

**Oracle® Retail Assortment and Space
Optimization**

Installation Guide

Release 14.0.1

E54401-02

June 2014

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Oracle Retail Assortment and Space Optimization Installation Guide, Release 14.0.1

Oracle welcomes customers' comments and suggestions on the quality and usefulness of this document.

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

- Are the implementation steps correct and complete?
- Did you understand the context of the procedures?
- Did you find any errors in the information?
- Does the structure of the information help you with your tasks?
- 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 Online Documentation available on the Oracle Technology Network Web site. It contains the most current Documentation Library plus all documents revised or released recently.

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Preface

Oracle Retail Installation Guides contain the requirements and procedures that are necessary for the retailer to install Oracle Retail products.

Audience

This Installation Guide is for the following audiences:

- Database administrators
- System analysts and designers
- Integrators and implementation staff

Documentation Accessibility

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Access to Oracle Support

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Related Documents

For more information, see the following documents in the Oracle Retail Assortment and Space Optimization documentation set:

- *Oracle Retail Advanced Science Engine Security Guide*
- *Oracle Retail Advanced Science Engine Implementation Guide*
- *Oracle Retail Assortment and Space Optimization Release Notes*
- *Oracle Retail Assortment and Space Optimization User Guide*

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, 14.0) or a later patch release (for example, 14.0.1). If you are installing the base release or additional patches, 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/technetwork/documentation/oracle-retail-100266.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.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
<code>monospace</code>	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Overview

This chapter provides an overview of Oracle Retail Assortment and Space Optimization (ORASO) and a road map for installing the application. It contains the following sections:

- [Introduction](#)
- [Overview of Oracle Configuration Manager](#)
- [Road Map for Installing ORASO](#)

Introduction

ORASO is an analytical application that includes a collection of algorithms that can help users to solve Micro Space physical retail space planning problems.

Micro Space Optimization

Given a fixed amount of space on physical fixtures (for example, shelving) and a set of products (for example, cold cereal assortment), determine the optimal allocation of space (typically, a number of facings) for each product.

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. 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.

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.

Road Map for Installing ORASO

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

Table 1–1 Road Map for Installing ORASO

Task	Description
<i>Pre-installation Tasks</i>	
1.	Plan your environment, based on your business needs. For more information on the planning process and the supported configurations, see Chapter 2, "Planning the Installation." When planning the environment, you must also review the security recommendations, and take the necessary steps to ensure secured deployment and configuration. For more information, see <i>Oracle Retail Advanced Science Engine Security Guide</i> .
2.	Set up the 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 the Application Server" .
4.	Set up users and roles. For more information, see Chapter 4, "Setting Up the Application Server" .
5.	Set up the password stores. For more information, see Chapter 5, "Setting Up Password Stores."
<i>Installation Task</i>	
6.	Access the ORASO installation software, set up the install.properties file, and run the Oracle installer. For more information, see Chapter 6, "Installing Assortment and Space Optimization" .

Planning the Installation

Before installing ORASO, 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 installation. It also includes the list of hardware and software requirements.

This chapter includes the following sections:

- [Installation Prerequisites](#)
- [Overview of the Planning Process](#)
- [Supported Configurations](#)
- [Supported Oracle Retail Products](#)

Installation Prerequisites

The application installer must be run from a Linux, AIX, or Solaris application server with the following installed:

- WebLogic Server 10.3.6 domain with Enterprise Manager
- ADF 11.1.1.7.0 Runtime
- Oracle Database Client (sqlplus)
- Java JDK 1.7.0_51 (or later) 64-bit
- Oracle Metadata Services (MDS) setup

Oracle MDS Setup

The installation of the ORASO standalone application requires an Oracle MDS Repository. For information on managing the Metadata Repository, see http://docs.oracle.com/cd/E28271_01/core.1111/e10105/repos.htm#ASADM260

Creating the MDS Repository

If a MDS Repository is not available for use by the application, then you need to create one. For detailed instructions, see <http://www.oracle.com/technetwork/articles/adf/part10-085778.html>

Registering the MDS Repository with the WebLogic Server Domain

After you create the repository, you must register it with the WebLogic Server domain where the application is to be installed. For detailed instructions, see <http://www.oracle.com/technetwork/articles/adf/part10-085778.html>

Note: When you register the domain in the MDS Repository Registration, you must use **RSE** as the descriptive name and **ORACLE** as the database vendor.

Overview of the Planning Process

Planning your process 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 ORASO 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).
 - Gathering the capacity data.
 - Planning the data security policies.
 - Designing the backup and recovery strategies.
2. Determine the size of the setup.
3. Identify source systems. Identify the systems that will exchange data with ORASO.

Planning for Optimal ORASO Performance

Consider the following steps when planning and preparing the product environment.

1. Determine the ORASO metrics relevant to your business needs. These include:
 - The number of concurrent users
 - The number of planograms expected to be loaded
 - The number of stores or store clusters in a typical optimization run
 - The number of assortments and assortment clusters
 - The maximum number item-locations per assortment or assortment cluster
 - The expected number of variable POG lengths (as each POG length is essentially a new POG)
 - The assortment date of ranges (as longer periods require bigger forecast datasets)

Note that, for each run, the number of store clusters * the number of POG lengths = the number of optimization problems for that run. Sizing for optimization run time and for storing run results should take this into account.

2. Plan and set up the file-based ETL scripts for data import and export. This also includes the data feeds needed from the external systems for nightly, weekly, and periodic batch updates and recycling.
3. Set up synchronization with historical data sources (such as merchandise, sales, calendar, and transaction). This also includes any nightly, weekly, and periodic batch updates and recycling.

Supported Configurations

This section describes the hardware and network requirements for ORASO, and includes the following topics:

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

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.

Database Requirements

ORASO requires the use of the Oracle Database Server 11g Release 2 (11.2.0.3.0). The following table lists the supported database configuration:

Table 2–1 Database Requirements

Software	Requirement
Database (64-bit)	Oracle Database 11g Release 2 (11.2.0.4.0) Patch 13566938
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 <i>Oracle Database Licensing Information 11g Release 2</i> .
Operating System (64-bit)	■ Oracle Linux 6 Update 3, x86-64 architecture based system. ■ Oracle Solaris 11 Update 11, SPARC based system. ■ IBM AIX 6.1 Technology Level 6 (TL6), Power processor based system. ■ Red Hat Enterprise Linux 6 Update 3, x86-64 based system. ■ IBM AIX 7.1 Technology Level 1 (TL 1), Power processor based system.
Utilities	File Transfer Protocol utility (ftp or ssh/scp/rsync) sudo utility

Application Server Requirements

The ORASO application requires the use of Oracle WebLogic Server 11g Release 1 (10.3.6), extended to use ADF 11.1.1.7.0 with a patch for JPA 2.0. [Table 2–2](#) lists the supported application server configuration:

Table 2–2 Application Server Requirements

Software	Requirement			
Operating Systems (64-bit)	Oracle Linux Release 6.3, x86-64 based.	Oracle Solaris 11, u 11 SPARC-based.	IBM AIX 6.1 Technology Level 6 (TL6) and IBM AIX 7.1 Technology Level 1 (TL1) Power processor -based.	Red Hat Enterprise Linux 6 Update 3.
JVM (64-bit)	Oracle's JDK 1.7.0 Update 51.	Oracle's JDK 1.7.0 Update 51.	IBM JDK 1.7 sp5.	Oracle's JDK 1.7.0 Update 51.

Client System Requirements

The following table lists the supported client system options:

Table 2–3 Client System Environment

Software	Requirements
Microsoft Windows 7 Service Pack 1	One of the following browsers: ■ Mozilla Firefox Enterprise Version 25.0 ■ Microsoft Internet Explorer 8.0 (32-bit) ■ Microsoft Internet Explorer 9.0 (32-bit)

Supported Oracle Retail Products

The following table lists the supported Oracle Retail products:

Table 2–4 Supported Oracle Retail Products

Product	Version
Oracle Retail Modeling Engine	14.0.1
Oracle Retail Analytics	14.0.1
Oracle Retail Demand Forecasting	14.0
Oracle Retail Macro Space Management	14.0

Setting Up the Database

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

- [Installing the Database](#)
- [Database Parameters](#)
- [Creating the Default Tablespaces](#)
- [Creating the Data User Accounts](#)

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 ORASO. Since the installation instructions for the database may vary based on the operating system, Oracle recommends that you refer to the relevant installation documentation included with the database.

Installing the Database

The application requires the use of Oracle 11g Release 2 (11.2.0.3.0) (64-bit). In addition, you must install patch 13566938 on top of 11.2.0.3.

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

Install the database for the application, along with the software, referring to the Oracle Database 11g Release 2 Documentation.

Important: The database must be secured using the recommendations provided in the *Oracle Database 11g Release 2 Security Guide*. For additional specific guidance for securing the database for use with ORASO, refer to the *Oracle Retail Advanced Science Engine Security Guide*.

Time Zone Consideration

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

Database Parameters

The database parameters shown in [Table 3–1, "Suggested Values for Database Parameters"](#) are sample values that can be used with the test dataset included with ORASO. Tune these parameters to suitable values for your environment.

Table 3–1 Suggested Values for Database Parameters

Database Parameter	Suggested Value
PARALLEL_MAX_SERVERS	Customer determines. See Setting Parallel Processing Parameters .
PARALLEL_THREADS_PER_CPU	Customer determines. See Setting Parallel Processing Parameters .
JOB_QUEUE_PROCESSES	Set a value between 2 through 1000 based on the recommendation provided in the section JOB_QUEUE_PROCESSES Recommendation .

Setting Parallel Processing Parameters

The settings for PARALLEL_MAX_SERVERS and PARALLEL_THREADS_PER_CPU database parameters are dependent on your specific hardware configuration. You should set these parameters so that a sufficient number of parallel resources are available for the various processes that are run by this application.

For example, if the various Degree of Parallelism (DOP) configuration parameters are set up so that ten threads can run simultaneously, but the combination of PARALLEL_MAX_SERVERS and PARALLEL_THREADS_PER_CPU are set up so that only five sessions can get parallel threads, then performance will be degraded for five of the parallel threads. Therefore, you should make sure that the number of sessions that can use parallel server resources are sufficient for the number of concurrent database processes that can be run. To do this, either increase the PARALLEL_MAX_SERVERS or decrease the PARALLEL_THREADS_PER_CPU, or decrease the various DOP configuration values, so that database resources are efficiently utilized without causing a bottleneck on the throughput for some processing.

Here is a suggested approach to setting the parameters. Allow a minimum of 12 concurrent processes to get some parallel resources. In this way the installer can set PARALLEL_THREADS_PER_CPU to a value that enables a comfortable setting for PARALLEL_MAX_SERVERS, where PARALLEL_MAX_SERVERS is set to 12* CPU_COUNT * PARALLEL_THREADS_PER_CPU.

JOB_QUEUE_PROCESSES Recommendation

The number of concurrent database threads for various application processes can be controlled by changing entries in the RSE_CONFIG table. These entry names typically will contain "DOP" as part of its PARAM_NAME. The JOB_QUEUE_PROCESSES value must be configured high enough to allow all DOP values to be executed without being constrained by the JOB_QUEUE_PROCESSES configuration. The actual number of concurrent threads is the lesser of the database configuration value for JOB_QUEUE_PROCESSES and the sum of all the "DOP" configuration parameter values.

Note that some processes can be run by multiple simultaneous users. Therefore, if the `JOB_QUEUE_PROCESSES` limit is defined at 6 and the maximum DOP configuration value is set at 2, then there will be an imposed limit of 3 processes running at a time. This limit can impact the performance of processing for some tasks, so make sure that the `JOB_QUEUE_PROCESSES` limit and the various DOP configuration values are set appropriately in order to work together efficiently while allowing proper use of database resources.

Note: `JOB_QUEUE_PROCESSES` **MUST** be set to greater than 2 or the application may hang.

Creating the Default Tablespaces

When you run the Oracle installer, schemas and tables for the application are installed on the database you create. For the schemas and tables to install successfully, the database must include certain default tablespaces.

ORASO uses the tablespace that is specified as the default tablespace for the schema. If you need to change the tablespace for individual tables or indexes, you should do this after the installation is complete. All tables whose names begin with "PROTO\$" are used as prototypes to create transient tables (that is, tables that start with TMP\$) for various database processes. If you want to keep these transient tables in a separate tablespace (for a different backup strategy) then you can move the tables whose names begin with "PROTO\$" to another tablespace. All subsequent transient tables that are built off of these prototypes will be placed in that tablespace.

Use the Oracle 11g Database Configuration Assistant to create a default database with the tablespace mentioned in [Table 3–2, Business Database Tablespace](#). For more information on using the Configuration Assistant, see the Installation documentation associated with the version of the Oracle database you are installing.

Table 3–2 Business Database Tablespace

Tablespace	Description
<User-supplied Name>	Required. Application tablespace for the ORASO tables.

Note: The recommended size of tablespace depends on the amount of data being stored and can change based on the size of your implementation.

Creating the Data User Accounts

You must create one database user to be used during the installation to create staging tables, core hierarchy tables, and application-specific tables.

To create the user accounts:

1. At the SQL prompt, type the following statement to create the users, and assign a name to the default tablespace:


```
CREATE USER <User-assigned SchemaName> IDENTIFIED BY <PASSWORD> DEFAULT
TABLESPACE <User-assigned TablespaceName>;
```
2. Once the users are created, use the Database Configuration Assistant and grant the following access privileges to all the users:
 - ALTER SESSION

- CREATE JOB
 - CREATE MATERIALIZED VIEW
 - CREATE MINING MODEL
 - CREATE PROCEDURE
 - CREATE SEQUENCE
 - CREATE SESSION
 - CREATE SYNONYM
 - CREATE TABLE
 - CREATE TYPE
 - CREATE VIEW
 - UNLIMITED TABLESPACE
 - QUERY REWRITE
3. Grant the following roles to all users:
- CONNECT
 - RESOURCE
 - SELECT_CATALOG_ROLE
 - EXECUTE_CATALOG_ROLE
4. Grant the following object privileges to all users:
- EXECUTE on DBMS_LOCK
 - EXECUTE on DBMS_STATS
 - EXECUTE on DBMS_METADATA
 - EXECUTE on DBMS_RANDOM
 - EXECUTE on DBMS_UTILITY
 - EXECUTE on DBMS_PARALLEL_EXECUTE

Setting Up the Application Server

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

ORASO supports the use of Oracle WebLogic Server 11g Release 1 (10.3.6) extended to use Oracle Application Development Runtime (ADF) Release 11.1.1.7. This chapter provides instructions on setting up the WebLogic server for your business. It contains the following sections:

- [Setting Up the WebLogic Server](#)
- [Restarting the Application Server](#)
- [Setting Up JVM Memory Settings](#)
- [Setting Up Users and Roles](#)
- [Setting Up JTA Timeout Seconds](#)

Note: This chapter includes specific instructions required for ORASO. 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.

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](#)
- [Installing the Oracle Application Development Runtime Patch](#)
- [Setting Up a WebLogic Domain](#)
- [Setting Up the WebLogic Startup Script](#)

Note: The WebLogic server must be secured using the security recommendations provided in the *Oracle Fusion Middleware Information Roadmap for Oracle WebLogic Server*. For additional specific guidance on securing the WebLogic server for ORASO, refer to the *Oracle Retail Advanced Science Engine Security Guide*.

Installing the WebLogic Server

Install the Oracle WebLogic Server Release 11g Release 1 (10.3.6), referring to the Oracle WebLogic Server Documentation for guidance.

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

Installing the Oracle Application Development Runtime Patch

ORASO also requires that the WebLogic Server is extended to use ADF 11.1.1.7. You must apply this patch before you set up the WebLogic domain.

After installing ADF, it is necessary to also apply a patch on top of ADF 11.1.7. The patch is called ADF Patch 16788543. You can find it here:

http://aru.us.oracle.com:8080/ARU/ViewCheckin/process_form?bug=16788543

To download and apply the patch:

1. Log on to the Oracle Technology Network Web site and download the patch. To download this patch:
 - a. In a Web browser, open the following URL:
`https://otn.oracle.com/`
 - b. On the **Oracle Technology Network** page, in the horizontal menu, hover your mouse cursor over **Downloads**, and then click **JDeveloper and ADF** under the **Developer Tools** section. The **Oracle JDeveloper Software** page appears.
 - c. Click the **Downloads** tab.
 - d. On the **Downloads** tab, click the **Download** link under the **Oracle Application Development Runtime Installer** section. The **Application Development Framework** page appears.
 - e. Click the **Downloads** tab.
 - f. In the **Downloads** tab, review and accept the license agreement.
 - g. Under the **Oracle ADF Downloads** area, select **11.1.1.7** from the drop-down list under **Application Development Runtime**, and then click **Download**.
2. Unpack the ZIP file to a temporary directory and navigate to this location.
3. Install Application Development Runtime 11.1.1.7 by running the installer.

You can now set up your WebLogic domain. For more information, see [Setting Up a WebLogic Domain](#).

Setting Up a WebLogic Domain

Use the WebLogic Configuration Wizard to create and set up a domain on the WebLogic Server. This section describes how you can create and set up a domain.

To set up a WebLogic domain:

1. Navigate to the <WLS_HOME>/wlserver_10.3/common/bin directory, and run the following command to start the WebLogic Configuration Wizard in the graphical mode:

```
sh config.sh
```
2. On the WebLogic Configuration Wizard, follow the steps listed in [Table 4-1](#):

Table 4–1 Steps to Set Up a WebLogic Domain

Step	Window	Task
1.	<i>Welcome</i>	Click the Create a new WebLogic domain option, and then click Next .
2.	<i>Select Domain Source</i>	Click the Generate a domain configured automatically to support the following products option, select the Oracle Enterprise Manager - 11.1.1.0 [oracle_common] check box, and then click Next. This also selects Oracle JRF - 11.1.1.0 [oracle_common], which is also required. Note that the Basic WebLogic Server Domain - 10.3.6.0 [wlserver_10.3] check box is automatically selected and greyed out.
3.	<i>Specify Domain Name and Location</i>	Enter a domain name in the Domain Name field. In the Domain location field, specify the location where you want to install the domain.
4.	<i>Configure Administrator User Name and Password</i>	Set up an administrative user name and password. Important: Please keep a note of the user name and password. You must set up an alias in a password store using this user name and password. The Oracle Installer uses the alias name for this user account to connect to the WebLogic Server during the application installation. For more information on setting up a password store and an alias, see Setting Up the Credential Storage Manager Password Store.
5.	<i>Configure Server Start Mode and JDK</i>	Under WebLogic Domain Startup Mode, click Production Mode. Under JDK Selection, select the relevant JDK. Click Next.
6.	<i>Select Optional Configuration</i>	Select the configurations you want to customize and click Next. Go to Step 7. Note that ORASO does not require a WebLogic cluster-based configuration. You can choose to skip selecting the Managed Servers, Clusters and Machines check box. OR Proceed directly to creating your domain. Skip the following steps and go to Step 8.

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

Step	Window	Task
7.	<i>Configure the Administration Server</i>	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.
8.	<i>Configuration Summary</i>	Review and confirm the configuration summary, and then click Next.
9.	<i>Creating Domain</i>	Displays the domain configuration progress. Once the configuration is complete, click Done.

Listen Port Configuration

Once the WebLogic domain for ORASO is created, ensure that you manually disable the HTTP port and enable the HTTPS port. This ensures that only a secure channel is used for accessing ORASO.

You must also ensure that the secure HTTPS port number is changed to a non-default value. This value must be environment-specific, non-standard, and not easily predictable.

For more information on configuring the listen ports, refer to the *Oracle Fusion Middleware Administrator's Guide*.

WebLogic Domain Configuration

To configure the WebLogic domain, you must install the JPA patch.

Installing the JPA 2.0 Patch WLS 10.3.6 must be patched to use JPA 2.0. For more information, see:

http://docs.oracle.com/cd/E23943_01/web.1111/e13720/using_toplink.htm#CIHDJHHI

Setting Up the WebLogic Startup Script

To set up the WebLogic Startup script:

- Navigate to the `<WLS_HOME>/user_projects/domains/<your domain name>/bin` directory and ensure that the following parameters are set within the `startWebLogic.sh` script:
 - **WLS_HOME** – The WebLogic installation directory.
 - **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 WebLogic, IBM, HP, or Sun.
- **JAVA_HOME** – The location where the JDK is installed.
- **JAVA_OPTIONS** – Only for diagnostics such as verbose garbage collection.
- **ulimit** – Add `ulimit -c unlimited` to enable the core dump.

For Example

```
#!/bin/sh
WL_HOME=${WLS_HOME}/wlserver_10.3"<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>"
. ${WL_HOME}/common/bin/commEnv.sh
SERVER_NAME="admin"
CLASSPATH="${WEBLOGIC_CLASSPATH}:${POINTBASE_CLASSPATH}:${JAVA_
HOME}/jre/lib/rt.jar:${WL_HOME}/server/lib/webservices.jar:${CLASSPATH}"
CLASSPATH=${CLASSPATH}
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 &
```

Note: You can choose to remove the `WLS_USER` and `WLS_PW` parameters from the script. When you run the WebLogic Startup script again, you will be prompted to enter the administrative user name and password.

Including the WebLogic administrator user name and password inside the `startWebLogic.sh` script allows the script to be run silently and in the background, with no additional prompts.

Restarting the Application Server

If the application server needs to be re-started, you must first shut down the server. To do this:

1. Navigate to `<WLS_Home>/user_projects/domains/<your domain name>/bin`
2. Run the command `./stopWebLogic.sh`
3. Enter the Administrator user name and password if prompted to.
4. After the server is successfully shut down, use `startWebLogic.sh` to restart the server.

If the server does not shut down using this procedure, you may need to kill the back-end process. To do this:

1. Obtain the process ID (PID) for that process.

2. Run the command:
kill -9 <PID1>
3. After the server is successfully shut down, use **startWebLogic.sh** to restart the server.

Setting Up JVM Memory Settings

The default WebLogic JVM memory settings may not be sufficient for your implementation to run the application. When running the application on memory settings that are too low, the user interface may freeze up and the following error may get logged in the WebLogic logs:

```
Exception in thread "JMX Framework document pooling thread"  
java.lang.OutOfMemoryError: GC overhead limit exceeded.  
Exception in thread "CacheCleaner" java.lang.OutOfMemoryError: GC overhead limit  
exceeded.
```

To prevent this from occurring, modify the MEM_ARGS settings to use a minimum of "1024m" in the <WebLogic domain directory>/bin/setDomainEnv.sh. Modify only the MEM_ARGS values for the JVM they are using for WebLogic.

For example,

For a 64-bit Sun JDK, modify the following values:

```
WLS_MEM_ARGS_64BIT="-Xms1024m -Xmx1024m"  
MEM_PERM_SIZE_64BIT="-XX:PermSize=1024m"  
MEM_MAX_PERM_SIZE_64BIT="-XX:MaxPermSize=1024m"
```

Once you change these values, restart the WebLogic server for them to take effect.

Setting Up Users and Roles

Once the WebLogic Server is installed, you must also set up security and authentication for the application using the WebLogic Administration Console. This process includes the setting up of roles (Global Roles), users and assigning the users to the relevant roles. For more information, refer to the WebLogic Administration Console Online Help.

For ORASO, you must create the following four user login roles:

- Micro Space Optimization Analyst – main business user responsible for day-to-day micro-space optimization activities
- Category Management – product-assortment-centric user who is interested in viewing ORASO results and in the translation of data between Category Management, Retail Analytics, and ORASO
- Administrator – responsible for general system setup and configuration tasks related to the business
- Analytical Super User – responsible for analytical configuration, testing, and model diagnosis

Table 4–2 User Roles and Permissions

Privilege	Data Access	Micro ORASO Analyst	Category Management	Administrator	Analytical Super User
Create new ORASO run	All runs	X			X
Modify existing ORASO run	Runs they created	X			X
View existing ORASO run	All runs	X	X	X	X
Submit or re-submit ORASO run	Runs they created	X			X
	Runs with technical failures	X		X	
Delete or archive saved ORASO run	Runs they created	X			X
	All runs			X	
View list of saved ORASO runs	All runs	X	X	X	X
Mange list of saved ORASO runs	Runs they created	X			X
	All runs			X	

Setting Up JTA Timeout Seconds

For ORASO, you must also set the Java Transaction API (JTA) transaction timeout seconds for active transactions. To set up the JTA timeout seconds:

1. Log on to the **WebLogic Server Administration Console**.
2. On the left navigation panel, under **Domain Structure**, expand **Services**, and then click **JTA**. The **Settings** page appear with **JTA** tab appearing within the **Configuration** tab.
3. On the **JTA** tab, set the value for the **Timeout Seconds** field to **60**.
4. Click **Save**, and then log out.

Setting Up Password Stores

Password stores are secure software containers that store the encrypted user credentials. As part of the Oracle Software Security Assurance (OSSA) program, sensitive information such as user credentials must be encrypted and stored in a secure location called as the password stores. When the installation starts, all the necessary user credentials will be retrieved from the password stores based on the alias name associated with the user credentials. The relevant applications, installers, and scripts can retrieve the credentials using aliases that were set up when encrypting and storing the user credentials in the password store.

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

This chapter describes how you can set up the password stores. It includes the following steps:

1. Review and understand the required password stores configuration. See [Password Stores Configuration Overview](#).
2. Set up a password store for the database user accounts using Oracle Wallet on the application database side. In this document, this password store is referred to as the *Oracle Secret Store*. See [Setting Up the Oracle Secret Store](#).
3. Set up another password store for the application installation using the Credential Storage Manager. This password store will store the user credentials of the relevant application server and the database user accounts. In this document, this password store is referred to as the *Credential Storage Manager Password Store*. See [Setting Up the Credential Storage Manager Password Store](#).

Note: In a clustered-based implementation, ensure that the password stores are installed at a location that is accessible to all the cluster nodes

Important Consideration

Before you start setting up the password stores, ensure that you have the set up the following:

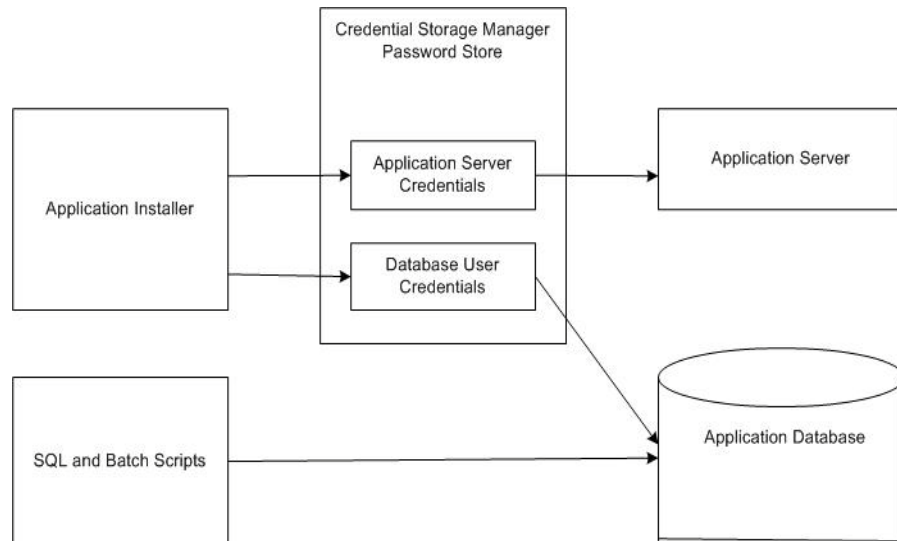
- Environment variables.
- Latest supported JDK.

Password Stores Configuration Overview

Before you start the application installation, you must set up the Credential Storage Manager Password Store. This password store is used for the application installation, and set up using the Credential Storage Manager available in the ORASO installation media. This password store will store user credentials for the application server and database user accounts.

The following figure illustrates the password stores setup and usage for an installation:

Figure 5–1 Password Stores Required for an Installation



Setting Up the Oracle Secret Store

After the database is installed and the default database user accounts are set up, administrators must set up a password store using the Oracle wallet. This involves assigning an alias for the user name and associated password for each database user account. This password store must be accessible to the installed applications.

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

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

To set up a password store for the database user accounts, perform the following steps:

1. Create a wallet using the following command:

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

After you run the command, a prompt appears. Enter a password for the Oracle Wallet in the prompt.

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

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

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

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

After you run the command, a prompt appears. Enter the password associated with the database user account in the prompt.

3. Repeat Step 2 for all the database user accounts.
4. Update the sqlnet.ora file to include the following statements:

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

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

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

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

Setting Up Wallets for Database User Accounts

The following example shows how to set up wallets for database user accounts for ORASO.

To set up wallets for database user accounts, do the following.

1. Create a new directory called wallet under your folder structure.

```
mkdir /u00/product/oracle/oraso/wallets/runtime
mkdir .wallet
```

Note: The default permissions of the wallet allow only the owner to use it, ensuring the connection information is protected. If you want other users to be able to use the connection, you must adjust permissions appropriately to ensure only authorized users have access to the wallet.

2. Create a sqlnet.ora in the wallet directory with the following content.

```
WALLET_LOCATION = (SOURCE = (METHOD = FILE) (METHOD_DATA =
(DIRECTORY = /u00/product/oracle/oraso/runtime/wallet)) )
SQLNET.WALLET_OVERRIDE=TRUE
SSL_CLIENT_AUTHENTICATION=FALSE
```

Note: WALLET_LOCATION must be on line 1 in the file.

3. Set up a tnsnames.ora in the wallet directory. This tnsnames.ora includes the standard tnsnames.ora file. Then, add two custom tns_alias entries that are only for use with the wallet. For example

```
sqlplus /@ orcsid04_orasouser.
ifile = /u00/oracle/product/11.2.0.1/network/admin/tnsnames.ora

orcsid04_orasouser =
  (DESCRIPTION = (ADDRESS_LIST = (ADDRESS = (PROTOCOL = tcp)
    (host = mspxxxxx.us.oracle.com) (Port = 1521)))
    (CONNECT_DATA = (SID = dvols29) (GLOBAL_NAME = dvols29)))

orcsid04_orasouser.world =
  (DESCRIPTION = (ADDRESS_LIST = (ADDRESS = (PROTOCOL = tcp)
    (host = mspxxxxx.us.oracle.com) (Port = 1521)))
    (CONNECT_DATA = (SID = dvols29) (GLOBAL_NAME = dvols29)))
```

Note: It is important to not just copy the tnsnames.ora file because it can quickly become out of date. The ifile clause (shown above) is key.

4. Create the wallet files. These are empty initially.

- a. Ensure you are in the intended location.

```
$ pwd
/u00/product/oracle/oraso/wallets/runtime/.wallet
```

- b. Create the wallet files.

```
$ mkstore -wrl . -create
```

- c. Enter the wallet password you want to use. It is recommended that you use the same password as the UNIX user you are creating the wallet on.

- d. Enter the password again.

Two wallet files are created from the above command: ewallet.p12 and cwallet.sso.

5. Create the wallet entry that associates the user name and password to the custom tns alias that was setup in the wallet's tnsnames.ora file.

```
mkstore -wrl . -createCredential <tns_alias> <username> <password>
```

For example

```
mkstore -wrl . -createCredential orcsid04_orasouser orasouser orasouser_passwd
```

6. Test the connectivity. The ORACLE_HOME used with the wallet must be the same version or higher than what the wallet was created with.

```
$ export TNS_ADMIN=/u00/product/oracle/oraso/wallets/runtime/.wallet /* This is
very important to use wallet to point at the alternate tnsnames.ora created in
this example */
```

```
$ sqlplus /@orcsid04_orasouser
```

```
SQL*Plus: Release 11
```

```
Connected to:
Oracle Database 11g
```

```
SQL> show user
USER is "orasouser"
```

Running batch programs or shell scripts would be similar:

```
Ex: dtesys /@orcsid04_orasouser
script.sh /@orcsid04_orasouser
```

As shown in the example above, users can ensure that passwords remain invisible.

Additional Database Wallet Commands

The following is a list of additional database wallet commands.

- Delete a credential on wallet

```
mkstore -wrl . -deleteCredential orcsid04_orasouser
```

- Change the password for a credential on wallet

```
mkstore -wrl . -modifyCredential orcsid04_orasouser orasouser orasouser_new_
passwd
```

- List the wallet credential entries

```
mkstore -wrl . -list
```

This command returns values such as the following.

```
oracle.security.client.connect_string1
oracle.security.client.user1
oracle.security.client.password1
```

- View the details of a wallet entry

```
mkstore -wrl . -viewEntry oracle.security.client.connect_string1
```

Returns the value of the entry:

```
orcsid04_orasouser
```

```
mkstore -wrl . -viewEntry oracle.security.client.user1
```

Returns the value of the entry:

```
orasouser
```

```
mkstore -wrl . -viewEntry oracle.security.client.password1
```

Returns the value of the entry:

```
orcsid04_orasouser_newpassword
```

Setting Up the Credential Storage Manager Password Store

Before starting the application installer, you must set up the user credentials for the application server and database user accounts. The application installation includes a Credential Storage Manager that you can use to set up a password store for the application installation. In this document, this password store is referred to as the *Credential Storage Manager Password Store*.

To set up the Credential Storage Manager Password Store:

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

```
<OASO_CD_IMAGE>/aso/installer/retail-public-security-api/bin
```

For more information on the <OASO_CD_IMAGE> folder, see [Chapter 6, "Installing Assortment and Space Optimization."](#)

2. Run the save_credential.sh script. You can add new or update using save-credential.sh as follows:

```
save_credential.sh -a <alias-name> -u <user-name> -p <partition-name> -l  
<locationOfWalletDir>
```

Note: In the command above, <alias-name>, <user-name>, <partition-name>, and <locationofwalletDir> are placeholder text for illustration purposes. For each set of user name and associated password, you must specify an unique alias name.

For the <alias-name> argument, you must specify the name you want for the alias. This is the information that you will give to the ORASO Installer.

For the <user-name> argument, you must specify the DB Schema Username or the WLS Domain Admin Username.

For the <partition-name> argument, you must specify the proper partition name used by the installer. Partition Name to be used for the ORASO Installer is "DEFAULT_KEY_PARTITION_NAME" (without the "").

For the <locationofwalletDir> argument, you must specify the location where you want to store the wallet file that contains the encrypted user credentials. Keep a note of this location.

Example:

```
./save_credential.sh -p DEFAULT_KEY_PARTITION_NAME -a ORASO_DB_ALIAS -u  
ORASO_PROD_DB -l /u00/product/oracle/oraso/wallet
```

```
-----
-----
Retail Public Security API Utility
-----
-----
```

```
Enter password:
Verify password:
```

Note: save_credential.sh can also be used to update the information in wallet.

3. If you are unsure about the information that is currently in the wallet, use dump_credentials.sh as follows:

```
./dump_credentials.sh <wallet-location>
```

Example:

```
./dump_credentials.sh /u00/product/oracle/oraso/wallet
```

```
-----
-----
Retail Public Security API Utility
-----
-----
```

```
-----
-----
Below are the credentials found in the wallet at the location:
/u00/product/oracle/oraso/wallet
-----
-----
```

```
Application level key partition name: DEFAULT_KEY_PARTITION_NAME
```

```
User Name Alias: ORASO_DB_ALIAS
User Name:ORASO_PROD_DB
```

Important Considerations

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

Installing Assortment and Space Optimization

After you have set up your database and application server, you can install the application using the guidelines provided in this chapter. This chapter contains the following sections:

- [Overview of the Installation Process](#)
- [Accessing the Installation Software](#)
- [Setting Up the Installation Properties File](#)
- [Setting Up Environment Variables](#)
- [Installing ORASO](#)
- [Post-Installation Updates](#)
- [Logging In](#)
- [About install.sh](#)

Note: In this guide, ASE is the correct term for RSE. Make of note of this when running the Installer.

Overview of the Installation Process

In order to install ORASO, your first task is to obtain the installation media. You can then choose the installation mode you prefer. Whichever mode you use, you first need to set up the ORASO properties file. The installation modes are as follows:

- **Graphical or Text mode** – In the graphical mode, the Oracle Installer displays a graphical user interface and prompts you to enter or modify the value of the properties specified in the properties file.
- **Silent mode** – In the silent mode, the installer processes the properties file without any manual intervention.

Accessing the Installation Software

In order to install ORASO, 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 ORASO software ZIP file from the Oracle Software Delivery Cloud Web site.

To download the ORASO software:

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

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

The **Oracle Software Delivery Cloud** download page displays.

Note: Installation media files for an Enterprise release (for example, 14.0) are available on the *Oracle Software Delivery Cloud* Web site (<http://edelivery.oracle.com/>), and Patch releases (14.0.x) and Hot Fixes (14.0.x.y) are available on the *My Oracle Support* Web site (<https://support.oracle.com/>).

2. On the **Oracle Software Delivery Cloud** page, click **Sign In/Register**.
3. On the **Sign In** page, log on to the **Oracle Software Delivery Cloud** Web site.
4. On the **Terms & Restrictions** page, review and accept the licensing agreement by selecting the check boxes.
5. Click **Continue**. The **Media Pack Search** window opens.
6. 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.

The **Oracle Retail Category Management Media Pack** window opens.

7. In the **Select** column, click **Download** next to Oracle Retail Assortment and Space Optimization.
8. Unpack the ZIP file to a temporary directory. In this guide, the directory that contains the installation media is referred to as the <ORASO_CD_IMAGE> directory.

Now you can set up your ORASO installation properties file.

Setting Up the Installation Properties File

In order to install the ORASO application, you first need to specify the properties to use during the installation process. The `ant.install.properties` file, available for each installation, helps you specify the necessary properties for the installation.

To set up the `ant.install.properties` file:

1. Copy **oraso.14.0.0.installer.zip** to a location where you can run the installer. This is referred to as `STAGING_DIR`.
2. Use an unzip utility to unzip **oraso.14.0.0.installer.zip**. This creates the `so/installer` subdirectories under `STAGING_DIR`.
3. Change directories to `<STAGING_DIR>/so/installer`.
4. Copy the **ant.install.properties.sample** file and rename it **ant.install.properties**.
5. Edit the **ant.install.properties** file using any text editor, specifying values as described within the file, and save it. For more information about the properties included in the file, see [The ant.install.properties Parameters Reference](#).

The ant.install.properties Parameters Reference

The following table describes the parameters in the ant.install.properties file that you must set up before you install the ORASO application:

Table 6–1 The ant.install.properties Parameters Reference

Parameter	Description
ant.install.config.version = [Version Number]	The version of the ORASO 14.0.0 installer configuration. Default = 1.1
basedir = [fullpath directory]	The directory where the ORASO 14.0.0 installer has been unzipped and the directory from which install.sh is run. Default = fullpath equivalent of ./
input.admin.port = [Admin Port Number]	WLS Application Server port number. Default = <Empty> If the SSL port is to be used for the installation, enter that here.
input.admin.username.alias = [Admin Alias]	Oracle Wallet Alias Name for WLS Server Name. Default = <Empty>
input.datasource.alias = [schema Alias]	Oracle Wallet Alias for ORASO DB. Default = <Empty>
input.datasource.sid = [Oracle SID/DB name]	WLS Datasource SID for ORASO DB Default = <Empty>
input.datasource.url = jdbc:oracle:thin:@[host]:[port]:[dbname]	WLS Datasource URL for ORASO DB. Default = <Empty>
input.enable.ssl = [true or false]	If using SSL Port to communicate with WLS Application Server, set to true. Default = false
input.is.multiple.hosts = [yes or no]	If installing ORASO Apps in a Clustered WLS Environment, set to yes. Default = no.
input.lang.code = [de, el, en, es, fr, hr, hu, it, ja, ko, nl, pl, pt, ru, sv, tr, zh, zh_TW]	Installed language selection. Default = en
input.new.install = [true or false]	If a new installation, set to true. Setting to true will cause rse.home directory to be deleted prior to copying installation files to it. Default = false
input.radm.datasource.alias = [RADM user alias]	Oracle Wallet Alias for RADM DB. Default = <Empty>
input.radm.datasource.sid = [Oracle SID/DB name]	WLS Datasource SID for RADM DB. Default = <Empty>
input.retrieve.credentials = [yes or no]	Set to yes if using Oracle Wallet for credentials. Default = no
input.rpasfc.home = [config path for fusion client]	Directory where the RPAS Fusion Client files are installed. Default = <Empty>. For example: /oracle/product/rpas14/fusion14config/config/catman/ Note that the ORASO installer will create a directory below this path in /config.
input.rse.home = [full path to RSE home directory]	Directory where the ORASO files are installed. Default = <Empty>

Table 6–1 (Cont.) The ant.install.properties Parameters Reference

Parameter	Description
input.ssh.authentication.mode = default	If installing ORASO Apps in a Clustered WLS Environment, this specifies the Authentication Mode to be used to communicate with Servers. Default = default.
input.ssh.keyfile =	Directory that contains Oracle Wallet entries.
input.ssh.username.alias =	Oracle Wallet Alias for ssh User. Default = <Empty>
input.so.app = [true or false]	Set to true if any of the ORASO.Apps should be installed, otherwise false. Default = false
input.so.db = [true or false]	Set to true if the ORASO.DB should be installed, otherwise false. Default = false
input.so.dbinstall = [true or false]	Set to true to install the ORASO DB component. Default = false
input.so.microappwar.install = [true or false]	Set to true to install the ORASO.MicroApp component. Default = false If installing ORASO as a standalone application, this should be set to false.
input.so.ui.install = [true or false]	Set to true to install the ORASO Standalone application. Default = false If installing ORASO as a micro application within RPAS, this should be set to false.
input.target.name = [Admin/Managed Server]	WLS Admin Server Name or WLS Managed Server Name. Default = AdminServer
input.targetMachines = [target machines (comma separated)]	Comma separated list of Hostnames which are the target machines where the RPAS Fusion Client has been installed. Use <code>localhost</code> if cluster is not used. Default = 'localhost'
input.wallet.dir = [fullpath to wallet directory]	Directory that contains Oracle Wallet entries. Default = ./
input.wls.target = [Application Server Hostname]	WLS Application Server hostname. Default = <Empty>
input.rabatch.grant.recipient = [RADM user alias or Role]	Oracle Wallet Alias for RADM DB or RADM Database Role that is to be granted DB privilege to run ORASO Batch Processes
input.rase.db.batch.user.alias = [ORASE user alias]	Oracle Wallet Alias for ORASE DB
Description: Oracle	Oracle Wallet directory where input.rase.db.batch.user.alias is defined

Setting Up Environment Variables

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

- JAVA_HOME
- ORACLE_HOME
- ORACLE_SID

- TNS_ADMIN
- PATH
- LD_LIBRARY_PATH
- WL_HOME
- WEBLOGIC_DOMAIN_HOME
- NLS_LANG

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
export JAVA_HOME=<path where JVM is installed>
#Example: export JAVA_HOME=/usr/lib/java/jdk1.7.0_51

#Export ORACLE_HOME
export ORACLE_HOME=<path where the Oracle database is installed>
#Example: export ORACLE_HOME=/u01/app/oracle/product/11.2.0/db_1

#Export ORACLE_SID
export ORACLE_SID=<Oracle System ID of ORASE DB Schema>
#Example: export ORACLE_SID=ORASE_TEST

#Export TNS_ADMIN
export TNS_ADMIN=<the location where sql.ora and tnsnames.ora are stored>
#Example: export TNS_ADMIN=${ORACLE_HOME}/network/admin

#Update PATH
export PATH=${ORACLE_HOME}/bin:${PATH}
export PATH=${JAVA_HOME}/bin:${PATH}

#Update LD_LIBRARY_PATH
export LD_LIBRARY_PATH=${ORACLE_HOME}/lib:${LD_LIBRARY_PATH}

#Export WL_HOME
export WL_HOME=<the location where the WebLogic Server is installed>
#Example: WL_HOME=/u00/middleware/weblogic_1036/wlserver_10.3

#Export WEBLOGIC_DOMAIN_HOME
export WEBLOGIC_DOMAIN_HOME=<the location where the WebLogic Domain is installed>
WEBLOGIC_DOMAIN_HOME
#Example: WL_HOME=/u00/middleware/weblogic_1036/wlserver_10.3

#Export NLS_LANG
export NLS_LANG=AMERICAN_AMERICA.AL32UTF8
```

Installing ORASO

The ORASO installation media includes an Oracle installer that you must run to install the application. the installer installs the application based on the input specified in an application properties file, `ant.install.properties`.

You can install the ORASO application in one of the following ways:

- Graphical or Text Mode: The installer prompts you to enter or modify the value of the properties specified in the installation properties file.
- Silent Mode: The installer processes the values set in the properties file without any manual intervention from you.

Installing ORASO in Graphical or Text Mode

To install ORASO in graphical or text mode, complete the following steps. Although this section describes how you can install ORASO in graphical mode, the same instructions appear on the screen as text instructions if you are installing the application in text mode.

Note: Although you do not have to set up the installation properties file when you are installing the application in graphical or text mode, it can be helpful to do so. If you set up the values in the properties file, those values will be taken as the default values in the graphical or text mode dialog boxes. For information on setting up the properties file, see [Setting Up the Installation Properties File](#).

To install the ORASO application in graphical mode:

1. Ensure that the WebLogic application server software is running and that the database is accessible.
2. 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
```

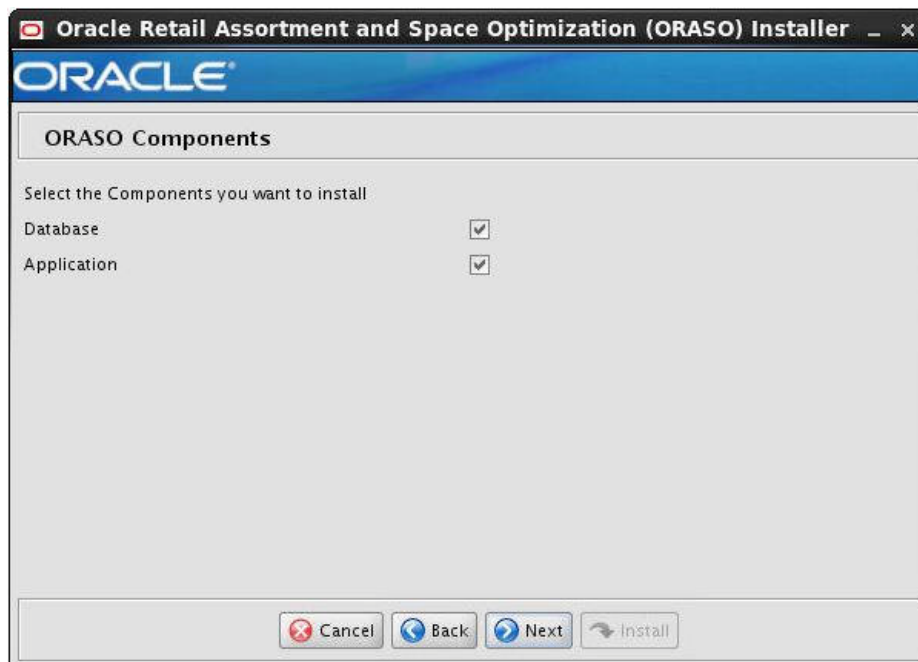
3. From the application server machine, enter the following command:

```
./install.sh
```

4. The ORASO Welcome window appears. Click **Next**.

Figure 6–1 Welcome

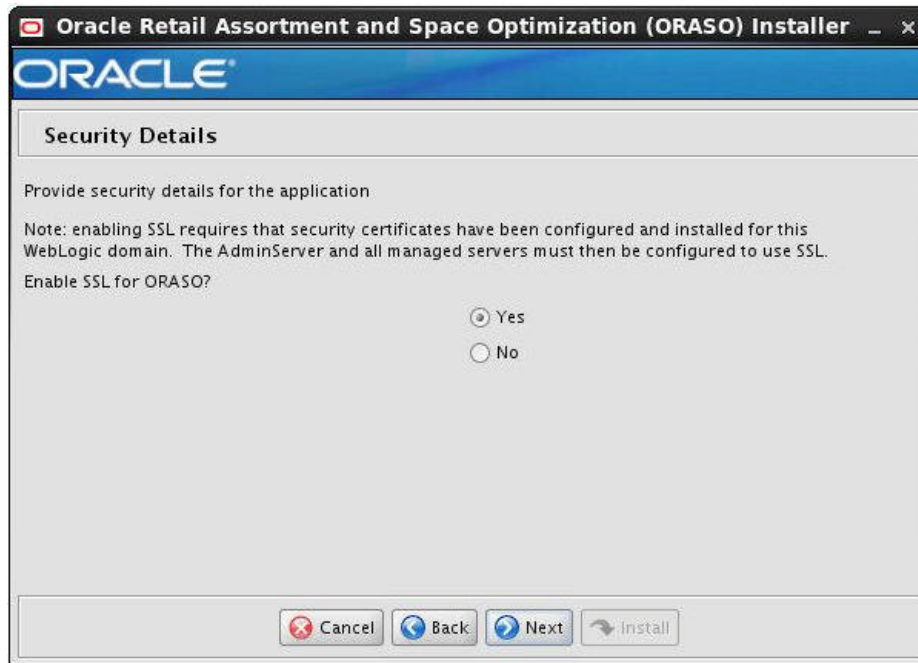
5. The ORASO Components window appears. Select the components you want to install.

Figure 6–2 ORASO Components

6. The Security Details window appears.
 - Select **Yes** to install ORASO on a WebLogic environment configured to use SSL. In this case, SSL must be configured and the ports must be enabled for the administration server or the managed server.

- Select **No** to install ORASO using a WebLogic environment configured without SSL. In this case, non-SSL ports must be enabled for the administration server or the managed server.

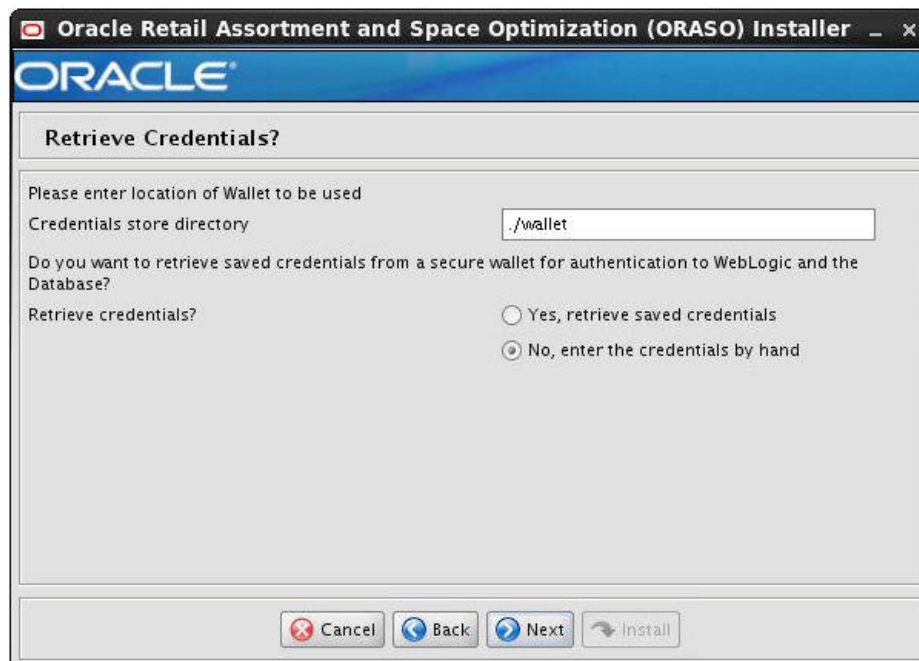
Figure 6–3 Security Details



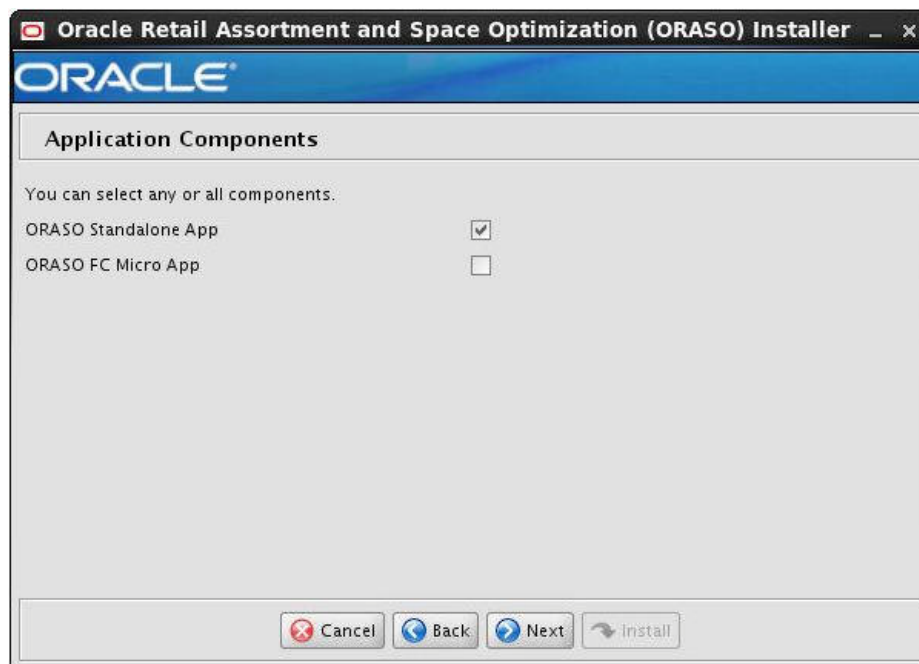
Click **Next**.

7. The Retrieve Credentials? window appears. Select whether you want to retrieve user credentials from the Oracle Wallet:
 - Select **Yes** to indicate that the installed should read the user credentials from an Oracle Wallet and specify the location of the Oracle Wallet.
 - Select **No** to indicate that you are going to enter the user credentials in the user interface and specify a location where you want the credentials to be stored temporarily. (This directory will be deleted after the installation.)

Click **Next**.

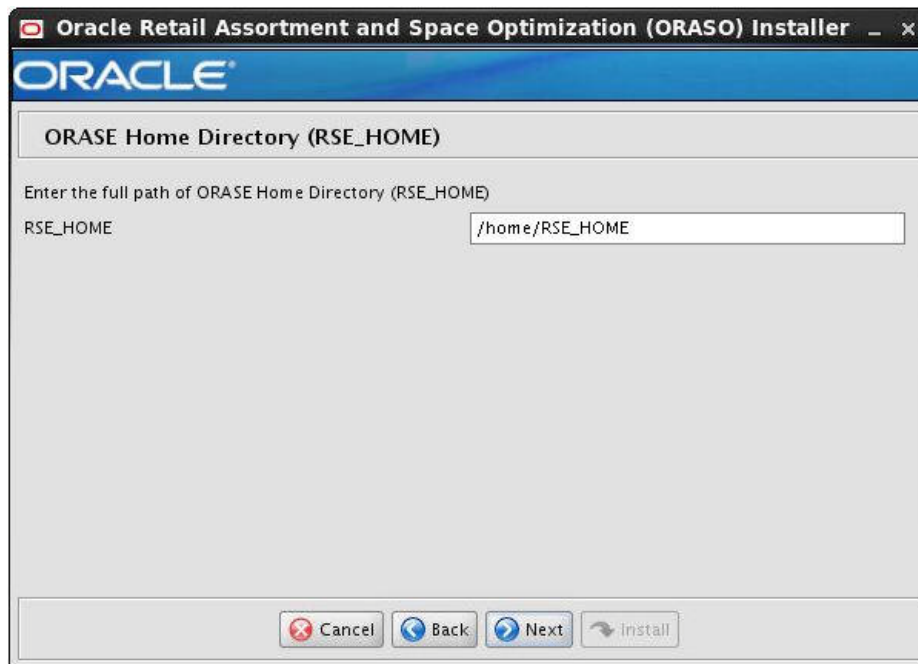
Figure 6–4 Retrieve Credentials

8. The Application Components window appears. Select the components you want to add. Note that if you are installing ORASO standalone, you must select ORASO UI only. If you are installing ORASO as a micro app, you must select ORASO Micro App only.
Click **Next**.

Figure 6–5 Application Components

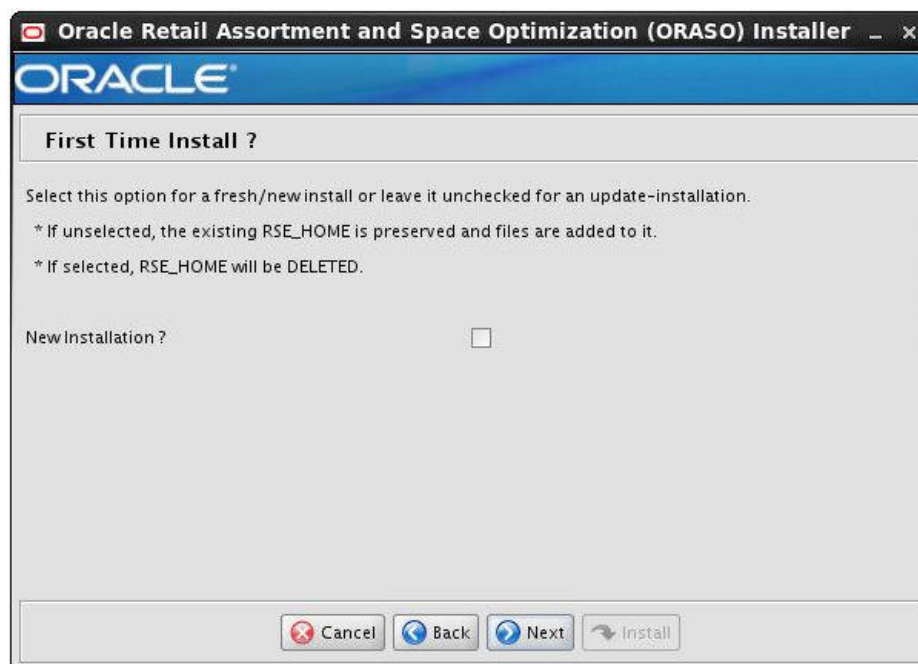
9. The RSE_HOME window appears. Enter the path to the location where you are installing the ORASO files and click **Next**.

Figure 6–6 RSE Home



10. The First time Install? window appears. If you are installing the application for the first time, select the check box and click **Next**. If you select the check box, RSE_HOME will be deleted.

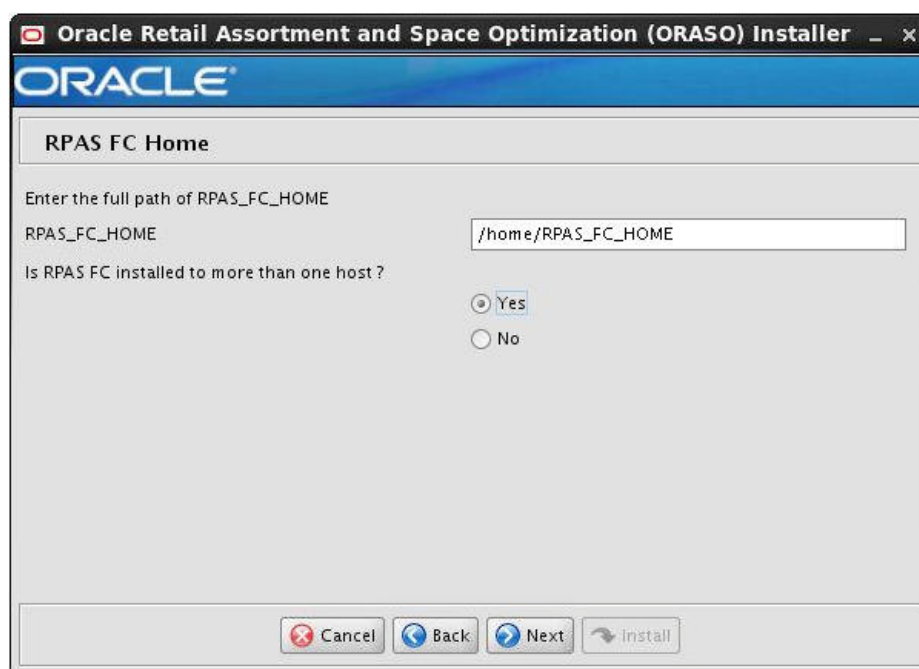
Figure 6–7 First time Install?



11. The RPAS FC Home window appears if you have selected ORASO MicroApp for installation.
 - Specify the location where the RPAS Fusion Client is installed.
 - Select **Yes** if this is a cluster installation. This is an installation in which at least one target managed server is running on a machine that is remote to the administration server machine.
 - Select **No** if you are deploying the ORASO MicroApp to the administration server or managed servers on the same machine. This is an installation in which all of the target managed servers are running on the same machine as the administration server machine.

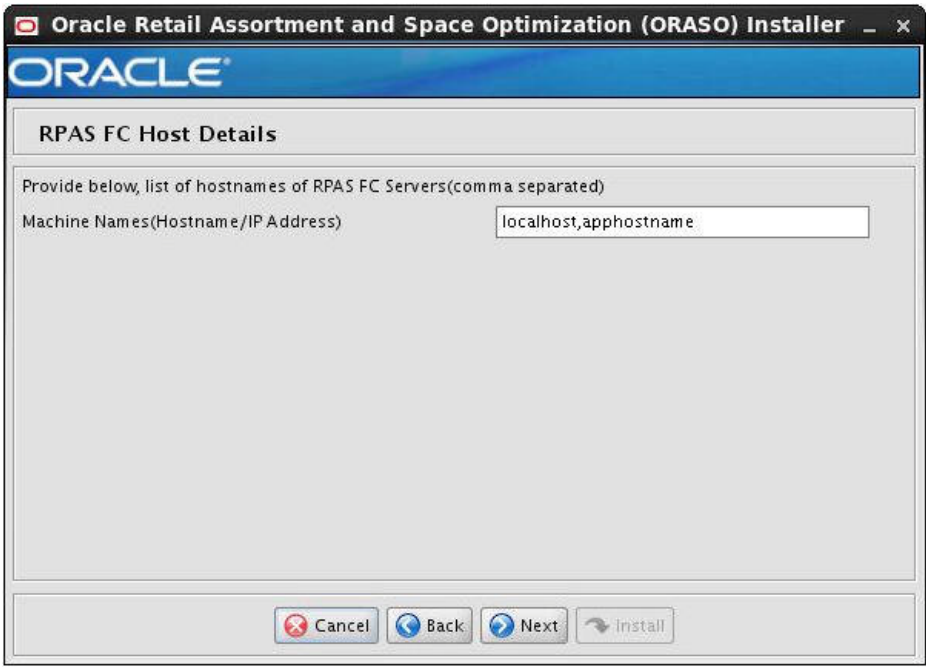
Click **Next**.

Figure 6–8 RPAS FC Home



12. The RPAS FC Host Details window appears if you selected Yes in the previous step. Provide the hostname for the servers where RPAS Fusion Client is installed.
Click **Next**.

Figure 6–9 RPAS FC Host Details



13. The SSH Credentials window appears (if you selected Yes in Step 11). Enter the relevant information, as described in [SSH Credentials Details](#), and click **Next**.

Table 6–2 SSH Credentials Details

Field	Description
Authentication Method	Select one of the following authentication methods: ■ Password: Use the specified password (associated with the SSH User Name) to connect to the remote hosts for copying the files. ■ Passphrase: Use the specified passphrase (associated with the SSH User Name) along with the SSH Key to connect to the remote hosts. ■ No need for password or passphrase: Default option; connect to the remote hosts without a user name, password, or passphrase.
SSH User Name	The SSH user name to connect to the remote hosts.
SSH User Name Alias	The alias name associated with the SSH user name. Specifying an alias name enhances the security for the application. When left blank, the alias name will default to the administrative user name.
SSH Password or Passphrase	Based on the authentication method you selected, enter the relevant SSH password or passphrase.
SSH Key File Path	If you selected the Passphrase option in the Authentication Method field, enter the location of the SSH key file. If left blank, the installer will retrieve the file from \${user.home}/.ssh/id_dsa directory, where user.home is your home directory. To use this default location, ensure that you have the private DSA key stored at this location.

Figure 6–10 SSH Credentials

The screenshot shows the 'Oracle Retail Assortment and Space Optimization (ORASO) Installer' window. The title bar includes the Oracle logo and the window title. The main window has a header with the Oracle logo and a section titled 'SSH Credentials'. Below this, the text asks 'What is your SSH authentication method?' and provides instructions: 'If you do not need to enter a password/passphrase, select the last option and do not enter any credential and alias.' There are three radio button options for the authentication method: 'Password', 'Passphrase', and 'No need for password or passphrase'. The 'No need for password or passphrase' option is selected. Below the radio buttons, there is a text prompt: 'Enter an SSH user name and an alias if you selected a password or passphrase method.' This is followed by three text input fields: 'SSH User Name', 'SSH User Name Alias', and 'SSH password or passphrase'. A note states: 'If left blank SSH User Name Alias will default to the user name.' At the bottom of the window, there are four buttons: 'Cancel', 'Back', 'Next', and 'Install'.

14. The Database Schema Details window appears. Enter the relevant information, as described in [Database Schema Details](#), and click **Next**.

Table 6–3 Database Schema Details

Field	Description
JDBC URL	The JDBC URL
ORASO Schema User Name	The user name for the ORASO schema.
ORASO Schema Password	The password associated with the user name.
Oracle SID	The Oracle system ID.
Database User Alias	The alias for the database user.

Figure 6–11 Database Schema Details

ORACLE

ORASO Database Schema Details

Provide the details for the ORASO Data Source

ORASO JDBC URL

ORASO Schema Username

ORASO Schema Password

Oracle SID

ORASO Database User Alias

(The alias for each username/password pair must be unique)

15. The RADM Database Schema Details window appears. Enter the relevant information, as described in [RADM Database Schema Details](#), and click **Next**.

Table 6–4 RADM Database Schema Details

Field	Description
RADM Schema User Name	The user name for the RADM schema.
RADM Schema Password	The password associated with the user name.
RADM Oracle SID	The RADM Oracle system ID.
RADM Alias	The alias for RADM.

Figure 6–12 RADM Database Schema Details

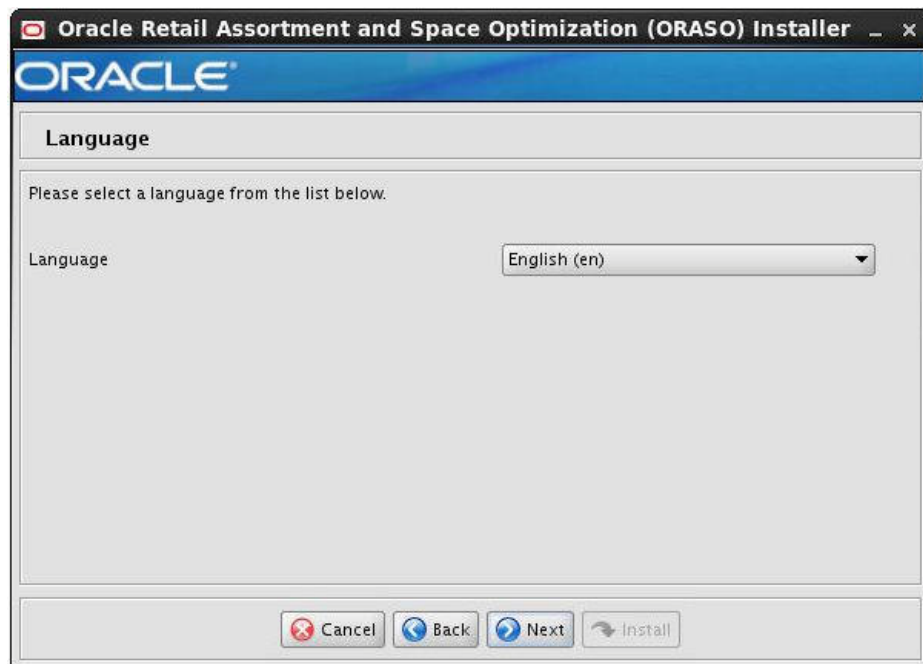
The screenshot shows the 'Oracle Retail Assortment and Space Optimization (ORASO) Installer' window. The title bar includes the Oracle logo and the window title. The main content area is titled 'RADM Database Schema Details'. Below the title, it says 'Provide the schema details'. There are four input fields: 'RADM Schema Username', 'RADM Schema Password', 'RADM Oracle SID' (containing 'mydb'), and 'RADM Alias' (containing 'radmAlias'). A note below the fields states: '(The alias for each username/password pair must be unique)'. At the bottom, there are four buttons: 'Cancel', 'Back', 'Next', and 'Install'.

16. The RA Database Schema Details window appears. Enter an RA schema/role and click **Next**.

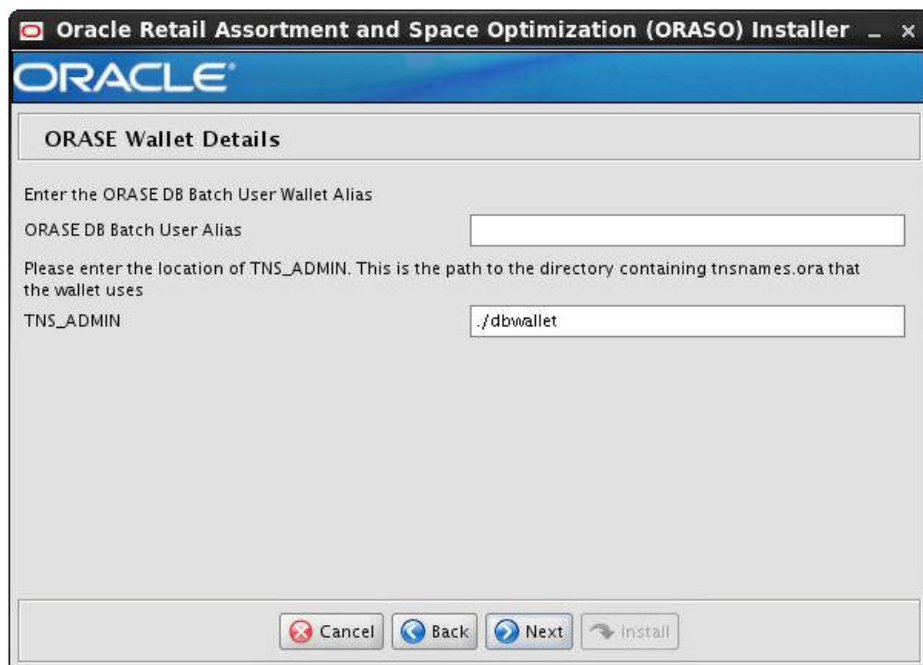
Figure 6–13 RA Database Schema Details

The screenshot shows the 'Oracle Retail Assortment and Space Optimization (ORASO) Installer' window. The title bar includes the Oracle logo and the window title. The main content area is titled 'RA Database Schema Details'. Below the title, it says 'RA Schema or an RA Role which will receive permission to access ORASE modules'. There is one input field labeled 'RA Schema/Role'. At the bottom, there are four buttons: 'Cancel', 'Back', 'Next', and 'Install'.

17. The Language window appears. Select the appropriate language from the drop-down list and click **Next**.

Figure 6–14 Language

18. The Wallet Details window appears. Enter the batch user wallet alias and the TNS_ADMIN values. These values are entered into the RASE_HOME/common/scripts/lib/rse_env file. Click **Next**.

Figure 6–15 Wallet Details

19. The WebLogic Administrative Details window appears. Enter the appropriate information, described in [WebLogic Administrative Details](#), in the fields provided and click **Next**.

Table 6–5 WebLogic Administrative Details

Field	Description
WebLogic Hostname	The host name of the application server.
Admin Server Port Number	The port number associated with the application server.
WebLogic Admin User Name	The administration user name for the application server.
WebLogic Admin Password	The password associated with the administration user name.
Admin Server/Managed Server Name	The name of the admin server or the managed server. This is the target for the application. For a MicroApp installation to a clustered environment, specify the cluster name here.
Admin User Name Alias	The alias name for the administration user. This information enhances the security of the application. If you leave this field blank, the alias name defaults to the administration user name.

Figure 6–16 WebLogic Administrative Details

Oracle Retail Assortment and Space Optimization (ORASO) Installer

WebLogic Administrative Details

Enter the administrative user and password for the Weblogic Server to which the application will be deployed.

Weblogic Hostname:

Admin Server Port Number:

WebLogic Admin User Name:

Weblogic Admin Password:

Cluster name can be given below if this is a MicroApp-only installation

Admin Server/Managed Server Name:

Admin User Name Alias:

(If left blank Admin User Name Alias will default to the admin username)

Buttons: Cancel, Back, Next, Install

20. The Database Installation Summary window appears. Review the installation summary and when satisfied click **Next**.

Figure 6–17 Database Installation Summary

Summary of Installation	
ORASE Home Directory (RSE_HOME)	/home/RSE_HOME
Oracle SID	mydb
ORASO Schema Username	asouser
ORASO Database User Alias	dsAlias
RADM Oracle SID	mydb
RADM Schema Username	radmuser
RADM Schema Alias	radmAlias
RA Schema/Role	rauser1
Language Code	en

Buttons: Cancel, Back, Next, Install

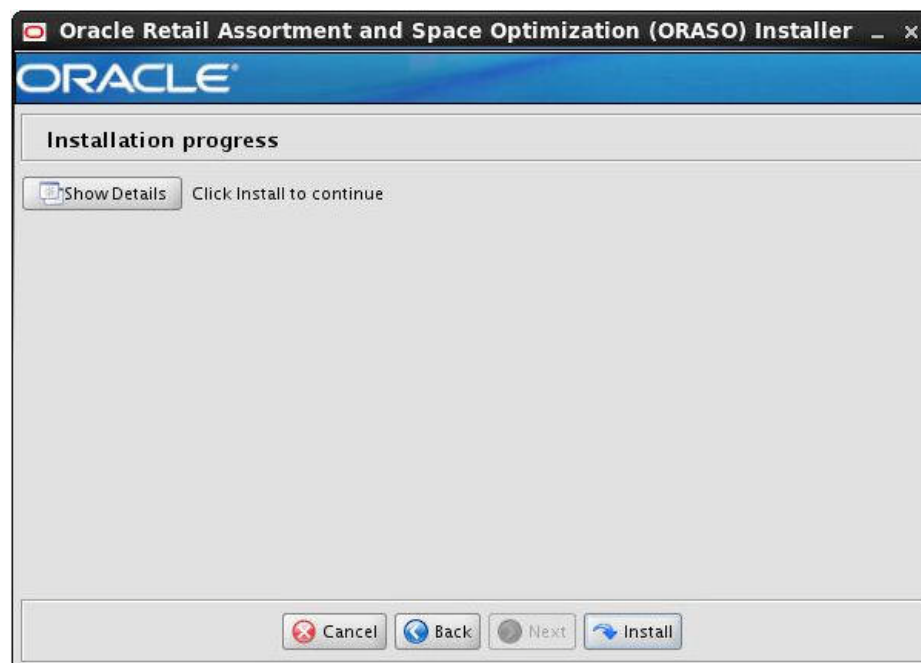
21. The Application Installation Summary window appears. Review the installation summary and when satisfied click **Next**.

Figure 6–18 Application Installation Summary

Summary of Installation	
Enable SSL for ORASO	true
ORASO Standalone App	true
ORASO FC Micro App	true
ORASE Home Directory (RSE_HOME)	/home/RSE_HOME
ORASO JDBC URL	jdbc:oracle:thin:@dbhostname:1521:mydb
ORASO Schema Username	orasouser
ORASO Database User Alias	dsAlias
Weblogic hostname	hostname
ASO Server	AdminServer

Buttons: Cancel, Back, Next, Install

22. The Installation Progress window appears. Click **Install** to start the installation.

Figure 6–19 Installation Progress

23. After the installation is complete, click **Exit** to close the Installer.

Installing ORASO in Silent Mode

Silent mode is not interactive. To install the ORASO application in silent mode:

1. Ensure that you have completed [Setting Up the Installation Properties File](#).

Note: Make sure that the ant.install.properties file is available in the same directory as the install.sh script.

2. Ensure that you have saved the following user credentials in an Oracle Wallet:

- WebLogic domain administration user credential (if you are installing application components)
- Database user credential
- RADM database user credential (if you are installing database components)
- SSH user credentials (if you are deploying MicroApp to multiple machines)

The silent mode installer does not ask for user credentials. Instead, it retrieves the user credentials from the Oracle Wallet.

Note: The installation property input.retrieve.credentials must be set to a value of **Yes**.

3. Ensure that the WebLogic Server is running and that the database is accessible.
4. Navigate to the Dashboard installation folder and enter the following command:

```
./install.sh silent
```

Post-Installation Updates

After you have completed the installation of ORASO, you must update two files: sia-so-bundle-manifest.xml and MultiSolution.properties. The procedures for making these changes are described in this section. Remember to start the WebLogic domain after you have completed making these changes.

Update sia-so-bundle-manifest.xml

To update sia-so-bundle-manifest.xml, complete the following steps:

1. Make sure that the installation of ORASO is complete and that the WebLogic domain is not in a running state.
2. Go to <FC install directory>/config/functionalmodulebundles/sia-so.
3. Edit sia-so-bundle-manifest.xml as follows:

- a. Delete the following lines:

```
<menu_model>
  <menu name="ASO CMDs">
    <menu_item name="Optimization List" event="asoOptListEvent"/>
    <menu_item name="Assortment List" event="asoAssortListEvent"/>
    <menu_item name="Execute Space Optimization" event="asoExecuteOptEvent"/>
    <menu_item name="Assortment Mapping" event="asoAssortMapEvent"/>
  </menu>
</menu_model>
```

- b. In the same location in the file where you just deleted the lines indicated in Step 3a, add the following lines:

```
<menu_model>
  <menu name="aso.menu.label" application_
roles="Administrator,AnalyticalSuperUser,CategoryManager,MicroSpaceOptAnaly
st" resource_bundle="oracle.rgbu.ard.util.i18n.SolutionResourceBundle">
    <menu_item name="aso.menuitem.optimizationlist.label"
application_
roles="Administrator,AnalyticalSuperUser,CategoryManager,MicroSpaceOptAnaly
st" resource_bundle="oracle.rgbu.ard.util.i18n.SolutionResourceBundle"
event="asoOptListEvent"/>
    <menu_item name="aso.menuitem.assortmentlist.label"
application_
roles="Administrator,AnalyticalSuperUser,CategoryManager,MicroSpaceOptAnaly
st" resource_bundle="oracle.rgbu.ard.util.i18n.SolutionResourceBundle"
event="asoAssortListEvent"/>
    <menu_item name="aso.menuitem.exespaceopt.label" application_
roles="AnalyticalSuperUser,MicroSpaceOptAnalyst" resource_
bundle="oracle.rgbu.ard.util.i18n.SolutionResourceBundle"
event="asoExecuteOptEvent"/>
    <menu_item name="aso.menuitem.assortmentmapping.label"
application_
roles="Administrator,AnalyticalSuperUser,CategoryManager,MicroSpaceOptAnaly
st" resource_bundle="oracle.rgbu.ard.util.i18n.SolutionResourceBundle"
event="asoAssortMapEvent"/>
  </menu>
</menu_model>
```

Update MultiSolution.properties

To update MultiSolution.properties, complete the following steps:

1. After you have set up the RPAS Domain MultiSolution Taskflow, go to the following directory:
`<FC install directory>/config/MultiSolution/resources`
2. Edit each MultiSolutionBundle*.properties file as follows. (Note that there is one MultiSolutionBundle*.properties file for each language that is supported. The default file, MultiSolutionBundle.properties is English.)

Add these five lines to the end of the file.

```
aso.menu.label =ASO CMDs
aso.menuitem.optimizationlist.label=Optimization List
aso.menuitem.assortmentlist.label=Assortment List
aso.menuitem.exespaceopt.label=Execute Space Optimization
aso.menuitem.assortmentmapping.label=Assortment Mapping
```

Start WebLogic

After you have completed updating sia-so-bundle-manifest.xml and MultiSolution.properties, you must start the WebLogic domain so that the changes you have made to the two files take effect.

Logging In

Once ORASO is installed, you can access the application using the following URL:

`http://<SERVER>:<PORT>/so/faces/oracle/retail/rse/so/fe/view/page/SpaceOptimizationHome.jspx`

About install.sh

The install.sh script enables you to launch the Oracle installer and install the application.

Syntax

`install.sh [text | silent]`

Arguments

The following table describes the arguments you can use along with the install.sh. You can specify [text] or [silent] as optional arguments. If neither is specified, the Oracle Installer displays the default Graphical Mode user interface and prompts you to enter or modify the value of the properties specified in the properties file.

Argument	Description
text	Optional. Console mode. If you include this option, the Oracle Installer user interface displays a console user interface and prompts you to enter or modify the value of the properties specified in the properties file.
silent	Optional. Silent mode. If you include this option, the installer processes the properties file (ant.installer.properties) without any manual intervention.

Appendix: Installation Order

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

Note: The installation order is not meant to imply integration between products.

Enterprise Installation Order

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

Note: ORFM is an optional application for RMS if you are implementing Brazil localization.

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 Invoice Matching (ReIM)
7. Oracle Retail Price Management (RPM)

Note: During 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 `remote_service_locator_info_ribserver.xml` file.

8. Oracle Retail Allocation
9. Oracle Retail Central Office (ORCO)
10. Oracle Retail Returns Management (ORRM)
11. Oracle Retail Back Office (ORBO)
12. Oracle Retail Store Inventory Management (SIM)

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

13. Oracle Retail Predictive Application Server (RPAS)
14. Oracle Retail Demand Forecasting (RDF)
15. Oracle Retail Category Management (CM)
16. Oracle Retail Analytics (RA)
17. Oracle Retail Modeling Engine (ORME)
18. Oracle Retail Assortment Space Optimization (ORASO)
19. Oracle Retail Replenishment Optimization (RO)
20. Oracle Retail Analytic Parameter Calculator Replenishment Optimization (APC-RO)
21. Oracle Retail Regular Price Optimization (RPO)
22. Oracle Retail Merchandise Financial Planning (MFP)
23. Oracle Retail Size Profile Optimization (SPO)
24. Oracle Retail Assortment Planning (AP)
25. Oracle Retail Item Planning (IP)
26. Oracle Retail Item Planning Configured for COE (IP COE)
27. Oracle Retail Advanced Inventory Planning (AIP)
28. Oracle Retail Integration Bus (RIB)
29. Oracle Retail Service Backbone (RSB)
30. Oracle Retail Financial Integration (ORFI)
31. Oracle Retail Point-of-Service (ORPOS)
32. Oracle Retail Markdown Optimization (MDO)
33. Oracle Retail Clearance Optimization Engine (COE)
34. Oracle Retail Analytic Parameter Calculator for Markdown Optimization (APC-MDO)
35. Oracle Retail Analytic Parameter Calculator for Regular Price Optimization (APC-RPO)