Oracle Commerce Retail Extension Module
Installation Guide
Release 16.0.2
E90906-01

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Oracle Commerce Retail Extension Module Installation Guide, Release 16.0.2

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Value-Added Reseller (VAR) Language

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Oracle Commerce Retail Extension Module Installation Guide Release 16.0.2

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- Are the implementation steps correct and complete?
- Did you understand the context of the procedures?
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Preface

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

Audience

This Installation Guide is written for the following audiences:

- Database administrators (DBA)
- System analysts and designers
- Integrators and implementation staff

Customer Support

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

https://support.oracle.com

When contacting Customer Support, please provide the following:

- Product version and program/module name
- Functional and technical description of the problem (include business impact)
- Detailed step-by-step instructions to re-create
- Exact error message received
- Screen shots of each step you take

Review Patch Documentation

When you install the application for the first time, you install either a base release (for example, 16.0) or a later patch release (for example, 16.0.2). 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 also available on the following Web site:

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

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
```

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Preinstallation Tasks

Oracle Retail assumes that the retailer has applied all required fixes for supported compatible technologies.

Check Supported Database and Application Server Requirements

Oracle Commerce Retail Extension Module (RXM) supports the following stack:

Supported on	Versions Supported
Operating System	▪ Oracle Linux 6 and 7 for x86-64 (Actual hardware or Oracle virtual machine) ▪ Red Hat Enterprise Linux 6 and 7 for x86-64 (Actual hardware or Oracle virtual machine)

Application Server	▪ RXM Data Integration (RXMDI)
	▪ Oracle Fusion Middleware 12.2.1.2:
	  - Oracle WebLogic Application Server 12.2.1.2
	  - Oracle Data Integrator Enterprise Edition 12.2.1.2
	▪ RXM Commerce Module (RXM)
	▪ Oracle Fusion Middleware 12.2.1.2:
	  - Oracle WebLogic Application Server 12.2.1.2

Database	Oracle Database 12c Release 1 (12.1.0.2.0) - Enterprise Edition)
Oracle Java Runtime Environment (JRE)	Java 8
Oracle Commerce Platform	Oracle Commerce 11.3

Supported Oracle Retail Products

Requirement	Version
Oracle Retail Order Management	16.0
Oracle Retail Order Broker	16.0
Oracle Retail Xstore Point of Service	16.0
Oracle Retail Customer Engagement	16.0

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RXMDI Installation

Prerequisites and RXMDI/ODI Components Installation

The following document describes the installation of various components required for RXMDI and ODI setup.

Install Oracle JDK 1.8.0_112

Install JDK 8 (1.8.0_112 or higher). Preferably, install the latest JDK 8. Install the Java Cryptography Extension (JCE) Unlimited Strength Jurisdiction Policy Files.

Install Oracle Database 12c Release 1 (12.1.0.2.0) - Enterprise Edition

Install the Oracle DB 12c release.

Install Oracle Fusion Middleware Infrastructure

Download link: http://www.oracle.com/technetwork/middleware/data-integrator/downloads/index.html

Install Oracle Fusion Middleware Infrastructure **first** and then install ODI into the **same** *Oracle_Home* chosen for Oracle Fusion Middleware infrastructure.

Install Oracle Data Integrator 12cR2

Download link: http://www.oracle.com/technetwork/middleware/data-integrator/downloads/index.html

Ensure that Oracle Fusion Middleware Infrastructure has been installed **first.** Install ODI into the **same** *Oracle_Home* chosen for Oracle Fusion Middleware Infrastructure.

Detailed instructions: https://docs.oracle.com/middleware/12212/lcm/ODING/toc.htm

On the *Installation Type* screen, select Enterprise Installation.

Create Master and Work Repositories using Repository Creation Utility (RCU)

1. Information on creating repositories:
   https://docs.oracle.com/middleware/12212/lcm/ODING/GUID-25AC5AEE-D46D-4E4B-8835-4C1FE32207CC.htm#ODING860

2. Information about creating Custom Prefixes:
   https://docs.oracle.com/middleware/12212/lcm/RCUUG/GUID-2E73B30E-9E64-4986-82AD-CD54BB9641BD.htm#RCUUG308

   > **Note:** Make a note of the prefix and password that is set up. This will be required when Installing/Configuring the Java EE Agent.

3. On the **Select Components** screen, select the following components:

    a. AS Common Schemas:

        i. Oracle Platform Security Services

        ii. Audit Services

        iii. Audit Services Append

        iv. Audit Services Viewer

    b. Oracle Data Integrator:

        i. Master and Work Repository

4. When selecting the Work Repository Type ((D) for Development, (E) for Execution), select Execution repository **E** and not Development repository **D**.

Install/Configure Java EE Agent

Information on configuring Java EE Agent:
https://docs.oracle.com/middleware/12212/lcm/ODING/GUID-3F74BFAB-99E9-4060-86E8-F70A8352A701.htm#ODING280

1. Information on Understanding the Recommended Directory Structure:
https://docs.oracle.com/middleware/12212/lcm/WBCSI/GUID-16F78BFD-4095-45EE-9C3B-DB49AD5CBAAD.htm#ASINS338

2. On the *Templates* screen, make sure Create Domain Using Product Templates is selected and then select the following templates:

    a. Oracle Enterprise Manager Plugin for ODI - 12.2.1.2 [em]

    Selecting this template automatically selects the following as dependencies:

        i. Oracle Enterprise Manager - 12.2.1.2 [em]

        ii. Oracle JRF - 12.2.1.2 [oracle_common]

        iii. WebLogic Coherence Cluster Extension - 12.2.1.2 [wlserver]

    b. Oracle Data Integrator - Standalone Colocated Agent - 12.2.1.2 [odi]

    Selecting this template automatically selects the following as dependencies:

        i. Oracle JRF - 12.2.1.2 [oracle_common]

        ii. WebLogic Coherence Cluster Extension - 12.2.1.2 [wlserver]

    c. Oracle Data Integrator - Agent - 12.2.1.2 [odi]

    Selecting this template automatically selects the following as dependencies:

        i. Oracle Data Integrator - Agent Libraries - 12.2.1.2 [odi]

        ii. Oracle Data Integrator SDK Shared Library Template - 12.2.1.2 [odi]

    d. Oracle Data Integrator - Console - 12.2.1.2 [odi]

3. On the **Database Configuration Type** screen, use the prefix and password that was noted during the Master and Work Repositories creation step.

4. On the **Credentials** screen, create the following two keys:

   a. A key for the Supervisor user already exists. Modify the credential as follows:

      i. Specify SUPERVISOR (all CAPS) as the user name. This is the default name initially assigned to the Supervisor account and cannot be changed unless you create a new Supervisor account. The password must be the same password specified on the Custom Variables screen in RCU during schema creation

   b. Create a second credential with the WebLogic **domain name** as the key and provide the WebLogic Administrator user's username and password in the relevant fields. Select an appropriate store name.

5. On the **Managed Servers** screen, in the Server Groups drop-down list, select **JRF-MAN-SVR**. This server group ensures that the Oracle JRF services are targeted to the Managed Servers you are creating.

Create Java EE Agent in the Master Repository Using ODI Studio

Information on creating a Java EE Agent in the Master Repository Using ODI Studio: https://docs.oracle.com/middleware/12212/lcm/ODING/GUID-3F74BFAB-99E9-4060-86E8-F70A8352A701.htm#GUID-6EEED355-F944-447F-A4CE-EA7BD9FE160C

Information on create a Logical Agent Using ODI Studio: http://docs.oracle.com/middleware/12212/odi/administer-develop/setup_topology.htm#ODIAD200.

Associate the Context to the Physical Agent created.

Start Servers

Start the Node Manager, Admin Server, and Managed Server.

Database Schemas for MOM to RXM

MOM to RXM require several schemas to be created:

- BDI Interface Schema
- RXMDI Staging Schema
- RxmJobAdmin Schema

Schemas can be created with the following commands:

1. Create User

   a. CREATE USER <data_source_username>

   b. IDENTIFIED BY <data_source_password>

   c. DEFAULT TABLESPACE users

   d. TEMPORARY TABLESPACE TEMP

   e. QUOTA UNLIMITED ON users;

2. Grant privileges

   GRANT CREATE TABLE, CREATE VIEW, CREATE TYPE, CREATE SEQUENCE, CREATE PROCEDURE, ALTER SESSION, CONNECT, CREATE SYNONYM , SELECT_CATALOG_ROLE TO <data_source_username>

Steps for Creating the Schemas:

1. The BDI Interface Schema should be available once the BDI Infrastructure has been installed. Make a note of this schema's details.

2. Create RXMDI Staging Schema:

   a. Execute the RXMDI sql ddl files provided in the RXMDI release package.

   b. Execute the RIB Error Hospital sql ddl files provided in the RXMDI release package.

      i. This can be executed by connecting to the correct user using sqlplus and running the following command:
      SQL> @1_KERNEL_CREATE_OBJECTS.SQL

      ii. This assumes that the Tablespace in use is USERS. If this needs to be changed, open up the 1_KERNEL_CREATE_OBJECTS.SQL file and update lines 43, 44, and 45 with the correct values.

3. Insert pre-requisite data into the RXMDI Staging Schema based on values obtained from RMS and set up in RXM Publishing's Business Control Center (BCC).

   a. Insert the following values into *rxmdi_store_site*

      i. store_id: Obtained from RMS

      ii. site id: Created in BCC

      iii. catalog id: Created in BCC

      iv. price_list_id: Created in BCC

      v. sale_list_id: Created in BCC

      vi. file_name: Leave blank

      vii. folder_id: Created in BCC

4. The RXM Publishing and Production Schemas should be available after RXM is installed. Make a note of these schema details.

5. Create Schema for RxmJobAdminDataSource. This is an *empty* schema which will be populated by the BdiEdgeAppJobAdminPak16.0.2ForRxm16.0.2 deployer when deploying the Job Admin WAR.

Define WebLogic Datasources

1. BDI Interface Schema (Used by Java Batch Batchlets).

   a. This JNDI name will be needed in the Java Batch Job configurations.

2. RXMDI Staging (Used by Java Batch Batchlets as well as RIB Injectors). This datasource must be an XA data source:

   a. This JNDI name will be needed in the Java Batch Job configuration.

   b. This JNDI name will need to be provided to the RIB during RIB integration.

   c. This JNDI name will be used during RXMDI ear deployment.

RIB Integration Components

The following information is required by the RIB when integrating with RXMDI.

1. JNDI URI: Host IP/Port

2. Username/password of the user created in WebLogic for authorization.

3. Datasource JNDI name so RIB Hospital Schema is accessible to the RIB in case of errors.

4. Username/password for Username Token. This requires creation of an IntegrationRole mapped to an IntegrationGroup with the user added to the IntegrationGroup.

   a. Create a WebLogic Role/Group, map the created Role to the created Group and attached the user to the created Group. This user will be used for username token authentication.

      i. Create Role, create Group, map Group to Role, map user to Group.

WebLogic Java Batch Configuration

The Oracle WebLogic documentation states that JavaBatch will work as installed in a default mode using the Derby database. For production, configure WebLogic server with the recommended production configuration as described here: https://docs.oracle.com/middleware/12212/wls/CNFGD/batch-apps.htm#CNFGD369

Make a note of the name of the Schema Owner because it will be used in the Batch Data Source and the Batch Runtime.

WebLogic Credential Configuration

The credentials for the ODI Agent are stored in a wallet on the WebLogic application server. Configure the credentials as described here: https://docs.oracle.com/middleware/12212/opss/JISEC/csfadmin.htm#JISEC2953

Make a note of the credential key since this will need to be set in the Java Batch Job XMLs.

WebLogic Grant for ODIBatchlet CSF Access

ODIBatchlet uses the Credential Store Framework (CSF) to access the credentials for the ODI Agent. Access to the CSF is restricted and a grant to allow access is required. To add the permission, follow the instructions here: http://docs.oracle.com/middleware/12212/opss/JISEC/managepols.htm#JISEC2935

Access must be granted to the RXM Batch Job Admin WAR which contains ODIBatchlet.

Example: codeBase

```
file:${oracle.deployed.app.dir}/rxm-batch-job-admin-
16.0.2.war${oracle.deployed.app.ext}
```

The following permission should be provided.

- Permission Class: oracle.security.jps.service.credstore.CredentialAccessPermission
- Resource
  Name: context=SYSTEM,mapName=<credential_key_map_name>,keyName=*
- Permission Actions: read

Configure and Deploy RXMDI

RXMDI consists of 2 components, an RXMDI EAR which contains the RIB Integration components and a Job Admin WAR which contains the BDI Integration components. Configuration changes are required prior to deploying.

RXMDI EAR (RIB)

1. RXMDI EAR (RIB): This EAR is available as part of the RXMDI release package:

   a. jdbc.properties: The *jdbc.properties* file located at *RXMDI-16.0.2.ear\RXMDI-16.0.2.war\WEB-INF\classes* must be updated to put in the correct *jndi.name* for RXMDI Staging schema.

   b. persistence.xml: The *persistence.xml* file located at *RXMDI-16.0.2.ear\RXMDI-16.0.2.war\WEB-INF\classes\META-INF* must be updated to put in the *<jta-data-source></jta-data-source>* for RXMDI Staging schema.

2. Deploy RXMDI EAR to WebLogic.

RXMDI Job Admin WAR (BDI)

RXMDI Job Admin WAR (BDI): Built using BdiEdgeAppJobAdminPak16.0.2ForRxm16.0.2 tool. This tool will deploy the war automatically. The BdiEdgeAppJobAdminPak16.0.2ForRxm16.0.2 tool is available as part of the RXMDI release package.

1. Unzip the tool and *cd* to the bdi-edge-rxm-job-home folder.

2. Make the following configuration changes:

   a. bdi-edge-rxm-job-home\bin\bdi-job-admin-deployer.sh: Update the JAVA_HOME value.

   b. bdi-edge-rxm-job-home\conf*bdi-job-admin-deployment-env-info.json*: Update the following properties in this json file so the tool points to the correct Database instances and deploys to the correct WebLogic domain:

      i. jdbcUrl: Update jdbc url for both JobAdminDataSource and BatchInfraDataSource. Note that the JobAdminDataSource is an empty schema created in the Schema Creation section of this document and BatchInfraDataSource is created using RCU in a previous section in this document.

      ii. weblogicDomainName: WebLogic domain name.

      iii. weblogicDomainHome: WebLogic domain home.

      iv. weblogicDomainAdminServerUrl: Server url information.

      v. weblogicDomainAdminServerHost: Server host.

      vi. weblogicDomainAdminServerPort: Admin Server port.

      vii. weblogicDomainTargetManagedServerName: Managed Server name.

      viii. jobAdminUiUrl: Managed Server host and Managed Server port in this url. This should be setup with the HTTPS port.

   c. bdi-edge-rxm-job-home\setup-data\META-INF\config\odiInvoke.properties: Update odi.invoke.endpoint to have the correct information for the ODI Agent web service. This can be setup with the HTTPS port.

   d. bdi-edge-rxm-job-home\setup-data\META-INF*batch-jobs*.xml*: Update the following properties (if present) in all the xml files in this folder:

      i. sourceSchemaJNDI: This is the JNDI name of the data source created in WebLogic for the BDI Interface Schema.

      ii. stagingSchemaJNDI: This is the JNDI name of the data source created in WebLogic for the RXMDI Staging Schema. Note that this property must be updated in two locations in some of these files.

> iii. providerUrl: This should be similar to the value added to the odi.invoke.endpoint property in odiInvoke.properties. This is the information for the ODI Agent web service. This can be setup with the HTTPS port.
>
> iv. odiAgentCredentialKey: This should match the ODI Agent Credential Key that was created using the Enterprise Manager in a previous section of this document.
>
> v. workRep: This is the name of the work repository created when installing and configuring ODI.
>
> vi. *targetContext*: This is the name of the context imported into or setup in ODI.
>
> e. bdi-edge-rxm-job-home\dist\rxm-jars\oracle.retail.infrastructure.javabatch-16.0.2.jar. This jar is located in the following location:
>
> ```
> bdi-edge-rxm-job-home\dist\rxm-
> jars\oracle.retail.infrastructure.javabatch-16.0.2.jar
> ```

3. cd to the bdi-edge-rxm-job-home\bin folder and run the following command: *./bdi-job-admin-deployer.sh -setup-credentials -deploy-job-admin-app*

4. There will be four prompts, one to enter the WebLogic Admin Server credentials (setup previously), one for the RXMDI Job Admin console credentials (created by this tool), one for the RXMDI Job Operator console credentials (created by this tool), and one for the RXMDI Job Monitor console credentials (created by this tool).

5. There will be two additional prompts, one for the RxmJobAdminDataSource and one for the BatchInfraDataSource.

6. The app will then be deployed to the WebLogic domain.

Import and Create ODI Artifacts

ODI Artifacts are available as part of the RXMDI release package.

Setup Physical Artifacts

There are two physical artifacts for item/merch hier, an xml file (*productCatalog.xml*) and an xsd file (*gsa.xsd*). Copy these files to a location on the ODI host machine. They will be referenced while creating the Physical Topology for the GSA Template.

There are two physical artifacts for pricing, an xml file (*priceLists.xml*) and an xsd file (*gsa_options.xsd*).Copy these files to a location on the ODI host machine. They will be referenced while creating the Physical Topology for the RPM_Price.

Import the PROD context

Using ODI Studio, import the PROD context. ODI documentation has steps here: http://docs.oracle.com/middleware/12212/odi/develop/export_import.htm#ODIDG596

Import Logical Topologies

Logical topologies need to be imported for:

- BDIInterface
- RXMDI
- RXM
- RPMLoad
- RXMDI_PromoImport
- RPM_SOURCE
- GSATemplate
- RPM_PRICE

Using ODI Studio, import the Logical Topologies (file, oracle, xml). Instructions on importing Logical Topologies are available here:
https://docs.oracle.com/middleware/12212/odi/develop/export_import.htm#ODIDG605

Import Scenarios

Using ODI Studio, import all the Scenarios. Instructions on importing Scenarios are available here:
https://docs.oracle.com/middleware/12212/odi/develop/scenarios.htm#ODIDG473

Create Physical Topologies

Physical topologies have to be created for

- BDIInterface
- RXMDI
- RXM (PRODUCTION)
- RXM (PUBLISHING)
- RPMLoad
- GSATemplate
- RPM_PRICE
- RPM_SOURCE

Create Physical Topologies for each of the Logical Topologies and map the DB topologies to the actual DB schemas. Right click on the *Physical Topology* and click **New Data Server**. Click **Test Connection** after each Topology has been set up to confirm connectivity.

Instructions on Creating Data Servers for Databases, Files and XML are available here: https://docs.oracle.com/middleware/1221/odi/develop-connectivity-km/partpage1.htm#CDDDFHFE

BDIInterface

Follow the instructions here: https://docs.oracle.com/middleware/12212/odi/develop-connectivity-km/oracle_db.htm#ODIKM427

This Data Server should reference the BDI Interface Inbound Schema.

RXMDI

Follow the instructions here: https://docs.oracle.com/middleware/12212/odi/develop-connectivity-km/oracle_db.htm#ODIKM427

This Data Server should reference the RXMDI Staging Schema.

RXM (PRODUCTION)

Follow the instructions here: https://docs.oracle.com/middleware/12212/odi/develop-connectivity-km/oracle_db.htm#ODIKM427

This Data Server should reference the RXM Production Schema.

RPMLoad

Follow the instructions here: https://docs.oracle.com/middleware/12212/odi/develop-connectivity-km/oracle_db.htm#ODIKM427

This Data Server should reference the RXMDI Staging Schema.

RXM (PUBLISHING)

Follow the instructions here: https://docs.oracle.com/middleware/12212/odi/develop-connectivity-km/oracle_db.htm#ODIKM427

This Data Server should reference the RXM Publishing Schema.

GSATemplate

Follow the instructions here: https://docs.oracle.com/middleware/12212/odi/develop-connectivity-km/xml_file.htm#ODIKM525

This Data Server should reference the *productCatalog.xml* creation.

1. The following values need to be changed here:
   a. JDBC Driver: com.sunopsis.jdbc.driver.xml.SnpsXmlDriver (this can also be obtained by clicking on the "Search" icon on the right)
   b. JDBC URL: jdbc:snps:xml?d=<path_to_gsa.xsd> (Update this to reference the correct location where gsa.xsd is located)
2. The following values need to be set in *Properties (XML Properties)*:
   a. file: <path_to_productCatalog.xml> (use forward slashes to separate folders in path)
   b. id_length: 255
   c. numeric_ids: False (pick from Dropdown)
   d. root_ele: gsa-template
   e. schema: (Prefix of DB tables). Use PRODUCT
2. The following values need to be set in Properties (External DB Properties):
   a. dp_driver: oracle.jdbc.OracleDriver
   b. dp_drop_on_connect: True (pick from Dropdown)
   c. dp_password: Generate the password as follows:
      i. Go to the domain/bin directory.
      ii. Enter the following command: ./encode.sh "-INSTANCE=<Agent>" <password> where Agent is the name of the Standalone Collocated Agent (not the JEE Agent) and password is the password of the RXMDI schema user. Enter the generated password in the dp_password field.
   d. dp_schema: (Name of user used for RXMDI schema)
   e. dp_url: (JDBC URL for RXMDI schema)
   f. dp_user: (Name of user used for RXMDI schema)
   g. dp_varchar_length: 4000

RPM_PRICE

Follow the instructions here: https://docs.oracle.com/middleware/12212/odi/develop-connectivity-km/xml_file.htm#ODIKM525

This Data Server should reference the priceLists.xml creation.

1. The following values need to be changed here:

   a. JDBC Driver: com.sunopsis.jdbc.driver.xml.SnpsXmlDriver (this can also be obtained by clicking on the "Search" icon on the right)

   b. JDBC URL: jdbc:snps:xml?d=<path_to_gsa_options.xsd> (Update this to reference the correct location where gsa_options.xsd is located)

2. The following values need to be set in Properties (XML Properties):

   a. file: <path_to_priceLists.xml> (Use forward slashes to separate folders in path)

   b. id_length: 255

   c. numeric_ids: False (pick from Dropdown)

   d. root_ele: gsa-template

   e. schema: (Prefix of DB tables). Use PRICING

3. The following values need to be set in Properties (External DB Properties):

   a. dp_driver: oracle.jdbc.OracleDriver

   b. dp_drop_on_connect: True (pick from Dropdown)

   c. dp_password: Generate the password as follows:

      i. Go to the domain/bin directory.

      ii. Enter the following command: ./encode.sh "-INSTANCE=<Agent>" <password> where Agent is the name of the Standalone Collocated Agent (not the JEE Agent) and password is the password of the RXMDI schema user. Enter the generated password in the dp_password field.

   d. dp_schema: (Name of user used for RXMDI schema)

   e. dp_url: (JDBC URL for RXMDI schema)

   f. dp_user: (Name of user used for RXMDI schema)

   g. dp_varchar_length: 2555

RPM_SOURCE

Follow the instructions here: https://docs.oracle.com/middleware/12212/odi/develop-connectivity-km/files.htm#ODIKM466

This Data Server should reference the RPM Flat Files Source folder.

Create Physical Schemas

Physical schemas need to be created for:

- BDIInterface
- RXMDI
- RXM (PRODUCTION)
- RXM (PUBLISHING)
- RPMLoad
- GSATemplate
- RPM_PRICE
- RPM_SOURCE

Once created, the physical schemas need to be associated with the Physical Topologies.

Create Physical Schemas for each of the Physical Topologies and map the Physical Schemas with the Physical Topologies. Right click each Data Server created in the previous section and click **New Physical Schema**.

Instructions on Creating Physical Schemas for Databases, Files and XML are available here: https://docs.oracle.com/middleware/12212/odi/develop-connectivity-km/partpage1.htm#CDDDFHFE

BDIInterface

Follow the instructions here: https://docs.oracle.com/middleware/12212/odi/develop-connectivity-km/oracle_db.htm#ODIKM429

This Physical Schema should reference the BDI Interface Inbound Schema.

RXMDI

Follow the instructions here: https://docs.oracle.com/middleware/12212/odi/develop-connectivity-km/oracle_db.htm#ODIKM429

This Physical Schema should reference the RXMDI Staging Schema.

RXM (PRODUCTION)

Follow the instructions here: https://docs.oracle.com/middleware/12212/odi/develop-connectivity-km/oracle_db.htm#ODIKM429

This Physical Schema should reference the RXM Production Schema.

RXM (PUBLISHING)

Follow the instructions here: https://docs.oracle.com/middleware/12212/odi/develop-connectivity-km/oracle_db.htm#ODIKM429

This Physical Schema should reference the RXM Publishing Schema.

RPMLoad

Follow the instructions here: https://docs.oracle.com/middleware/12212/odi/develop-connectivity-km/oracle_db.htm#ODIKM429

This Physical Schema should reference the RXMDI Staging Schema.

GSATemplate

Follow the instructions here: https://docs.oracle.com/middleware/12212/odi/develop-connectivity-km/xml_file.htm#ODIKM528

This Physical Schema should reference the productCatalog.xml schema.

RPM_PRICE

Follow the instructions here: https://docs.oracle.com/middleware/12212/odi/develop-connectivity-km/xml_file.htm#ODIKM528

This Physical Schema should reference the priceLists.xml schema.

RPM_SOURCE

Follow the instructions here: https://docs.oracle.com/middleware/12212/odi/develop-connectivity-km/files.htm#ODIKM469

This Physical Schema should reference the RPM Flat Files Source folder.

Associate PROD context with Physical Schema in Logical Topology

Update the Logical Topologies to map the PROD context with the Physical Schemas as described here (#5): http://docs.oracle.com/middleware/12212/odi/administer-develop/setup_topology.htm#ODIAD198

Context Schemas Mapping

Logical Schemas	Physical Schemas (examples)
BDI Interface	BDIIntegratedSchema.BDI_RXM_INT_SCHEMA
GSATemplate	GSATemplate.PRODUCT
RPMLoad	RPM_Load.RXMDI
RPM_PRC	RPM_PRICE.PRICING
RPM_Source	RPM_SOURCE./u00/webadmin/media/source
RXM	RXM.RXMCORE
RXMDI_CommerceStaging	RXMDI.RXMDI
RXMDI_PromoImport	RXMPUB.RXMPUB

Context Agent Mapping

Logical Agents	Physical Agents
OracleDIAgent	OracleDIAgent

3

RXM Installation

Prerequisites

1. Install JDK 8 (1.8.0_112 or higher). Preferably, install the latest JDK 8. Install the Java Cryptography Extension (JCE) Unlimited Strength Jurisdiction Policy Files.

2. RSB instance with the following decorator Paks deployed:
   - OMS
   - OOC
   - RCE
   - RMS
   - ROB

3. An existing ATG 11.3 installation.

4. For BCC setup and configuration, refer to the Commerce 11.3 documentation.

5. A WebLogic 12.2.1.2 domain. An Admin Server is required for securing RXM:
   a. Install WebLogic 12.2.2.1.2.
   b. Install ADR Runtime for JRF Installer in the same Middleware_Home as WebLogic.

   > **Note:** When creating a domain, only the default template is required. Do not select other templates.

6. An Oracle 12c 12.1.0.1.0 database:
   a. Create RXM Production User:
      i. Create user rxmprod identified by rxmprod;
         GRANT CONNECT, RESOURCE, CREATE VIEW TO rxmprod;
         GRANT UNLIMITED TABLESPACE TO rxmprod;
   b. Create RXM Publishing User:
      ii. create user rxmpub identified by rxmpub;
         GRANT CONNECT, RESOURCE, CREATE VIEW TO rxmpub;
         GRANT UNLIMITED TABLESPACE TO rxmpub;

7. For secured installations, the locations of the keystore and truststore to be used to secure the RXM domain.

Installation of RXM

Setting up RXM happens in two phases: installation and configuration. The installation phase puts the RXM application binaries in the right place for the Commerce system to use them.

1. Download the latest *RXM-EPD-16.0.2.zip* from the Oracle Software Delivery Cloud.

2. Extract the *RXM-EPD-16.0.2.zip file* into the root directory of an 11.3 installation of the Commerce Platform.

   RXM is now installed.

RXM Configuration

The second phase of the setup is configuring RXM prior to deployment. This phase involves manual configuration to integrate with an existing RSB instance along with using the Commerce Configuration and Installation Manager (CIM) utility to generate an EAR for deployment.

Manual Configuration

RXM requires the RSB endpoints to be configured for the decorator PAKs mentioned in the prerequisites. Currently, the endpoints are declared in the security.properties file for each integration point. The integration points are in the Base and Loyalty modules.

1. Update the endpoint URLs in the Base module

   The properties files are packaged in the oracle.retail.commerce.base-16.0.2.jar under RXM/Base/lib. They are located here:

   - Gift List: retail/commerce/integration/giftlist/security.properties

   - Purchase History**:** retail/commerce/integration/history/security.properties

   - Inventory: retail/commerce/integration/inventory/security.properties

   - Order**:** retail/commerce/integration/order/security.properties

   - Customer: retail/commerce/integration/profile/security.properties

2. Update the endpoint URL in the Loyalty module.

   The properties file is packaged in the oracle.retail.commerce.loyalty-16.0.2.jar under RXM/Loyalty/lib. It is located here:

   - Loyalty**:** retail/commerce/integration/loyalty/security.properties

3. Update Loyalty Account Configuration based on settings from ORCE.

   These settings are available on the `retail/commerce/integration/loyalty/LoyaltyServiceTransformer` component of the `RXM.Loyalty` module.

   - The component properties file, LoyaltyServiceTransformer.properties, is packaged in the config.jar in `RXM/Loyalty/config` under `retail\commerce\integration\loyalty`.

   - Change the defaults to values provided by the target ORCE instance.

   - The prefix to use when creating loyalty card numbers. This value will be set as the card prefix when creating a new loyalty account for a shopper.

   - The merchant usually sets this up ahead of time in the loyalty service provider's system and is usually limited to 5 numbers.

- The card series to use when generating cards. For example cardPrefix=12345. This value will be set as the card series sequence when creating a new loyalty account for a shopper.

- The merchant usually sets this up ahead of time in the loyalty service provider's system and is usually limited to 2 numbers. For example: cardSeriesSequence=01

4. To secure RXM communications, the security.xml and base security.properties files will need to be manually updated prior to CIM configuration and deployment.

These files are packaged in the oracle.retail.commerce.base-16.0.2.jar under RXM/Base/lib. They are located in the root of the JAR.

- Updates to security.properties:
    - soap.mustunderstand - Boolean: This flag should be set to false when using HTTP so SOAP on the Server side does not need to understand Web Service Security related headers needed for Policy A or B.
    - webservice.user - String: The wallet alias for the user with authorization to use RXM web services, that is, the Policy A user.
    - keystore.path - String: File system path to the keystore RXM should use for TLS communications.
    - keystore.password.alias - String: The wallet alias for the keystore password.
    - keystore.cert.password.alias - String: The wallet alias for the password for host certificate stored in keystore
    - keystore.type - String: The file format of the keystore
    - truststore.path - String: File system path to the truststore RXM should use for TLS communications
    - truststore.password.alias - String: The wallet alias for the truststore password
    - truststore.type - String: The file format of the truststore

- For secured communications with ORCE
    - orce.auth.userName - String: The wallet alias for the ORCE user with authorization to access ORCE web services
    - orce.auth.password - String: The wallet alias for the password of the ORCE user with authorization to access ORCE web services
    - orce.auth.orgId - String: The wallet alias for the organization ID the ORCE user must belong to
    - orce.auth.scheme - String: The encoding scheme for the ORCE authorization header

- For secured communications with OROB:
    - orob.auth.userName - String: The wallet alias for the OROB user with authorization to access OROB web services
    - orob.auth.password - String: The wallet alias for the password of the OROB user with authorization to access OROB web services
    - orob.auth.orgId - String: Blank as this value is not used by the OROB integration
    - orob.auth.scheme - String: The encoding scheme for the OROB authorization header. Generally will be "Basic".

5. For securing the SOAP services hosted by Commerce, insert the web services user into the Commerce repository as described in the RXM as a Server section.

CIM Configuration

Once all of the manual steps have been completed, the Commerce CIM utility can be used to package and deploy the Commerce applications enhanced with the RXM modules. This section will cover the steps added to the CIM tool by RXM. Refer to the Commerce Platform Installation and Configuration Guide for details on using CIM.

1. Start CIM

   a. Open a command console in the Commerce Platform installation area under *home/bin.*

   b. Run cim.sh.

2. Product Selection: The Product Selection prompt has been updated to include RXM as an option. Choose **Retail Extension Module (RXM)** to include the module in the deployment.

   ☝ Product Selection prompt

```
-------PRODUCT SELECTION--------------------------------------------------------
enter [h]Help, [m]Main Menu, [q]Quit to exit
Select product you wish to configure by entering the corresponding item number.
  (Searching for products... done.)
  Choose one of the following options: (* = Currently selected )
  [1]  Oracle Commerce Platform -
         Includes, optionally, data warehouse components
  [2]  Oracle Commerce REST -
          RESTful Web Services
  [3]  Oracle Commerce WebCenter Sites Extensions -
         Includes Commerce Platform and Commerce CAS Reader.
  [4]  Oracle Commerce Core Commerce -
          Includes Commerce Platform and Content Administration. Optional: data
          warehouse components, Preview and Merchandising UI
  [5]  Oracle Commerce Site Administration -
          Includes Commerce Platform and Content Administration
  [6]  Oracle Commerce Platform-Guided Search Integration -
          Includes Commerce Platform. Select this option when Commerce Guided
           Search is used.
  [7]  Content Administration -
          Includes Oracle Commerce Platform.  Optional: Preview
  [8]  Oracle Commerce CAS Reader -
          Includes Commerce Platform. Select this option when Commerce Platform
           is used to import data to Commerce CAS.
  [9]  Retail Extension Module (RXM) -
          Includes Oracle Commerce Core Commerce
  [D]  Done
Select one or more > 9
```

3. Retail Extension Module (RXM) Add-Ons: RXM has also introduced additional AddOns. Select the AddOns for RXM. These are the two sub-modules, Loyalty and Services. Select **Loyalty** and **Services** to enable all of RXM's capabilities.

   ▪ Selecting the Loyalty AddOn will enable the Loyalty features RXM provides (Loyalty program enrollment, loyalty point estimation, and so on.).

   ▪ Selecting the Services AddOn will enable the JAX-WS services provided by RXM in this deployment (Shopping Cart access, Targeted Item lookup, and Item Information).

   RXM AddOns prompt

```
-------RETAIL EXTENSION MODULE (RXM) ADD-ONS----------------------------------------
enter [h]Help, [m]Main Menu, [q]Quit to exit
  Retail Extension Module (RXM) Add-Ons
  [1]  Loyalty - Enables loyalty capabilities in Core Commerce
  [2]  Services - Enables web services published by RXM
  [D]  Done
Select 0 to 2 > 1 2

  Retail Extension Module (RXM) Add-Ons
 *[1]  Loyalty - Enables loyalty capabilities in Core Commerce
 *[2]  Services - Enables web services published by RXM
  [D]  Done
Select 0 to 2 > D
```

   ▪ Database Configuration: Configures the database connection as well as initialized the database schema and loads base data. The RXM modules provide repository extension to base Commerce schema, so the RXM module and any desired sub-modules should be included in both the publishing and production schema.

4

Additional Configurations

This section describes how to configure the SOAP service exposed by RXM.Services called TargetedItemsService once it has been deployed.

How to Configure TargetedItemsService

Locating the Configuration Path of TargetedItemsService

The service is implemented by a component located at

`/retail/commerce/service/targeting/TargetedItemsService.properties`.

A location for this file would be, for example:

- Using regular RXM/ATG installation

  `{ATG_11.3}/RXM/Services/config/config.jar/retail/commerce/service/targeting/TargetedItemsService.properties`

- Where `ATG_11.3` is where Oracle Commerce 11.3 is installed.

  It contains the content TargetedItemsService.properties .

```
#
# The TargetedItemsService returns cross-sell/up-sell items and any targeted
# items returned from the targeter as specified by the targeterPath. Note that
# this service is session-scoped.
#
$class=oracle.retail.commerce.service.targeting.TargetedItemsService
$scope=session

# Tools and Managers
catalogTools=/atg/commerce/catalog/CatalogTools
locationManager=/atg/commerce/locations/LocationManager
nucleusSecurityManager=/atg/webservice/security/NucleusSecurityManager
profileTools=/atg/userprofiling/ProfileTools
targetedItemsServiceTransformer=/retail/commerce/integration/targeting/TargetedItemsServiceTransformer
targetingServices=/atg/targeting/TargetingServices

# Settings
currentLocation=/retail/commerce/service/CurrentLocation
inStoreItemsPropertyName=inStoreItems
targeterPath=/atg/registry/RepositoryTargeters/TargetedItems
```

Configuring theTargeter named TargetedItem

The targeter component that is run by the service is
`/atg/registry/RepositoryTargeters/TargetedItems`. Its rule is defined as:

TargetedItems.properties

```
$class=atg.targeting.DynamicContentTargeter

$description=Targeted products for TargetedItemsService.


profileRepositoryViewName=user
profileRepository=/atg/userprofiling/ProfileAdapterRepository

repositoryViewName=sku
repository=/atg/commerce/catalog/ProductCatalog

overriddenRulesets^=/Constants.null
repositoryViewName=product

#
# Merchant is expected to change this rule in BCC as appropriate.
#
rulesets=\
  <ruleset>\
    <accepts>\
      <rule op\=and>\
        <rule op\=any tag\="Content">\
          <rule op\=matchid>\
            <valueof constant\="mpprod10061">\
            <valueof constant\="mpprod10062">\
            <valueof constant\="mpprod10063">\
          </rule>\
        </rule>\
        <rule op\=any tag\="Environment">\
          <rule op\=eq>\
            <valueof bean\="Location.locationId">\
            <valueof constant\="1">\
          </rule>\
        </rule>\
      </rule>\
    </accepts>\
```

Setting Up the Database

One way to ensure that the targeter rule works is to ensure that:

1. You have a location in the table DCS_LOCATION where LOCATION_ID=1.

2. You have products in the table DCS_PRODUCT that match the three ids listed in the rule above.

Changing the Configuration to Match the Data

The other option is change the ids in the rule, such as changing the product ids and location id to match what is in the database.

1. Create a new TargetedItems.properties file

2. Add new entry for rulesets= to reflect the changes you want.

3. Place the .properties file where Oracle Commerce's Nucleus configuration can find it.

a. An appropriate location would be, for example:
`{ATG_11.3}/home/servers/{server_name}/localconfig/atg/regis try/RepositoryTargeters/TargetedItems.properties`

i. Where `ATG_11.3` is where Oracle Commerce 11.3 is installed.

ii. Where `server_name` is the name of the server given during CIM EAR creation.

4. Restart the server's domain that contains the service.

Data Setup for ORCE Gift List/Wish List

If integrating with ORCE, a new Registry Event Type must be added in ORCE to support the RXM integration with ORCE Gift List/Wish List functionality. Add the Event Type: "OTHER".

RXM Security with Policy A

RXM provides both client access to several RSB services and hosts RSB services. The following sections will describe how to secure both.

RXM as a Client

1. Set up SSL on the WebLogic domain (keystore, truststore, Policy A user, and so on). Refer the the WebLogic 12.2.1.2 documentation for properly configuring SSL.

2. Create an Oracle wallet with the following values. Use the provided CSM tool to create the wallet. Create a file based credential store, such as wallet.

Alias	Username	Password	Comments
webserviceUser	webserviceUser	\<appropriate password>	WebLogic user for web services. **Note:** In case of this property (only), the Alias must be identical to the Username. **Note:** The same user is used for Policy A validationfor all edge apps.
SSLKey	SSLKey	\<appropriate password>	Password for Host certificate stored in Keystore
SSLKeyStore	SSLKeyStore	\<appropriate password>	Password for the Keystore
SSLTrustStore	SSLTrustStore	\<appropriate password>	Password for the Truststore

To Secure Communications with ORCE:

Alias	Username	Password	Comments
ORCEuser	orce.username	<appropriate user>	ORCE user for authorizing ORCE web services
ORCEpassword	orce.password	<appropriate password>	ORCE pwd for authorizing ORCE web services
ORCEorgId	orce.orgId	<appropriate orgId>	ORCE organization Id for ORCE web services

To Secure Communications with OROB:

Alias	Username	Password	Comments
OROBuser	orob.username	<appropriate user>	OROB user for authorizing OROB web services
OROBpassword	orob.password	<appropriate password>	OROB pwd for authorizing OROB web services
OROBorgId	orob.orgId	<appropriate orgId if needed>	OROB organization Id for OROB web services

To Secure Communications with OROMS

Alias	Username	Password	Comments
OROMSuser	oroms.username	<appropriate user>	OROMS user for authorizing OROMS web services
OROMSpassword	oroms.password	<appropriate password>	OROMS pwd for authorizing OROMS web services
OROMSorgId	oroms.orgId	<appropriate orgId if needed>	OROMS organization Id for OROMS web services

3. Update the WebLogic domain with the wallet files. The wallet and its associate files need to be placed in the root of the domain containing RXM. These are the required files:

   - cwallet.sso
   - jazn-data.xml
   - jps-config.xml

   As an example, if the RXM domain is called rxm_domain, the files should be placed in

   `/u00/webadmin/Oracle/Middleware/user_projects/domains/rxm_domain`.

4. Make the following changes to the WebLogic installation.

a. Add the neethi-3.1.0.jar shipped with RXM ahead of the JPS jars in the WebLogic classpath. The neethi-3.1.0.jar will be available in the following location after RXM installation.

Example: `/u00/webadmin/ATG/ATG11.3/RXM/Base/lib/neethi-3.1.0.jar`

b. Add the jps-wls.jar, jps-manifest.jar, and jps-mbeans.jar to the WebLogic classpath *after the* neethi-3.1.0.jar mentioned earlier. These are available in the WebLogic installation.

Example: `/u00/webadmin/Oracle/Middleware/oracle_common/modules/oracle.jps/jps-manifest.jar,`
`/u00/webadmin/Oracle/Middleware/oracle_common/modules/oracle.jps/jps-mbeans.jar`

`/u00/webadmin/Oracle/Middleware/oracle_common/modules/oracle.jps/jps-wls.jar`

c. Add the following to weblogic.policy (or the policy file in use).

Example: `u00/webadminOracle/Middleware/wlserver/server/lib/weblogic.policy`

```
grant codeBase
"file:/u00/webadmin/Oracle/Middleware/user_projects/domains/rxm__domain/server
s/rxm_prod_server/tmp/_WL_user/rxm_product.ear/-" {permission
java.security.AllPermission;};
```

> **Note:** The ear file name and managed server name should match what is selected during installation.

```
grant codeBase
"file:/u00/webadmin/Oracle/Middleware/oracle_common/modules/oracle.jps/-"
{permission java.security.AllPermission;};
```

5. Start the RXM Production and RXM Publishing Managed Servers.

RXM as a Server

The server setup reuses much of the SSL configuration done for the client setup, so there are only two additional steps. For more information on securing the RXM services, refer to the RXM Web Services Security section.

1. Secure the OOC web services with Policy A following the steps provided in the WebLogic documentation. Secure the services indicated below.

2. Import the RXM root certificate into the RSB server's truststore. Because you are communicating over the HTTPS protocol, you'll need to add the appropriate certificates to the appropriate truststores to enable proper authentication. Since the RSB will be calling these services as a client, the RXM server's certificate will need to be placed in the RSB server's truststore.

a. Obtain the RXM server's CA certificate.

b. Use the java Keytool to import the certificate into the RSB server's trust store. Here is an example of importing a certificate (relateder.cer) into a truststore (cacerts).

```
C:\Java\jdk1.8.0_72\jre\lib\security>keytool -importcert -alias relateder
-file \truststore\Relate\relateder.cer -keystore cacerts
```

Enter Keystore (Truststore) password when prompted.

c. Restart the RSB Admin Server.

d. Restart the RSB Managed Server.

3. Set up the user credentials needed for the web services. The RXM JAX-WS services provide two layers of protection: SOAP policy (Username Token over HTTPS) and application level authorization:

a. To enable Username Token over HTTPS, create a new user in the WebLogic security realm. This username and password will need to be provided by any client of the RXM services as part of the SOAP header.

b. To enable application-level authorization, create a new user in the Commerce user repository (refer to Commerce 11.3 documentation) and assign that user the webservices-user-group role created by RXM. This username and password will need to be provided by any client of the RXM services as an HTTP Authentication header (for example: Basic Authentication).

5

RXM Web Services

Services Provided

- Targeted Item Service
- Shopping Cart Service
- Item Information Service

JAX-WS Configuration

The SOAP web services provided by `RXM.Services` use the JAX-WS API, which is different from the JAX-RPC web service (see Web Services Guide) framework provided by the Oracle Commerce Platform. These services provide RSB-based operations for use by other Oracle Retail (and potentially non-Oracle) applications.

The web services are provided with JAX-WS annotations on the appropriate Java class files.

1. @WebService is used to mark classes as web services.

2. @HandlerChain is used to configure each service with reference to the `/com/oracle/retail/ooc/integration/services/<service>/v1/oraclecommercehandler s.xml` path.

The use of annotations means that WebLogic (or other application server) must be told to look for JEE resources. The ooc-service-ejb-16.0.2.jar must be configured as a <module> in the EAR's /META-INF/application.xml for the application server to find the services. The

`oraclecommercehandlers.xml` file configures each service with the JAX-WS SOAPHandler,

`oracle.retail.commerce.service.handler.ServletPipelineHandler`.

The ServletPipelineHandler is used by each service to execute the servlet request pipeline.

Security

Security for RXM is enabled by default. As stated in the RSB Security Guide, web service security is comprised of four parts: authentication, authorization, confidentiality, and integrity. In the RXM.Services module, this primarily means application-level authorization. When fully configured, these four security aspects are accomplished.

PathAuthenticationServlet

RXM.Services by default enables the /atg/dynamo/servlet/dafpipeline/PathAuthenticationServlet Nucleus component within the servlet request pipeline. Additional authenticators are configured for each of the web service's context paths. Each is a UserAuthorityAuthenticator, which uses the database (see below) to check credentials and authorization.

NucleusSecurityManager

Each service component has the NucleusSecurityManager set.

- `/retail/commerce/service/catalog/ItemInformationService`
- `/retail/commerce/service/order/ShoppingCartService`
- `/retail/commerce/service/targeting/TargetedItemsService`

To disable the user authorization provided by these services, set the NucleusSecurityManager to null (that is, nucleusSecurityManager=). In this configuration, the service will not check functional access thus disabling authorization for that service. Use this configuration if the application server (that is, WebLogic) is managing all user authentication and authorization duties.

Functional Access

Each service component will check the HTTP request's (see DynamoHttpServletRequest) user for access to that service's functional name. The user will not be set onto the `DynamoHttpServletRequest` unless `PathAuthenticationServlet` (see above) is enabled. In this case, access will be denied (unless `NucleusSecurityManager` is unset [see above]). The service's functional name is formatted as "Component Name <dot> Operation Name". For example, `TargetedItemsService.queryTargetedItems`.

RXM.Services loads these functional names into the `/atg/webservice/security/NucleusSecurityRepository` during installation and database initialization. The database tables involved in the data setup of functions and users are

- `DAS_ACCOUNT`
- `DAS_GROUP_ASSOC`
- `DAS_NS_ACLS`
- `DAS_NUCL_SEC`

User Setup

RXM.Services will also load a group (or role) called "webservices-user-group" into the /atg/dynamo/security/AdminSqlRepository during installation and database initialization. This group is given access to the above functional names.

The user that has the webservices-user-group role will need to be manually created. This user is not created by the installation or configuration process.

Troubleshooting

HTTP requests to the deployed JAX-WS SOAP web service musts provide a Basic "Authorization" header token that matches the user setup in WebLogic and the same in the `DAS_ACCOUNT` table.

A bad username or password set up will result in a "401 Unauthorized" response.

Here are additional options to set when making a request:

1. Provide authorization credentials "preemptively". This assures the request has the "Authorization" header token when it is challenged by the app server and then passed to the application.

   If you do not provide "Authorization" header preemptively, then you may see a response like:

```
<faultstring>Security token failed to validate.
weblogic.xml.crypto.wss.SecurityTokenValidateResult@2971ce8d[status: false][msg
UNT Error:A duplicated nonce is found! vRuyx7NIC2ChC8qHWlkheg==]</faultstring>
```

2. Set request option "WSS-Password Type" to "PasswordText". The application expects to be able to read the credentials as text. The credentials and request are encrypted by the TLS layer. If you do not set "PasswordText", then you may see the following response.

```
<faultstring>Error on verifying message against security policy Error codes:
1001 1021 Error codes: 1001 1021</faultstring>
```

3. Set request option "WSS TimeToLive" to 5000 (5 seconds) or similar.

If you do not set "WSS TimeToLive", then you may see the following response.

```
<faultstring>Timestamp validation failed.</faultstring>
```

A

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 Warehouse Management System (RWMS)
5. Oracle Retail Invoice Matching (ReIM)
6. Oracle Retail Price Management (RPM)
7. Oracle Retail Allocation
8. Oracle Retail Mobile Merchandising (ORMM)
9. Oracle Retail Customer Engagement (ORCE)
10. Oracle Retail Xstore Office
11. Oracle Retail Xstore Point-of-Service, including Xstore Point-of-Service for Grocery, and including Xstore Mobile
12. Oracle Retail Xstore Environment
13. Oracle Retail EFTLink
14. Oracle Retail Store Inventory Management (SIM), including Mobile SIM
15. Oracle Retail Predictive Application Server (RPAS)
16. Oracle Retail Predictive Application Server Batch Script Architecture (RPAS BSA)
17. Oracle Retail Demand Forecasting (RDF)
18. Oracle Retail Category Management Planning and Optimization/Macro Space Optimization (CMPO/MSO)
19. Oracle Retail Replenishment Optimization (RO)
20. Oracle Retail Regular Price Optimization (RPO)
21. Oracle Retail Merchandise Financial Planning (MFP)
22. Oracle Retail Size Profile Optimization (SPO)
23. Oracle Retail Assortment Planning (AP)
24. Oracle Retail Item Planning (IP)
25. Oracle Retail Item Planning Configured for COE (IP COE)
26. Oracle Retail Advanced Inventory Planning (AIP)
27. Oracle Retail Integration Bus (RIB)
28. Oracle Retail Service Backbone (RSB)
29. Oracle Retail Financial Integration (ORFI)

30. Oracle Retail Bulk Data Integration (BDI)
31. Oracle Retail Integration Console (RIC)
32. Oracle Commerce Retail Extension Module (ORXM)
33. Oracle Retail Data Extractor for Merchandising
34. Oracle Retail Clearance Optimization Engine (COE)
35. Oracle Retail Analytic Parameter Calculator for Regular Price Optimization (APC-RPO)
36. Oracle Retail Insights, including Retail Merchandising Insights (previously Retail Merchandising Analytics) and Retail Customer Insights (previously Retail Customer Analytics)
37. Oracle Retail Order Broker (OROB)
38. Oracle Retail Order Management (OROMS)