Oracle® Retail Store Inventory Operations Cloud Services

Implementation Guide

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Preface

This document provides critical information about the processing and operating details of Oracle Retail Store Inventory Operations Cloud Services.

Audience

This document is for:

- Systems administration and operations personnel
- Systems analysts
- Integrators and implementers

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Related Documents

For more information, see the following documents in the Oracle Retail Store Inventory Operations Cloud Services Release 19.4 documentation set:

- *Oracle Retail Enterprise Inventory Cloud Service Administration Guide*
- *Oracle Retail Enterprise Inventory Cloud Service Security Guide*
- *Oracle Retail Enterprise Inventory Cloud Service User Guide*
- *Oracle Retail Store Inventory Operations Cloud Services Release Notes*
- *Oracle Retail Store Inventory Operations Cloud Services Data Model*
- *Oracle Retail Store Operations Cloud Service Mobile Guide*
- *Oracle Retail Store Operations Cloud Service User Guide*

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Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1

Oracle SIOCS Implementation Overview

EICS (Enterprise Inventory Cloud Service) and SOCS (Store Operations Cloud Service) are two separately licensed products.

EICS includes:

- EICS Browser Client
- EICS Web Services
- EICS Server Tier
- EICS Database tier with data access code, batches, reports

SOCS includes:

- Oracle MAF Client

In order to use SOCS, EICS needs to be deployed.

The implementation process includes a needs assessment, business impact analysis, requirements gathering, and other activities. However, this document is concerned only with the specific aspects of a technical implementation. In a typical project life cycle, technical implementations can begin only after the environment has been provisioned. Once a subscription agreement has been signed and Service Activation Request is logged, the Oracle Cloud team will start the provisioning process.

Once the account is provisioned, the Oracle Cloud team provides the following:

- URL to access the EICS Application User Interface (UI) for production and staging environments.
- One Customer Delegate Administrator user account.
- URLs to access the various web services associated with the staging and production environments.
- Details about accessing the SFTP sites.

Noteworthy Differences between V16.x/on premise (SIM) and SIOCS (cloud)

- **UI**: No Wavelink UI, No Swing UI. Uses Oracle JET (JavaScript extension technology) based UI for Administration & Oracle MAF (mobile application framework) for mobile UI.
- **Server**: No change in technology. Some changes to support modified/new functionalities.
- **Database**: Minimal schema change.

- **Integration**: Integrates with RICS (Retail Integration Cloud service). RICS includes RSB (retail service bus), BDI (bulk data integration), RIB (retail integration bus).

- **Data Seeding**: Now uses BDI (bulk data integration).

- **Security model**: "hybrid" model

  - AuthN: using IDCS or OCI IAM/WTSS

  - AuthZ: within EICS administration UI

- **Batch scheduling**: Internal to EICS. It has a batch scheduler interface.

- **Printing**: Reports would be downloaded to UI. Users can then print from UI.

- **Deployment**: Standardized cloud deployment model.

Oracle Retail Integration Components

EICS requires others systems, such as a merchandising system, to provide foundation (item, location, and so on) and transaction data (purchase order, stock order) to operate. This would be integrated through RICS (Retail Integration Cloud Service) that provides RIB/RSB/BDI.

EICS integrates out of the box with Oracle Retail Merchandising System (RMS) or Oracle Retail Merchandising Foundation Cloud Service (RMFCS).

All other web services based integration (such as with Point of Sale and Oracle Retail Order Broker systems) exist as well.

The following Integration Infrastructures are required for EICS to integrate with external systems:

- RICS (Retail Integration Cloud Service).

  - RSB (Retail Service Bus)

  - BDI (Bulk Data Integration Components)

  - RIB (Retail Integration Bus for Asynchronous message processing).

For more details, see the information on integration in the *Oracle Retail Enterprise Inventory Cloud Service Administration Guide*.

Implementation Considerations

In general, a technical implementation involves the following key steps areas:

- Setup Users

- Signing into EICS

- System Configurations

- Batch Job Admin

- Initial Data Seeding

- Report Configurations

- Store Configurations

- Internationalization and Localization

- Integrations

- Mobile Application (SOCS)

URL Reference

The EICS URLs required for reporting, apex data viewer, EICS to RICS Message Publishing and Web service APIs will need to be formed using the format provided in the *Oracle Retail Enterprise Inventory Cloud Service Administration Guide.*

2

EICS Cloud Deployment Environment

The Cloud deployment has a single tenant deployment model. For each cloud customer, there will be three clustered/RAC instances:

Cloud Deployment Environment

The Cloud deployment has a single tenant deployment model. For each cloud customer, there will be three clustered/RAC instances:

- Production
- Disaster Recovery (DR)
- Stage

An additional environment for testing could be requested with additional costs.

The following table lists the components of a standard Cloud deployment:

Server	Notes
Oracle WebLogic Application server	Clustered with 2 nodes.
WTSS / IDCS or OCI IAM	Web Tier Security Service that handles all user authentication via Oracle Identity Cloud Service or Oracle Cloud Infrastructure Identity and Access Management.
Oracle DB server / DBaaS	RAC enabled.
SFTP Server	Used for file transfers between products.
OBIEE (BIPublisher)	Used as a reporting engine.

For more details, see the *Oracle Retail Enterprise Inventory Cloud Service Administration Guide*.

Technical Stack
- Oracle WebLogic 12.2.1.4
- Oracle Database 19 C
- WTSS / IDCS or OCI IAM
- Oracle Mobile Application Framework (MAF) 2.6.2
- Oracle JavaScript Extension Toolkit (JET) 8.3
- OBIEE/ Oracle BI Publisher 12.2.1.4

3

Setup Users

By default, EICS provision one system operator user account and one customer delegate administrator user account. The customer delegate cloud administrator may create additional application admin accounts and implementation user account. Customer cloud administrator may also create a customer security admin user to manage users.

Terminology

This section defines Security Terms used throughout this document.

Table 3–1   Security Terms

Term	Definition
Application Administrator	A customer application admin user who can perform application configurations via EICS admin screen.
Application Implementer	System implementer is user who implements the application.
Application Role	An application role is a collection of users and other application roles. Application roles are defined in applications and they are not necessarily known to a Java Container.
Application System Operator	Application system operator user can perform application setup and configurations, including operations which are restricted to other application users.
Customer Cloud Administrator	A delegated customer cloud user for customer cloud management tasks, for example create customer security admin user, and other users.
Customer Security Admin	A customer security admin user who can create customer users and assign application roles.
Enterprise Group	An enterprise group is a collection of users and groups. Enterprise groups are defined in security store, and are known to java EE server container.
Store Manager	A user who performs store manager role.
Store User	A user who performs store operations with assigned role permissions.
User	A user is an end-user accessing a service or application.

User Types and Responsibilities

Users in SIOCS are divided into the following types based on their job duties.

Table 3–2   User Types and Responsibilities

User Type	Responsibilities
Application Implementer	Data Seeding Configuration
	Operation Issues
Customer Cloud Administrator	Create Additional App Users
Security Admin	
Application Administrator	Configure System
	Configure Store
Store Manager	Store Management
Store User	Store Operations
Retail Home User	A user who can access EICS tile reports on Retail Home and navigate to related operational views in EICS from there.

In addition to application users, integration users need to be setup based on integrated applications.

User Access Control

Users of SIOCS have roles through which they gain access to functions and data.

Security implementation involves the management of:

- Assign security groups to corporate operational users
- Assign application roles to store users

Assign Customer-Cloud-Admin User and Security-Admin User

Before the Retailer's initial customer cloud admin user can access the Oracle Retail Store Inventory Operations Cloud Service (SIOCS) applications, it is necessary to provision the user access to the system and assign Oracle Identity Cloud Service (IDCS) or Oracle Cloud Infrastructure Identity and Access Management (OCI IAM) application roles listed below.

- all_users
- admin_users
- batch_users
- full_permission_users
- global_store_users
- mps_users
- psraf_users
- security_users

The initial customer admin user can create or manage other user provisioning via IDCS or OCI IAM.

Users also need to be assigned application roles via SIOCS Security Admin Role permission console. For details on how to use the SIOCS administration screens, see the *Oracle Retail Enterprise Inventory Cloud Service Security Guide* and the *Oracle Retail Enterprise Inventory Cloud Service User Guide* Security chapter.

Assign Implementation Users

Implementation users perform the key setup tasks to start your implementation. As part of initial setup, add an implementation user, and give them login credentials and the url for your Oracle Applications. The Cloud service administrator may setup additional users for performing implementation tasks. To create implementation users and the data roles for performing the tasks, the service administrator performs following tasks:

- Create Implementation users and assign appropriate security IDCS or OCI IAM Application Roles in IDCS or OCI IAM

- Assign SIOCS Application Roles in SIOCS Security Admin Console to implementation users, optionally you can create custom roles and data roles to assign to implementation users

Users also need to be assigned application roles via SIOCS Security Admin Role permission console. For details on how to use the SIOCS administration screens, see the *Oracle Retail Enterprise Inventory Cloud Service Security Guide* and the *Oracle Retail Enterprise Inventory Cloud Service User Guide* Security chapter.

Assign Store Users

The Customer security admin user will need to setup the additional application users and store users using IDCS or OCI IAM, and assign EICS application permissions and stores to store users via SIOCS Security Users Screens.

Store assignments control the stores available for a user to login to. Users can be assigned access to specific stores through the SIOCS security admin UI.

Steps to setup users and permissions:

- Custom Security Admin creates application users in Oracle Identity Cloud Service (IDCS) or Oracle Cloud Infrastructure Identity and Access Management (OCI IAM)

- Assign IDCS or OCI IAM Application Roles which are applicable to application users based on their job duties

- Define Custom Roles for non-Administrator role. You may assign the Default ADMINISTRATOR role to admin user.

- Assign permissions to Role:

  EICS defines two default application roles (ADMININISTRATOR and MANAGER), you may define custom roles to control user accesses based on job duties. There are 350+ roles permissions that decide how users access functionality. For details, see the *Oracle Retail Enterprise Inventory Cloud Service Administration Guide* - Configuration chapter.

- Assign user to roles and stores:

  Once stores are seeded into EICS, in SIOCS Security screen, customer security admin can assign users to stores, application roles. You may assign a single user to stores, or use SIOCS UI Spreadsheet Data Loader to upload user role assignments.

See *Oracle Retail Enterprise Inventory Cloud Service Security Guide* - Application Security chapter, Mass Assigning Roles and Stores section and SIOCS UI Spreadsheet Data Loader.

4

Signing into EICS

When you launch the EICS URL, you are re-directed to Login screen.

Login Screen

Use the EICS login screen to sign in the EICS application.

Oracle Identify Cloud Service (IDCS) or Oracle Cloud Infrastructure Identity and Access Management (OCI IAM) requires you to provide a valid user ID and password set up in IDCS or OCI IAM, and select **Sign In**. The user must also be assigned proper roles and permissions within EICS.

Successful Login

If the User ID and password are valid, IDCS or OCI IAM authenticates the user, and if the user is configured in EICS, the system logs the user in.

Un-Successful Login

Please see Troubleshooting Tips.

5

System Configurations

There are 200+ system configuration settings applicable across the product functionalities. Depending on which functionality would be used, please read and configure settings accordingly.

Users with ADMINSTROR application role and admin_users IDCS or OCI IAM Application Role have permissions to update configurations. Some of restricted configuration settings requires users to have sysop_users IDCS or OCI IAM Application Role.

For more information on configuration please see *Oracle Retail Enterprise Inventory Cloud Service Administration Guide* - Configuration chapter.

Summary of Admin System Configurations Topics

The property settings that displayed on the Configure System Screen are listed below in groups:

- Admin Configurations
- Audit Configurations
- Batch Configurations
- Functional Areas Related Configurations
- Message Processing Configurations
- Mobile Configurations
- Notification Configurations
- Purge Configurations
- System and Integration Web Service Configurations
- Time Zone Configurations
- UI Configurations

Admin Configurations

Table 5–1   Admin Configurations

Configuration Topic	Descriptions
Admin	Configurations under this topic contains general application admin settings. See *Oracle Retail Enterprise Inventory Cloud Service Administration Guide* - Configuration chapter for details.

Audit Configurations

Table 5–2   Audit Configurations

Configuration Topic	Descriptions
Audit	Configurations under this topic contains auditing settings. See *Oracle Retail Enterprise Inventory Cloud Service Administration Guide* - Configuration chapter for details.

Batch Configurations

Table 5–3   Batch Configurations

Configuration Topic	Descriptions
Batch	Configurations under this topic contains settings for batch settings, such as file import path, sftp locations, and so on.

Batch File Configurations

At the time of provisioning, the Oracle Cloud team configures an SFTP server to facilitate the import and export of the batch files in and out of the cloud service. The batch file paths are set during EICS application installation. If the paths changed after installation, system operator may update the path using EICS system configuration screen.

Functional Areas Related Configurations

Table 5–4   Functional Area Specific Configurations

Configuration Topic	Descriptions
Carton Lookup	Configurations under this topic contains settings for Container Lookups.
Customer Order	Configurations under this topic contains settings for Customer Order Fulfillment.
DSD Receiving	Configurations under this topic contains settings for Direct Store Receiving.
Inventory Adjustment	Configurations under this topic contains settings for Inventory Adjustment.
Item Basket	Configurations under this topic contains settings for Item Basket.
Item Lookup	Configurations under this topic contains settings for Item Lookup.
Item Price	Configurations under this topic contains settings for Item Price.

Table 5–4   (Cont.) Functional Area Specific Configurations

Configuration Topic	Descriptions
Ops	Configurations under this topic contains settings related to specific functional area operations.
RTV	Configurations under this topic contains settings for Return to Vendor.
RTV Shipment	Configurations under this topic contains settings for Return to Vendor Shipment.
Shelf Replenishment	Configurations under this topic contains settings for Shelf Replenishment.
Stock Counts	Configurations under this topic contains settings for Stock count.
Transfer Receiving	Configurations under this topic contains settings for transfer receiving.
Transfer Shipment	Configurations under this topic contains settings for transfer shipment.
transfers	Configurations under this topic contains settings for transfers.
UIN	Configurations under this topic contains settings for Item Unique Identification Number processing Configurations.

Message Processing Configurations

Table 5–5   MPS Configurations

Configuration Topic	Descriptions
MPS	Configurations under this topic contains settings for MPS (Message Processing).
	See *Oracle Retail Enterprise Inventory Cloud Service Administration Guide -* Configuration chapter for details.

Mobile Configurations

Table 5–6   Mobile Configurations

Configuration Topic	Descriptions
Mobile	Configurations under this topic contains settings for Mobile Client.
	See *Oracle Retail Enterprise Inventory Cloud Service Administration Guide -* Configuration chapter for details.

Notification Configurations

Table 5–7   Notification Configurations

Configuration Topic	Descriptions
Notification	Configurations under this topic contains settings for notification settings.
	See *Oracle Retail Enterprise Inventory Cloud Service Administration Guide -* Configuration chapter for details.

Purge Configurations

Table 5–8   Purge Configurations

Configuration Topic	Descriptions
Purge	Configurations under this topic contains settings for data purge, such as days to hold, and so on.
	See *Oracle Retail Enterprise Inventory Cloud Service Administration Guide -* Configuration chapter for details.

System and Integration Web Service Configurations

Table 5–9   System and Integration Web Service Configurations

Configuration Topic	Descriptions
System Setting	Configurations under this topic contains settings for generic system configurations, and so on, external web service URLs, and system setting refresh rates, and so on.
	See *Oracle Retail Enterprise Inventory Cloud Service Administration Guide -* Configuration chapter for details.

Time Zone Configurations

Table 5–10   Time Zone Configurations

Configuration Topic	Descriptions
TIME ZONE	Configurations under this topic contains settings to determine if GMT time zone settings are used.
	See *Oracle Retail Enterprise Inventory Cloud Service Administration Guide -* Configuration chapter for details.

UI Configurations

Table 5–11   UI Configurations

Configuration Topic	Descriptions
UI	Configurations under this topic contains UI related settings, such as UI search limits, and so on.
	See *Oracle Retail Enterprise Inventory Cloud Service Administration Guide -* Configuration chapter for details.

6

Batch Job Admin

Batch Scheduler

EICS provides a batch scheduler interface that allows customers to enable/disable batch jobs and schedule batches with specific intervals.

Please note this is part of EICS itself.

For more details, see the information on batches in the *Oracle Retail Enterprise Inventory Cloud Service Administration Guide* Batches Chapter- Job Scheduler.

Batch Activity

Admin users and system operator can view batch job activities via EICS Batch Job Admin Screen.

See *Oracle Retail Enterprise Inventory Cloud Service Administration Guide* Batch Job Admin Chapter- Job Admin screen.

7
Initial Data Seeding

Initial Data Seeding

Data seeding is a process where EICS seed enterprise foundation information from external system, such as merchandise hierarchy, items, locations, items, suppliers, and related data.

EICS data seeding uses the Oracle Retail Bulk Data Integration (BDI) process to load source data from sourcing system into the EICS.

See *Oracle Retail Enterprise Inventory Cloud Service Administration Guide* - Data Seeding chapter.

8

SIOCS UI Spreadsheet Data Loader

Use EICS Spreadsheet Data Loader to upload data to the EICS application tables from spreadsheets. Spreadsheet Data Loader is applicable to small or medium data file up to a few Megabytes.

EICS UI spreadsheets loader provides following features:

- Download the templates
- Upload user store assignments
- Upload user role assignments
- Data Validations

Upload Store Assignments

You can assign users to stores using EICS Spreadsheet data loader in EICS Admin Security screen. User must exist in credential store (for example, IDCS or OCI IAM).

You must have the Application Administrator job role or privileges.

Spreadsheet Templates

UserAssignmentsTemplate.xlsx/Store Assignments:

Table 8–1   Spreadsheet Templates

Field	Description	Required
Action	The assignment action, choose value from dropdown, assign, revoke.	Yes
Action Value	N/A	No
Username	The username to assign the store.	Yes
Store ID	The store Id to assign to user.	Yes

See *Oracle Retail Enterprise Inventory Cloud Service Security Guide* and *Oracle Retail Enterprise Inventory Cloud Service User Guide* Security chapter.

Upload Role Assignments

You can assign users to roles using EICS Spreadsheet data loader in EICS Admin Security screen. User must exist in credential store (for example, IDCS or OCI IAM).

The role must exist in EICS.

You must have the Application Administrator job role or privileges.

Spreadsheet Templates

UserAssignmentsTemplate.xlsx/Role Assignments:

Table 8–2   Spreadsheet Templates

Field	Description	Required
Action	The assignment action, choose value from dropdown, assign, revoke.	Yes
Action Value	N/A	No
Username	The username to assign the store.	Yes
Role Name	The role name to assign to user.	Yes
Store ID	The store Id to assign to user.	No
Start Date	User start date.	No
End Date	User end date.	No

See *Oracle Retail Enterprise Inventory Cloud Service Security Guide* and *Oracle Retail Enterprise Inventory Cloud Service User Guide* Security chapter.

9

Report Configurations

EICS ships with around 30+ built-in operational reports. These reports are requested from the EICS user interface. The reports are displayed in PDF on the EICS user interface. These reports cannot be modified.

See *Oracle Retail Enterprise Inventory Cloud Service Administration Guide* Reporting chapter and *Oracle Retail Enterprise Inventory Cloud Service Administration Guide* Appendix D: Report Formats.

10

Store Configurations

Once stores are seeded into EICS, you can change default store configurations.

There are 100+ configuration settings applicable specific for a store(s).

Users with ADMINSTROR application role and admin_users IDCS or OCI IAM Application Role have permissions to change store configurations.

Store Admin UI also provides mass store configuration updates features to update configurations for all stores or list of stores.

For details, see the *Oracle Retail Enterprise Inventory Cloud Service Administration Guide* Configuration chapter.

11

Mobile Application (SOCS)

SOCS is a hybrid mobile platform that gets distributed through a mobile application archive (.maa) file from the Oracle Software Delivery Cloud (OSDC). Go to `https://edelivery.oracle.com` and search for **Store Operations Cloud Service** to get the mobile archive file. This .maa needs to be built into either an Android build (apk) or an iOS build (ipa).

SOCS can also be downloaded as an application from Google Play Store.

For details, see the *Oracle Retail Store Operations Cloud Service Mobile Guide*.

Configure Manual Quantity Entry Mode

For MAF client, you need to set the numeric entry popup on MAF will have its mode defaulted to either scan mode or override mode.

For details, see the *Oracle Retail Enterprise Inventory Cloud Service Administration Guide* Configuration chapter.

Enable Mobile Functionalities

By default, the EICS application installer set following value as false.

`input.sim.mobile.client.enabled = false`

By disabling **Access Execution UI**, Mobile Client (SOCS) access on following functional areas are disabled. If a customer has purchased SOCS licenses then following access permissions need to be enabled in order to use these functionalities on mobile client.

- Access Execution UI
- Access Inventory Adjustments
- Access DSD Receiving
- Access RTV
- Access RTV Shipment
- Access Transfer
- Access Transfer Shipment
- Access Transfer Receiving
- Access Customer Order
- Access Stock Count

- Access Shelf Replenishment
- Access Open Transactions
- Access Notifications
- Access Item Basket

12

Internationalization and Localization

SIOCS supports translation into following locales out of the box:

1. Arabic

2. Chinese (Simplified)

3. Chinese (Traditional)

4. Croatian

5. Dutch

6. English

7. French

8. German

9. Greek

10. Hungarian

11. Italian

12. Japanese

13. Korean

14. Polish

15. Portuguese (Brazilian)

16. Russian

17. Spanish

18. Swedish

19. Turkish

Extension hook for adding new locales

Translation records for these new locales have been defaulted to English.

Translation value can be updated for these locales by accessing administration screen on EICS Admin UI.

1. Albanian

2. Armenian

3. Azerbaijani

4. Belarusian

5. Bengali

6. Bosnian

7. Bulgarian

8. Burmese

9. Czech

10. Danish

11. Estonian

12. Filipino

13. Finnish

14. Georgian

15. Hebrew

16. Hindi

17. Indonesian

18. Kazakh

19. Khmer

20. Lao

21. Latvian

22. Lithuanian

23. Malay

24. Norwegian

25. Romanian

26. Serbian

27. Slovak

28. Slovene

29. Thai

30. Ukrainian

31. Urdu

32. Uzbek

33. Vietnamese

EICS Admin UI translations relies on following two bundle categories:

1. Framework bundles: owned by Oracle JET and Oracle Retail platform team.

2. EICS bundles: owned by EICS.

These bundles are merged at runtime to provide an overall translation bundle which is used to provide translated UI content.

For updating Oracle provided translations Administration UI provides a setup screen.

For more details, see the information in the *Oracle Retail Enterprise Inventory Cloud Service Administration Guide* Internationalization chapter.

SOCS (built using Oracle MAF) follows an XML format to organize translation records within a translation bundle. Each supported locale will have its on XLF file. For example, translations for French locale could be found under **xxxMobileViewControllerBundle_fr.xlf** file. For information on how to update the mobile translations, see the *Oracle Retail Store Operations Cloud Service Mobile Guide*.

13

Operational Monitoring

To assist system operators and implementers to view operational issue, following tools can assist users with job monitoring activities.

View Operational Issues through EICS Admin UI

To view EICS application operational issues, EICS provides an Operational Issues Admin UI, users who have sysop_users IDCS or OCI IAM Application Role have permissions to access the page. For details, see *Oracle® Retail Enterprise Inventory Cloud Service Administration Guide*.

EICS DB Data Viewer User

In addition to data sources users, EICS database installation also creates a DB data viewer user.

This user has read permissions to all tables/synonyms owned by EICS master schema. This DB data viewer user can be used by system implementer or system operator to perform necessary job monitoring activities. This user has the following database roles assigned to it:

- sim_business_viewer
- sim_admin_viewer
- sim_mps_viewer
- sim_bdi_viewer
- sim_security_viewer
- sim_rib_viewer

14

Integrations

This chapter describes the integration setup within EICS to Integrate with other systems.

For completed integration interfaces, see *Oracle® Retail Enterprise Inventory Cloud Service Administration Guide* - Integration chapter.

- Foundation Data Integration with Foundation Data Cloud Service

- Pricing Integration with Retail Pricing Cloud Service

- Pricing Integration with 3rd Party

- Pricing Imports with On-premise RPM

- RFID Integrations

- Stock Count Export Integration with MFCS

- Sale Data Integration with POS and ReSA

- Stock Count Import with 3rd Party

- Inventory Available Warehouse TX with 3rd Party

- Web Service: Integration with Generic Order Mgmt System

- Web Service: Integration with Manifest System

- Web Service: Integration with External System for Ticket Printing

- Web Service: Integration with External System for Notification Services

- ZPL Printing

- Non-ZPL Printing

- RIB Integration Guidance (From SIOCS Perspective)

- Xstore Integration

- Other Integration Interfaces

Foundation Data Integration with Foundation Data Cloud Service

The following diagram depicts integrations between EICS and MFCS using Oracle RICS.

Figure 14–1   Integrations between EICS and MFCS
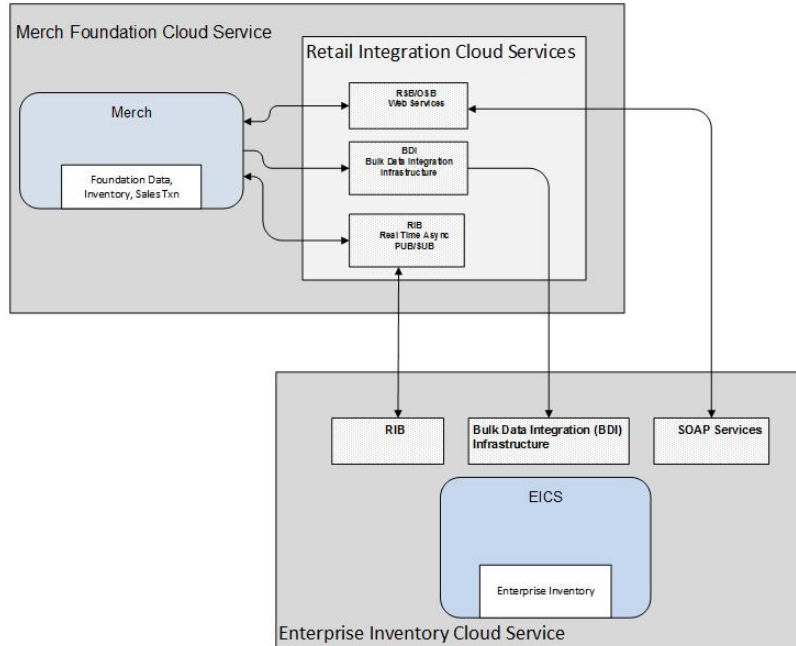
For a complete list of integration details, see:

- *Oracle Retail Enterprise Inventory Cloud Service Administration Guide* Integration chapter

- *Oracle Retail Enterprise Integration Overview Guide*

- *Oracle Retail Bulk Data Integration Implementation Guide*

- *Oracle Retail Enterprise Integration Guide*

Pricing Integration with Retail Pricing Cloud Service

Clearance Transaction Import

See *Oracle® Retail Enterprise Inventory Cloud Service Administration Guide* Batch Chapter: Clearance Transaction Import

Price Change Transaction Import

See *Oracle® Retail Enterprise Inventory Cloud Service Administration Guide* Batch Chapter: Price Change Transaction Import

Promotion Offer Import (N/A): Require Filed Enabled Integration

SIOCS does not consuming Oracle Retail Pricing Cloud Service Interface PromotionOffer_Tx, It requires field enabled integration. At this point, the pricing service does not post promotion price by item/date, so there is nothing for SIOCS to consume. SIOCS does have a generic promotion interface for the retailer to integrate promotion price into.

Pricing Integration with 3rd Party

BDI Implementation Considerations

To load third party data into EICS via BDI, external system need to provide data sourcing implementations.

There are two approaches for data sourcing implementations.

BDI Ext-EdgeApp Approach:
With this approach, the BDI Ext Process Flow will move the data from sourcing system to destination system's application table. BDI process flow provides BDI job scheduling, end to end data transportation from sourcing system's database table into destination application's tables.

Customer need to implement the BDI Ext-EdgeApp to move data into the BDI outbound interface table.

BDI Process Flow: ExtPrice_Tx_ProcessFlow_From_EXTERNAL

See *Oracle Retail Enterprise Integration Overview Guide*: BDI Third Party Integrations

BDI CLI File transmitter Approach:
BDI CLI File Transmitter is a client command line tool, is applicable for smaller data file size which does not require concurrent processing.

BDI CLI file transmitter only transport data files from sourcing systems to destination system's interface tables. It does not provide end to end data transportation. If you choose BDI CLI File transmitter for load third party data into EICS application table, it would require three steps:

1. Download BDI CLI File Transmitter and install on customer's system.

2. Run BDI CLI Transmitter batch to load data file from sourcing system into destination system's interface table.

3. Once the data are loaded into receiver app's inbound interface tables, EICS's importer job will move the data from inbound interface table into EICS app tables.

> **Note:** By default, batch scheduler **Third Party Price Import** in EICS is disabled; this job should only be enabled if you choose to use BDI CLI File transmitter for data sourcing provider.

See *Oracle® Retail Enterprise Inventory Cloud Service Administration Guide* Integration chapter.

Pricing Imports with On-premise RPM

Price Change Import (On Premise RPM):
See *Oracle® Retail Enterprise Inventory Cloud Service Administration Guide* Batch Chapter: Price Change Import

Clearance Price Change Import (On Premise RPM):

See *Oracle® Retail Enterprise Inventory Cloud Service Administration Guide* Batch Chapter: Clearance Price Change Import

Promotion Price Change Import (On Premise RPM):

See *Oracle® Retail Enterprise Inventory Cloud Service Administration Guide* Batch Chapter: Promotion Price Change Import

RFID Integrations

Oracle Retail has enabled RFID functionality across various Retail products.

For RFID overview, see Appendix: RFID.

RFID BDI Implementation Considerations

To load third party data into EICS via BDI, external system need to provide data sourcing implementations.

There are two approaches for data sourcing implementations.

BDI Ext-EdgeApp Approach:

With this approach, the BDI Ext Process Flow will move the data from sourcing system to destination system's application table. BDI process flow provides BDI job scheduling, end to end data transportation from sourcing system's database table into destination application's tables.

Customer need to implement the BDI Ext-EdgeApp to move data into the BDI outbound interface table.

BDI Process Flow: ExtRfid_Tx_ProcessFlow_From_EXTERNAL

See *Oracle® Retail Enterprise Integration Overview Guide*: BDI Third Party Integrations

BDI CLI File transmitter Approach:

BDI CLI File Transmitter is a client command line tool, is applicable for smaller data file size which does not require concurrent processing.

BDI CLI file transmitter only transport data files from sourcing systems to destination system's interface tables. It does not provide end to end data transportation. If you choose BDI CLI File transmitter for load third party data into EICS application table, it would require three steps:

1. Download BDI CLI File Transmitter and install on customer's system.

2. Run BDI CLI Transmitter batch to load data file from sourcing system into destination system's interface table.

3. Once the data are loaded into receiver app's inbound interface tables, EICS's importer job will move the data from inbound interface table into EICS app tables.

> **Note:** By default, batch scheduler **Third Party RFID Import** in EICS is disabled; this job should only be enabled if you choose to use BDI CLI File transmitter for data sourcing provider.

See *Oracle® Retail Enterprise Inventory Cloud Service Administration Guide* Integration chapter.

Stock Count Export Integration with MFCS

Stock Count Export

When a Unit Amount stock count is authorized, a Unit and Amount Stock Counts Export file is generated.

See *Oracle® Retail Enterprise Inventory Cloud Service Administration Guide* Appendix: Unit and Amount Stock Counts Export.

Sale Data Integration with POS and ReSA

POS Transaction Import Batch

> **Note:** Oracle Retail Xstore POS does not use this batch to integrate with SIOCS.

See:

- *Oracle® Retail Enterprise Inventory Cloud Service Administration Guide* Batch chapter
- *Oracle® Retail Enterprise Inventory Cloud Service Administration Guide* Integration chapter

Retail Sale Audit Import Batch

See:

- *Oracle® Retail Enterprise Inventory Cloud Service Administration Guide* Batch chapter
- *Oracle® Retail Enterprise Inventory Cloud Service Administration Guide* Integration chapter

Stock Count Import with 3rd Party

Third Party Stock Count Import

See:

- *Oracle® Retail Enterprise Inventory Cloud Service Administration Guide* Third Party Stock Count Import
- *Oracle® Retail Enterprise Inventory Cloud Service Administration Guide* Appendix: Batch File Layout

Inventory Available Warehouse TX with 3rd Party

Inventory Available warehouse TX batch import warehouse available inventory from third party via BDI.

See Oracle® Retail Enterprise Inventory Cloud Service Administration Guide Inventory Available warehouse TX

Web Service: Integration with Generic Order Mgmt System

See:

- The *Oracle® Retail Enterprise Integration Overview Guide* - Customer Address

- Web Service URL:

  System Integrator provides the external Web Service URL. This URL is taken as input by the EICS installer to update system configuration entry in the database.

  The URL can also be updated via EICS System Configuration UI using the below configuration.

Table 14–1   System Configuration Entries

Database CONFIG_SYSTEM Name	System Configuration UI Display Name
integration.fulfilord.wsdl.url	Fulfillment Order Web Service URL
integration.fulfilordaddr.wsdl.url	Fulfillment Order Address Web Service URL

- Web Service User alias: oms-user

- OMS is an external system called through RSB so the customer will need to manage those credentials. EICS chef scripts takes the provided input to add to EICS credential stores

See:

- *Oracle® Retail Enterprise Inventory Cloud Service Administration Guide* Integration Chapter: Web Service

- The *Oracle® Retail Enterprise Integration Overview Guide*

Web Service: Integration with Manifest System

See:

- *Oracle® Retail Enterprise Inventory Cloud Service Administration Guide* - Integrate with Manifest System

- Web Service URL:

  System Integrator provides the external Web Service URL. This URL is taken as input by the EICS installer to update system configuration entry in the database.

  The URL can also be updated via EICS System Configuration UI using the below configuration.

  SIOCS is not a package shipping management system. It calls an external shipping-manifest system that acts as a broker for multiple courier entities such as FedEX, UPS, DHL, national mail carriers and so on.

  Details of the shipping manifest web service are captured in the WSDL. Details of the data elements are provided in the XSD.

  - Request Shipping-Manifest-Service jar from Oracle Support.

  - Please look at all the definitions/wsdl in that JAR and write service as needed. This service will run on a server outside of Oracle network.

- Please log a service request on My Oracle Support and provide the following details that are required to be configured by Oracle Cloud Operations.

  Server URL to be allow listed.

Table 14–2 System Configuration

Database CONFIG_SYSTEM Name	System Configuration UI Display Name
integration.manifest.wsdl.url	Manifest Web Service URL

- Web Service User alias: manifest-user
- Credential management: Manifest is an external system called through RSB so the customer will need to manage those credentials.

Web Service: Integration with External System for Ticket Printing

See:

- *Oracle® Retail Enterprise Inventory Cloud Service Administration Guide* - Ticket Print
- Web Service URL:

  System Integrator provides the external Web Service URL. This URL is taken as input by the EICS installer to update system configuration entry in the database.

  SIOCS is not a printing system that manages printers & formats. Tickets are sent to an external web service end-point; that is implemented by any system that needs to receive tickets. The external system is responsible for managing printing.

  SIOCS stages the printed tickets in the Message Processing System queue. In order to process the staged tickets, the **TicketPrint** outbound MPS work type needs to be enabled through the MPS Work Type screen. Please refer to the *Oracle® Retail Enterprise Inventory Cloud Service Administration Guide* for details on MPS Work Type screen.

  The external web service is called **tps-TicketPrint** and has one operation **printTickets**.

  Details of the ticket printing web service are captured in the WSDL. Details of the ticket data elements are provided in the XSD.

  - Request tps-TicketPrintService jar from Oracle Support.
  - Please look at all the definitions/wsdl in that JAR and write service as needed. This service will run on a server outside of Oracle network.
  - Please make sure outbound TicketPrint MPS work type has been enabled.
  - Please log a service request on My Oracle Support and provide the following details that are required to be configured by Oracle Cloud Operations.

    Server URL to be allow listed.

The URL can also be updated via EICS System Configuration UI using the below configuration.

Table 14–3   System Configuration

Database CONFIG_SYSTEM Name	System Configuration UI Display Name
integration.ticket.wsdl.url	Ticket Print Web Service URL

- Web Service User alias: ticket-user
- Credential management: Customer will need to manage the credentials for the external printing system. EICS installation takes the provided input to add to EICS credential stores.

Web Service: Integration with External System for Notification Services

- Web Service URL:

  System Integrator provides the external Web Service URL. This URL is taken as input by the EICS installer to update system configuration entry in the database.

  SIOCS does not provide email integration but it can be implemented by the external system that this service calls. SIOCS stages the notifications in the Message Processing System queue.

  Notifications can be sent to an external web service end-point that is implemented by any system that needs to receive notifications. The external system is responsible for managing emails.

  In order to process the staged notifications, the **Notification** outbound MPS work type needs to be enabled through the MPS Work Type screen. Please refer to the *Oracle® Retail Enterprise Inventory Cloud Service Administration Guide* for details on MPS Work Type screen.

  The external web service is called **external-storeextnotificationservice** and has one operation **createNotification**.

  Details of the notification web service are captured in the WSDL. Details of the notification data elements are provided in the XSD.

  – Request sim-external-storeextnotificationservice.jar from Oracle Support.

  – Please look at all the definitions/wsdl in that JAR and write service as needed. This service will run on a server outside of Oracle network.

  – Please make sure outbound Notification MPS work type has been enabled.

  – Please log a service request on My Oracle Support and provide the following details that are required to be configured by Oracle Cloud Operations.

  Server URL to be allow listed.

The URL can also be updated via EICS System Configuration UI using the below configuration.

Table 14–4   System Configuration

Database CONFIG_SYSTEM Name	System Configuration UI Display Name
integration.notification.wsdl.url	Notification Web Service URL

- Web Service User alias: notification-user
- Credential management: Customer will need to manage the credentials for the external notification system.

ZPL Printing

- ZPL is a proprietary ticket formatting language used for printing to Zebra printers.
- ZPL is not entirely an ASCII format and is not readable without tools.
- If not using ZPL ticket printing on Zebra printers, then usage of ZPL is not recommended.
- If using ZPL with ZPL printers, SIOCS allows for the placement of tags within the ZPL design (managed by ZPL tools).
- SIOCS will then replace those tags with the correct data before sending the ticket information to the web service endpoint.
- ZPL files and formats are created and managed by tools and software outside of SIOCS. Files are uploaded into SIOCS.

Non-ZPL Printing

- Information captured in printer administration is sent with the ticket information, such as printer name and address.
- The custom development of the printing system (or middleware system designed to speak to a printing solution) must use the printer and ticket information to determine how to print.
- Ticket information can be used to determine format of ticket to print, but such tasks as matching the ticket type information to a template managed by the implementing system.
- Once a template in the middleware system is identified, the middleware system should use ticket information to populate the template and print the ticket. SIOCS does not manage printing templates.
- Printer information can be used to determine which printer it should be sent to.
- Printing templates are created and manages by tools and software outside of SIOCS as part of a custom or middleware product.

Figure 14–2   Ticket Printing
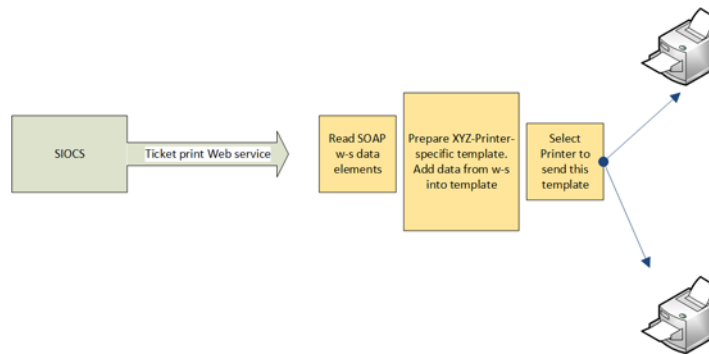
RIB Integration Guidance (From SIOCS Perspective)

Overview

The Oracle Retail Integration Bus (RIB) is a fully distributed integration infrastructure that implements messaging using Asynchronous JMS Publish/Subscribe Fire-and-Forget model.

The concept of message-bus is that one product broadcasts information and each product or cloud service only subscribes to those message families/payloads that they are interested in. Everything else is ignored.

To process all messages intended for ordering systems, pricing systems, or any other external systems would require massive processing of mapping, then writing to the database, and then reading messages that are not intended for processing in our system in order to discard them.

To avoid all the processing and overhead, messages not intended for SIOCS are simply dropped at the point of receiving them from the RIB.

Unsupported Messages and Payloads

When an entire family or message type is not used or desired in SIOCS, then it is not subscribes to and does not arrive at SIOCS.

The message type and payload has no injector that places the RIB payload into the MPS staged message processing workflow in SIOCS.

Unsupported Data Within Messages and Payloads

In the case of some message families or types, a brief look at the internal information of the message may also determine, it is not meant for SIOCS.

1. SIOCS does not process non-stockholding stores (stores with no inventory). So, if a payload arrives for a message family and type we support, but the payload contains an internal attribute, usually labeled "stockholding_ind", that is set to "N", the payload is dropped as it is not intended for the SIOCS system.

2. SIOCS does not process virtual stores so limited itself by store type. If the payload contains a store type attribute, then SIOCS only processes COMPANY ("C") stores and FRANCHISE ("F") stores.

3. When dealing with quantities, a quantity of 0 primarily means a cancellation or removal of that item or detail from a transaction, and so it is deleted. There may be exception to this in certain circumstances.

Errors

Errors that occur within the RIB through injection in MPS are logged and managed within the RIB.

Errors that occur within MPS staged messages within SIOCS are logged and can be seen and managed with MPS management workflow.

Messages that are successfully processed, including successfully being ignored as not relevant to the store, do not log any information.

Modify/Delete

In the case of transaction data, in some cases if the transaction is actively being processed by a user or business functionality in the store, it may have already passed a state where it can modified or canceled.

Message Family/Type

The following table contains a list of message families and types that SIOCS subscribes to (incoming) or broadcasts (publishes out) to other systems.

It indicates the family name, message type, payloads used within the family, whether or not SIOCS publishes or subscribes to it, and whether or not it is part of the initial data seeding.

Message type suffixes indicates intent of the payload: **Cre** means create information, **Mod** means modify information, and **Del** means cancel or delete information.

Table 14–5   Message Family/Type

Message Family	Message Type	Payload	Publish/ Subscribe	Seeded	SIOCS Data
ASNIn	ASNInCre ASNInMod	ASNInDesc	Subscribe	No	Store Delivery
ASNOut	ASNOutCre	ASNOutDesc	Publish	No	Store Shipment
ClrPrcChg	ClrPrcChgCre ClrPrcChgMod ClrPrcChgDel	ClrPrcChgDesc ClrPrcChgRef ClrPrcChgDtlRef	Subscribe	No	Clearance Price Change
CoInvAvail	COInvAvailMod	COInvAvailDesc	Publish	No	Customer Order Store Inventory Shift Notification
Diffs	DiffCre DiffDel DiffMod	DiffDesc DiffRef	Subscribe	Yes	Differentiators
DSDReceipt	DSDReceiptCre DSDReceiptMod	DSDReceiptDesc	Publish	No	Non-PO DSD Receipt

Table 14–5   (Cont.) Message Family/Type

Message Family	Message Type	Payload	Publish/ Subscribe	Seeded	SIOCS Data
FulfilOrd	FulfilOrdStDlvCre FulfilOrdReqDel FulfilOrdApprDel	FulfilOrdDesc	Subscribe	No	Fulfillment Orders
FulfilOrdCfm	FulfilOrdCfmCre	FulfilOrdCfmDesc	Publish	No	Fulfillment Order Confirm
FulfilOrdCfmCnc	FulfilOrdCfmCncCre	FulfilOrdRef	Publish	No	Fulfillment Order Cancel
InvAdjust	InvAdjustCre	InvAdjustDesc	Publish, Subscribe	No	Stock Movement Notification
InvReq	InvReqCre	InvReqDesc	Publish	No	Store Order/Item Request
ItemLoc	ItemLocCre ItemLocDel ItemLocMod ItemLocReplMod	ItemLocDesc	Subscribe	Yes	Item Location Item Replenishment
Items	ItemBOMCre ItemBOMDel ItemBOMMod ItemCre ItemDel ItemHdrMod ItemImageCre ItemImageMod ItemImageDel ItemUPCCre ItemUPCDel ItemUPCMod	ItemBOMDesc ItemDesc ItemHdrDesc ISCDimDesc ItemImageDesc ItemTcktDesc ItemUPCDesc	Subscribe	Yes	Item Item Details Item UPC Item Image
Items	RelItemHeadCre RelItemHeadMod RelItemHeadDel RelItemDetCre RelItemDetDel RelItemDetMod	RelatedItemDesc	Subscribe	Yes	Related Items

Table 14–5   (Cont.) Message Family/Type

Message Family	Message Type	Payload	Publish/ Subscribe	Seeded	SIOCS Data
Items	ItemSupCre ItemSupDel ItemSupMod ItemSupCtyCre ItemSupCtyDel ItemSupCtyMod ISCDimCre ISCDimMod ISCDimDel ISCMfrCre ISCMfrDel ISCMfrMod	ItemSupCtyDesc ItemSupCtyMfrDesc ItemSupDesc	Subscribe	Yes	Supplier Items Supplier Manufacturer Supplier Country
Items	ItemUDALOVCre ItemUDALOVMod ItemUDALOVDel ItemUDAFFCre ItemUDAFFMod ItemUDAFFDel ItemUDADateCre ItemUDADateMod ItemUDADateDel	ItemUDADateDesc ItemUDAFFDesc ItemUDALOVDesc	Subscribe	Yes	Item User Defined Attributes
MerchHier	ClassCre ClassMod ClassDel DeptCre DeptMod DeptDel SubclassCre SubclassMod SubclassDel	MrchHrClsDesc MrchHrDeptDesc MrchHrSclsDesc	Subscribe	Yes	Department Class Subclass
Order	POCre PODel PODtlCre PODtlDel PODtlMod POHdrMod	PODesc PORef	Subscribe	No	Purchase Order

Table 14–5   (Cont.) Message Family/Type

Message Family	Message Type	Payload	Publish/ Subscribe	Seeded	SIOCS Data
Partner	PartnerCre PartnerDel PartnerMod PartnerDtlCre PartnerDtlDel PartnerDtlMod	PartnerDesc PartnerOUDesc PartnerRef	Subscribe	Yes	Finishers
PrmPrcChg	MultiBuyPromoCre MultiBuyPromoMod MultiBuyPromoDel PrmCnlItemLocCre	PromotionDesc	Subscribe	No	Promotions
RcvUnitAdj	RcvUnitAdjCre RcvUnitAdjMod	RcvUnitAdjDesc	Subscribe	No	Adjusts Supplier Deliveries
Receiving	ReceiptCre ReceiptOrdCre	ReceiptDesc	Publish	No	Transfer Receipt, Purchase Order Receipt, Receipt with Customer Order
RegPrcChg	RegPrcChgCre RegPrcChgMod RegPrcChgDel	RegPrcChgDesc RegPrcChgDtl	Subscribe	No	Regular Price Change
RTV	RTVCre	RTVDesc	Publish, Subscribe	No	Warehouse Return
RTVReq	RTVReqCre RTVReqMod RTVReqDel RTVReqDtlCre RTVReqDtlDel RTVReqDtlMod	RTVReqDesc RTVReqRef	Subscribe	No	Supplier Return
SeedData	DiffTypeCre DiffTypeDel DiffTypeMod	DiffTypeDesc DiffTypeRef	Subscribe	Yes	Differentiator Types
ShipInfo	ShipInfoCre	ShipInfoDesc	Publish	No	Pre-Shipment Notification
SOStatus	SOStatusCre	SOStatusDesc	Publish, Subscribe	No	Transfers Shipments
StkCountSch	StkCountSchCre StkCountSchMod StkCountSchDel StkCountSchDtlDel	StkCountSchDesc	Publish	No	Stock Count Schedule

Table 14–5   (Cont.) Message Family/Type

Message Family	Message Type	Payload	Publish/ Subscribe	Seeded	SIOCS Data
StockOrder	SOCre SODtlCre SODtlDel SODtlMod SOHdrDel SOHdrMod	SODesc SORef	Subscribe	No	Transfer Allocation
Stores	StoreCre StoreDel StoreMod StoreDtlCre StoreDtlDel StoreDtlMod	StoreDesc StoreRef	Subscribe	Yes	Store
UDAs	UDAHdrCre UDAHdrMod UDAHdrDel UDAValCre UDAValMod UDAValDel	UDADesc UDARef UDAValDesc UDAValRef	Subscribe	No	User Defined Attributes
Vendor	VendorAddrCre VendorAddrDel VendorAddrMod VendorCre VendorDel VendorHdrMod VendorOUCre VendorOUDel	VendorAddrDesc VendorAddrRef VendorDesc VendorRef	Subscribe	Yes	Suppliers
WH	WHCre WHDel WHMod	WHDesc WHRef	Subscribe	Yes	Warehouse

Xstore Integration

When Xstore is sold with SIOCS then SIOCS handles inventory updates.

Xstore (on-premise) is integrated with SIOCS out of the box. Xstore point of sale terminals call the following SIOCS web-services.

1. /StoreInventoryBean/StoreInventoryService

2. /StoreInventoryUinBean/StoreInventoryUinService

3. /POSTransactionBean/POSTransactionService

POS Terminal Interactions with SIOCS

Below interactions are initiated from POS terminal that reach out to SIOCS web services to fulfill various requirements.

- Within Item Lookup, all inventory stock information for the searched item is retrieved from SIOCS. StoreInventoryService > lookupInventoryInStore

- Inventory Locator makes a call to SIOCS to retrieve available inventory levels for items across stores. StoreInventoryService > lookupAvailableInventory

- In back office Order Maintenance, the **Check Inventory** feature retrieves the available quantity from SIOCS. StoreInventoryService > lookupAvailableInventory

- When purchasing or ordering an item, a call to check if the item is available in the store is made. Note that this is disabled by default. StoreInventoryService > lookupAvailableInventory

- When purchasing or returning a serialized item, a call is made to validate the serial number in SIOCS. Note that this validation is configurable and that the default setting for this configuration is not to validate. StoreInventoryUinService > readUINDetail

- During POS transaction completion, records of changes to inventory that occurred within the transaction are sent to SIOCS to update inventory levels there. POSTransactionService > ProcessPOSTransactions

SIOCS Web Service Details

Information related to the above web services and it's implementation can be found in *Oracle® Retail Enterprise Inventory Cloud Service Administration Guide* under the section titled **Available Web Services**.

Xstore to Sim Service Call Paths

Figure 14–3   Successful Path
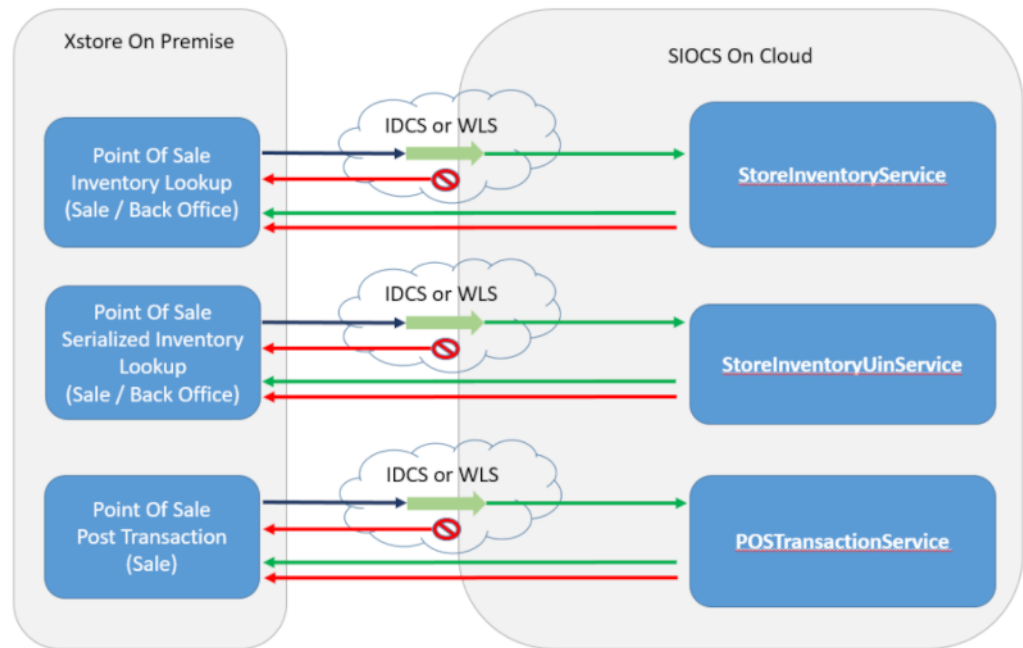
Figure 14–4   Error Scenarios Focusing on Web Service POSTransactionService
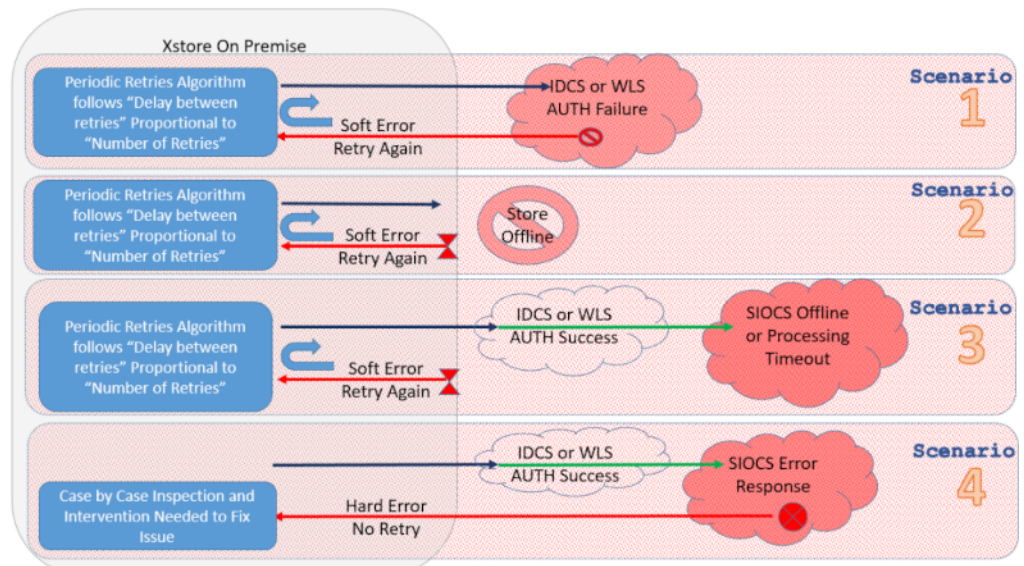
Xstore Timeout and Retry Configurations

Table 14–6   Xstore Timeout and Retry Configurations

Service	Connect Timeout Default	Connect Timeout Action	Read Timeout Default	Read Timeout Action
StoreInventoryService	30 Seconds	Return Error	30 Seconds	Return Error
StoreInventoryUinService	30 Seconds	Return Error	30 Seconds	Return Error
POSTransactionService	30 Seconds	Retry after 15 minutes	30 Seconds	Retry after 15 minutes

Other Integration Interfaces

See *Oracle® Retail Enterprise Inventory Cloud Service Administration Guide* Integration chapter.

15

Customization and Extension

Customization and Extension Considerations

This section provides considerations for customization and extension.

Code Customization

No customization to the core application code is permitted.

No write access to the database or data model is permitted.

Configuring Report Delivery to SFTP

BI Publisher supports the delivery of a generated report to an SFTP directory. This is particularly used for larger outputs that aren't easily delivered via e-mail. This can be configured to deliver reports to the your Inbound SFTP host directory by following the instructions below:

1. Connect to the SFTP host and create a folder to where reports will be delivered. For example, name the folder "XXXXX Reports".

2. Log into the BI Publisher XMPL Server as an Administrator user.

3. Navigate to the **Administration** area and select **FTP** under the **Delivery** header.

4. Click the **Add Server** button.

5. Complete the following details in the **Add Server** page:

   a. **Server Name** - provide a name for the server that you want to appear when selecting a delivery method for reports.

   b. **Host** - enter the SFTP host URL provided in your cloud service introduction e-mail.

   c. **Port** - enter number 2222

   d. Check the following check boxes:

      Use Secure FTP

      Create files with Part extension when copy is in process

   e. **Authentication Type** - select the value **Password**

   f. **Username** - enter your SFTP username

   g. **Password** - enter your SFTP password

   h. **Access Control** - select the **BI Service Administrator** role

6. Click **Test Connection**. You will receive a confirmation if the connection is successful. If you do not receive a positive confirmation, review the entries from the previous step.

16

Logs

This chapter describes the integration setup within EICS to Integrate with other systems.

EICS Log Debug Settings

EICS debug settings apply to EICS-server, JET-Admin-UI and MAF-mobile-UI.

The server would be the main place for debug logging. Accessing logs is only via filesystem at least for EICS logs. WebLogic logs can be viewed in the console, if needed.

If a log level change is needed to troubleshoot a problem, in addition to, changing debug settings, restarting the server is required.

Debug Configuration file: `sim-server-resources.jar -> logback.xml`

Server: For the server debug, it's possible to access through MBeans (JMX), otherwise it requires changing deployed files, which means restarting the server.

JET Admin UI (EICS): Does allow for changing logging through the browser console, but this would be after application startup. So any logging for the start/login processes would need the configuration on the server to be changed (deployed).

MAF UI (SOCS): would require a new build and tools to access the logs.

Server Log File Locations

Table 16–1   Server Log File Locations

#	Log Type	Log Location
1	EICS application log	Server: <eics weblogic server>
		Log directory:
		<eics_domain_home>/log
		For example:
		/u01/domains/wls_sim/SIMDomain/log
		sim.log, sim.1.log, …, sim.log.log
		sim_services.log
		(For clustered environment, need to check all nodes log locations)

Table 16–1 (Cont.) Server Log File Locations

#	Log Type	Log Location
2	Domain and admin server log	Server: <eics weblogic server>
		Log directory:
		<eics_domain_home>/servers/AdminServer/logs
		SIMDomain.log
		AdminServer.log
		access.log
3	Application server log	Server: <eics weblogic server>
		Log directory:
		<eics_domain_home>/servers/sim-server_1/logs
		For example:
		/u01/domains/wls_sim/SIMDomain/servers/sim-server_1/logs
		sim-server_1.log
		sim-server_1.out
		access.log

17

Troubleshooting Tips

Application Login Troubleshooting

Batch Troubleshooting

Report Troubleshooting

RIB (Retail Integration Cloud Service / RICS) Troubleshooting

Web Service Troubleshooting

Bulk Data Integration/Data Seeding

References

Application Login Troubleshooting

Table 17–1   Application Login Troubleshooting

#	Error Category	Solution Hint
1	Customer Admin User login issue	1. Verify user exists in Oracle IDCS or OCI IAM
		(Notes: a default admin user is also created in EICS database)
		2. Verify user in IDCS or OCI IAM has assigned the following IDCS or OCI IAM Application Roles:
		admin_users
		security_users
		mps_users
		batch_users
		global_store_users
		3. Verify user in SIOCS has assigned ADMINISTRATOR SIOCS Application Role
2	Store user login failure on web client after version upgrade	Clear browser cache.
		SIOCS 19.2 has added custom cache headers which do not allow the web client application to be cached by the browser.
		Users are required to clear the existing copy of the client that is already cached on their systems by clearing the browser cache before logging into the web client first time after a version update.
3	Store user login failure	See *Oracle® Retail Enterprise Inventory Cloud Service Administration Guide* - Security chapter for details.

Batch Troubleshooting

Table 17–2   Batch Troubleshooting

#	Error Category	Solution Hint
1	Invalid file incoming directory	Verify the file incoming directory entry exist in System Configuration table. The value can be viewed via EICS System Configuration screen. Filter by topic "batch"
		Verify the directory exist in the EICS application server in the location specified in the system configuration
		The above settings should be setup during EICS installation. If the values are not correct setup, please correct the values and ensure the file incoming directory in system configuration matches in actual physical path in the OS server.

Report Troubleshooting

Table 17–3   Report Troubleshooting

#	Error Category	Solution Hint
1	EICS report connection issue	Verify Reporting WSDL in EICS System Configuration screen setup.

RIB (Retail Integration Cloud Service / RICS) Troubleshooting

Table 17–4   RIB (RICS) Troubleshooting

#	Error Category	Solution Hint
1	RIB injection user connection issue	Verify user has been assigned the following IDCS or OCI IAM Application Role: integration_users
2	RIB publisher connection issue	Verify the credentials of rib-user alias matches between in both EICS credential store and RIB-SIM. In RIB-SIM server, that the user need to be in ribAdminGroup.

Web Service Troubleshooting

Table 17–5   Web Service Troubleshooting

#	Error Category	Solution Hint
1	RIB injection user connection issue	1.Verify user has been assigned integration_users IDCS or OCI IAM Application Role 2.Verify web service end point url 3.Verify web service policy

Bulk Data Integration/Data Seeding

For additional details, please see Admin guide -Data seeding section.

Table 17–6   Bulk Data Integration/Data Seeding

#	Error Category	Solution Hint
1	BDI SIM receiver and importer connection issue	Followings are few things to check:
		Please make sure that the "sim.bdi" users with (integration_users, security_users IDCS or OCI IAM Application Role) are set up in Oracle IDCS or OCI IAM, this is the user that is used for installation bdi-process-flow-admin-deployment-env-info.json
		"SimAppJobAdminAppServer": {
		"jobAdminUiUrl":" <sim server url> /sim-mobile/internal/bdi",
		"jobAdminUiUserAlias":"simappJobAdminBaseUrlUserAlias",
		"jobAdminUiUser":"GET_FROM_WALLET",
		"jobAdminUiPassword":"GET_FROM_WALLET",
		} JobAdminUiUser: sim.bdi
2	uploader to SIM failed on DB connection error	1. Verify the correct SIM database user for BDI-SIM receiver and downloader are entered.
		For example sim01_bdi, the user is created as part of EICS database
		2. Delete the cache and bounce the BDI related server if configuration values changed.
		3. Verify the BDI process flow configuration simappJobAdminBaseUrl is correct:
		Notes: This is ECIS bdi REST service URL
		For example: (note: the url should not have trailing / at end of the url)
		<EICS App url>/sim-mobile/internal/bdi

References

1. Oracle® Retail Store Inventory Operations Cloud Services Data Model residing on My Oracle Support

2. Oracle Retail Integration Cloud Service Integration Guide

3. Oracle Retail Enterprise Integration Overview Guide

4. Oracle Retail Bulk Data Integration Implementation Guide

A

Appendix: Oracle APEX

This section covers the following topics:

- What is Oracle APEX?
- Suggested APEX Usage in Store Inventory Operations Cloud Service
- APEX Users, Administration
- EICS Specific Configuration
- Database Objects

What is Oracle APEX?

Oracle Application Express (abbreviated APEX, previously named Oracle HTML DB) is a web-based software development environment that runs on an Oracle database. Application Express is a minimal code web application development tool for the Oracle database which enables end users to design, develop and deploy visually pleasant, responsive, database-driven applications, either on-premises or in the cloud.

Using only a web browser and limited programming experience, a user can rapidly develop and deploy professional applications that are both fast and secure for any device from desktop to mobile. Oracle Application Express combines the qualities of a minimal code tool such as productivity, ease of use, and flexibility, with the qualities of an enterprise development tool such as security, integrity, scalability, availability and built for the web.

 The following are just a few advantages for the customer using APEX:

- Easy to create mock-up screens using pre-built themes.
- Rich GUI components available for data representation.
- Scalable
- Easy to deploy and configure.
- HTML / Browser based database experience for end user.

Suggested APEX Usage in Store Inventory Operations Cloud Service

We suggest using Oracle APEX as a bolt-on piece so customers (that is, retailers) can browse the database for transactions and create their own reports, BI dashboards.

Oracle APEX components applicable to EICS includes:

- SQL Workshop

   This component allows a user to perform SQL operation on the database. Please refer to the SQL Workshop section for more details.

   > **Note:** APEX has other capabilities but those are not applicable for SaaS deployed products such as EICS.

SQL Workshop

The SQL Workshop provides tools that enable users to view database objects. Users can run queries on the database but will be restricted from running DDL and DML scripts on the EICS schema or creating any reference to the tables from EICS schema. This would be controlled via database privileges assigned to an APEX schema user. An APEX schema user will have only select privileges on the business / transaction tables of the EICS database schema.

The following key features are provided by this Oracle APEX component:

- Object Browser

   Object Browser enables a tree control to view object properties and create new objects.

- SQL Commands

   The SQL Commands tool enables a user to execute ad hoc SQL on the APEX schema.

- SQL Scripts

   SQL Scripts enables a user to store and run scripts on the APEX schema.

- Query Builder

   Query Builder enables a user to create join queries using drag and drop.

- Create Object Wizard

   Create object wizard provides a user friendly interface for the user to create various database objects. This help the user create tables, view, sequence, packages and so on, on the current APEX schema.
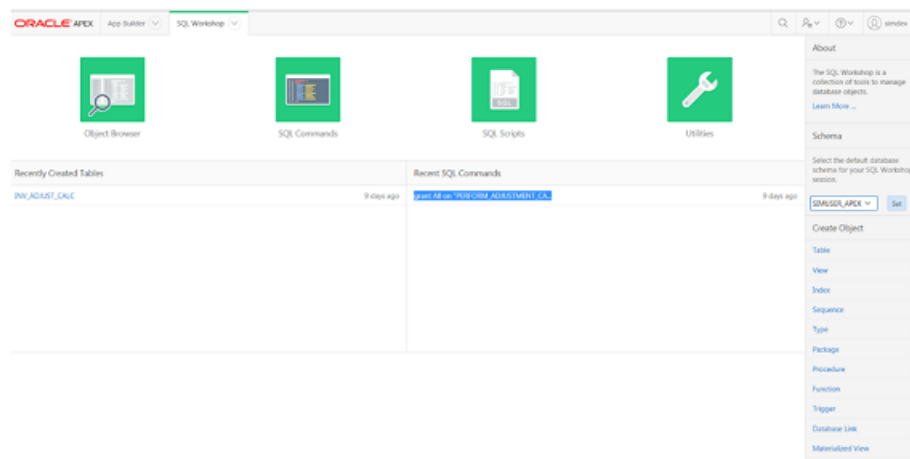
APEX Users, Administration

There are three (3) types of users:

- Customer APEX Schema User
- APEX Administrator
- APEX Customer Admin/Developer

Customer APEX Schema User

This is the database schema (example RTLWS01) user that gets created when EICS is installed.

APEX has a concept of workspace to which the user logs in. To access the EICS tables there would be a schema user who has read only privileges on production and read/write privileges on non-production database tables listed in Table A–1.

This user will be configured on the workspace, so after the customers access APEX they can query the EICS database tables.

APEX Administrator

This user (APEXADMIN) gets created during APEX installation at the time of EICS provisioning.

This user is the Oracle Cloud Operations who will create a workspace and provision the initial Customer Admin user.

APEX supports SSO, however the user needs to be created within the application and should exist on LDAP as well. (that is, authentication is external but authorization is internal).

This user will provide the necessary privileges to the customer users and block the unwanted features from APEX (REST Service, Team Development and so on.)

This user will be the sole admin user to manage the APEX configuration.

The user is responsible for the following:

1. Managing instance configuration.

2. Managing workspace creation and schema assignment.

3. Managing the customer service requests.

4. Monitoring the user activity if enabled.

5. Provisioning the user account.

On EICS APEX Installation, APEX Administrator will create a workspace and provision the APEX schema for the work space which has been created via EICS database installer. The Administrator is required to provision users to have access to the work space.

APEX Customer Admin/Developer

This user will be the customer service administrator who will get access to the RETAILWORKSPACE at the time of provisioning. This initial user will be required to login to the ORDS (Apex Data Viewer) URL (https://<eics_external_load_balanced_address>/ords) in order to add other customer users to the workspace.

This user can also query data / build reports and so on.

The user will not have access to any admin features of APEX. This role accesses SQL-Workshop component.

An APEX Administrator could:

1. **Manage Instance**

   Oracle Application Express instance level configuration will be available under this component. The following configurations can be configured under this component:

   – Feature Configuration

     Allows control of the feature components.

   – Security

     Allows setting of Security Configuration, Authentication Control, Password Policy and so on.

   – Instance Setting

     Allows setting instance level parameter that is, Storage Settings, Email, Report Printing.

   – Manage Logs and Files

     Manages logs and feature component user activity. These features will be disabled by default and need to be enabled if monitoring is required.

   – System Message

     Can set custom login messages for the user.

2. **Manage Request**

   This feature is used to authorize user's request for the account and workspace access.

3. **Manage Workspace**

   A workspace is a virtual private database allowing multiple users to work within the same Oracle Application Express installation while keeping their objects, data and applications private. Each workspace has a unique ID and name. An Oracle

Application Express administrator can create a workspace manually or have users submit requests.

On EICS APEX Installation, Administrator (Oracle Cloud Operations) will create a workspace and provision the APEX schema for the work space which has been created via EICS database installer. The Customer Apex Administrator is required to provision users to have access to the work space.

4. **Monitor Activity**

This feature component allow the administrator to monitor user activity. The activity can be monitored for an application created by user, for a workspace or for a specific days.

EICS Specific Configuration

The following configuration is required for the EICS APEX Environment.

Configuration Type	Configuration Name	Value
Manage Instance\Feature Configuration	Enable RESTful Services	No
Manage Instance\Feature Configuration	Enable Service Requests	No
Manage Instance\Feature Configuration	Enable Team Development's File Repository	No
Manage Instance\Security	Authentication Scheme	Single Sign On / LDAP
Manage Instance\Instance Setting	Auto Extend Tablespaces	No
Manage Instance\ Component Availability	Custom Create Workspace	
Manage Workspaces\ Component Availability	Enable App Builder	No
Manage Workspaces\ Component Availability	Enable SQL Workshop	Yes
Manage Workspaces\ Component Availability	Allow PL/SQL Editing in SQL Workshop	Yes
Manage Workspaces\ Component Availability	Enable Team Development	No
Manage Workspaces\ Component Availability	Enable Packaged Application Installation	No

`APEX`, for example, RTLWS01	Database user who have READ privilege on EICS business data tables.
	The privileges granted to user:

	`alter session,`
	`create session,`
	`create table,`
	`create view,`
	`create sequence,`
	`create procedure`

	The EICS master schema objects access are granted to the objects directly instead of EICS data set role base of following reasons:
	The APEX database user need to create views or stored procedures which requires grant read permissions to database objects owned by EICS master schema owner.
	For list of objects the user have access to, see SIM_BUSINESS Database Object List

Database Objects

The list of database objects available on APEX as synonyms to be used for querying on the Application Builder is shown below:

Tables

Table A–1   Tables

Name	Description
ACTIVITY_DELIVERY	This table holds store activity information for receiving.
ADDRESS	This table holds the various addresses for the entities that is, store, supplier, finisher and warehouse along with their types.
ARV_ACTIVITY_HIST	This table holds archived data from user activity table.
ARV_EXPORT	This table contains last export archive activity info.
ARV_ITEM_UIN_HIST	This table contains item UIN archived data.
ARV_RFID_HIST	This table contains RFID transactions archived data.
ARV_STORE_ITEM_STOCK_HIST	This table contains store item stock transaction archived data.
ARV_TICKET_HIST	This table contains ticket history archived data.
CODE_DETAIL	This table holds the defined available code along with their type descriptions that are used in the system.
CODE_TYPE	This table contains one row for each different set of codes used by the system. The specific codes are defined in the CODE_DETAIL table.
CUSTOM_ATT_ADMIN	This table contains the list of custom attributes configured for the transactions.
DELIVERY_SLOT	This table is delivery slot master table, values are from RMS. (Reserved for future use.)
DIFFERENTIATOR	This table will hold all possible sizes, size combinations, colors, flavors, scents, patterns, and so on, along with their associated NRF industry codes. For example, include blue for a differentiator type of color, large for a differentiator type of size, and lavender for a differentiator type of scent.
DIFFERENTIATOR_TYPE	This table holds the available differentiator types that an item can contain. For example, Size, Color, Scent, and so on.
DSD	This table holds one row for each direct supplier delivery (DSD) that is received in the system.
DSD_ADJUSTMENT	This table holds direct supplier delivery (DSD) adjustments.
DSD_CARTON	This table holds one row for each carton that a direct supplier delivery (DSD) contains.
DSD_CARTON_CDA	This table contains the values for the custom attributes associated to a vendor delivery carton.
DSD_CARTON_CFA	This table contains the list of custom flex attribute associated to the vendor delivery carton.
DSD_CDA	This table contains the values for the custom attributes associated to a vendor delivery.

Table A–1 (Cont.) Tables

Name	Description
DSD_CFA	This table contains the list of custom flex attribute associated to the vendor delivery.
DSD_LINE_ITEM	This table holds one row for each item that is in the carton of a direct supplier delivery (DSD).
DSD_LINE_ITEM_ATT	This table holds extended attributes associated to direct supplier delivery (DSD) line items.
DSD_LINE_ITEM_UIN	This table holds the specific UIN information associated with the direct supplier delivery (DSD) line items.
FUL_ORD	This table holds store fulfillment orders.
FUL_ORD_BIN	This table holds bins created for picks of store fulfillment orders.
FUL_ORD_CDA	This table holds the values for the custom attributes associated to a fulfillment order.
FUL_ORD_CFA	This table contains the list of custom flex attribute associated to the fulfillment order.
FUL_ORD_DLV	This table holds deliveries created for store fulfillment orders.
FUL_ORD_DLV_CDA	This table contains the values for the custom attributes associated to a fulfillment order delivery.
FUL_ORD_DLV_LINE_ITEM	This table holds the fulfillment order delivery line items.
FUL_ORD_DLV_LINE_ITEM_ATT	This table holds extended attributes associated to line items of deliveries for store fulfillment orders.
FUL_ORD_DLV_LINE_ITEM_UIN	This table holds the UINs of line items for deliveries of store fulfillment orders.
FUL_ORD_LINE_ITEM	This table holds store fulfillment order line items.
FUL_ORD_PICK	This table holds picks created for store fulfillment orders.
FUL_ORD_PICK_CDA	This table contains the values for the custom attributes associated to a fulfillment order pick.
FUL_ORD_PICK_LINE_ITEM	This table holds line items associated to a pick created for store fulfillment orders.
FUL_ORD_RV_PICK	This table holds reverse picks created for store fulfillment orders.
FUL_ORD_RV_PICK_CDA	This table contains the values for the custom attributes associated to a fulfillment order reverse pick.
FUL_ORD_RV_PICK_LINE_ITEM	This table contains line items associated to fulfillment order reverse picks.
GROUP_SCHEDULE_EXTRACT	This table holds the data populated via batch processes for today's process to do. The data will be cleared out at the end of the run.
INV_ADJUST	This table holds the inventory adjustment records.
INV_ADJUST_CDA	This table holds the values for the custom attributes associated to inventory adjustments.
INV_ADJUST_LINE_ITEM	The table holds the item associated to the inventory adjustments.
INV_ADJUST_LINE_ITEM_ATT	This table holds extended attributes associated to line items of inventory adjustments.

Table A–1   (Cont.) Tables

Name	Description
INV_ADJUST_LINE_ITEM_UIN	This table holds the UIN associated to inventory adjustments.
INV_ADJUST_REASON	This table holds the defined reason codes that are available for attaching to a stock inventory adjustment. Each reason code contains a disposition.
INV_ADJUST_TEMPLATE	The table holds defined the inventory adjustment templates.
INV_ADJUST_TEMPLATE_ITEM	This table holds the line item associated to the defined inventory adjustment templates.
ITEM	This table contains one record for each item defined for the company. It contains the base information for an item that is consistent across all locations.
ITEM_BASKET	This table stores data about Item Basket transactions.
ITEM_BASKET_CDA	This table contains the values for the custom attributes associated to an item basket.
ITEM_BASKET_HIERARCHY	This table holds one row for each level of the hierarchy that is assigned to the item basket.
ITEM_BASKET_LINE_ITEM	This table contains items on an Item Basket.
ITEM_CFA	This table contains the list of custom flex attribute associated to the item.
ITEM_COMPONENT	This table defines all of the items contained within a simple or complex pack item. For a simple pack there will be only one record for the pack item listing its member item and a complex pack will have more than one record denoting pack component listing.
ITEM_HIERARCHY	This table holds merchandise hierarchy information.
ITEM_HIERARCHY_ATTRIB	This table holds extended attributes assigned to item hierarchies at a store.
ITEM_IMAGE	This table holds the item image information.
ITEM_PRICE	This table holds one row for each price change. These can either be created by EICS, if the store is allowed to control the pricing or they are loaded in from an external system (that is, RPM).
ITEM_PRICE_HISTORY	This table holds historical archive of the retail-selling unit price at which a given item is being sold.
ITEM_QR_CODE	This table contains the item QR code image information.
ITEM_UDA	This table holds all the User Defined Attribute (UDA) entries associated with a specific item.
ITEM_UIN	This is the primary UIN table holding detailed information about a specific UIN, most significantly its current status.
ITEM_UIN_HISTORY	This tables holds records of each alteration or action taken upon the ITEM_UIN table with basic auditing information added.
ITEM_UIN_PROBLEM	This table holds a list of UIN state transformations that failed for some reason. There is an old and new status to help determine what the issue is. This list can be viewed and updated in the UIN Resolution screen.

Table A–1   (Cont.) Tables

Name	Description
MPS_STAGED_MESSAGE	This table holds the staged inbound and outbound messages from and to external systems.
	Note: APEX limitation on CLOB columns: For clob column types, users need to write their query to display first 4000 characters.
	For example:
	[select id, business_id, DBMS_LOB.SUBSTR(MESSAGE_ data,4000) as message_data,
	DBMS_LOB.SUBSTR(MESSAGE_ERROR,4000) as message_error from mps_staged_message;]
NONSELLABLE_TYPE	This table holds the non-sellable quantity types.
NOTES	This table holds user-defined notes for different transactions.
PARTNER	This table holds partner information.
PARTNER_ITEM	This table holds items at partner site.
POS_TRANSACTION	This table will hold the details of the POS transaction header and the line items in the transaction.
POS_TRANSACTION_LOG	This table holds the POS transaction processing logs.
PRICE_CHANGE_WORKSHEET	This is a working table that holds the new prices to be extracted into item price table.
PRODUCT_BASKET	This table stores data about product basket transactions.
PRODUCT_BASKET_STORE	This tables holds one record for each store that is assigned to the product basket.
PRODUCT_GROUP	This table holds all product groups that are created within the system. Product Groups are used to schedule events within the system that need to occur at certain times. Product Groups are used for item requests, stock counts (including unit, unit and amount and problem lines), replenishment and wastage.
PRODUCT_GROUP_ HIERARCHY	This table holds one row for each level of the hierarchy that is assigned to the product group.
PRODUCT_GROUP_ITEM	This table holds one row for each item that has been added to the product group. It holds items that are added to the product group via the item, supplier or promotion options. For supplier and promotion (which is only used for item request type product groups), only those items that have a replenishment type of SO are added. For the item option, any item specified will be added to the product group.
PRODUCT_GROUP_SCHEDULE	This table holds the defined schedule for any product group of how often the batch program should process the items that belong to the product group.
PRODUCT_GROUP_SCHED_ STORE	This table holds one record per store that belongs to the defined product group schedule.
PROD_GROUP_ITEM_BKDN	This is a temporary table that holds product group schedule items breakdown details defined by the product group schedule or product group hierarchy. It is used in product group related event generation.

Table A–1   (Cont.) Tables

Name	Description
PURCHASE_ORDER	This table holds one row for each purchase order per location that has been placed by the company. The purchase order may have been created via a merchandise system message or when a user starts to process a direct store delivery (DSD).
PURCHASE_ORDER_CFA	This table contains the list of custom flex attribute associated to the purchase order.
PURCHASE_ORDER_LINE_ITEM	This table holds items that are associated with respective purchase orders.
RELATED_ITEM	This table contains related item information.
RELATED_ITEM_TYPE	This table holds relationships of related items.
REPLENISH_GAP	This table holds one row per replenishment gap.
REPLENISH_GAP_CDA	This table contains the values for the custom attributes associated to a replenishment gap.
REPLENISH_GAP_LINE_ITEM	This table hold one row per item associated with replenishment gap.
RFID	This table holds the RFID information.
RFID_ADJUST	This table contains the RFID adjustment information.
RFID_HISTORY	This table contains the RFID history information.
RFID_ZONE	This table holds the RFID zone information.
RTV	This table holds header level information of a vendor return document.
RTV_CDA	This table contains the values for the custom attributes associated to a vendor return.
RTV_CFA	This table contains the list of custom flex attribute associated to the vendor return.
RTV_LINE_ITEM	This table hold one record per item associated with vendor return documents.
RTV_SHIP	This table holds one record of header level information for each RTV Shipment.
RTV_SHIP_CARTON	This table holds RTV Shipment Container associated with the respective RTV Shipment record.
RTV_SHIP_CARTON_CDA	This table contains the values for the custom attributes associated to a vendor shipment carton.
RTV_SHIP_CDA	This table contains the values for the custom attributes associated to a vendor shipment.
RTV_SHIP_LINE_ITEM	This table holds items associated with RTV shipment container per RTV shipment record.
RTV_SHIP_LINE_ITEM_ATT	This table holds extended attributes associated to line items of RTV shipment.
RTV_SHIP_LINE_ITEM_UIN	This table hold associated UIN records for each RTV Shipment line items.
SCAN_BLOCK	This table contains item scan block summary for associated transaction.
SCAN_BLOCK_ITEM	This table contains item detail of scanned items within a block.

Table A–1   (Cont.) Tables

Name	Description
SCAN_BLOCK_ITEM_ATT	This table contains extended attributes associated to an item of a scan block.
SCHEDULE_GROUP_ITEM	This is a temporary table that holds the items associated with the store product group schedule.
SEQUENCE_ADMIN	This table contains information about sequence settings for integration.
SHELF_ADJUST	This table holds one record for each shelf adjustment transaction.
SHELF_ADJUST_CDA	This table contains the values for the custom attributes associated to a shelf adjustment.
SHELF_ADJUST_LINE_ITEM	This table holds line item details of the items in a shelf adjustment list.
SHELF_REPLENISH	This table holds one record per shelf replenishment transaction.
SHELF_REPLENISH_BKDN	This table temporarily holds shelf replenishment item breakdown depending on the UI limit parameter.
SHELF_REPLENISH_CDA	This table contains the values for the custom attributes associated to a shelf replenishment.
SHELF_REPLENISH_LINE_ITEM	This table holds one record per item associated with respective shelf replenishment.
SHIPMENT_BOL	This table holds bill of lading records.
SHIPMENT_CARRIER	This table holds delivery carriers.
SHIPMENT_CARRIER_SERVICE	This table holds delivery service types.
SHIPMENT_CARTON_DIM	This table hold the delivery carton dimension information.
SHIPMENT_REASON	This table holds the shipment reasons.
SHIPMENT_WEIGHT_UOM	This table hold shipment weight UOM information.
STOCK_COUNT	This table will hold one row for each stock count in the system. It defines the stock count instances of a stock count schedule. These records are generated by the batch processes using the stock count schedules defined.
STOCK_COUNT_CDA	This table contains the values for the custom attributes associated to a stock count.
STOCK_COUNT_CHILD	This table holds a row for each location that is being counted for the stock count.
STOCK_COUNT_EXPORT	This table holds the stock count line item to be exported to external system.
STOCK_COUNT_IMPORT	This table holds the third party file information for a third party stock count. The file must follow the RGIS file layout definition.
STOCK_COUNT_LINE_ITEM	This table holds the one record per line item counted on the respective stock count. Each row hold the complete details of the snapshot, counted, recounted (when applicable) and authorized quantities and timestamp.
STOCK_COUNT_LINE_ITEM_ ATT	This table holds extended attributes associated to line items of stock counts.

Table A–1 (Cont.) Tables

Name	Description
STOCK_COUNT_LINE_ITEM_ RFID	This table contains the RFID data for stock count line items.
STOCK_COUNT_LINE_ITEM_ UIN	This table holds all the UINs that are assigned to a particular line item on a stock count. It also contains whether the UIN is counted, recounted, or authorized. It is de-normalized to include the UIN description for performance.
STOCK_COUNT_REJECTED_ ITEM	This table contains rejected items from third party stock count.
STOCK_COUNT_SALE	This table will hold the details of the POS transaction header and the line items in the transaction with open stock counts.
STORE	This table holds defined stores within the organization that hold items.
STORE_AUTO_RECEIVE	This table holds mapping of defined stores that will automatically receive stock transfers in from another store.
STORE_GROUP	This table holds the mapping of buddy store relationship for all stores in the system.
STORE_ITEM	This table holds the items which are ranged to a store.
STORE_ITEM_CFA	This table holds the list of custom flex attribute associated to the item for the ranged store.
STORE_ITEM_STOCK	This table holds the current inventory numbers for items on a location bases. The types of inventory buckets that are held include available for sale, unavailable for sale, in transit, and reserved for a pending stock inventory event.
STORE_ITEM_STOCK_HISTORY	This table holds the store item stock transaction history.
STORE_ITEM_STOCK_NONSELL	This table holds non-sellable store item stock information.
STORE_ITEM_STOCK_PUBLISH	This table holds stock adjustment information for external messaging. Records are deleted when processed.
STORE_ORDER	This table contains store order header information.
STORE_ORDER_CDA	This table contains the values for the custom attributes associated to Store Order.
STORE_ORDER_CFA	This table contains store order custom flexible attribute information.
STORE_ORDER_LINE_ITEM	This table contains store order line item information.
STORE_PRINTER	This tables holds the associated printers with the retail stores in which the printers are installed.
STORE_SEQUENCE_AREA	This table holds a floor and an area on a floor inside a retail store that is explicitly identified for tracking inventory, sales activity and other business activities that are import to measuring a stores performance.
STORE_SEQUENCE_ITEM	This table defines a map of an item to a location and what order the item is in within the location.
STORE_SHIP_NETWORK	This table defines the stores that are excluded from shipping-to location for transfer documents and transfer shipments.

Table A–1   (Cont.) Tables

Name	Description
STORE_TRANSFER_ZONE	This table holds all transfer zones defined for a given company. Each store can be assigned one transfer zone which limits which locations can move inventory between them.
STORE_UIN_ADMIN_DEPT	This table holds the UIN specific attributes of an item at a store by department and class.
STORE_UIN_ADMIN_ITEM	This table holds all the UIN specific attributes of an item at a store (such as type and label). This overrides the values in STORE_UIN_ADMIN_DEPT table value.
SUPPLIER	This table holds all of the external sources for merchandise items offered for sale for the company.
SUPPLIER_CFA	This table holds the list of flex attribute associated to the supplier.
SUPPLIER_ITEM	This table holds one row for each item/supplier combination within the system.
SUPPLIER_ITEM_CFA	This table contains the list of custom flex attribute associated to the item for supplier.
SUPPLIER_ITEM_COUNTRY	This table holds one entry for each country associated with an item/suppler. It is used to determine what the case size of an item will be for a particular supplier in the same country as the store.
SUPPLIER_ITEM_COUNTRY_ DIM	This table holds dimensions for each item, supplier, supplier country and dimension object combination.
SUPPLIER_ITEM_ MANUFACTURE	This table hold country of manufacture for a given item-supplier.
SUPPLIER_ITEM_UOM	This table holds the item supplier data. It also contains the suppliers UOM information.
SUPPLIER_ORGANIZATION	This table holds supplier organization information.
TICKET	This table contains tickets.
TICKET_EVENT	This table contains ticket events to generate tickets.
TICKET_FORMAT	This table contains ticket formats.
TICKET_FORMAT_BASKET	This table contains tickets format and item basket assignment information.
TICKET_FORMAT_BASKET_ STORE	This table contains stores assigned to a ticket format and item basket assignment record.
TICKET_HISTORY	This table contains ticket history data.
TICKET_ZPL	This table contains ticket formats.
TOLERANCE	This table holds one row for each ad hoc stock count that is initiated at a store.
TRAN_EVENT	This table contains transaction event header information.
TRAN_EVENT_ATTRIBUTE	This table contains transaction event attribute information. The attribute value will be populated depending on the associate transaction event type.
TRAN_EVENT_COMPONENT	This table contains components assigned to the transaction event information.

Table A–1   (Cont.) Tables

Name	Description
TRAN_EVENT_EXTRACT	Batch process will populate this table with today's process to do, and will clear out at the end of the run.
TRAN_EVENT_ITEM_BKDN	Temporary table holds transaction event items breakdown details defined by the transaction event. This table is used in transaction event related batch generation.
TRAN_EVENT_STORE	This table contains transaction event store association information.
TSF	This table contains the transfer document which captures the request for a transfer to a store, warehouse, or finisher.
TSF_ALLOCATION	This table contains transfer stock allocated to the locations.
TSF_CDA	This table contains the values for the custom attributes associated to a transfer.
TSF_CFA	This table contains the list of custom flex attribute associated to the transfer.
TSF_DELV	This table hold one row for each transfer delivery transaction. The header level information for the delivery is captured on this table.
TSF_DELV_CARTON	This table holds one row for each transfer delivery carton received for the respective transfer delivery transaction record.
TSF_DELV_CARTON_CDA	This table contains the values for the custom attributes associated to a transfer delivery carton.
TSF_DELV_CARTON_CFA	This table contains the list of custom flex attribute associated to the transfer delivery carton.
TSF_DELV_CDA	This table contains the values for the custom attributes associated to a transfer delivery.
TSF_DELV_CFA	This table contains the list of custom flex attribute associated to the transfer delivery.
TSF_DELV_LINE_ITEM	This table holds one row for each item received on the containers associated to respective transfer delivery transactions.
TSF_DELV_LINE_ITEM_ATT	This table holds extended attributes associated to line items of transfer delivery transaction.
TSF_DELV_LINE_ITEM_UIN	This table holds UINs associated to line items of transfer delivery transaction.
TSF_LINE_ITEM	This table holds one row for each item associated with the transfer document.
TSF_SHIP	This table holds one row for each transfer shipment transaction. The header level information for the shipment is captured on this table.
TSF_SHIP_CARTON	This table holds one row for each transfer shipment carton to be shipped for the respective transfer shipment transaction record.
TSF_SHIP_CARTON_CDA	This table contains the values for the custom attributes associated to a transfer shipment carton.
TSF_SHIP_CDA	This table contains the values for the custom attributes associated to a transfer shipment.

Table A–1   (Cont.) Tables

Name	Description
TSF_SHIP_LINE_ITEM	This table holds one row for each item to be shipped on the containers associated to respective transfer shipment transactions.
TSF_SHIP_LINE_ITEM_ATT	This table holds extended attributes associated to line items of transfer shipment transaction.
TSF_SHIP_LINE_ITEM_UIN	This table holds UINs associated to line items of transfer shipment transaction.
UDA	This table holds all the User Defined Attributes (UDAs) available to items.
UDA_LOV	This table holds all valid values associated with a User Defined Attribute (UDA) of UDA Type of LOV (List of Value)
UIN_ATTRIBUTE_IMPORT	This table holds the UIN Attributes for store.
UIN_LABEL	This table holds all the labels that are available in the system for a UIN.
WAREHOUSE	This table holds warehouse information.
WAREHOUSE_ITEM	This table holds items ranged to a warehouse.
WAREHOUSE_VIRTUAL	This table contains all warehouses in the system, including virtual and physical warehouses.

Views

Table A–2   Views

Name	Description
CUST_ORDER_MGMT_LIST_V	This view load data for respective transaction which is been associated with store fulfillment order. Transaction queried for this view are DSD, Purchase Order, Transfer Receiving, Transfer, Transfer Shipment and Customer Order Delivery.
ITEM_DIFFERENTIATOR_V	This view loads one row for each item to which contains has associated differentiator data. All the differentiators for an item, its types and description are selected as a single row.
ITEM_HIERARCHY_ATTRIB_V	This view loads mapping of extended attribute to the item hierarchy.
ITEM_LIST_V	This view loads minimal or summary information for an item.
ITEM_PRICE_V	This view loads minimal or summary information about the price changes for an item.
ITEM_UDA_V	This view load information for the user define attribute (UDA) for an item.
LOCATION_V	This view loads data for all the location entity available in system that is, Supplier, Store, Warehouse and Finisher.
PRODUCT_GROUP_SCHEDULE_ V	This view loads data containing Product Group Schedule information.
PROMOTION_V	This view loads data related to Price Promotion for each store.

Table A–2   (Cont.) Views

Name	Description
RPRT_DSD_DISCREPANT_ITM_V	This view is used for populating the data on Direct Delivery Discrepant Items report.
RPRT_DSD_V	This view is used for populating the data on Direct Delivery Report.
RPRT_FUL_ORD_BIN_V	This view is used for populating the data on Customer Order Bin Label.
RPRT_FUL_ORD_DLV_BOL_V	This view is used for populating the data on Customer Order Delivery BOL Report.
RPRT_FUL_ORD_DLV_V	This view is used for populating the data on Customer Order Report.
RPRT_FUL_ORD_PICK_DISC_V	This view is used for populating the data on Customer Order Pick Discrepancy Report.
RPRT_FUL_ORD_PICK_V	This view is used for populating the data on Customer Order Pick Report.
RPRT_FUL_ORD_RV_PICK_V	This view is used for populating the data on Customer Order Reverse Pick Report.
RPRT_FUL_ORD_V	This view is used for populating the data on Customer Order Report.
RPRT_INV_ADJUST_V	This view is used for populating the data on Inventory Adjustment Report.
RPRT_ITEM_DETAIL_V	This view is used for populating the data on Item Detail Report.
RPRT_ITEM_ORDER_QTY_V	This view is used for populating the order quantities on Item Detail Report.
RPRT_PURCHASE_ORD_V	This view is used for populating the data on Purchase Order Report.
RPRT_REPLENISH_GAP_V	This view is used for populating the data on Scan List Report.
RPRT_RFID_HISTORY_V	This view is used for populating the data on RFID History Report.
RPRT_RTV_SHIP_BOL_V	This view is used for populating the data on RTV Shipment BOL Report.
RPRT_RTV_SHIP_V	This view is used for populating the data on RTV Shipment Report.
RPRT_RTV_V	This view is used for populating the data on RTV Report.
RPRT_SHELF_ADJUST_V	This view is used for populating the data on Shelf Adjustment Report.
RPRT_SHELF_REPLENISH_V	This view is used for populating the data on Shelf Replenishment Report.
RPRT_STOCK_COUNT_NOF_V	This view is used for populating the data on Stock Count Rejected Items Report.
RPRT_STOCK_COUNT_V	This view is used for populating the data on Stock Count related reports.
RPRT_STORE_ORDER_V	This view is used for populating the data on Store Order Report.

Table A–2   (Cont.) Views

Name	Description
RPRT_TRANSFER_V	This view is used for populating the data on Transfer Report.
RPRT_TSF_DELV_V	This view is used for populating the data on Transfer Receiving related reports.
RPRT_TSF_SHIP_V	This view is used for populating the data on Transfer Shipment related reports.
STOCK_ITEM_V	The view selects required item related attribute and inventory information to which represent a complete Item.
STORE_AUTO_RECEIVE_V	This view loads the mapping for stores which are defined to auto receive the stock transfer from a give store.
STORE_GROUP_V	This view loads the buddy store related information.
STORE_SHIP_NETWORK_V	This view has details about store hipping network.
SUPPLIER_ITEM_COUNTRY_V	This view load item supplier country information for which item supplier mapping exists.
TICKET_FORMAT_BASKET_V	The unique identifier for the ticket format and item basket assignment record.
TOLERANCE_V	This view load the tolerance related information for Ad hoc Stock Count (topic = 0) and Customer Order Picking (topic = 1)
UIN_TYPE_V	This view load the UIN related information about an item for a specific store.

Packages

Table A–3   Packages

Package Functions	Parameters	Description
DATE_UTILS. PRINT_ TIMESTAMP	inDate IN timestamp	This function print timestamp.
DATE_UTILS. CONVERT_ TIME_ZONE	I_date IN timestamp I_from_time_zone IN varchar2 I_to_time_zone IN varchar2	This function converts date from one time zone to another time zone. If the from time zone is not provided, DB time zone will be used as default.
DATE_UTILS. GET_DATE_ AT_START_OF_DAY	I_date timestamp I_time_zone varchar2	This function return a current day resets to midnight in the current time zone.
DATE_UTILS. GET_DATE_ AT_END_OF_DAY	I_date timestamp I_time_zone varchar2	This function return a current day resets to midnight in the current time zone.
DATE_UTILS. GET_ CURRENT_GMT	NA	This function returns current GMT timestamp.
DATE_UTILS. GET_ CURRENT_GMT_NUMERIC	NA	This function returns current GMT timestamp in numeric.
TRANSLATION_UTIL. TRANSLATE	i_localeId IN number i_key IN varchar2	This function returns the translated text for given key if exists on translation tables.
DATE_UTILS. PRINT_ TIMESTAMP	inDate IN timestamp	This function print timestamp.
DATE_UTILS. CONVERT_ TIME_ZONE	I_date IN timestamp I_from_time_zone IN varchar2 I_to_time_zone IN varchar2	This function converts date from one time zone to another time zone. If the from time zone is not provided, DB time zone will be used as default.
DATE_UTILS. GET_DATE_ AT_START_OF_DAY	I_date timestamp I_time_zone varchar2	This function return a current day resets to midnight in the current time zone.

Use the links to get an in depth knowledge about Oracle APEX features / components / configuration:

APEX Documentation List

APEX Installation

Application Builder User's Guide

SQL Workshop Guide

End User's Guide

To get started with and explore the feature on Oracle Application Express (APEX), visit the following site (free signup): https://apex.oracle.com

B

Appendix: RFID

This section covers the following topics:

- RFID Overview
- System Integration Overview
- RFID EPC Information
- Retail Merchandising System / RIB
- Xstore or POS Integration
- Third Party RFID System
- RFID Events
- RFID Bulk Import (using BDI)

RFID Overview

Oracle Retail has enabled RFID functionality across various Retail products.

This document will focus on enhancements done in EICS (Enterprise Inventory Cloud Service) product & its integration with other retail products.

There are three main concepts used in EICS: an RFID tag, an RFID event, and an RFID zone.

- RFID Tag

 An RFID tag is defined by its EPC (Electronic Product Code) and represents a single piece of inventory.

- RFID Event

  An RFID event is a scan of an RFID tag that takes place in an RFID system and can be sent to EICS to update the RFID tag information.

- RFID Zone

  A zone is a physical area within a facility (store or warehouse), often where a single configured scanner can identify RFID tags.

Figure B–1   RFID Overview
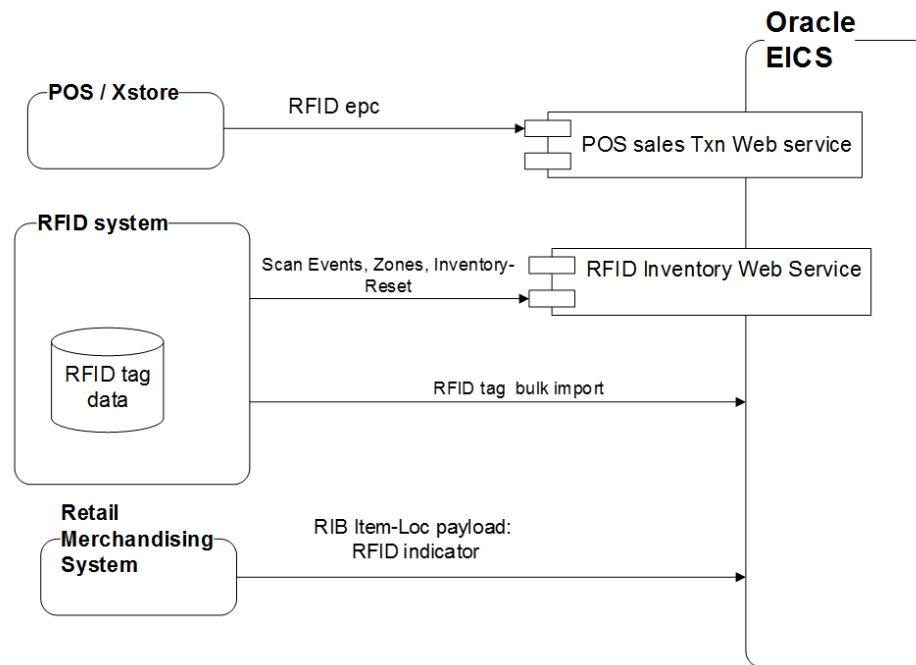
System Integration Overview

EICS has three basic integration points for RFID summarized below. Each integration point is detailed later in this document.

■   Retail Merchandising System / RIB

Item Loc Payload has been updated with an optional RFID indicator. EICS would consume this payload from Merchandising System.

■   XStore

The sales transactions that flow to EICS through the POS web service contain the EPC (Electronic Product Code) of each individual RFID tag.

■   Third Party RFID System

EICS can be integrated to an external RFID system via newly added RFID Inventory web service and bulk import batch.

RFID EPC Information

RFID readers typically return the raw hex or binary representation of an EPC, values which must then be de-coded to derive a useful representation of the information that a tag holds. The external systems are expected to decode in the hex or binary information and to send EICS the EPC in the Uniform Resource Identifier (URI) standard.

An EPC URI looks as follows:

`urn:epc:tag:sgtin-96:3.0037000.06542.773346595`
In the above example, the tag is a SGTIN-96 tag that has a filter value of 3 (meaning that it is tracking a shipping unit), a Company Prefix of 0037000, an Item Reference of 06542, and a Serial Number of 773346595.

Retail Merchandising System / RIB

EICS can now receive an RFID indicator for a particular item at a particular location through the item/location integration flow. This attribute is stored with the item information at the location level and used to deter-mine if users can see RFID related information while using the application. The RFID indicator will not prevent EICS from receiving or tracking RFID tags for an item. An external RFID system that scans tags could send that information to EICS through integration for processing.

Xstore or POS Integration

EICS provides a web service to receive sale and return transactions from a POS system. This can contain RFID related information.

POSTransaction Web Service

Operation: processPosTransactions

This operation takes a collection of item level transactions that occur at a point-of-sale system. If the incoming payload contains an EPC value (in standard URI/URN format), EICS will find and mark the RFID tag as out of inventory. Regardless of whether or not an EPC value is contained therein, EICS will process the quantity on the transaction. If an EPC exists, then the quantity should be "1" to keep inventory in the current inventory positions and the RFID tag count accurate.

Third Party RFID System

A third party RFID system can integrate and communicate RFID events to EICS through the RFIDInventory web service.

RFIDInventory Web Service

EICS provides an RFIDInventory SOAP web service containing several operations to manage RFID integration. The web service allows an external system to:

1. Manage zones

2. Send RFID scan events to EICS

Zones

A zone is a region within a facility (store or warehouse).

RFID data in EICS has a zone associated to it, so setting up zones is the first step in integration.

Operation: LookupRfidZones

This operation is used to find or lookup details about zones within a particular facility. The input is an RfidZoneCriVo object and the output is a collection of RfidZoneDesc objects. See object definitions below.

Operation: SaveRfidZone

This operation will create or update the details about a zone within the facility. If a unique identifier is includes in the RfidZoneModVo object, the zone the identifier refers to is updated, otherwise a new zone is created. This operation returns an RfidZoneRef object with a reference to the created or updated zone.

Operation: DeleteRfidZone

This operation will delete a zone definition within a facility. A zone cannot be deleted if RFID tag data still exists with the zone associated to it. In this case, the web service operation will return an error indicating the zone is still in use.

Table B–1   Object: RfidZoneCriVo

Attribute	Required	Description
location_type	Yes	The type of facility: store or warehouse.
location_id	Yes	The unique identifier of the facility.

Table B–2   Object: RfidZoneDesc

Attribute	Required	Description
zone_id	Yes	The unique identifier of the zone in EICS.
location_type	Yes	The type of facility: store or warehouse.
location_id	Yes	The unique identifier of the facility.
external_id	No	The unique identifier of the zone in external RFID system
zone_type	Yes	The type of zone: shopfloor, backroom, or no location.
description	No	A description of the zone.

Table B–3   Object: RfidZoneModVo

Attribute	Required	Description
zone_id	No	The unique identifier of the zone in EICS (or null if adding a zone).
location_type	Yes	The type of facility: store or warehouse.
location_id	Yes	The unique identifier of the facility.
external_id	No	The unique identifier of the zone in external RFID system
zone_type	Yes	The type of zone: shopfloor, backroom, or no location.
description	No	A description of the zone.

Table B–4   Object: RfidZoneRef

Attribute	Required	Description
zone_id	Yes	The unique identifier of the zone.

Facility Does Not Support Zones

If your facility or external system does not support zones, you could insert a single zone record with a "No Zone" description and use that zone identifier on all RFID event, or leave zone null on these messages.

RFID Events

This is the section for processing RFID events. ECIS provides a RFIDInventory web service operation that receives scan events from an external RFID system.

Operation: processRfidEvents

This service takes in RFID scan events and updates the RFID tag information based on the event. The EPC is considered unique and will be used to retrieve information to update such fields as location_id and zone_id.

Single RFID events may be sent, however, greater throughput in both network traffic and in processing time per record is achieved as more records are sent within a single usage of the web service. Best practice is to send many RFID scan events at one time.

There are three types of events:

- ADD

    Create a new RFID EPC tag within EICS.

- DELETE

    Remove an RFID EPC tag from EICS.

- OBSERVE

    Update the values of an RFID EPC tag within EICS. Values that are updated include item identifier, location type, location id, and zone id.

Table B–5   RfidEventDesc

Attribute	Required	Description
location_type	Yes	The type of facility: store or warehouse.
location_id	Yes	The unique identifier of the facility.
item_id	Yes	The unique identifier/sku number associated with the RFID tag.
epc	Yes	The complete SGTIN-96 epc URN value for the RIFD tag.
zone_id	No	The unique identifier of the zone in EICS.
event_type	Yes	The type of event: ADD, DELETE, OBSERVE.
event_date	Yes	The timestamp the event took place.

RFID Adjust

During process, changes to the state of an RFID tag may increase or decrease the amount of stock. This generates an RFID Adjustment that captures the inventory change to notify external systems. Since these adjustments can happen rapidly and can be out of time sync with other activity affecting the state of the tag, the system holds onto these adjustments for a short period of time in an RFID Adjust table. These adjustments are processed all at once at time increments and the amount of inventory changes is summed up. For example, if there is an increase of 10 for a count of phone RFID tags and a decrease of 7 for a count of phone RFID tags, then only +3 inventory will be published to external systems. Internal inventory is always updated immediately.

RFID Bulk Import (using BDI)

EICS allows imports the RFID information via a BDI process flow (ExtRfid_Tx) from an external source.

The External RFID import is an operational batch which can run as often as needed. The following sections describes the Importer Steps for EICS which imports data from BDI Inbound interface table to EICS RFID table.

The importer first sets all the present attribute to 'N' for all existing RFID tags at the location thereby removing them from inventory. It then inserts or replaces the RFID data from inbound interface table into RFID table in ECIS, setting the present attribute to Y (yes) for each RFID tag in the import.

In this fashion, it operates much like a stock count and will generate inventory adjustments for external system to have their SOH updated for any discrepancies found.

BDI Tables

Figure B–2   BDI Tables
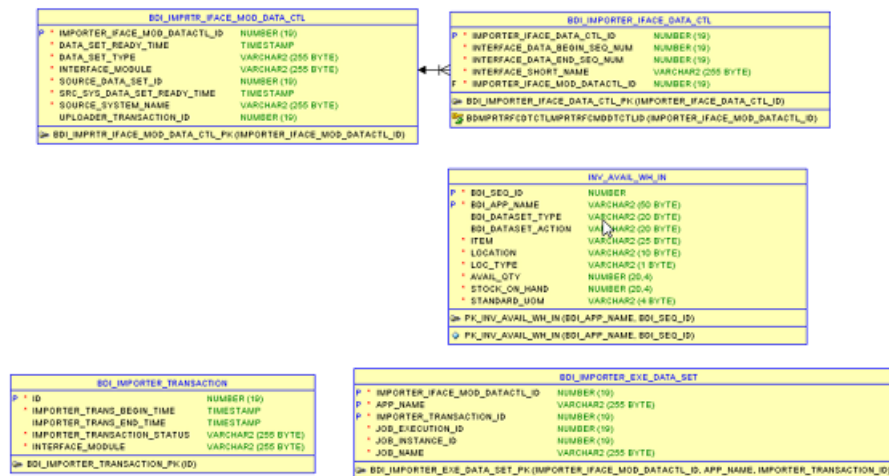
In an integrated environment, tables are created by the BDI process flow, for every data set there will be a corresponding record in BDI_IMPRTR_IFACE_MOD_DATA_CTL table for the module, and each module record will have Interface record in BDI_IMPORTER_IFACE_DATA_CTL table.

C

Appendix: Accessibility

Accessibility involves making your application usable for persons with disabilities such as low vision or blindness, deafness, or other physical limitations. This means, for example, creating applications that can be:

- Used without a mouse (keyboard only).

- Used with assistive technologies such as screen readers and screen magnifiers.

- Used without reliance on sound, color, animation, or timing.

Enterprise Inventory Cloud Service (EICS)

This user interface is designed using Oracle JavaScript Extension Toolkit (JET). Oracle JET components have built-in accessibility support that conforms to the Web Content Accessibility Guidelines version 2.0 at the AA level (WCAG 2.0 AA), developed by the World Wide Web Consortium (W3C). Please note that since different browsers themselves support accessibility somewhat differently, user experience tends to differ on different web-browsers.

Oracle JET components provide support for:

- Keyboard and touch navigation

  Oracle JET components follow the Web Accessibility Initiative - Accessible Rich Internet Application (WAI-ARIA) guidelines.

- Zoom

  Oracle JET supports browser zooming up to 200%.

- Screen reader

  Oracle JET supports screen readers such as JAWS, Apple VoiceOver, and Google Talkbalk by generating content that complies with WAI-ARIA standards, and no special mode is needed.

- Oracle JET component roles and names

  Each Oracle JET component has an appropriate role, such as button, link, and so on, and each component supports an associated name (label), if applicable.

- Sufficient color contrast

  Oracle JET provides the Alta theme which is designed to provide a luminosity contrast ratio of at least 4.5:1.

Besides use of JET components, the following updates were made to application.

- Added alternative texts to images/logos/icons as needed.

- Added labels as needed to gui widgets.

- Color Contrast was adjusted.

- Improved error identification & display, so screens readers can read meaningful information.

Store Operations Cloud Service (SOCS)

This user interface is designed using Oracle Mobile Application framework (MAF). MAF AMX UI and data visualization components have a built-in accessibility support, with most components being subject to the accessibility audit. Oracle MAF is a hybrid framework which means same codebase gets complied and rendered on IOS and Android mobile platforms.

MAF accessibility is achieved using WAI-ARIA. Please note that iOS and Android mobile platforms and versions, support WAI-ARIA to varying degrees.

So your MAF Accessibility experience will be greatly influenced by a given platform's support.

Besides use of MAF components, following updates were made to application.

- Added alternative texts to images/logos/icons as needed.

- Added alternative texts for background images.

- Added short-descriptions UI elements on list screens.

- Color Contrast was adjusted.

- Improved error identification & display, so screens readers can read meaningful information.