail Markdown Optimization 13.2.8, please see the latest *Oracle Retail Markdown Optimization Installation Guide*.

For information on how to integrate Markdown Optimization with Oracle Retail Workspace, see the latest *Oracle Retail Workspace Implementation Guide*.

Oracle Retail Workspace is a supported configuration of Oracle WebCenter Spaces 11.1.1.5 for Oracle Retail. For the Oracle Retail 13.2.x enterprise, Oracle Retail Workspace replaces previous versions of Oracle Retail Workspace. There is no more packaged Oracle Retail Workspace code, only configuration instructions for Oracle WebCenter Spaces 11.1.1.5.

The Oracle Retail Workspace configuration utilizes the external application functionality and the application navigator taskflow of the Oracle WebCenter Framework to configure Markdown Optimization in Oracle WebCenter Spaces.

A

Installation Order

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

1. Oracle Retail Merchandising System (RMS), Oracle Retail Trade Management (RTM), Oracle Retail Sales Audit (ReSA)

2. Oracle Retail Service Layer (RSL)

3. Oracle Retail Extract, Transform, Load (RETL)

4. Oracle Retail Active Retail Intelligence (ARI)

5. Oracle Retail Warehouse Management System (RWMS)

6. Oracle Retail Allocation

7. Oracle Retail Invoice Matching (ReIM)

8. Oracle Retail Price Management (RPM)

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

9. Oracle Retail Central Office (ORCO)

10. Oracle Retail Back Office (ORBO)

11. Oracle Retail Store Inventory Management (SIM)

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

12. Oracle Retail Integration Bus (RIB)

13. Oracle Retail Point-of-Service (ORPOS)

14. Oracle Retail Analytics Applications

    ■ Oracle Retail Markdown Optimization

    ■ Oracle Retail Clearance Optimization Engine

- Oracle Retail Promotion Intelligence and Promotion Planning and Optimization

15. Oracle Retail Advanced Inventory Planning (AIP)

16. Oracle Retail Predictive Application Server (RPAS)

17. Oracle Retail Data Warehouse (RDW)

18. Oracle Retail Workspace (ORW)

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