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Value-Added Reseller (VAR) Language

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(i) the **MicroStrategy** Components developed and licensed by MicroStrategy Services Corporation (MicroStrategy) of McLean, Virginia to Oracle and imbedded in the MicroStrategy for Oracle Retail Data Warehouse and MicroStrategy for Oracle Retail Planning & Optimization applications.

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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.

Send your comments to us using the electronic mail address: retail-doc_us@oracle.com

Please give your name, address, electronic mail address, and telephone number (optional).

If you need assistance with Oracle software, then please contact your support representative or Oracle Support Services.

If you require training or instruction in using Oracle software, then please contact your Oracle local office and inquire about our Oracle University offerings. A list of Oracle offices is available on our Web site at www.oracle.com.
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 written for the following audiences:
- Database administrators (DBA)
- System analysts and designers
- Integrators and implementation staff

**Related Documents**

You can find more information about this product in these resources:
- Oracle Retail Fiscal Management Release Notes
- Oracle Retail Merchandising System with Brazil Localization Installation Guide
- Oracle Retail Fiscal Management User Guide and Online Help
- Oracle Retail RMS-ReSA User Guide for Brazil Localization and Online Help
- Oracle Retail Fiscal Management/RMS Brazil Localization Implementation Guide
- Oracle Retail Fiscal Management Data Model
- Oracle Retail Merchandising Security Guide
- Oracle Retail Licensing Guide
- Oracle Retail Merchandising System Documentation

Also see the documentation library for Oracle Business Intelligence Enterprise Edition at this URL: [http://www.oracle.com/technology/documentation/bi_ee.html](http://www.oracle.com/technology/documentation/bi_ee.html)

**Customer Support**

To contact Oracle Customer Support, access My Oracle Support at the following URL:
[https://support.oracle.com](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, 14.1) or a later patch release (for example, 14.1.2). If you are installing the base release or 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

Oracle Retail product documentation is 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. You can obtain them through My Oracle Support.)

Conventions

Navigate: This is a navigate statement. It tells you how to get to the start of the procedure and ends with a screen shot of the starting point and the statement “the Window Name window opens.”

This is a code sample

It is used to display examples of code
Preinstallation Tasks

Implementation Capacity Planning

There is significant complexity involved in the deployment of Oracle Retail applications, and capacity planning is site specific. Oracle Retail strongly suggests that before installation or implementation you engage your integrator (such as the Oracle Retail Consulting team) and hardware vendor to request a disk sizing and capacity planning effort.

Sizing estimates are based on a number of factors, including the following:
- Workload and peak concurrent users and batch transactions
- Hardware configuration and parameters
- Data sparcity
- Application features utilized
- Length of time history is retained

Additional considerations during this process include your high availability needs as well as your backup and recovery methods.

Requesting Infrastructure Software

If you are unable to find the necessary version of the required Oracle infrastructure software (database server, application server, WebLogic, etc.) on the Oracle Software Delivery Cloud, you should file a non-technical ‘Contact Us’ Service Request (SR) and request access to the media. For instructions on filing a non-technical SR, see My Oracle Support Note 1071023.1 – Requesting Physical Shipment or Download URL for Software Media.

Check Database Server Requirements

Oracle Retail Tax Integration Layer (RTIL) requires that the RMS 14.1.2.1 database schema be installed. See the Oracle Retail Merchandising System Installation Guide for the supported database server requirements.

General Requirements for a database server running RTIL include:
### Supported on: Database Server OS

OS certified with Oracle Database 12cR1 Enterprise Edition. Options are:
- Oracle Linux 6 for x86-64 (Actual hardware or Oracle virtual machine).
- Red Hat Enterprise Linux 6 for x86-64 (Actual hardware or Oracle virtual machine).
- Oracle Linux 6 for x86-64 (Actual hardware or Oracle virtual machine).
- Red Hat Enterprise Linux 6 for x86-64 (Actual hardware or Oracle virtual machine).
- AIX 7.1 (Actual hardware or LPARs)
- Solaris 11 SPARC (Actual hardware or logical domains)
- HP-UX Itanium11.31 Integrity (Actual hardware, HPVM, or vPars)

### Versions Supported:

Database Server 12cR1

Oracle Database Enterprise Edition 12cR1 (12.1.0.2) with the following specifications:

**Components:**
- Oracle Partitioning
- Examples CD (Formerly the companion CD)

**Oneoff Patches:**
- 19623450: MISSING JAVA CLASSES AFTER UPGRADE TO JDK 7
- 20406840: PROC 12.1.0.2 THROWS ORA-600 [17998] WHEN PRECOMPIILING BY 'OTHER' USER

**Other components:**
- Perl compiler 5.0 or later
- X-Windows interface
- JDK 1.7

---

**Note:** By default, JDK is at 1.6. After installing the 12.1.0.2 binary, apply the patches 19623450 and 20406840. Then follow the instructions on Oracle Database Java Developer’s Guide 12c Release 1 to upgrade JDK to 1.7. The Guide is available here:

http://docs.oracle.com/database/121/JJDEV/chone.htm#JJ DEV01000
Check Supported Application Server Requirements

General requirements for an application server capable of running RTIL include the following.

<table>
<thead>
<tr>
<th>Supported on</th>
<th>Versions Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Server OS</td>
<td>OS certified with Oracle Fusion Middleware 11g Release1 (11.1.1.7). Options are:</td>
</tr>
<tr>
<td></td>
<td>- Oracle Linux 6 for x86-64 (Actual hardware or Oracle virtual machine).</td>
</tr>
<tr>
<td></td>
<td>- Red Hat Enterprise Linux 6 for x86-64 (Actual hardware or Oracle virtual machine).</td>
</tr>
<tr>
<td></td>
<td>- AIX 7.1 (Actual hardware or LPARs)</td>
</tr>
<tr>
<td></td>
<td>- Solaris 11 SPARC (Actual hardware or logical domains)</td>
</tr>
<tr>
<td></td>
<td>- HP-UX 11.31 Integrity (Actual hardware, HPVM, or vPars)</td>
</tr>
<tr>
<td>Application Server</td>
<td>Oracle Fusion Middleware 11g Release 1 (11.1.1.7)</td>
</tr>
<tr>
<td></td>
<td>Components:</td>
</tr>
<tr>
<td></td>
<td>- Oracle WebLogic Server 11g Release 1 (10.3.6)</td>
</tr>
<tr>
<td></td>
<td>Java:</td>
</tr>
<tr>
<td></td>
<td>- JDK 1.7.0+ 64 bit</td>
</tr>
</tbody>
</table>

Check Supported Web Browser and Client Requirements

General requirements for client running RMS include the following.

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating system</td>
<td>Windows 7</td>
</tr>
<tr>
<td>Display resolution</td>
<td>1024x768 or higher</td>
</tr>
<tr>
<td>Processor</td>
<td>2.6GHz or higher</td>
</tr>
<tr>
<td>Memory</td>
<td>1GByte or higher</td>
</tr>
<tr>
<td>Networking</td>
<td>intranet with at least 10Mbps data rate</td>
</tr>
<tr>
<td>Oracle (Sun) Java Runtime Environment</td>
<td>1.7.0+</td>
</tr>
<tr>
<td>Browser</td>
<td>Microsoft Internet Explorer version 11 or Mozilla Firefox ESR 31</td>
</tr>
</tbody>
</table>

**Note:** Oracle Retail does not recommend or support installations of RTIL with less than 256 kb bandwidth available between the PC client location (store and warehouse locations) and the data center at which the application server resides. Attempting to utilize less than 256 kb total available bandwidth causes unpredictable network utilization spikes, and performance of the ORFM screens degrades below requirements established for the product. The 256 kb requirement provides reasonable, predictable performance and network utilization.
## Supported Oracle Retail Products

<table>
<thead>
<tr>
<th>Product</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle Retail Merchandising System (RMS)</td>
<td>14.1.2.1</td>
</tr>
</tbody>
</table>

## Supported Third-Party Products

<table>
<thead>
<tr>
<th>Product</th>
<th>Version</th>
</tr>
</thead>
</table>
| TaxWeb Tax Rules (The Tax Rules software is a product of TaxWeb Compliance Software S.A.) | • taxinterfaces.jar – version 1  
• taxcomponent.jar – version 55  
• taxrulesdbplugin.jar – version 2  |

**Note:** RTIL was tested with the above mentioned versions. Please contact TaxWeb for the latest compatible release ([http://www.taxweb.com.br](http://www.taxweb.com.br)).

## Supported Oracle Retail Integration Technologies

<table>
<thead>
<tr>
<th>Integration Technology</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle Retail Integration Bus (RIB)</td>
<td>14.1.2</td>
</tr>
</tbody>
</table>
The Oracle Retail Tax Integration Layer has been validated to run in two configurations on Linux:

- Standalone Oracle Application Server or Web Logic Server and Database installations
- Real Application Cluster Database and Oracle Application Server or Web Logic Server Clustering

The Oracle Retail products have been validated against a 12.1.0.2 RAC database. When using a RAC database, all JDBC connections should be configured to use THIN connections rather than OCI connections.

Clustering for Web Logic Server 10.3.6 is managed as an Active-Active cluster accessed through a Load Balancer. Validation has been completed utilizing a RAC 12.1.0.2 Oracle Internet Directory database with the Web Logic 10.3.6 cluster.

References for Configuration:

- Oracle® Fusion Middleware High Availability Guide 11g Release 1 (11.1.1) Part Number E10106-09
- Oracle Real Application Clusters Administration and Deployment Guide 12c Release 1 (12.1) E48838-08
RTIL Installation Tasks

Before proceeding, you must install Oracle WebLogic Server 11g Release 1 (10.3.6), create a separated domain for RTIL without any other applications not selecting any template like JRF along with all patches listed in Chapter 1, Preinstallation Tasks and create a separated domain for RTIL without any other applications. The RTIL application is deployed to a WebLogic Managed server within the WebLogic installation.

Install Managed Server in WebLogic

Before running the application installer, you must install a managed server for the RTIL application in WebLogic if it was not created during the domain installation.

1. Log in to the Administration Console.

![Oracle WebLogic Server Administration Console]

2. Click Lock & Edit.

4. Set the following variables:

- **Server Name**: This value should be specific to your targeted application (for example, rtil-server).
- **Server Listen Address**: `<weblogic server>` (for example, msp52474.us.oracle.com)
- **Server Listen Port**: A free port. Check for availability.
  
  A suggestion is to increment the AdminServer port by two and keep incrementing by two for each managed server (for example, 17003, 17005, 17007, and so on.)
5. Click Next.
6. Click Finish.

7. Click **Activate Changes** on the left side. Once the changes are activated, the State of the rtile-server should change to SHUTDOWN status.
RTIL and TaxWeb Integration

For this release, it is possible to select the mode where tax rules will be available; either making the rules available in a database or archived in a jar file.
RTIL was tested using the database mode, but it is possible to use the taxrules.jar file provided by TaxWeb.

Note: Refer to the installation guide provided by TaxWeb for additional information on using database mode or jar mode.

The steps related to rules when installing RTIL are separated into database mode and jar mode. Refer to the procedures that are applicable to your installation decisions about tax rules.

Install Node Manager

Install Node Manager if it was not created during domain install. The node manager is required so that the managed servers can be started and stopped through the admin console. Only one node manager is needed per WebLogic installation.

1. Log in to the Administration Console.
2. Click Lock & Edit. Navigate to Environments->Machines. Click New.
3. The following page is displayed. Set the following variables:
   - Name: Logical machine name
   - Machine OS: UNIX

4. Click Next. The following page is displayed. Set the following variables:
   - Type: Plain
   - Listen Address: <weblogic server> (for example, msp52478.us.oracle.com)
   - Listen Port: Assign a port number. Example: 5557
The default port is 5556.

5. Click Finish.
6. Click **Activate Changes**.

7. Click **Lock & Edit**.
8. Navigate to Environments > machines. Click the machine name. Select the Servers tab. Click Add.

9. Add the managed servers that need to be configured with the Nodemanager. Save changes.
   - From the drop down select the managed server to be added to nodemanager
   - Server: <app-server> (for example: rtil-server)

10. Click Next. Click Finish.

11. Go to the managed server on which RTIL will be deployed and click the Server Start tab. In the Class Path box, add the following:
    <full-path-to-domain>/servers/<managed-server>
    For example:
    /u00/webadmin/product/10.3.x/WLS/user_projects/domains/RTILDomain/servers/rtil-server:$CLASSPATH

12. When using tax rules in database mode, in the same Server Start Tab referenced in the above step add the line “-
    Dtaxcomponent.conf.basedir=[$DOMAIN_HOME]/config” to the Arguments box. Note that “[DOMAIN_HOME]” needs to be the full path to the domain, For Example:
    -Dtaxcomponent.conf.basedir=/u00/webadmin/product/10.3.x/WLS/user_projects/domains/RTILDomain /config
13. Click **Save**.
14. Click **Activate Changes**.

**Start the Node Manager**

To start the managed servers, complete the following steps.

1. Start up the nodemanager. Edit the nodemanager.properties file at the following location with the below values:
   
   ```
   $WLS_HOME/wlserver_10.3/common/nodemanager/nodemanager.properties
   ```
   
   - StartScriptEnabled=true
   - StartScriptName=startWebLogic.sh.

2. After making changes to the nodemanager.properties file, NodeManager must be restarted.
   
   **Note:** The nodemanager.properties file is created after NodeManager is started for the first time. It is not available before that point.

3. Start the Node Manager from the command line.
   
   ```
   <WLS_HOME>/wlserver_10.3/server/bin startNodeManager.sh
   ```
   
   After the Node Manager is started, the managed servers can be started through the admin console.

4. Navigate to Environments > Servers. Select `<app-server>` (for example, rtil-server server managed server). Click the Control tab.
5. Click **Start** to start the managed server.

### Load TaxRules (Database Mode)

TaxWeb will provide a jar file (taxrules) with the rules necessary to use in ORFM. For this mode, check with TaxWeb for the steps used to load rules in their database schema.

### Extract TaxRules (Jar Mode)

For the rules to be extracted as individual Java serialized files, extraction requires about about 7 GB of free space on the file system. The amount of space required depends on the number of tax rules in the taxweb drop and must be verified in the taxweb installation document.

**Note:** TaxRules extraction is done through a Java utility, which requires about 5 GB of RAM for the extraction. The amount of space depends on the number of tax rules in the taxweb drop and must be verified in the taxweb installation document.

TaxRules extraction can be done in one environment, where the extracted folder that contains rules can be transferred to all the RTIL deployment boxes independently. If this method is chosen, the deployment environment is not required to have five 5 GB of RAM available.

To extract TaxRules, do the following:

1. Create a folder/directory (for example, taxweb-slim).

**Note:** This directory should be created outside of WebLogic domain directory with read permission for all users (or at least for the Weblogic domain user).
2. Transfer the taxrules.jar, taxcomponent.jar and the log4j-1.2.15.jar to taxweb-slim folder. The above mentioned jars are present in the TaxWeb Tax Rules bundle delivered by TaxWeb.

3. From the command prompt, run the following commands inside the taxweb-slim folder.

```
$ jar -xf taxrules.jar
$ java -Xmx6120m -cp log4j-1.2.15.jar:taxcomponent.jar:. erija.taxrules.test.ondemand.RulesToDir
```

**Note:** Verify that a rules folder is created with individual rules in sub directory. (more than 1 GB).

---

**Verify taxcomponent.conf (Database Mode)**

This config file must be available in the same path defined in step 12 of the Install Node Manager section (Dtaxcomponent.conf.basedir).

Verify the following entries in taxcomponent.conf file.

- withDBAcess=true
- driverClass=jndi
- url=taxrules_component
- user=taxrules_component
- taxcomponent.rules.source=database
- # Taxrules DB plugin config
- dbplugin.flavor=oracle
- dbplugin.connection=jndi
- dbplugin.url=taxrules_data

**Verify taxcomponent.conf (Jar Mode)**

This file must be available in the config folder from the RTIL domain.

Verify the following entries in taxcomponent.conf file.

- onDemand=true
- dataFiles=<absolute path of the folder created in step 1 of the Extract TaxRules (Jar Mode) (for example: taxweb-slim)>
- withDBAcess=true
- driverClass=jndi
- url=<jndi of the taxweb datasource>

---

**Install Datasource Configuration File**

The prerequisite for this step is the availability of a TaxWeb Tax Rules schema which should be installed based on the TaxWeb Tax Rules installation guide. The datasource should be created in the WebLogic domain in which RTIL will be installed. Please refer to the TaxWeb Tax Rules installation guide for data source creation details.

The configured datasource name should be included in the taxcomponent.conf file supplied in the TaxWeb Tax Rules distribution and placed in the config folder of the Weblogic domain in which RTIL will be deployed.
Expand the RTIL Application Distribution

To expand the RTIL application distribution, complete the following steps.

1. Create a new staging directory for the RTIL application distribution (rtil14application.zip).

   **Example:**
   
   `<WLS_HOME> /user_projects/domain/<domain_name>/servers/<rtil-server>/rtil-staging`

   This location is referred to as STAGING_DIR for the remainder of this chapter.

2. Copy rtil14application.zip to STAGING_DIR and extract its contents.

Run the RTIL Application Installer

Once you have a WebLogic instance that is configured and started, you can run the RTIL application installer. This installer configures and deploys the RTIL application.

**Note:** See Appendix: RTIL Installer Screens for details on every screen and field in the RTIL application installer.

**Note:** It is recommended that the installer be run as the same UNIX account that owns the WebLogic application server ORACLE_HOME files.

1. Change directories to STAGING_DIR/rtil/application. This directory was created when the rtil14application.zip file was expanded under STAGING_DIR.

2. Set and export the following environment variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
</table>
   | ORACLE_HOME         | The location where Weblogic has been installed                              | `ORACLE_HOME=/u00/webadmin/product/10.3.6/WLS
   |                     |                                                                            | `export ORACLE_HOME`                                                     |
   | WEBLOGIC_DOMAIN_HOME| The location where the Weblogic domain has been installed                  | `WEBLOGIC_DOMAIN_HOME=$ORACLE_HOME/user_projects/domains/RTILDomain/
   |                     |                                                                            | `export WEBLOGIC_DOMAIN_HOME`                                           |
   | JAVA_HOME           | Location of a Java 7.0 (1.7.0+) JDK. 64 bit. For Linux and Solaris OS only. | `JAVA_HOME=/u00/webadmin/java/jdk1.7
   |                     |                                                                            | `export JAVA_HOME`                                                       |
   | ANT_HOME            | Location of an Ant 1.9.6.x instance.                                       | `ANT_HOME=/usr/ant/ant1.9.6/
   |                     |                                                                            | `export ANT_HOME`                                                       |
   | DISPLAY             | Address and port of X server on desktop system of user running installation. | `DISPLAY=<IP address>:0
   |                     |                                                                            | `export DISPLAY`                                                        |

3. If you are using an X server (such as Exceed), set the DISPLAY environment variable so that you can run the installer in GUI mode (recommended). If you are not using an
X server, or the GUI is too slow over your network, do not set DISPLAY for text mode.

4. If a secured datasource is going to be configured you also need to set “ANT_OPTS” so the installer can access the key and trust store that is used for the datasource security:

```bash
export ANT_OPTS="-Djavax.net.ssl.keyStore=<PATH TO KEY STORE> -Djavax.net.ssl.keyStoreType=jks -Djavax.net.ssl.keyStorePassword=<KEYSTORE PASSWORD> -Djavax.net.ssl.trustStore=<PATH TO TRUST STORE> -Djavax.net.ssl.trustStoreType=jks -Djavax.net.ssl.trustStorePassword=<TRUSTSTORE PASSWORD>"
```

An example of this would be:

```bash
export ANT_OPTS="-Djavax.net.ssl.keyStore=/u00/webadmin/product/wls_retail/wls_server_10.3/server/lib/orapphost.keystore -Djavax.net.ssl.keyStoreType=jks -Djavax.net.ssl.keyStorePassword=retail123 -Djavax.net.ssl.trustStore=/u00/webadmin/product/wls_retail/wls_server_10.3/server/lib/orapphost.keystore -Djavax.net.ssl.trustStoreType=jks -Djavax.net.ssl.trustStorePassword=retail123"
```

5. Run the install.sh script. This launches the installer. After installation is complete, a detailed installation log file is created (rtil14install.<timestamp>.log).

   **Note:** The typical usage for GUI mode is no arguments.
   ```
   ./install.sh [text | silent]
   ```

   **Note:** If you are running the installer on AIX7.1, please set and export ANT_OPTS variable with “-Xms1024k -Xss1024k”, prior to launching the installer. For example, assuming korn, bourne, or bash shell:

   ```bash
   ANT_OPTS="-Xms1024k -Xss1024k"
   export ANT_OPTS
   ```

6. The installer leaves behind the ant.install.properties file for future reference and repeat installations. This file contains inputs you provided. As a security precaution, make sure that the file has restrictive permissions.

   **Example:** `chmod 600 ant.install.properties`

7. Once the installer is finished, open a web browser and navigate to the URL reported at the end if the installer logs. You should see something similar to the following (the text may not be the same):

   ```
   QtEqwkgqJW06jSuzKkb5zGkweMJ6Wy9Dd/N72JagXk7w=
   ```

   This indicates that RTIL has been deployed and the application is running and accessible.
Post Install Steps

1. Once RTIL installation is complete, set the JTA transaction timeout to 1000 seconds in the WebLogic Admin console.
   - To override the default JTA timeout, log in to the WebLogic admin console.
     Navigate to Services > JTA link to go to the Configuration section.
   - Replace the default timeout of 30 seconds with 1000.
   - For the changes to take effect, bounce the WebLogic Server (for the domain).

2. Once RTIL installation is complete, configure Xmx and Xms values in the WebLogic Admin console.
   a. Log in to the admin console.
   b. Click Lock & Edit.
c. Navigate to Servers -> RTIL Managed Server (for example, rtil-server).

d. Click the Server Start tab under configuration.

e. Change the Xmx and Xms as below:
   -Xms2g -Xmx9g

f. Save the configuration.
g. Click Activate Changes.

h. Navigate to Environment → Servers.

i. Click the Control Tab, under Summary of Servers.

j. Restart RTIL Managed Server.

**IMPORTANT! IF THE FOLLOWING STEP IS NOT DONE, IT WILL RESULT IN A NON-WORKING APPLICATION!**

k. Log in to the RMS database schema as an RMS user.

l. Add a record in the retail_service_report_url table with the following column values.

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS_CODE</td>
<td>RTIL</td>
</tr>
<tr>
<td>RS_NAME</td>
<td>Retail Tax Integration Layer</td>
</tr>
<tr>
<td>RS_TYPE</td>
<td>S</td>
</tr>
</tbody>
</table>
Resolving Errors Encountered During Application Installation

If the application installer encounters any errors, execution is halted immediately. You can run the installer in silent mode so that you do not have to retype the settings for your environment. See “Appendix: Installer Silent Mode” for silent mode instructions.

See “Appendix: Common Installation Errors” for common installation errors.

Because full application installation is required every time, any previous partial installations are overwritten by the successful installation.

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>URL</td>
<td>(&lt;RTIL) URL&gt; (for example, http://<a href="">rtilhostname:port</a>/rtil-web/invokeApp)</td>
</tr>
<tr>
<td>SERVER</td>
<td>(&lt;RTIL)_SERVER_NAME&gt;</td>
</tr>
<tr>
<td>PORT</td>
<td>(&lt;PORT)_NUMBER&gt; (for example, 17065)</td>
</tr>
</tbody>
</table>
Appendix: RTIL Installer Screens

You need the following details about your environment for the installer to successfully deploy the RTIL application. Depending on the options you select, you may not see some screens or fields.

**Screen: Security Details**

![Security Details Screen](image)

Provide security details for the RTIL application.

Note: enabling SSL requires that security certificates have been configured and installed for this WebLogic domain. The AdminServer and all managed servers must then be configured to use SSL.

Enable SSL for RTIL?

- Yes
- No

<table>
<thead>
<tr>
<th>Field Title</th>
<th>Enable SSL for RTIL?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Description</td>
<td>Choosing Yes will deploy RTIL using SSL and configure RTIL to use SSL. In this case, SSL must be configured and the ports must be enabled for the AdminServer and RTIL managed servers. Choosing No will deploy and configure RTIL without SSL. In this case the non-SSL ports must be enabled for the AdminServer and for the RTIL managed servers.</td>
</tr>
</tbody>
</table>
Screen: JDBC Security Details

Note: Enabling Secure JDBC requires that security certificates have been configured and installed for this WebLogic domain.

Enable Secure JDBC connection

- Yes
- No

<table>
<thead>
<tr>
<th>Field Title</th>
<th>Enable Secure JDBC connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Description</td>
<td>Choose Yes to create secured data sources in WebLogic, otherwise choose No. A secure database connection must already be set up if you want to create a secure data source.</td>
</tr>
</tbody>
</table>
Screen: Data Source Details

Provide the details for the RMS data source

<table>
<thead>
<tr>
<th>Field Title</th>
<th>RMS JDBC URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Description</td>
<td>URL used by the RTIL application to access the RMS database schema.</td>
</tr>
<tr>
<td></td>
<td>See Appendix: URL Reference for expected syntax.</td>
</tr>
<tr>
<td></td>
<td>Note: The RTIL database tables are a part of the RMS schema.</td>
</tr>
<tr>
<td>Examples</td>
<td>For Non Secure JDBC Connection:</td>
</tr>
<tr>
<td></td>
<td>jdbc:oracle:thin:@hostname:1521/dbname</td>
</tr>
<tr>
<td></td>
<td>For Secure JDBC Connection:</td>
</tr>
<tr>
<td></td>
<td>jdbc:oracle:thin:@(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=tcps)(HOST=dbhostname)(PORT=2484)))(CONNECT_DATA=(SERVICE_NAME=mydb)))</td>
</tr>
</tbody>
</table>

Note: The alias for each username/password pair must be unique.
<table>
<thead>
<tr>
<th>Field Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RMS schema user</td>
<td>RMS database user for accessing the RTIL tables. This should match what was given in the RMS schema field of the RMS database installer.</td>
</tr>
<tr>
<td>Example</td>
<td>rms01app</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Field Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RMS schema password</td>
<td>Password for the RMS database user entered above to access the RTIL tables.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Field Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTIL schema user alias</td>
<td>The alias to store the schema credentials.</td>
</tr>
<tr>
<td>Example</td>
<td>db-alias</td>
</tr>
<tr>
<td>Notes</td>
<td>This alias must be unique. Do not use the same value for any other alias fields in the installer. If the same alias is used, entries in the wallet can override each other and cause problems with the application.</td>
</tr>
</tbody>
</table>
Screen: Secure Data Source Details

Provide the details for the RMS secure data source

<table>
<thead>
<tr>
<th>Field Title</th>
<th>Identity Keystore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identity Keystore</td>
<td>/path/sample.keystore</td>
</tr>
<tr>
<td>Identity Keystore Type</td>
<td>jks</td>
</tr>
<tr>
<td>Identity Keystore Passphrase</td>
<td>••••••••</td>
</tr>
<tr>
<td>Identity truststore</td>
<td>/path/sample.keystore</td>
</tr>
<tr>
<td>Identity truststore Type</td>
<td>jks</td>
</tr>
<tr>
<td>Identity truststore Passphrase</td>
<td>••••••••</td>
</tr>
</tbody>
</table>

Note: This screen will appear only if you select Secure JDBC in the above screens.

<table>
<thead>
<tr>
<th>Field Title</th>
<th>Field Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identity Keystore</td>
<td>Keystores ensure the secure storage and management of private keys and trusted certificate authorities (CAs). This screen lets you provide the keystore to be used for datasource connection These settings help you to manage the security of message transmissions. For further information, please refer to the Oracle Retail Merchandising Operations Management Security Guide. Location or path where identity keystore file is stored.</td>
</tr>
<tr>
<td>Example</td>
<td>/path/sample.keystore</td>
</tr>
<tr>
<td>Field Title</td>
<td>Identity Keystore Type</td>
</tr>
<tr>
<td>--------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Field Description</td>
<td>The type of the keystore used.</td>
</tr>
<tr>
<td>Example</td>
<td>jks</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Field Title</th>
<th>Identity Keystore PassPhrase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Description</td>
<td>Please provide password to access the keystore mentioned above.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Field Title</th>
<th>Identity TrustStore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Description</td>
<td>This is the path of the keystore which contains the ssl root and optionally intermediate certificates as obtained from the certificate authority.</td>
</tr>
<tr>
<td>Example</td>
<td>/path/sample.keystore</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Field Title</th>
<th>Identity TrustStore Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Description</td>
<td>The type of the truststore used</td>
</tr>
<tr>
<td>Example</td>
<td>Jks</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Field Title</th>
<th>Identity TrustStore PassPhrase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Description</td>
<td>Please provide password to access the truststore mentioned above.</td>
</tr>
</tbody>
</table>
Screen: Application Deployment Details

<table>
<thead>
<tr>
<th>Field Title</th>
<th>RTIL app deployment name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Description</td>
<td>Name by which this RTIL application is identified in the application server.</td>
</tr>
<tr>
<td>Example</td>
<td>Rtil</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Field Title</th>
<th>RTIL server/cluster</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Description</td>
<td>Name of the server/cluster that was created for this RTIL application.</td>
</tr>
<tr>
<td></td>
<td>The installer deploys the RTIL application to all instances that are members of this server/cluster. For this reason, you should not use default_group. A new group dedicated to RTIL should be created instead.</td>
</tr>
<tr>
<td>Example</td>
<td>rtil-server</td>
</tr>
</tbody>
</table>
Screen: Weblogic Administrative User

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

<table>
<thead>
<tr>
<th>Field Title</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hostname</td>
<td>Hostname of the application server</td>
<td>apphostname</td>
</tr>
<tr>
<td>Weblogic admin port</td>
<td>Port number of admin console</td>
<td>17002</td>
</tr>
<tr>
<td>Weblogic admin user</td>
<td></td>
<td>weblogic</td>
</tr>
<tr>
<td>Weblogic admin password</td>
<td></td>
<td>*********</td>
</tr>
<tr>
<td>Please re-enter password</td>
<td></td>
<td>*********</td>
</tr>
<tr>
<td>Weblogic admin alias</td>
<td></td>
<td>wls-alias</td>
</tr>
</tbody>
</table>

(The alias for each username/password pair must be unique)
<table>
<thead>
<tr>
<th>Field Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weblogic admin user</td>
<td>Username of the admin user for the WebLogic instance to which the RTIL application is being deployed.</td>
</tr>
<tr>
<td>Example</td>
<td>weblogic</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Field Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weblogic admin password</td>
<td>Password for the WebLogic admin user. You chose this password when you created the WebLogic instance or when you started the instance for the first time.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Field Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WebLogic admin alias</td>
<td>An alias for the WebLogic admin user that is used for ORACLE java wallet.</td>
</tr>
<tr>
<td>Example</td>
<td>wls-alias</td>
</tr>
<tr>
<td>Notes</td>
<td>This alias must be unique. Do not use the same value for any other alias fields in the installer. If the same alias is used, entries in the wallet can override each other and cause problems with the application.</td>
</tr>
</tbody>
</table>
## Screen: Log4j logger Details

![Log4j logger Details](image.png)

Provide the details for the RTIL Log4j

<table>
<thead>
<tr>
<th>Field Title</th>
<th>Log4j Log Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Description</td>
<td>Specifies the level at which the logging is enabled.</td>
</tr>
<tr>
<td>Example</td>
<td>INFO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Field Title</th>
<th>Output to STDOUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Description</td>
<td>Specifies whether the logs should be routed to the console.</td>
</tr>
<tr>
<td>Example</td>
<td></td>
</tr>
<tr>
<td>Field Title</td>
<td>Log4j logfile MaxFileSize (MB)</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Field Description</td>
<td>Specifies the file size threshold beyond which the log file gets rolled over.</td>
</tr>
<tr>
<td>Example</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Field Title</th>
<th>Log4j logfile MaxBackupIndex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Description</td>
<td>Specifies the number of rolled over log files that will be retained.</td>
</tr>
<tr>
<td>Example</td>
<td>30</td>
</tr>
</tbody>
</table>
Appendix: RTIL Installer Screens

Screen: Turn off the application server’s non-SSL port

If turned off, all clients connecting to the application server must use a secured connection.

A value of "Yes" indicates that the application server’s non-SSL port will be inactive. A value of "No" indicates that the applications server’s non-SSL port will still be active.

Disable non-SSL port?  
○ Yes  
○ No

Note: This screen appears only if you have enabled SSL for RTIL. Ignore this step in case you have not enabled SSL for RTIL.

<table>
<thead>
<tr>
<th>Field Title</th>
<th>Disable non-SSL port?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Description</td>
<td>Choosing Yes disables the non SSL port on the managed server. Choosing no will the leave the non SSL port of the managed server active.</td>
</tr>
</tbody>
</table>
Appendix: Installer Silent Mode

In addition to the GUI and text interfaces of the installer, there is a silent mode that can be run. This mode is useful if you wish to run a repeat installation without retyping the settings you provided in the previous installation. It is also useful if you encounter errors in the middle of an installation and wish to continue.

The installer runs in two distinct phases. The first phase involves gathering settings from the user. At the end of the first phase, a properties file named ant.install.properties is created with the settings that were provided. Then the second phase begins, where this properties file is used to provide your settings for the installation.

To skip the first phase and re-use the ant.install.properties file from a previous run, follow these instructions:

1. Edit the ant.install.properties file and correct any invalid settings that may have caused the installer to fail in its previous run.
2. Look for duplicate properties in the ant.install.properties file. Some properties are set on multiple pages to ensure default values when a page is only displayed under certain conditions. For example, if there are two instances of input.property.name, remove all but the last one.
3. Run the installer again with the silent argument.

Example: install.sh silent
Appendix: URL Reference

This section provides URL reference information.

**JDBC URL for a Database**

Used by the Java application and by the installer to connect to the database.

**Thick Client Syntax:** `jdbc:oracle:oci:@<sid>`
- `<sid>`: system identifier for the database

**Example:** `jdbc:oracle:oci:@mysid`

**Thin Client Syntax:** `jdbc:oracle:thin:@<host>:<port>:<sid>`
- `<host>`: hostname of the database server
- `<port>`: database listener port
- `<sid>`: system identifier for the database

**Example:** `jdbc:oracle:thin:@myhost:1521:mysid`

**LDAP Server URL**

Used by the Java application to connect to the LDAP directory.

**Syntax:** `ldap://<host>:<port>`
- `<host>`: hostname of the directory server
- `<port>`: LDAP server port

**Example:** `ldap://myhost:389`
Appendix: Common Installation Errors

This section provides some common errors encountered during installation of RTIL.

Installer Crashes, Producing Dump Files

Symptom:
When the installer is launched on AIX7.1, it may crash during navigation of the installer screens. The crash produces two binary dump files (core.<timestamp>.dmp, Snap.<timestamp>.trc) and a javacore text file (javacore.<timestamp>.txt).

Solution:
Set and export ANT_OPTS variable with "-Xmx1024k -Xss1024k", prior to launching the installer. For example, assuming korn, bourne, or bash shell:
ANT_OPTS="-Xmx1024k -Xss1024k"
export ANT_OPTS

Database Installer Hangs on Startup

Symptom:
When the database schema installer is run, the following is written to the console and the installer hangs indefinitely:
Running pre-install checks
Running tnsping to get listener port

Solution:
The installer startup script is waiting for control to return from the tnsping command, but tnsping is hanging. Type Control+C to cancel the installer, and investigate and solve the problem that is causing the tnsping <sid> command to hang. This can be caused by duplicate database listeners running.

Warning: Could not create system preferences directory

Symptom:
The following text appears in the installer Errors tab:
May 22, 2006 11:16:39 AM java.util.prefs.FileSystemPreferences$3 run
WARNING: Could not create system preferences directory. System preferences are unusable.
May 22, 2006 11:17:09 AM java.util.prefs.FileSystemPreferences
checkLockFile0ErrorCode
WARNING: Could not lock System prefs. Unix error code -264946424.

Solution:
This is related to Java bug 4838770. The /etc/.java/.systemPrefs directory may not have been created on your system. See http://bugs.sun.com for details.
This is an issue with your installation of Java and does not affect the Oracle Retail product installation.
Warning: Couldn’t find X Input Context

Symptom:
The following text appears in the console window during execution of the installer in GUI mode:
Couldn’t find X Input Context

Solution:
This message is harmless and can be ignored.

ConcurrentModificationException in Installer GUI

Symptom:
In GUI mode, the errors tab shows the following error:
java.util.ConcurrentModificationException
at java.util.AbstractList$Itr.checkForComodification(AbstractList.java:448)
at java.util.AbstractList$Itr.next(AbstractList.java:419)
… etc

Solution:
You can ignore this error. It is related to third-party Java Swing code for rendering of the installer GUI and does not affect the retail product installation.

Error Connecting to Database URL

Symptom:
After entering database credentials in the installer screens and hitting next, a message pops up with an error like this:
Error connecting to database URL <url> as user <user>
details...
The message prevents you from moving on to the next screen to continue the installation.

Solution:
This error occurs when the installer fails to validate the user credentials you have entered on the screen. Make sure that you have entered the credentials properly. If you receive a message similar to this:
Error connecting to database URL <url> as user <user>
java.lang.Exception: UnsatisfiedLinkError encountered when using the Oracle driver.
Please check that the library path is set up properly or switch to the JDBC thin client.
It may mean that the installer is using the incorrect library path variables for the platform you are installing on. Open the file <STAGING_DIR>/rms/dbschema/common/preinstall.sh and toggle the variable “use32bit” to “true” if it is set to “false” or vice versa. This setting is dependant on the JRE that is being used.
Multi-Threaded OCI Client Dumps Core after Reconnecting To Database

**Symptom**
If a multi-threaded Oracle client process that uses OCI to connect to a remote database loses connectivity with the database, it tries to reconnect and the client program continues to run. The program then dumps the core with the following stack trace, when Automatic Diagnostic Repository (ADR) is enabled.

```
skgfqio sdbgrfibf_io_block_file dbgrfrbf_read_block_file dbgmrflrp_read_page
dbgmbigmp_get_many_pages dbgmmdrmd_read_relation_meta_data
dbgmmddora_open_record_access_full
dbgriporc_openrel_wcreate dbgrip_open_relation_access dbgrip_start_iterator
dbgrip_relation_iterator dbgripzracs_read_adrctl...
```

**Solution**
Oracle Retail recommended you disable ADR (diag_adr_enabled=OFF, a sqlnet.ora parameter) while using multi-threaded OCI/OCCI application. diag_adr_enabled was introduced in Oracle 11g as a new method of tracing ADR. This will dump additional trace details.

Disabling `diag_adr_enabled` does not disturb any functionality. Therefore, it can safely be unset by doing `diag_adr_enabled=off` in sqlnet.ora. However, if you still want tracing, you can have following parameters/variables set in sqlnet.ora:

```
trace_level_server=16 -- for server side NET tracing
trace_level_client=16 -- for client side NET tracing
```

For how to set traditional tracing, see the My Oracle Support document, “SQL*Net, Net8, Oracle Net Services - Tracing and Logging at a Glance” (ID 219968.1).

GUI Screens Fail to Open When Running Installer

**Symptom**
When running the installer in GUI mode, the screens fail to open and the installer ends, returning to the console without an error message. The ant.install.log file contains this error:

```
Fatal exception: Width (0) and height (0) cannot be <= 0
java.lang.IllegalArgumentException: Width (0) and height (0) cannot be <= 0
```

**Solution**
This is an error encountered when Antinstaller is used in GUI mode with certain X Servers. To work around this issue, copy ant.install.properties.sample to ant.install.properties and rerun the installer.
Appendix: Setting Up Password Stores with wallets/credential stores

As part of an application installation, administrators must set up password stores for user accounts using wallets/credential stores. Some password stores must be installed on the application database side. While the installer handles much of this process, the administrators must perform some additional steps.

Password stores for the application and application server user accounts must also be installed; however, the installer takes care of this entire process.

ORACLE Retail Merchandising applications now have 3 different types of password stores. They are database wallets, java wallets, and database credential stores. Background and how to administer them below are explained in this appendix.

About Database Password Stores and Oracle Wallet

Oracle databases have allowed other users on the server to see passwords in case database connect strings (username/password@db) were passed to programs. In the past, users could navigate to `ps -ef|grep <username>` to see the password if the password was supplied in the command line when calling a program.

To make passwords more secure, Oracle Retail has implemented the Oracle Software Security Assurance (OSSA) program. Sensitive information such as user credentials now must be encrypted and stored in a secure location. This location is called password stores or wallets. These password stores are secure software containers that store the encrypted user credentials.

Users can retrieve the credentials using aliases that were set up when encrypting and storing the user credentials in the password store. For example, if `username/password@db` is entered in the command line argument and the alias is called `db_username`, the argument to a program is as follows:

```
sqlplus /@db_username
```

This would connect to the database as it did previously, but it would hide the password from any system user.

After this is configured, as in the example above, the application installation and the other relevant scripts are no longer needed to use embedded usernames and passwords. This reduces any security risks that may exist because usernames and passwords are no longer exposed.

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

There are three different types of password stores. One type explain in the next section is for database connect strings used in program arguments (such as `sqlplus /@db_username`). The others are for Java application installation and application use.

Setting Up Password Stores for Database User Accounts

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 username and associated password for each database user account. The alias is used later during the application installation. This password store must be created on the system where the application server and database client are installed.

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 examples show how to set up wallets for database user accounts for the following applications:

- For RMS, RWMS, RPM Batch using sqlplus or sqlldr, RETL, RMS, RWMS, and ARI

For RMS, RWMS, RPM Batch using sqlplus or sqlldr, RETL, RMS, RWMS, and ARI

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

1. Create a new directory called wallet under your folder structure.
   ```
   cd /projects/rms14/dev/
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 =  /projects/rms14/dev/.wallet)) )
   SQLNET.WALLET_OVERRIDE=TRUE
   SSL_CLIENT_AUTHENTICATION=FALSE
   ```
   **Note:** WALLET_LOCATION must be on line 1 in the file.

3. Setup 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 /@dvols29_rms01user.
   ```
   ifile = /u00/oracle/product/11.2.0.1/network/admin/tnsnames.ora
   Examples for a NON pluggable db:
   dvols29_rms01user =
   (DESCRIPTION = (ADDRESS_LIST = (ADDRESS = (PROTOCOL = tcp)
   (host = xxxxxx.us.oracle.com) (Port = 1521)))
   (CONNECT_DATA = (SID = <sid_name> (GLOBAL_NAME = <sid_name>))))
   dvols29_rms01user.world =
   (DESCRIPTION = (ADDRESS_LIST = (ADDRESS = (PROTOCOL = tcp)
   (host = xxxxxx.us.oracle.com) (Port = 1521)))
   (CONNECT_DATA = (SID = <sid_name> (GLOBAL_NAME = <sid_name>))))
   Examples for a pluggable db:
   dvols29_rms01user =
   (DESCRIPTION = (ADDRESS_LIST = (ADDRESS = (PROTOCOL = tcp)
   (host = xxxxxx.us.oracle.com) (Port = 1521)))
   (CONNECT_DATA = (SERVICE_NAME = <pluggable db name>)))
   dvols29_rms01user.world =
   (DESCRIPTION = (ADDRESS_LIST = (ADDRESS = (PROTOCOL = tcp)
   (host = xxxxxx.us.oracle.com) (Port = 1521)))
   (CONNECT_DATA = (SERVICE_NAME = <pluggable db name>)))
   ```
   **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.
Appendix: Setting Up Password Stores with wallets/credential stores

4. Create the wallet files. These are empty initially.
   a. Ensure you are in the intended location.
      
      $ pwd
      /projects/rms14/dev/.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
      – 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>
   
   Example: mkstore –wrl . –createCredential dvols29_rms01user
   rms01user 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=/projects/rms14/dev/.wallet /* This is very import to use
   wallet to point at the alternate tnsnames.ora created in this example */
   
   $ sqlplus /@dvols29_rms01user
   SQL*Plus: Release 12
   Connected to:
   Oracle Database 12g
   
   SQL> show user
   USER is "rms01user"
   
   Running batch programs or shell scripts would be similar:
   
   Ex: dtesys /@dvols29_rms01user
   script.sh /@dvols29_rms01user
   
   Set the UP unix variable to help with some compiles :
   
   export UP=/@dvols29_rms01user
   for use in RMS batch compiles, and RMS, RWMS, and ARI forms compiles.

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 dvols29_rms01user

- Change the password for a credential on wallet
  
  mkstore -wrl . –modifyCredential dvols29_rms01user rms01user passwd
Appendix: Setting Up Password Stores with wallets/credential stores

- 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:
  
  `dvols29_rms01user`

  `mkstore -wrl . -viewEntry oracle.security.client.user1`
  
  Returns the value of the entry:
  
  `rms01user`

  `mkstore -wrl . -viewEntry oracle.security.client.password1`
  
  Returns the value of the entry:
  
  `Passwd`

### Setting up RETL Wallets

RETL creates a wallet under `$RFX_HOME/etc/security`, with the following files:

- `cwallet.sso`
- `jazn-data.xml`
- `jps-config.xml`
- `README.txt`

To set up RETL wallets, perform the following steps:

1. Set the following environment variables:
   
   ```
   ORACLE_SID=<retaildb>
   RFX_HOME=/u00/rfx/rfx-13
   RFX_TEMP=/u00/rfx/rfx-13/tmp
   JAVA_HOME=/usr/jdk1.6.0_12.64bit
   LD_LIBRARY_PATH=$ORACLE_HOME
   PATH=$RFX_HOME/bin:$JAVA_HOME/bin:$PATH
   ```

2. Change directory to `$RFX_HOME/bin`.

   
   - Enter 1 to add a new database credential.
   - Enter the dbuseralias. For example, `retl_java_rms01user`.
   - Enter the database user name. For example, `rms01user`.
   - Enter the database password.
   - Re-enter the database password.
   - Enter D to exit the setup script.

4. Update your RETL environment variable script to reflect the names of both the Oracle Networking wallet and the Java wallet.
   
   For example, to configure RETLforRPAS, modify the following entries in `$RETAIL_HOME/RETLforRPAS/rfx/etc/rmse_rpas_config.env`.
   
   - The `RETL_WALLET_ALIAS` should point to the Java wallet entry:
Appendix: Setting Up Password Stores with wallets/credential stores

- export RETL_WALLET_ALIAS="retl_java_rms01user"

  The ORACLE_WALLET_ALIAS should point to the Oracle network wallet entry:
  - export ORACLE_WALLET_ALIAS="dvols29_rms01user"

  The SQLPLUS_LOGON should use the ORACLE_WALLET_ALIAS:
  - export SQLPLUS_LOGON="/@${ORACLE_WALLET_ALIAS}"

5. To change a password later, run setup-security-credential.sh.

  - Enter 2 to update a database credential.
  - Select the credential to update.
  - Enter the database user to update or change.
  - Enter the password of the database user.
  - Re-enter the password.

For Java Applications (SIM, ReIM, RPM, RIB, AIP, Alloc, ReSA, RETL)

For Java applications, consider the following:

  - For database user accounts, ensure that you set up the same alias names between the password stores (database wallet and Java wallet). You can provide the alias name during the installer process.
  - Document all aliases that you have set up. During the application installation, you must enter the alias names for the application installer to connect to the database and application server.
  - Passwords are not used to update entries in Java wallets. Entries in Java wallets are stored in partitions, or application-level keys. In each retail application that has been installed, the wallet is located in <WEBLOGIC_DOMAIN_HOME>/retail/<appname>/config. Example: /u00/webadmin/product/10.3.6/WLS/user_projects/domains/14_mck_soa_domain/retail/reim14/config
  - Application installers should create the Java wallets for you, but it is good to know how this works for future use and understanding.
  - Scripts are located in <WEBLOGIC_DOMAIN_HOME>/retail/<appname>/retail-public-security-api/bin for administering wallet entries.
    - Example:
      /u00/webadmin/product/10.3.6/WLS/user_projects/domains/REIMDomain/reim14/retail-public-security-api/bin
  - In this directory is a script to help you update each alias entry without having to remember the wallet details. For example, if you set the RPM database alias to rms01user, you will find a script called update-RMS01USER.sh.

  **Note:** These scripts are available only with applications installed by way of an installer.

  - Two main scripts are related to this script in the folder for more generic wallet operations: dump_credentials.sh and save_credential.sh.
  - If you have not installed the application yet, you can unzip the application zip file and view these scripts in <app>/application/retail-public-security-api/bin.
    - Example:
      /u00/webadmin/reim14/application/retail-public-security-api/bin
update-<ALIAS>.sh

update-<ALIAS>.sh updates the wallet entry for this alias. You can use this script to change the user name and password for this alias. Because the application refers only to the alias, no changes are needed in application properties files.

Usage:
update-<username>.sh <myuser>

Example:
/u00/webadmin/product/10.3.x/WLS/user_projects/domains/RPMDomain/retail/rpm14/retail-public-security-api/bin> ./update-RMS01USER.sh
usage: update-RMS01USER.sh <username>
<username>: the username to update into this alias.
Example: update-RMS01USER.sh myuser
Note: this script will ask you for the password for the username that you pass in.
/u00/webadmin/product/10.3.x/WLS/user_projects/domains/RPMDomain/retail/rpm14/retail-public-security-api/bin>

dump_credentials.sh

dump_credentials.sh is used to retrieve information from wallet. For each entry found in the wallet, the wallet partition, the alias, and the user name are displayed. Note that the password is not displayed. If the value of an entry is uncertain, run save_credential.sh to resave the entry with a known password.

dump_credentials.sh <wallet location>

Example:
dump_credentials.sh
location:/u00/webadmin/product/10.3.x/WLS/user_projects/domains/REIMDomain/retail/reim14/config

Retail Public Security API Utility
=============================================
Below are the credentials found in the wallet at the location:/u00/webadmin/product/10.3.x/WLS/user_projects/domains/REIMDomain/retail/reim14/config

Application level key partition name:reim14
User Name Alias:WLS-ALIAS User Name:weblogic
User Name Alias:RETAIL-ALIAS User Name:retail.user
User Name Alias:LDAP-ALIAS User Name:RETAIL.USER
User Name Alias:RMS-ALIAS User Name:rms14mock
User Name Alias:REIMBAT-ALIAS User Name:reimbat
**save_credential.sh**

save_credential.sh is used to update the information in wallet. If you are unsure about the information that is currently in the wallet, use dump_credentials.sh as indicated above.

```
save_credential.sh -a <alias> -u <user> -p <partition name> -l <path of the wallet file location where credentials are stored>
```

Example:

```
/u00/webadmin/mock14_testing/rtil/rtil/application/retail-public-security-api/bin>
save_credential.sh -l wallet_test -a myalias -p mypartition -u myuser
```

---

**Note:** `-p` in the above command is for partition name. You must specify the proper partition name used in application code for each Java application.

save_credential.sh and dump_credentials.sh scripts are the same for all applications. If using save_credential.sh to add a wallet entry or to update a wallet entry, bounce the application/managed server so that your changes are visible to the application. Also, save a backup copy of your cwallet.sso file in a location outside of the deployment path, because redeployment or reinstallation of the application will wipe the wallet entries you made after installation of the application. To restore your wallet entries after a redeployment/reinstallation, copy the backed up cwallet.sso file over the cwallet.sso file. Then bounce the application/managed server.

---

**Usage**

```
usage: save_credential.sh -au[plh]
E.g. save_credential.sh -a rms-alias -u rms_user -p rib-rms -l ./

-a,--userNameAlias <arg> alias for which the credentials needs to be stored
-h,--help usage information
-l,--locationofWalletDir <arg> location where the wallet file is created. If not specified, it creates the wallet under secure-credential-wallet directory which is already present under the retail-public-security-api/ directory.
-p,--appLevelKeyPartitionName <arg> application level key partition name
-u,--userName <arg> username to be stored in secure credential wallet for specified alias
```
How does the Wallet Relate to the Application?

The ORACLE Retail Java applications have the wallet alias information you create in an <app-name>.properties file. Below is the reim.properties file. Note the database information and the user are presented as well. The property called datasource.credential.alias=RMS-ALIAS uses the ORACLE wallet with the argument of RMS-ALIAS at the csm.wallet.path and csm.wallet.partition.name = reim14 to retrieve the password for application use.

Reim.properties code sample:

```java
datasource.url=jdbc:oracle:thin:@xxxxxxx.us.oracle.com:1521:pkols07
datasource.schema.owner=rms14mock
datasource.credential.alias=RMS-ALIAS
# =================================================================
# ossa related Configuration
#
# # These settings are for ossa configuration to store credentials.
# # =================================================================

csm.wallet.path=/u00/webadmin/product/10.3.x/WLS/user_projects/domains/REIMDomain/retail/reim14/config
csm.wallet.partition.name=reim14
```

How does the Wallet Relate to Java Batch Program use?

Some of the ORACLE Retail Java batch applications have an alias to use when running Java batch programs. For example, alias REIMBAT-ALIAS maps through the wallet to dbuser RMS01APP, already on the database. To run a ReIM batch program the format would be: reimbatchpgmname REIMBAT-ALIAS <other arguments as needed by the program in question>

Database Credential Store Administration

The following section describes a domain level database credential store. This is used in RPM login processing, SIM login processing, RWMS login processing, RESA login processing and Allocation login processing and policy information for application permission. Setting up the database credential store is addressed in the RPM, SIM, ReSA, RWMS, and Alloc 14.1 install guides.

The following sections show an example of how to administer the password stores thru ORACLE Enterprise Manger Fusion Middleware Control, a later section will show how to do this thru WLST scripts.
1. The first step is to use your link to Oracle Enterprise Manager Fusion Middleware Control for the domain in question. Locate your domain on the left side of the screen and do a right mouse click on the domain and select Security > Credentials.

2. Click on Credentials and you will get a screen similar to the following. The following screen is expanded to make it make more sense. From here you can administer credentials.
Appendix: Setting Up Password Stores with wallets/credential stores
The Create Map add above is to create a new map with keys under it. A map would usually be an application such as rpm14. The keys will usually represent alias to various users (database user, WebLogic user, LDAP user, etc). The application installer should add the maps so you should not often have to add a map.

Creation of the main keys for an application will also be built by the application installer. You will not be adding keys often as the installer puts the keys out and the keys talk to the application. You may be using EDIT on a key to see what user the key/alias points to and possibly change/reset its password. To edit a key/alias, highlight the key/alias in question and push the edit icon nearer the top of the page. You will then get a screen as follows:

The screen above shows the map (rpm14) that came from the application installer, the key (DB-ALIAS) that came from the application installer (some of the keys/alias are selected by the person who did the application install, some are hard coded by the application installer in question), the type (in this case password), and the user name and password. This is where you would check to see that the user name is correct and reset the password if needed. REMEMBER, a change to an item like a database password WILL make you come into this and also change the password. Otherwise your application will NOT work correctly.
Managing Credentials with WSLT/OPSS Scripts

This procedure is optional as you can administer the credential store through the Oracle enterprise manager associated with the domain of your application install for RPM, SIM, RESA, or Allocation.

An Oracle Platform Security Scripts (OPSS) script is a WLST script, in the context of the Oracle WebLogic Server. An online script is a script that requires a connection to a running server. Unless otherwise stated, scripts listed in this section are online scripts and operate on a database credential store. There are a few scripts that are offline, that is, they do not require a server to be running to operate.

Read-only scripts can be performed only by users in the following WebLogic groups: Monitor, Operator, Configurator, or Admin. Read-write scripts can be performed only by users in the following WebLogic groups: Admin or Configurator. All WLST scripts are available out-of-the-box with the installation of the Oracle WebLogic Server.

WLST scripts can be run in interactive mode or in script mode. In interactive mode, you enter the script at a command-line prompt and view the response immediately after. In script mode, you write scripts in a text file (with a py file name extension) and run it without requiring input, much like the directives in a shell script.

For platform-specific requirements to run an OPSS script, see http://docs.oracle.com/cd/E21764_01/core.1111/e19043/managepols.htm#CIHIBBDJ

The weakness with the WLST/OPSS scripts is that you have to already know your map name and key name. In many cases, you do not know or remember that. The database credential store way through enterprise manager is a better way to find your map and key names easily when you do not already know them. A way in a command line mode to find the map name and alias is to run orapki. An example of orapki is as follows:

```
/u00/webadmin/product/wls_apps/oracle_common/bin> ./orapki wallet display –wallet
/u00/webadmin/product/wls_apps/user_projects/domains/APPDomain/config/fmwconfig
```

(where the path above is the domain location of the wallet)

Output of orapki is below. This shows map name of rpm14 and each alias in the wallet:

```
Oracle PKI Tool: Version 11.1.1.7.0

Requested Certificates:
User Certificates:
Oracle Secret Store entries:
rpm14#@3#@DB-ALIAS
rpm14#@3#@LDAP-ALIAS
rpm14#@3#@RETAIL.USER
rpm14#@3#@user.signature.salt
rpm14#@3#@user.signature.secretkey
rpm14#@3#@WEBLOGIC-ALIAS
rpm14#@3#@WLS-ALIAS

Trusted Certificates:
Subject: OU=Class 1 Public Primary Certification Authority,O=VeriSign \, Inc.,C=US
```
Appendix: Setting Up Password Stores with wallets/credential stores

OPSS provides the following scripts on all supported platforms to administer credentials (all scripts are online, unless otherwise stated. You need the map name and the key name to run the scripts below:

- listCred
- updateCred
- createCred
- deleteCred
- modifyBootStrapCredential
- addBootStrapCredential

**listCred**

The script `listCred` returns the list of attribute values of a credential in the credential store with given map name and key name. This script lists the data encapsulated in credentials of type password only.

**Script Mode Syntax**

```
listCred.py -map mapName -key keyName
```

**Interactive Mode Syntax**

```
listCred(map="mapName", key="keyName")
```

The meanings of the arguments (all required) are as follows:

- map specifies a map name (folder).
- key specifies a key name.

**Examples of Use:**

The following invocation returns all the information (such as user name, password, and description) in the credential with map name `myMap` and key name `myKey`:

```
listCred.py -map myMap -key myKey
```

The following example shows how to run this command and similar credential commands with WLST:

```
/u00/webadmin/product/wls_apps/oracle_common/common/bin>
sh wlst.sh

Initializing WebLogic Scripting Tool (WLST)...

Welcome to WebLogic Server Administration Scripting Shell

wls:/offline> connect('weblogic','password123','xxxxxx.us.oracle.com:17001')
Connecting to t3://xxxxxx.us.oracle.com:17001 with userid weblogic ...
Successfully connected to Admin Server 'AdminServer' that belongs to domain 'APPDomain'.

wls:/APPDomain/serverConfig> listCred(map="rpm14",key="DB-ALIAS")
Already in Domain Runtime Tree

[Name : rms01app, Description : null, expiry Date : null]
PASSWORD:retail

*The above means for map rpm14 in APPDomain, alias DB-ALIAS points to database user rms01app with a password of retail*
updateCred

The script updateCred modifies the type, user name, and password of a credential in the credential store with given map name and key name. This script updates the data encapsulated in credentials of type password only. Only the interactive mode is supported.

Interactive Mode Syntax

updateCred(map="mapName", key="keyName", user="userName", password="passW", [desc="description")

The meanings of the arguments (optional arguments are enclosed by square brackets) are as follows:

- map specifies a map name (folder) in the credential store.
- key specifies a key name.
- user specifies the credential user name.
- password specifies the credential password.
- desc specifies a string describing the credential.

Example of Use:
The following invocation updates the user name, password, and description of the password credential with map name myMap and key name myKey:

updateCred(map="myMap", key="myKey", user="myUsr", password="myPassw")

createCred

The script createCred creates a credential in the credential store with a given map name, key name, user name and password. This script can create a credential of type password only. Only the interactive mode is supported.

Interactive Mode Syntax

createCred(map="mapName", key="keyName", user="userName", password="passW", [desc="description")

The meanings of the arguments (optional arguments are enclosed by square brackets) are as follows:

- map specifies the map name (folder) of the credential.
- key specifies the key name of the credential.
- user specifies the credential user name.
- password specifies the credential password.
- desc specifies a string describing the credential.

Example of Use:
The following invocation creates a password credential with the specified data:

createCred(map="myMap", key="myKey", user="myUsr", password="myPassw")

deleteCred

The script deleteCred removes a credential with given map name and key name from the credential store.

Script Mode Syntax

deleteCred.py -map mapName -key keyName
**Interactive Mode Syntax**

```
deleteCred(map="mapName", key="keyName")
```

The meanings of the arguments (all required) are as follows:

- **map** specifies a map name (folder).
- **key** specifies a key name.

**Example of Use:**

The following invocation removes the credential with map name `myMap` and key name `myKey`:

```
deleteCred.py -map myMap -key myKey
```

**modifyBootStrapCredential**

The **offline script** `modifyBootStrapCredential` modifies the bootstrap credentials configured in the default jps context, and it is typically used in the following scenario: suppose that the policy and credential stores are LDAP-based, and the credentials to access the LDAP store (stored in the LDAP server) are changed. Then this script can be used to seed those changes into the bootstrap credential store.

This script is available in interactive mode only.

**Interactive Mode Syntax**

```
modifyBootStrapCredential(jpsConfigFile="pathName", username="usrName", password="usrPass")
```

The meanings of the arguments (all required) are as follows:

- **jpsConfigFile** specifies the location of the file `jps-config.xml` relative to the location where the script is run. Example location: `/u00/webadmin/product/wls_apps/user_projects/domains/APPDomain/config/fmwconfig`. Example location of the bootstrap wallet is `/u00/webadmin/product/wls_apps/user_projects/domains/APPDomain/config/fmwconfig/bootstrap`

- **username** specifies the distinguished name of the user in the LDAP store.

- **password** specifies the password of the user.

**Example of Use:**

Suppose that in the LDAP store, the password of the user with distinguished name `cn=orcladmin` has been changed to `welcome1`, and that the configuration file `jps-config.xml` is located in the current directory. Then the following invocation changes the password in the bootstrap credential store to `welcome1`:

```
modifyBootStrapCredential(jpsConfigFile='./jps-config.xml', username='cn=orcladmin', password='welcome1')
```

Any output regarding the audit service can be disregarded.
addBootStrapCredential

The offline script `addBootStrapCredential` adds a password credential with given map, key, user name, and user password to the bootstrap credentials configured in the default jps context of a jps configuration file.

Classloaders contain a hierarchy with parent classloaders and child classloaders. The relationship between parent and child classloaders is analogous to the object relationship of super classes and subclasses. The bootstrap classloader is the root of the Java classloader hierarchy. The Java virtual machine (JVM) creates the bootstrap classloader, which loads the Java development kit (JDK) internal classes and `java.*` packages included in the JVM. (For example, the bootstrap classloader loads `java.lang.String`.)

This script is available in interactive mode only.

Interactive Mode Syntax

```
addBootStrapCredential(jpsConfigFile="pathName", map="mapName", key="keyName",
                       username="usrName", password="usrPass")
```

The meanings of the arguments (all required) are as follows:

- `jpsConfigFile` specifies the location of the file `jps-config.xml` relative to the location where the script is run. Example location:
  `/u00/webadmin/product/wls_apps/user_projects/domains/APPDomain/config/fmwconfig`
- `map` specifies the map of the credential to add.
- `key` specifies the key of the credential to add.
- `username` specifies the name of the user in the credential to add.
- `password` specifies the password of the user in the credential to add.

Example of Use:

The following invocation adds a credential to the bootstrap credential store:

```
addBootStrapCredential(jpsConfigFile='./jps-config.xml', map='myMapName',
                       key='myKeyName', username='myUser', password='myPass')
```
<table>
<thead>
<tr>
<th>Retail app</th>
<th>Wallet type</th>
<th>Wallet loc</th>
<th>Wallet partition</th>
<th>Alias name</th>
<th>User name</th>
<th>Use</th>
<th>Create by</th>
<th>Alias Example</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>RMS batch</td>
<td>DB</td>
<td>&lt;RMS batch install dir (RETAIL_HOME)&gt;/.wallet</td>
<td>n/a</td>
<td>&lt;Database SID&gt;_&lt;Data base schema owner&gt;</td>
<td>&lt;rms schema owner&gt;</td>
<td>Compile, execution</td>
<td>Installer</td>
<td>n/a</td>
<td>Alias hard-coded by installer</td>
</tr>
<tr>
<td>RMS forms</td>
<td>DB</td>
<td>&lt;forms install dir&gt;/base/.wallet</td>
<td>n/a</td>
<td>&lt;Database SID&gt;_&lt;Data base schema owner&gt;</td>
<td>&lt;rms schema owner&gt;</td>
<td>Compile</td>
<td>Installer</td>
<td>n/a</td>
<td>Alias hard-coded by installer</td>
</tr>
<tr>
<td>ARI forms</td>
<td>DB</td>
<td>&lt;forms install dir&gt;/base/.wallet</td>
<td>n/a</td>
<td>&lt;Db_Ari01&gt;</td>
<td>&lt;ari schema owner&gt;</td>
<td>Compile</td>
<td>Manual</td>
<td>ari-alias</td>
<td></td>
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<tr>
<td>RMWS forms</td>
<td>DB</td>
<td>&lt;forms install dir&gt;/base/.wallet</td>
<td>n/a</td>
<td>&lt;Database SID&gt;_&lt;Data base schema owner&gt;</td>
<td>&lt;rwms schema owner&gt;</td>
<td>Compile forms, execute batch</td>
<td>Installer</td>
<td>n/a</td>
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</tr>
<tr>
<td>RPM batch</td>
<td>DB</td>
<td>&lt;RPM batch install dir&gt;/.wallet</td>
<td>n/a</td>
<td>&lt;rms schema owner alias&gt;</td>
<td>&lt;rms schema owner&gt;</td>
<td>Execute batch</td>
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<td>rms-alias</td>
<td>RPM plsql and sqldr batches</td>
</tr>
<tr>
<td>RPM batch</td>
<td>DB</td>
<td>&lt;RPM batch install dir&gt;/.wallet</td>
<td>n/a</td>
<td>&lt;rms schema owner alias&gt;</td>
<td>&lt;rms schema owner&gt;</td>
<td>Execute batch</td>
<td>Manual</td>
<td>rms-alias</td>
<td>RPM plsql and sqldr batches</td>
</tr>
<tr>
<td>RWMS auto-login</td>
<td>JAVA</td>
<td>&lt;forms install dir&gt;/base/.javawallet</td>
<td></td>
<td>&lt;RWMS Installation name&gt;</td>
<td>&lt;RWMS database user alias&gt;</td>
<td>RWMS forms app to avoid dblogin screen</td>
<td>Installer</td>
<td>rwms14inst</td>
<td></td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>&lt;RWMS Installation name&gt;</td>
<td>&lt;RWMS schema owner&gt;</td>
<td>RWMS forms app to connect to BI Publisher</td>
<td>Installer</td>
<td>n/a</td>
<td>Alias hard-coded by installer</td>
</tr>
</tbody>
</table>
### Appendix: Setting Up Password Stores with wallets/credential stores

<table>
<thead>
<tr>
<th>Retail app</th>
<th>Wallet type</th>
<th>Wallet loc</th>
<th>Wallet partition</th>
<th>Alias name</th>
<th>User name</th>
<th>Use</th>
<th>Create by</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIP app</td>
<td>JAVA</td>
<td>&lt;weblogic domain home&gt;/retail/&lt;deployed aip app name&gt;/config</td>
<td>aip14</td>
<td>&lt;AIP weblogic user alias&gt;</td>
<td>&lt;AIP weblogic user name&gt;</td>
<td>App use</td>
<td>Installer</td>
<td>Each alias must be unique</td>
</tr>
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<td></td>
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<td></td>
<td></td>
<td>aip14</td>
<td>&lt;AIP database schema user alias&gt;</td>
<td>&lt;AIP database schema user name&gt;</td>
<td>App use</td>
<td>Installer</td>
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<td>aip14</td>
<td>&lt;rib-aip weblogic user alias&gt;</td>
<td>&lt;rib-aip weblogic user name&gt;</td>
<td>App use</td>
<td>Installer</td>
</tr>
<tr>
<td>RPM app</td>
<td>DB credential store</td>
<td>Map=rpm14 or what you called the app at install time.</td>
<td>Many for app use</td>
<td>Many for app use</td>
<td>Many for app use</td>
<td>Many for app use</td>
<td>Many for app use</td>
<td>&lt;weblogic domain home&gt;/config/fmwc config/jps-config.xml has info on the credential store. This directory also has the domain cwallet.sso file.</td>
</tr>
<tr>
<td>RPM app</td>
<td>JAVA</td>
<td>&lt;weblogic domain home&gt;/retail/&lt;deployed rpm app name&gt;/config</td>
<td>rpm14</td>
<td>&lt;rpm weblogic user alias&gt;</td>
<td>&lt;rpm weblogic user name&gt;</td>
<td>App use</td>
<td>Installer</td>
<td>Each alias must be unique</td>
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<td>rpm14</td>
<td>&lt;rpm weblogic user alias&gt;</td>
<td>&lt;rpm weblogic user name&gt;</td>
<td>App use</td>
<td>Installer</td>
<td>rpm-weblogic-alias</td>
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<td>Retail app</td>
<td>Wallet type</td>
<td>Wallet loc</td>
<td>Wallet partition</td>
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<td>rpm14</td>
<td>&lt;rpm batch user name&gt; is the alias. Yes, here alias name = user name</td>
<td>&lt;rpm batch user name&gt;</td>
<td>App, batch use</td>
<td>Installer</td>
<td>RETAIL.USER</td>
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<td>JAVA</td>
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<td>&lt;retail_home&gt;/orpatch/config/javaapp_rpm</td>
<td>retail Installer</td>
<td>&lt;rpm weblogic user alias&gt;</td>
<td>&lt;rpm weblogic user name&gt;</td>
<td>App use</td>
<td>Installer</td>
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<td>retail Installer</td>
<td>&lt;rms schema user alias&gt;</td>
<td>&lt;rms schema user name&gt;</td>
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<td>rms01user-alias</td>
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<td>retail Installer</td>
<td>&lt;reim batch user alias&gt;</td>
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<td>retail Installer</td>
<td>&lt;LDAP-ALIAS&gt;</td>
<td>cn=rpm.ad min,cn=Use rs,dc=us,dc=oracle,dc=com</td>
<td>LDAP user use</td>
<td>Installer</td>
<td>LDAP_ALIAS</td>
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<tr>
<td>ReIM app</td>
<td>JAVA</td>
<td>&lt;weblogic domain home&gt;/retail/&lt;deployed reim app name&gt;/config</td>
<td>&lt;installed app name, ex: reim14&gt;</td>
<td>&lt;reim weblogic user alias&gt;</td>
<td>&lt;reim weblogic user name&gt;</td>
<td>App use</td>
<td>Installer</td>
<td>weblogic-alias</td>
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<td>&lt;installed app name, ex: reim14&gt;</td>
<td>&lt;rms schema user alias&gt;</td>
<td>&lt;rms schema user name&gt;</td>
<td>App, batch use</td>
<td>rms01user-alias</td>
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<td>Retail app</td>
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<td>&lt;reim batch user alias&gt;</td>
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<td>App, batch use</td>
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<td>reimbatch-alias</td>
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<td>&lt;installed app name, ex: reim14&gt;</td>
<td>&lt;LDAP ALIAS&gt;</td>
<td>cn=REIM.ADMIN,cn=Users,dc=oracle,dc=com</td>
<td>LDAP user use</td>
<td>Installer</td>
<td>LDAP_ALIAS</td>
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<td>JAVA</td>
<td>&lt;retail_home&gt;/orpatch/config/javaapp_reim</td>
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</table>

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<table>
<thead>
<tr>
<th>Retail app</th>
<th>Wallet type</th>
<th>Wallet loc</th>
<th>Wallet partition</th>
<th>Alias name</th>
<th>User name</th>
<th>Use</th>
<th>Create by</th>
<th>Alias Example</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESA app</td>
<td>DB credential store</td>
<td>Map=resa14 or what you called the app at install time</td>
<td>Many for login and policies</td>
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<tr>
<td>RESA app</td>
<td>JAVA</td>
<td>&lt;weblogic domain home&gt;/retail/&lt;deployed resa app name&gt;/config</td>
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<td>&lt;resa weblogic user alias&gt;</td>
<td>&lt;resa weblogic user name&gt;</td>
<td>App use</td>
<td>Installer</td>
<td>wlsalias</td>
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<td>Retail app</td>
<td>Wallet type</td>
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<td>Use</td>
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<td>&lt;installed app name&gt;</td>
<td>&lt;rmsdb shema user name&gt;</td>
<td>App use</td>
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<td>Resadb-alias</td>
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<tr>
<td>JAVA</td>
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<td>&lt;retail_home&gt;/orpatch/config/javaapp_resa</td>
<td>&lt;resa schema user alias&gt;</td>
<td>&lt;rmsdb shema user name&gt;&gt;</td>
<td>App use</td>
<td>Installer</td>
<td>resa-alias</td>
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<tr>
<td></td>
<td>JAVA</td>
<td>retail_installer</td>
<td>&lt;resa weblogic user alias&gt;</td>
<td>&lt;resa weblogic user name&gt;</td>
<td>App use</td>
<td>Installer</td>
<td>wlsalias</td>
<td></td>
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</tr>
</tbody>
</table>

Each alias must be unique.
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<tr>
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<tbody>
<tr>
<td>Retail app</td>
<td>JAVA</td>
<td>&lt;retail_home&gt;/orpatch/config/javaapp_rasrm</td>
<td>retail_installer</td>
<td>&lt;rmsdb shema user name&gt;</td>
<td>App use</td>
<td>Installer</td>
<td>Resadb-alias</td>
<td>Each alias must be unique</td>
<td></td>
</tr>
<tr>
<td>Retail app</td>
<td>JAVA</td>
<td>&lt;ALLOC weblogic user alias&gt;</td>
<td>retail_installer</td>
<td>&lt;ALLOC weblogic user name&gt;</td>
<td>App use</td>
<td>Installer</td>
<td>weblogic-alias</td>
<td></td>
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</tr>
</tbody>
</table>
### Appendix: Setting Up Password Stores with wallets/credential stores

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<tr>
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<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Alloc app</td>
<td>DB credential store</td>
<td>Map=alloc 14 or what you called the app at install time</td>
<td>Many for login and policies</td>
<td>Example</td>
<td>Notes</td>
<td>&lt;weblogic domain home&gt;/config/fmwc config/jps-config.xml has info on the credential store. This directory also has the domain cwallet.sso file. The bootstrap directory under this directory has bootstrap cwallet.sso file.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alloc app</td>
<td>JAVA</td>
<td>&lt;weblogic domain home&gt;/retail/config</td>
<td>&lt;installed app name&gt;</td>
<td>&lt;alloc weblogic user alias&gt;</td>
<td>&lt;alloc weblogic user name&gt;</td>
<td>App use</td>
<td>Installer</td>
<td>weblogic-alias</td>
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<tr>
<td>Alloc app</td>
<td>JAVA</td>
<td>&lt;weblogic domain home&gt;/retail/config</td>
<td>&lt;installed app name&gt;</td>
<td>&lt;rms schema user alias&gt;</td>
<td>&lt;rms schema user name&gt;</td>
<td>App use</td>
<td>Installer</td>
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<tr>
<td>Alloc app</td>
<td>JAVA</td>
<td>&lt;weblogic domain home&gt;/retail/config</td>
<td>&lt;installed app name&gt;</td>
<td>&lt;alloc batch user alias&gt;</td>
<td>&lt;SYSTEM_ADMINISTRATOR&gt;</td>
<td>Batch use</td>
<td>Installer</td>
<td>alloc14</td>
<td></td>
</tr>
<tr>
<td>Alloc app</td>
<td>JAVA</td>
<td>&lt;weblogic domain home&gt;/retail/config</td>
<td>&lt;installed app name&gt;</td>
<td>&lt;alloc weblogic user alias&gt;</td>
<td>&lt;alloc weblogic user name&gt;</td>
<td>App use</td>
<td>Installer</td>
<td>weblogic-alias</td>
<td></td>
</tr>
</tbody>
</table>

Each alias must be unique.
<table>
<thead>
<tr>
<th>Retail app</th>
<th>Wallet type</th>
<th>Wallet loc</th>
<th>Wallet partition</th>
<th>Alias name</th>
<th>User name</th>
<th>Use</th>
<th>Create by</th>
<th>Alias Example</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail app</td>
<td></td>
<td></td>
<td></td>
<td>retail_install</td>
<td>&lt;alloc weblogic user alias&gt;</td>
<td>&lt;alloc weblogic user name&gt;</td>
<td>App use</td>
<td>Installer</td>
<td>weblogic-alias</td>
</tr>
<tr>
<td>Retail app</td>
<td></td>
<td></td>
<td></td>
<td>retail_install</td>
<td>&lt;rms schema user alias&gt;</td>
<td>&lt;rms schema user name&gt;</td>
<td>App use</td>
<td>Installer</td>
<td>dsallocAlias</td>
</tr>
<tr>
<td>Retail app</td>
<td></td>
<td></td>
<td></td>
<td>retail_install</td>
<td>&lt;alloc batch user alias&gt;</td>
<td>&lt;SYSTEM_ADMINISTRATOR&gt;</td>
<td>Batch use</td>
<td>Installer</td>
<td>alloc14</td>
</tr>
<tr>
<td>JAVA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&lt;alloc weblogic user alias&gt;</td>
<td>&lt;alloc weblogic user name&gt;</td>
<td>App use</td>
<td>Installer</td>
<td>weblogic-alias</td>
</tr>
<tr>
<td>SIM app</td>
<td>DB credential store</td>
<td>Map=oracle.retail.sim</td>
<td>Aliases required for SIM app use</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Each alias must be unique</td>
</tr>
<tr>
<td>JAVA</td>
<td></td>
<td></td>
<td></td>
<td>&lt;weblogic domain home&gt;/config/fmwc onfig/jps-config.xml has info on the credential store. This directory also has the domain cwallet.sso file.</td>
<td>&lt;sim batch user alias&gt;</td>
<td>&lt;sim batch user name&gt;</td>
<td>App use</td>
<td>Installer</td>
<td>BATCH-ALIAS</td>
</tr>
</tbody>
</table>
## Appendix: Setting Up Password Stores with wallets/credential stores

<table>
<thead>
<tr>
<th>Retail app</th>
<th>Wallet type</th>
<th>Wallet loc</th>
<th>Wallet partition</th>
<th>alias name</th>
<th>User name</th>
<th>Use</th>
<th>Create by</th>
<th>Alias Example</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAVA</td>
<td>JAVA</td>
<td>java&lt;weblogic domain home&gt;/retail/&lt;deployed sim app name&gt;/wireless/resources/conf</td>
<td>oracle.retail.sim</td>
<td>&lt;sim wireless user alias&gt;</td>
<td>&lt;sim wireless user name&gt;</td>
<td>App use</td>
<td>Installer</td>
<td>WIRELESS-ALIAS</td>
<td></td>
</tr>
<tr>
<td>RETL</td>
<td>JAVA</td>
<td>java&lt;RETL home&gt;/etc/security</td>
<td>n/a</td>
<td>&lt;target application user alias&gt;</td>
<td>&lt;target application db userid&gt;</td>
<td>App use</td>
<td>Manual</td>
<td>retl_java_rm s01user</td>
<td>User may vary depending on RETL flow's target application</td>
</tr>
<tr>
<td>RETL</td>
<td>DB</td>
<td>java&lt;RETL home&gt;/wallet</td>
<td>n/a</td>
<td>&lt;target application user alias&gt;</td>
<td>&lt;target application db userid&gt;</td>
<td>App use</td>
<td>Manual</td>
<td>&lt;db&gt;_&lt;user &gt;</td>
<td>User may vary depending on RETL flow's target application</td>
</tr>
<tr>
<td>RIB</td>
<td>JAVA</td>
<td>java&lt;RIBHOME DIR&gt;/deployment-home/conf/security</td>
<td>jms&lt;1-5&gt;</td>
<td>jms user alias&gt; for jms&lt;1-5&gt;</td>
<td>jms user name&gt; for jms&lt;1-5&gt;</td>
<td>Integration use</td>
<td>Installer</td>
<td>jms-alias</td>
<td>&lt;app&gt; is one of aip, rfm, rms, rpm, sim, rwms, tafr</td>
</tr>
<tr>
<td>JMS</td>
<td></td>
<td>jms&lt;1-5&gt;</td>
<td>jms user alias&gt; for jms&lt;1-5&gt;</td>
<td>jms user name&gt; for jms&lt;1-5&gt;</td>
<td>Integration use</td>
<td>Installer</td>
<td>jms-alias</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WebLogic</td>
<td></td>
<td>rib&lt;app&gt;-app-server-instance</td>
<td>rib-app weblogic user alias&gt;</td>
<td>rib-app weblogic user name&gt;</td>
<td>Integration use</td>
<td>Installer</td>
<td>weblogic-alias</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Admin GUI</td>
<td></td>
<td>rib&lt;app&gt;#web-app-user-alias</td>
<td>rib-app admin gui user alias&gt;</td>
<td>rib-app admin gui user name&gt;</td>
<td>Integration use</td>
<td>Installer</td>
<td>admin-gui-alias</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Application</td>
<td></td>
<td>rib&lt;app&gt;#user-alias</td>
<td>rib app weblogic user alias&gt;</td>
<td>rib app weblogic user name&gt;</td>
<td>Integration use</td>
<td>Installer</td>
<td>app-user-alias</td>
<td>Valid only for aip, rpm, sim</td>
<td></td>
</tr>
<tr>
<td>DB</td>
<td></td>
<td>rib&lt;app&gt;#app-db-user-alias</td>
<td>rib-app database schema user alias&gt;</td>
<td>rib-app database schema user name&gt;</td>
<td>Integration use</td>
<td>Installer</td>
<td>db-user-alias</td>
<td>Valid only for rfm, rms, rwms, tafr</td>
<td></td>
</tr>
<tr>
<td>Retail app</td>
<td>Wallet type</td>
<td>Wallet loc</td>
<td>Wallet partition</td>
<td>Alias name</td>
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<td>Use</td>
<td>Create by</td>
<td>Alias Example</td>
<td>Notes</td>
</tr>
<tr>
<td>--------------</td>
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<td>-----------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
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<td>------------------</td>
</tr>
<tr>
<td>Error</td>
<td></td>
<td></td>
<td>rib-&lt;app&gt;#hosp-user-alias</td>
<td>&lt;rib-app error hospital database schema user alias&gt;</td>
<td>&lt;rib-app error hospital database schema user name&gt;</td>
<td>Integration use</td>
<td>Installer</td>
<td>hosp-user-alias</td>
<td></td>
</tr>
<tr>
<td>RFI</td>
<td>Java</td>
<td>&lt;RFI-HOME&gt;/retail-financial-integration-solution/service-based-integration/conf/security</td>
<td></td>
<td>&lt;installed app name&gt;</td>
<td>rfiAppServe rAdminServ erUserAlias &lt;rfi weblogic user name&gt;</td>
<td>App use</td>
<td>Installer</td>
<td>rfiAppServe rAdminServ erUserAlias</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&lt;installed app name&gt;</td>
<td>rfiAdminUi UserAlias &lt;ORFI admin user&gt;</td>
<td>App use</td>
<td>Installer</td>
<td>rfiAdminUi UserAlias</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&lt;installed app name&gt;</td>
<td>rfiDataSour c eUserAlias &lt;ORFI schema user name&gt;</td>
<td>App use</td>
<td>Installer</td>
<td>rfiDataSour c eUserAlias</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&lt;installed app name&gt;</td>
<td>ebsDataSour c eUserAlias &lt;EBS schema user name&gt;</td>
<td>App use</td>
<td>Installer</td>
<td>ebsDataSour c eUserAlias</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&lt;installed app name&gt;</td>
<td>smtpMailFr omAddress Alias &lt;From email address&gt;</td>
<td>App use</td>
<td>Installer</td>
<td>smtpMailFr omAddress Alias</td>
<td></td>
</tr>
</tbody>
</table>
Appendix: Installation Order

This section provides a guideline as to the order in which the Oracle Retail applications should be installed. If a retailer has chosen to use some, but not all, 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)
2. Oracle Retail Sales Audit (ReSA)
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. Because RIB is installed after RPM, make a note of the URL you enter. To change the RIBforRPM provider URL after you install RIB, edit 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. Because RIB is installed after SIM, make a note of the URL you enter. To change the RIB provider URL after you install RIB, edit 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 (RCM)
16. Oracle Retail Replenishment Optimization (RO)
17. Oracle Retail Analytic Parameter Calculator Replenishment Optimization (APC RO)
18. Oracle Retail Regular Price Optimization (RPO)
19. Oracle Retail Merchandise Financial Planning (MFP)
20. Oracle Retail Size Profile Optimization (SPO)
21. Oracle Retail Assortment Planning (AP)
22. Oracle Retail Item Planning (IP)
23. Oracle Retail Item Planning Configured for COE (IP COE)
24. Oracle Retail Advanced Inventory Planning (AIP)
25. Oracle Retail Analytics
26. Oracle Retail Advanced Science Engine (ORASE)
27. Oracle Retail Integration Bus (RIB)
28. Oracle Retail Service Backbone (RSB)
29. Oracle Retail Financial Integration (ORFI)
30. Oracle Retail Point-of-Service (ORPOS)
   ▪ Oracle Retail Mobile Point-of-Service (ORMPOS) (requires ORPOS)
31. Oracle Retail Markdown Optimization (MDO)
32. Oracle Retail Clearance Optimization Engine (COE)
33. Oracle Retail Analytic Parameter Calculator for Markdown Optimization (APC-MDO)
34. Oracle Retail Analytic Parameter Calculator for Regular Price Optimization (APC-RPO)
35. Oracle Retail Macro Space Planning (MSP)
   The Oracle Retail Enterprise suite includes Macro Space Planning. This can be installed independently of and does not affect the installation order of the other applications in the suite. If Macro Space Planning is installed, the installation order for its component parts is:
   ▪ Oracle Retail Macro Space Management (MSM)
   ▪ Oracle Retail In-Store Space Collaboration (ISSC) (requires MSM)
   ▪ Oracle Retail Mobile In-Store Space Collaboration (requires MSM and ISSC)