Oracle® Retail Store Inventory Management

Implementation Guide, Volume 5 - Tablet

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Oracle Retail Store Inventory Management Implementation Guide, Volume 5 - Tablet, Release 15.0

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Preface

This Implementation Guide provides both technical and functional information about using a tablet device to perform Oracle Retail Store Inventory Management (SIM) functions.

Audience

This Implementation Guide is intended for SIM application integration and implementation staff, as well as, users of a tablet.

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Related Documents

For more information, see the following documents in the Oracle Retail Store Inventory Management Release 15.0 documentation set:

- *Oracle Retail Store Inventory Management Installation Guide*
- *Oracle Retail Store Inventory Management Implementation Guide, Volume 1 - Configuration*
- *Oracle Retail Store Inventory Management Implementation Guide, Volume 2 - Integration with Oracle Retail Applications*
- *Oracle Retail Store Inventory Management Implementation Guide, Volume 3 - Mobile Store Inventory Management*
- *Oracle Retail Store Inventory Management Implementation Guide, Volume 4 - Extension Solutions*
- *Oracle Retail Store Inventory Management Operations Guide*
- *Oracle Retail Store Inventory Management User Guide*

- *Oracle Retail Store Inventory Management Data Model*
- *Oracle Retail Store Inventory Management Release Notes*

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- Screen shots of each step you take

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When you install the application for the first time, you install either a base release (for example, 15.0) or a later patch release (for example, 15.0.1). If you are installing the base release or additional patch releases, read the documentation for all releases that have occurred since the base release before you begin installation. Documentation for patch releases can contain critical information related to the base release, as well as information about code changes since the base release.

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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
Introduction

Oracle Retail Store Inventory Management (SIM) provides the capability to use a tablet for a subset of available SIM functionality. This guide covers the technical architecture of the tablet, as well as, information on how to use the tablet with SIM.

Overview

A workbench-oriented User Interface (UI) is provided for the manager who wants to understand what is going on in their store and use a tablet to access the information. This UI is based on Oracle Mobile Application Framework (MAF) technology. The tablet gives access to the most important SIM features, as well as, provides several business intelligence and operational features:

- The Home Page or task list area provides the user an up-to-date view of all open transactions for the store, stock counts, transfer, transfer shipments, transfer receiving, RTV, RTV shipment, DSD receiving, inventory adjustments, item requests, shelf replenishment, customer orders, customer order pick, customer order delivery, and customer order reverse pick.

  Transactions displayed to the user depend on the security level given to the user.

- A notification area indicates alerts to the user that possibly require an action to be taken against it. These notifications are group assigned so one user reviewing them can automatically remove them from the list for other users once read. This allows users to work shifts and eliminates the need for someone at the start of their shift to guess which notifications have been taken care of.

  In addition to just reviewing notifications, the user is also able to forward an alert to another user to take action on an ad-hoc basis for open transactions from the Home Page. This can be helpful, for example, when a manager gets an alert that an inventory adjustment is open and needs approval.

- One of the main tasks for SIM is to provide accurate inventory information to a variety of sources. The item lookup dialog is available to provide the user with the same information as the PC user interface. The user is able to do an item lookup based on a SKU, or use the advanced filter option to allow item information lookup based on different item numbers, description, User-Defined Attributes (UDAs), supplier, warehouse, external finisher, inventory status, or style attributes.

  The information returned is very similar to that on the PC user interface, allowing the tablet user to have all the information to make business intelligence decisions such as how much inventory is available, what happened to certain UINs, or which store has a specific item available. Details include Stock on Hand, Pricing, Item Attributes, Ordering Attributes, Merchandise Hierarchy, Stock Locator,

UDAs, Non-Sellable, Item Locations, Deliveries, Show Packs, Show Components, Related Items, Customer Orders, UINs, and Additional Suppliers.

- Supplier Lookup on the tablet displays the same details as that of the PC user interface.
- Operational Views on the tablet is a dialog to display four views to the user for operating business.
- Inventory Adjustments enable the user to create or manage inventory adjustments. This dialog is fully enabled and has the same features as the handheld or PC inventory adjustment dialog. Since the tablet UI uses the same database layer as the handheld and PC, it is possible to share transaction responsibility between devices and users. A mobile unit user could, for example, create the inventory adjustment, while a manger approves it on their tablet.

For more information on the features available on the tablet, see Chapter 3, "Functional Overview".

Contents of this Guide

This guide covers technical information and the functionality of the tablet:

- Chapter 1, "Introduction": Overview of SIM on the tablet and the skills needed for implementation.
- Chapter 2, "Common User Interface": Overview of the user interface on the table.
- Chapter 3, "Functional Overview": Overview of the features available on the tablet.
- Chapter 4, "Technical Overview": Overview of the architecture for the tablet.

Skills Needed for Implementation

The implementer needs an understanding of the following applications and technical concepts.

Technical Concepts

The implementer should understand the following technical concepts:

- JDeveloper 12.1.3
- Technical architecture of the SIM tablet
- Application servers
- Java coding, including REST Java coding concepts
- XML manipulation
- Apple Enterprise Development setup and deployment
- Certificate creation and deployment

For customization of the user interface, the implementer should also understand the following technical concepts:

- Oracle Mobile Application Framework (MAF) 2.x
- Cascading Style Sheets (CSS) programming

2

Common User Interface

This chapter describes the method by which you start the application, log in, and log out. It also describes the User Interface (UI) controls in more detail.

Getting Started

SIM has the following options:

- Logging In to the Application
- Logging Out of the Application

Starting the Application

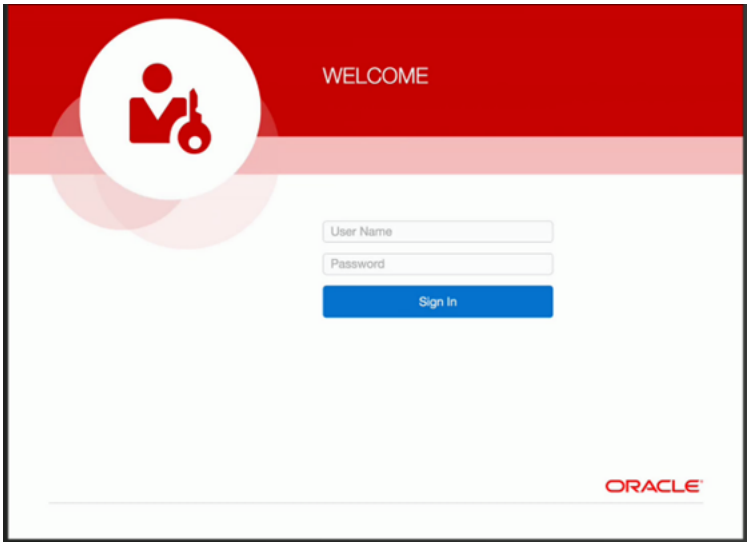
After the installation of the SIM application and configuration of all mobile devices, the application can be started and the tablet accessed.

Logging In to the Application

To log in to the application:

1. On the tablet, tap the SIM icon. The Welcome screen appears.

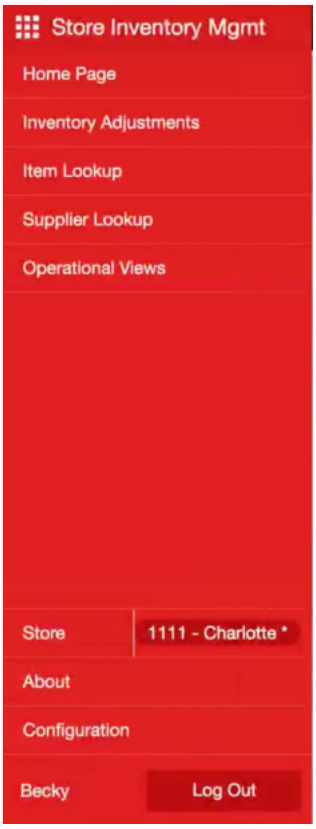
Figure 2–1 Welcome Screen



2. On the Welcome screen, enter your user name in the **User Name** field.

3. Enter your password in the **Password** field.
4. Tap **Sign In** to log in to the application. After you are successfully logged in, the Drawer/Menu appears:

Figure 2–2 Drawer/Menu Screen



5. For more information, see "Drawer/Menu."

Logging Out of the Application

To log out of the application, tap Log Out from the Drawer/Menu. The Welcome screen appears. See Figure 2–1.

Locale Support

Locale support means tailoring the information displayed on a screen and accepting user entered data in a format that meets the conventions of the locale, or geographic region, where the application is being used. The application can be internationalized. For more information on localization, see "Internationalization".

Drawer/Menu

This section describes the functionality that you can access from the Drawer/Menu.

From this menu, you can access the following SIM functionality. For more information on the following options, see the appropriate section:

- Home Page

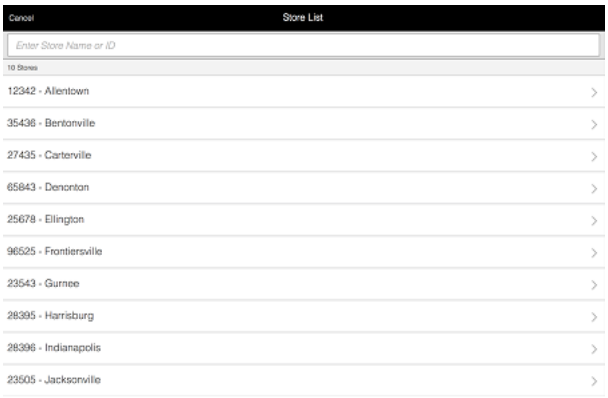
- Inventory Adjustments
- Item Lookup
- Supplier Lookup
- Operational Views

Store

The Store List screen lists the available stores to which the user has permission. It enables the user to select and log in to a new store.

To access the store list, tap **Store**. The Store List screen appears. The Store List is accessible from within the Drawer/Menu as well as from the Home Page.

Figure 2–3 Store List Screen



To change the store, enter the store name or ID or tap the entry. Enter the user name and password to log in to that store.

About

Information about the SIM application appears on the About screen. To access the screen, tap **About**.

Figure 2–4 About Screen

Common UI

This section describes the parts of the tablet UI that is used in multiple areas of the SIM application.

Icons

The navigation toolbar appears at the top of the navigation list. The toolbar buttons enable you to perform functions described in Table 2–1.

Table 2–1 Icons

Icon	Type	Description
	Drawer	Tap this icon to display the Drawer/Menu.
	Search Criteria	Tap this icon to enter search criteria. A text box appears under the search criteria.
	Remove	Tap this icon to remove the entry.
	Restore	Tap this icon to restore an previously removed UIN.
	Scan Mode - Increase	This icon represents a Scan Mode of increase.
	Scan Mode - Reduce	This icon represents a Scan Mode of reduce.
	Scan Mode - Review	This icon represents a Scan Mode of review.
	Scan Type - Auto	This icon represents a Scan Type of Auto, allowing for items of item, UPS, GS1, Type2, UIN, and son to be entered. The system will find the item number associated.
	Scan Type - UIN	This icon represents a Scan Type of UIN.

Table 2–1 (Cont.) Icons

Icon	Type	Description
	UOM - case	This icon represents a unit of measure in cases.
	UOM - Standard Unit of Measure	This icon represents a unit of measure in the standard unit of measure.
	UOM - Transaction Unit of Measure	This icon represents a unit of measure in the transaction unit of measure.
	Extended Attributes	Tap this icon to access the extended attributes for a line item. This icon only appears if extended attributes are defined for the line item.
	UIN	Tap this icon to access the UINs for a line item. This icon only appears if UINs exist for the line item.

Table 2–2 lists the message icons used in SIM.

Table 2–2 Message Icons

Icon	Type	Description
	Error	The error messages identify problems related to data input, validation, or application functionality.
	Warning	The warning messages inform about pending actions or situations that may need attention.
	Confirmation	This confirms an action has completed successfully. Typically used to convey that an action took place.
	Information	Information messages inform the user about changes in the application that are not errors, warnings, or confirmations.

Scan Type

You can select the scan mode that is used from that point on for all item/barcodes being scanned in the current session.

To select the scan type:

1. Tap the Scan Type icon. The Select Scan Type screen appears.

Figure 2–5 Select Scan Type Screen

2. Tap your selection or tap **Cancel** to not make a selection. The following values are available for scan type:

- Auto - you can scan any allowable item/barcode (item, UPCS, type 2, UIN, GS1, and so on) in the scan bar. SIM uses its barcode algorithm to find the item numbers associated with what was scanned.
- UIN - You enter/scan a UIN in the scan bar. SIM assumes that a UIN was scanned and finds the associated items.

Scan Mode

The scan mode is used to determine how the quantity from an item/barcode scan/entry (in the scan bar) should be applied to the transaction. You can select the scan mode that is used from that point on for all items and transactions being scanned in the current session.

To select the scan mode:

1. Tap the Scan Mode icon. The Select Scan Mode screen appears.

Figure 2–6 Select Scan Mode Screen

2. Tap your selection or tap **Cancel** to not make a selection. The following values are available for scan mode:
   - Increase - the quantity from the scan is added to the quantity in the transaction. If there is a UIN, SIM attempts to add it to the transaction.
   - Reduce - the quantity from the scan is subtracted from the quantity in the transaction. If there is a UIN, SIM attempts to remove it from the transaction.
   - Review - the quantity from the scan does not change the quantity in the transaction. The quantity is kept the same for the purpose of review. If there is a UIN, SIM does not do anything with it. The UIN should already be in the transaction. The item must already be in the transaction for Review mode to work.

UOM

The UOM determines what UOM is being used and displayed during that session. This value is initially defaulted to the System Admin setting Default UOM. Switching the UOM changes the UOM for all items on the transaction; conversions of quantities may occur (that is, Switching from cases to standard unit of measure).

You can select the UOM that is used from that point on for all items in the current session.

To select the UOM:

1. Tap the UOM icon. The Select Unit of Measure screen appears.

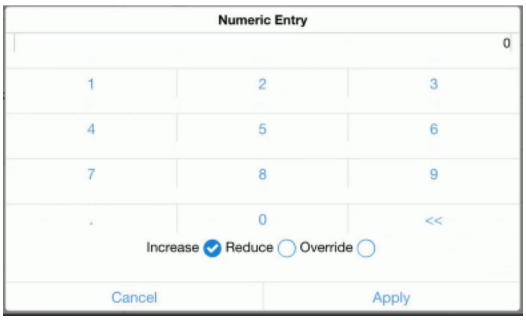
Figure 2–7 Select Unit of Measure Screen

2. Tap your selection or tap **Cancel** to not make a selection. The following values are available for UOM:
   - Standard - All items are set to the Standard Unit of Measure (units, Kg, LBs, and so on).
   - Cases - All items are set to cases.
   - Transaction - All items are set to the Transaction Unit of Measure.

Numeric Entry (Quantity)

This popup displays anytime you click an editable number field, for example, the Quantity or Pack Size fields.

Figure 2–8 Numeric Entry Screen



To update a numeric value:

1. For the quantity you want to enter, tap the numbers in the key pad.
2. Select the mode for the quantity change:
   - To take the entered number and add it to the numeric field, select **Increase**.
   - To take the entered number and subtract if from the numeric field, select **Reduce**.
   - To take the entered number and replace the existing number in the numeric field, select **Override**.
3. To take the quantity entered and apply it to the numeric field, tap **Apply**. To return to the previous screen with no quantity applied, tap **Cancel**.

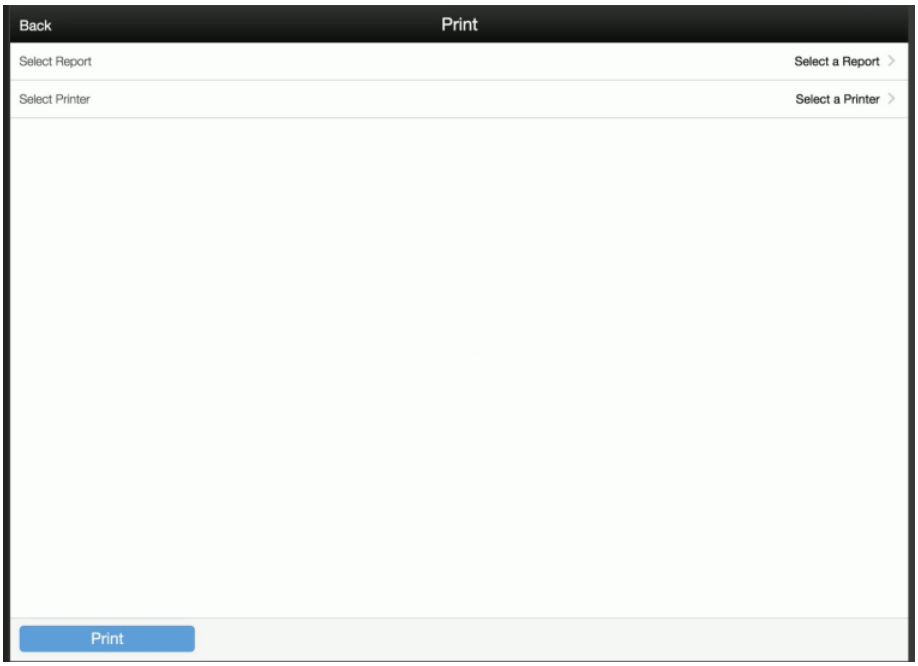
Print

This screen enables you to print a report.

To print a report:

1. Tap the Print icon. The Print screen appears.

Figure 2–9 Print Screen



2. To select a report, tap **Select Report**. A list of available reports for the store appears. Tap the report you want to select.
3. To select a printer, tap **Select Printer**. A list of available printers appears. The default printer is set based on the selected report. If you want to change the printer, tap the printer you want to use.
4. To print the report, tap **Print**. The reports prints at the selected printer.

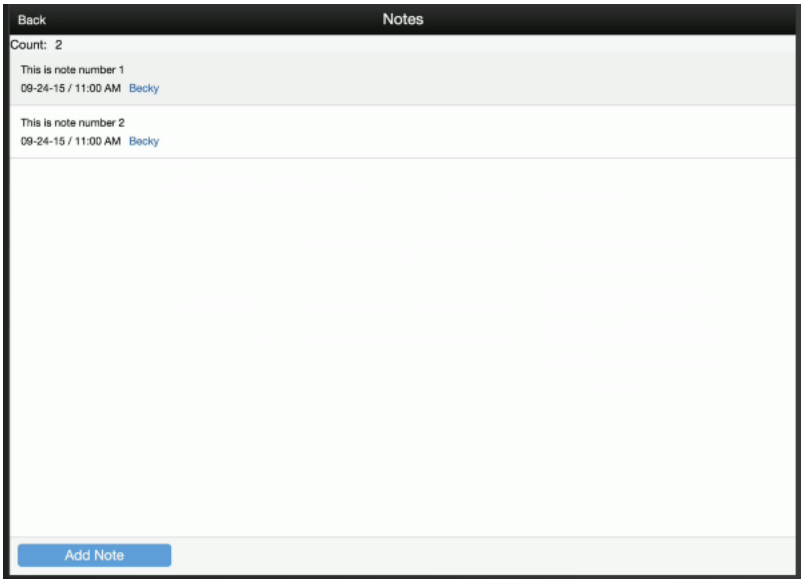
Notes

Notes can be added to a transaction. Multiple notes can be added to a transaction, giving a history trail of notes.

To view or add notes:

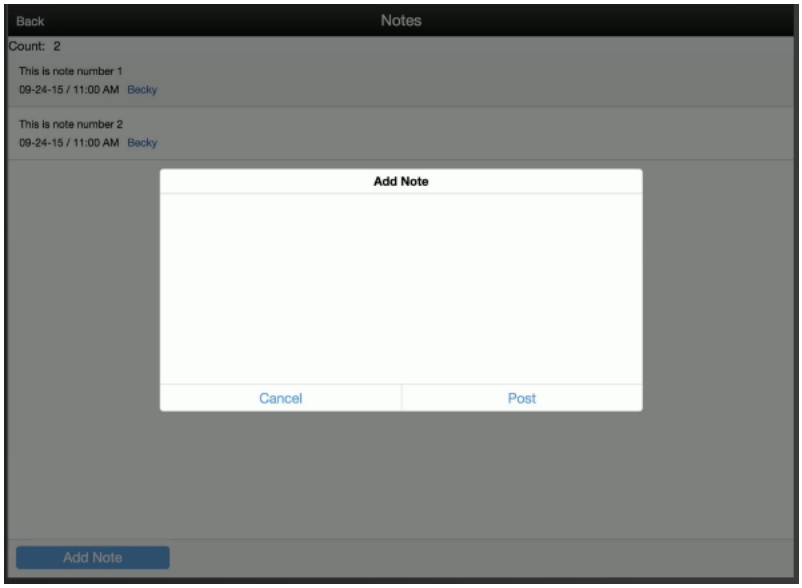
1. Tap the Notes icon. The Notes screen appears.

Figure 2–10 Notes Screen



2. To add a note, tap **Add Note**. The Add Note screen appears.

Figure 2–11 Add Note Screen



3. Enter the note. To add the note to the transaction, tap **Post**. To not add the note, tap **Cancel**.

3

Functional Overview

The workbench-oriented User Interface (UI) focuses on the manager who wants to understand what is going on in their store and use a tablet. This UI is based on Oracle Mobile Application Framework (MAF) technology and shows item images where available. The tablet gives access to the most important SIM features, as well as, provides several business intelligence and operational features.

Home Page

The Home Page appears upon selecting it from the Drawer/Menu. All of the open transactions for the user's store are displayed.

Figure 3–1 shows the flow of the screens from the Home Page.

Figure 3–1 Home Page Screen Flow

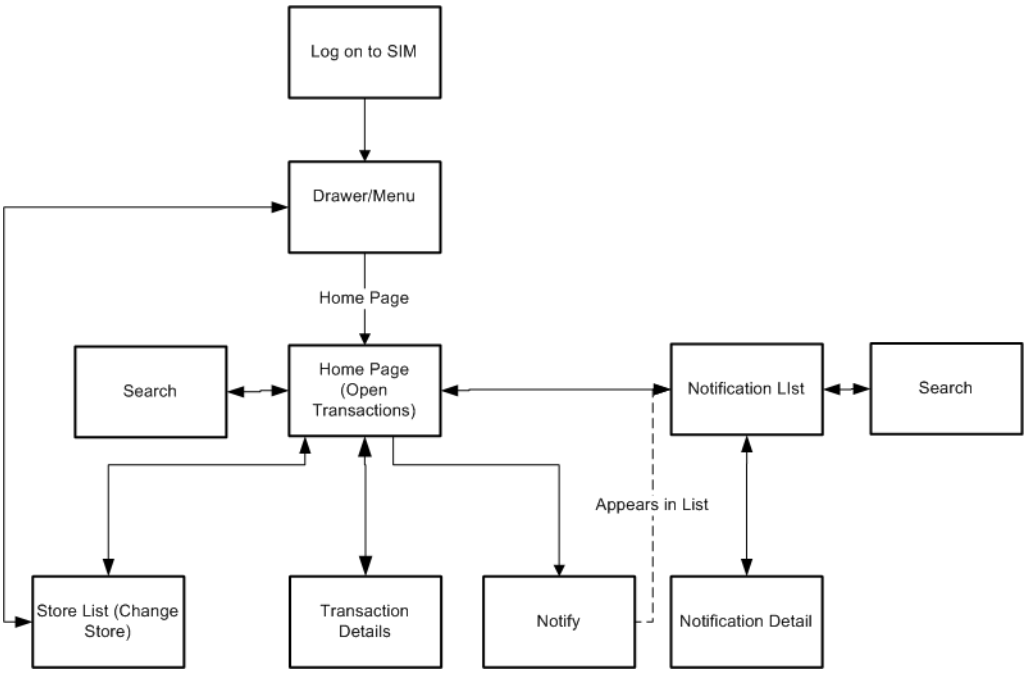
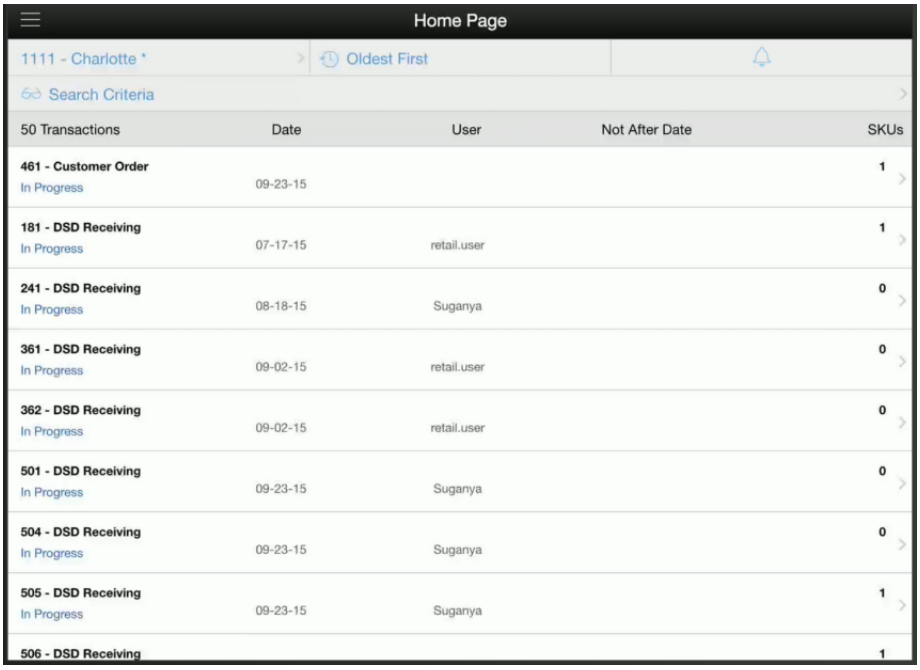


Figure 3–2 Home Page



From the Home Page, you can do the following:

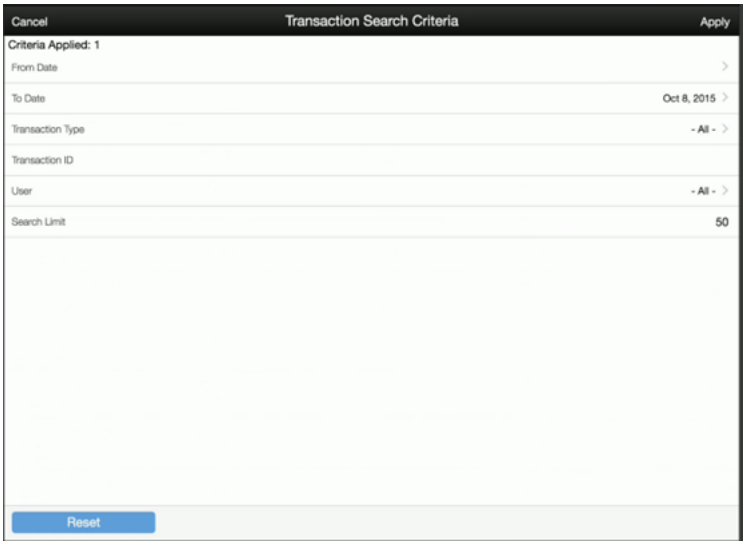
- Filter the List of Open Transactions
- View an Open Transaction
- Notify a User
- Access notifications. For more information, see "Notifications."

Filter the List of Open Transactions

To filter the list of open transactions:

1. Tap Search Criteria. The Transaction Search Criteria screen opens.

Figure 3–3 Transaction Search Criteria Screen



2. To select any of the criteria, tap that entry:
   - From Date and To Date: Select the date range for the search.
   - Transaction Type: Select a specific transaction type.
   - Transaction ID: Enter a specific transaction ID.
   - User: Select a specific user. This is the user who created or last updated the transaction.
   - Search Limit: Select the maximum number of transactions to be returned.
3. To filter the list, tap **Apply**. The list of transactions on the Home Page is updated to reflect the search criteria.

View an Open Transaction

To view the details of an open transaction, tap the entry. The Transaction Details screen opens. Currently, only inventory adjustments can be viewed.

Notify a User

To notify a user and create an ad-hoc notification:

1. Swipe a transaction and tap the Notify button. The list of users to select from opens in a popup.
2. Enter the user or partial user to notify.
3. Select the user from the list and tap **Notify**. A notification is generated for the selected user. The notification appears in the notification list for the user that was notified.

Notifications

Two types of Notifications exist:

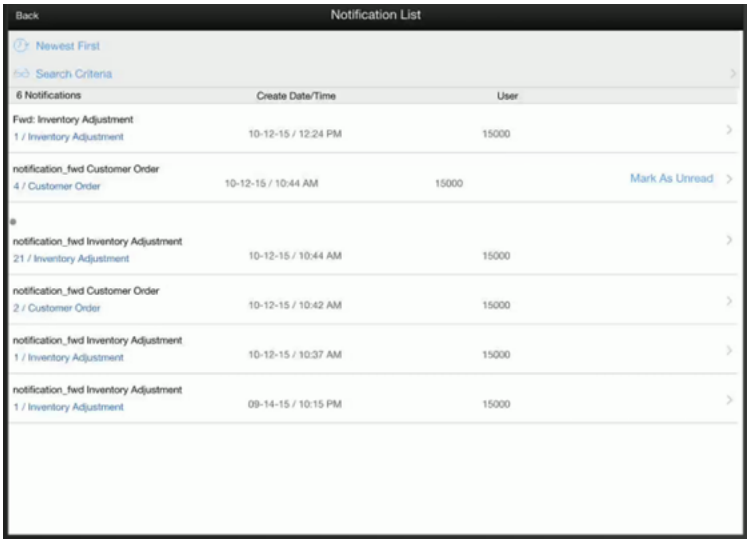
- Ad-hoc which are created from open transactions on the home page.
- System generated which are email notifications generated by the system.

The Notification List displays all notifications for a user at the user's store, ad-hoc and system generated. The unread notifications have a dot in front of them. You can read the detail for each notification as well as search and filter the list of notifications.

To see the notifications:

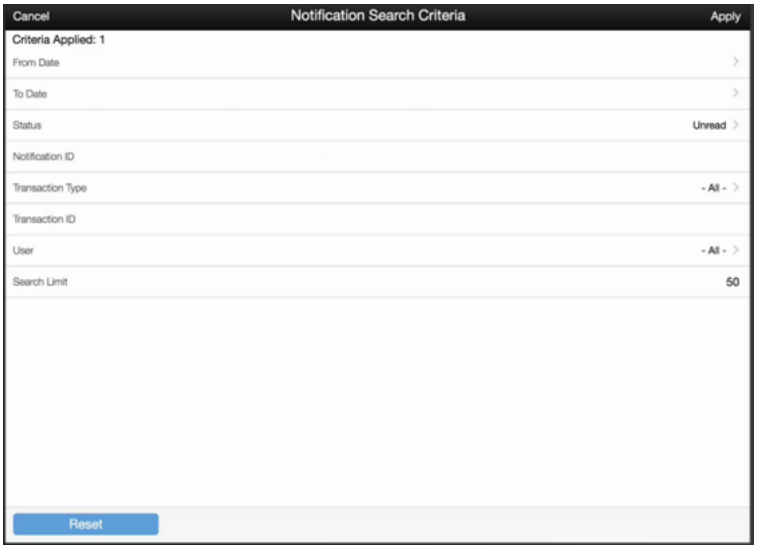
1. Tap Notifications on the Home screen. The Notification List screen opens.

Figure 3–4 Notification List Screen



2. To filter the list of notifications, tap **Search Criteria**. The Notification Search screen opens.

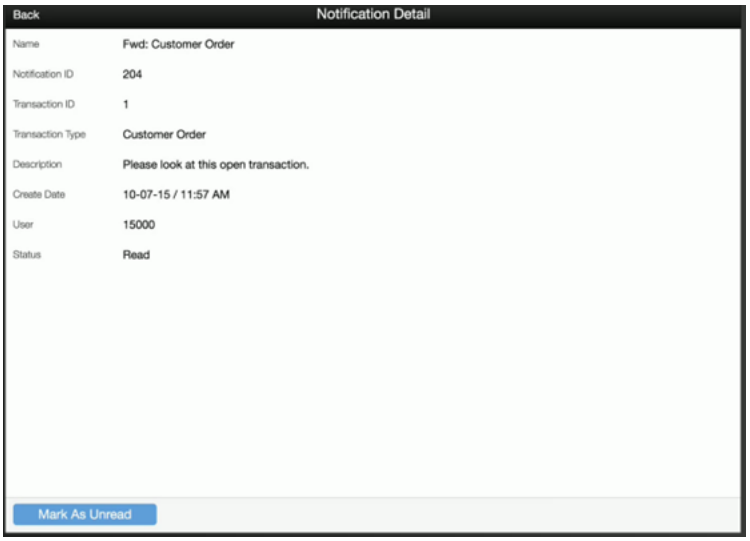
Figure 3–5 Notification Search Criteria Screen



3. To select that criteria, tap the entry:
   - From Date and To Date: Select the date range for the search.
   - Status: Select a specific notification status.
   - Notification ID: Enter a specific notification ID.
   - Transaction Type: Select a specific transaction type.
   - Transaction ID: Enter a specific transaction ID.
   - User: Select a specific user. This is the user who created or last updated the transaction.
   - Search Limit: Select the maximum number of transactions to be returned.

4. Tap **Apply**. The Notification List screen is updated based on the selected criteria.
5. To see the details for a notification, tap the notification. The Notification Detail screen opens.

Figure 3–6 Notification Detail Screen



The following information is shown:

Field	Description
Name	Name associated to the notification. For ad-hoc notifications, this is Fwd: <transaction type>.
Notification ID	ID associated to the notification.
Transaction ID	Transaction ID of the transaction associated to the notification.
Transaction type	Type of transaction associated to the notification.
Description	Details of the notification.
Create Date	Date the notification was created.
User	User who created the notification.
Status	Status of the notification, read or unread.

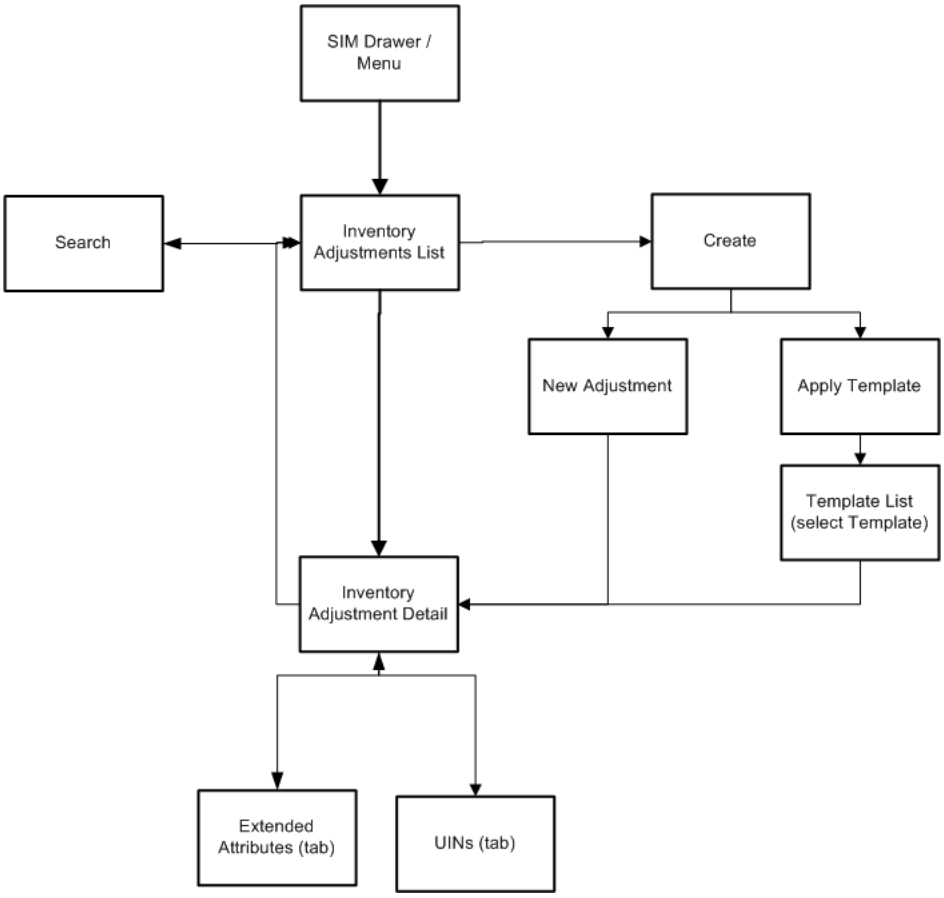
6. To mark the notification as unread, tap **Mark as Unread**. To return to the Notification List screen, tap **Back**.

Inventory Adjustments

Inventory adjustments that you enter in SIM are supplied to the merchandising system to adjust stock levels and maintain perpetual inventory. Inventory adjustments increment or decrement inventory levels, such as stock on hand and unavailable inventory.

Each inventory adjustment contains a reason code that determines the disposition of the inventory being adjusted. For example, inventory removed for repair adds to unavailable inventory and decreases the stock on hand.

Figure 3–7 Inventory Adjustment Flow



Inventory Adjustments are accessed on the tablet through the Inventory Adjustment menu within the drawer. Selecting the menu option takes the user to the Inventory Adjustment List screen. On this screen, the user has the option to search for adjustment records which are presented on the Inventory Adjustment List screen. The user has the option to create an inventory adjustment, apply a template, or edit/view one on the Inventory Adjustment Detail screen. On the Detail screen, there are tabs for UINs as well as Extended Attributes.

Create an Inventory Adjustment

To create an inventory adjustment:

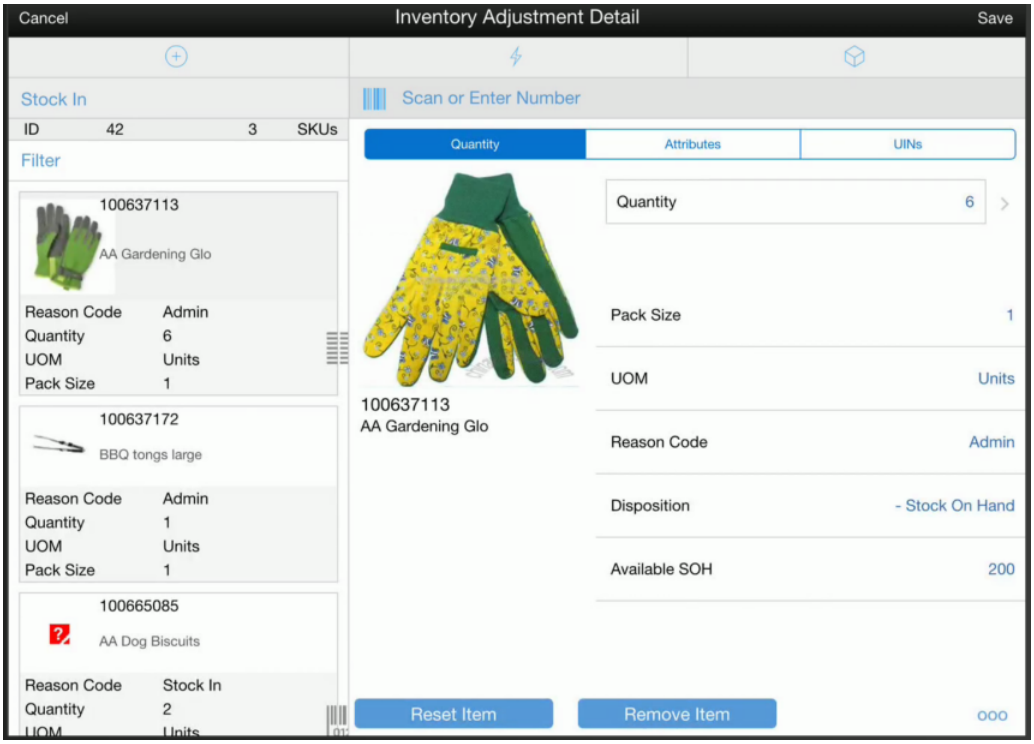
1. Tap **Inventory Adjustments** from the Drawer/Menu. The Inventory Adjustments List screen opens.
2. Click **Create**. You are prompted to choose whether this is a new adjustment or if it is created from a template.
   - For a new adjustment, select New. Tap **Apply**.
   - To create from a template, select Template. The Select Template screen opens for you to select the template. Select the template and tap **Apply**.
3. The Inventory Adjustment Detail screen opens. On this screen, you can enter the details for the adjustment. For more information on this screen, see "Edit an Inventory Adjustment."

Edit an Inventory Adjustment

To edit an inventory adjustment:

1. Tap **Inventory Adjustments** from the Drawer/Menu. The Inventory Adjustments List screen opens.
2. Scan or enter an item number which is on an inventory adjustment.you want to look up. To filter the list of items, tap **Search Criteria**. The Inventory Adjustment Search Criteria screen opens.
3. Select the search criteria and tap **Apply**. The Inventory Adjustments List screen is updated based on the criteria.
4. Tap an entry in the list. The Inventory Adjustment Detail screen opens. There are three tabs available on this screen. The following buttons are available on each tab:
   - Reset Item - Take all changes that have been made during the session and undo them back to the way the item was prior to entering the inventory adjustment session.
   - Remove Item - Flag the item for removal.
   - Restore Item - Restore an item that has been marked for removal and enable it for editing.
5. To adjust the quantity, tap the Quantity tab. This is the default tab for the item when making an inventory adjustment.

Figure 3–8 Inventory Adjustment Detail Quantity Tab



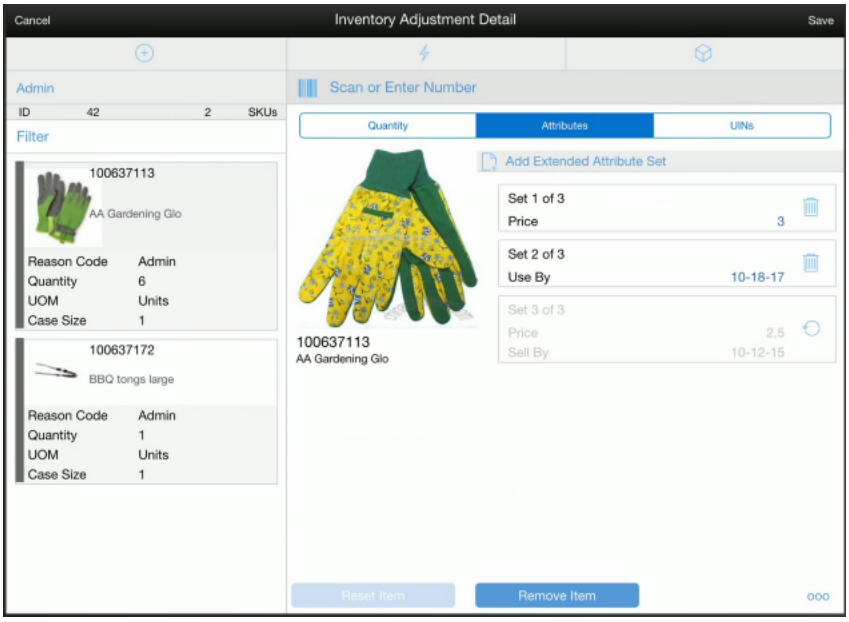
The following information is displayed for the Quantity tab:

Field	Description
Quantity	Quantity to be adjusted. Quantity is validated against the appropriate inventory bucket based upon the disposition associated with the reason code.
Pack Size	Pack size associated with the item. This field is editable when the unit of measure is set to cases.
UOM	Item's unit of measure. This field is set based upon the unit of measure field in the header.
Reason Code	Description for the currently selected reason code. Modifying the reason code will apply to all newly added items to the inventory adjustment.
Disposition	Specifies how inventory adjustments with this reason code affect SIM inventory counts. A plus (+) value specifies that stock on hand, unavailable, or customer order reserve inventory is increased by the adjustment. A minus (-) sign specifies that the inventory is decreased.
Inventory	Amount of stock for the item and store based upon the disposition of the reason code.

6. To adjust the attributes, tap the Attributes tab.

Note: The system/store must be configured to capture extended attributes or the tab will not be available. The item must also be configured for capturing extended attributes otherwise the attributes panel will be blank.

Figure 3–9 Inventory Adjustment Detail Attributes Tab



The sets of extended attributes defined for the item are shown.

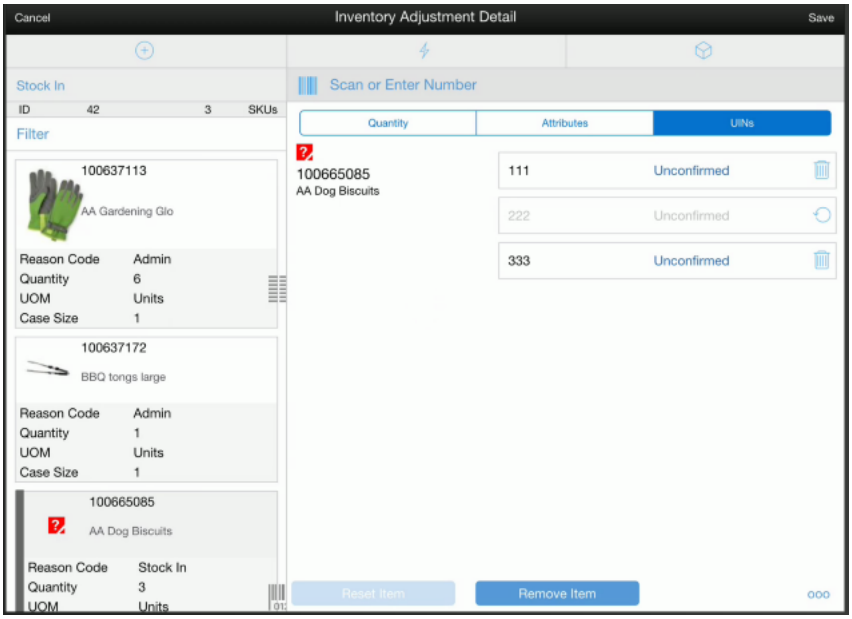
- To add a set of extended attributes, tap **Add Extended Attribute Set**. The Add Extended Attributes Set window opens so you add the attributes. When you have added the attributes, tap **Apply**.

- To remove a set of extended attributes, tap the Remove icon.

7. To adjust the UINs, tap the UINs tab.

> **Note:** The system must be configured for UINs or the UIN tab will not be available. The item must also be a UIN item, otherwise the UIN panel will be empty.

Figure 3–10 Inventory Adjustment Detail UINs Tab



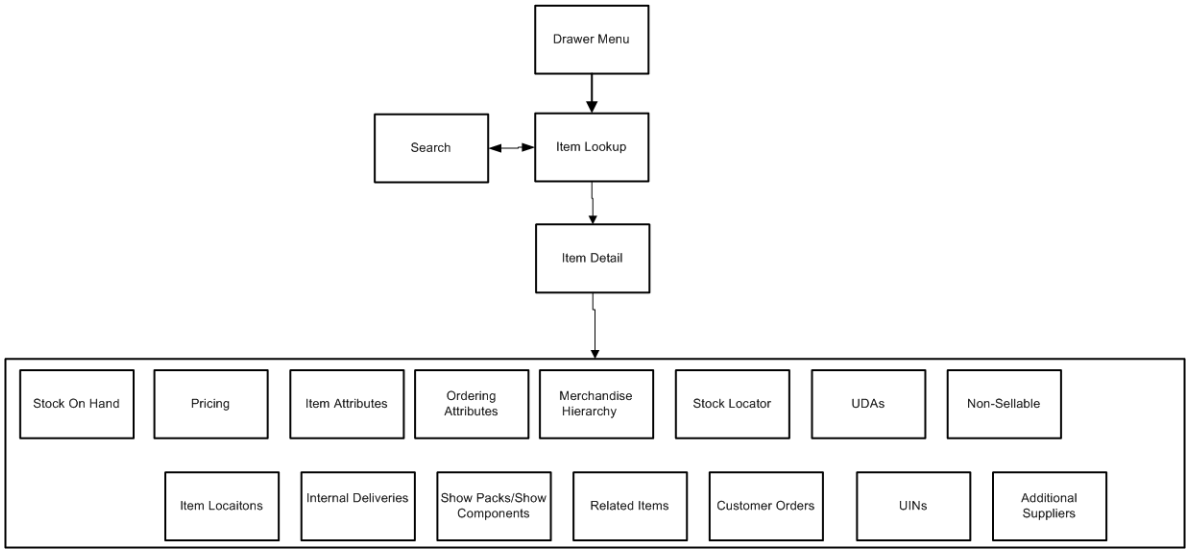
The UINs that are defined for the item are shown. To add a UIN, enter or scan the UIN into the scan bar of the header. To remove a UIN, tap the Remove icon. To restore a UIN, tap the Undo icon.

8. When you have completed the adjustments, tap **Save**. You are returned to the Inventory Adjustments screen.

Item Lookup

You can look up all details about an item by selecting Item Lookup from the Drawer/Menu.

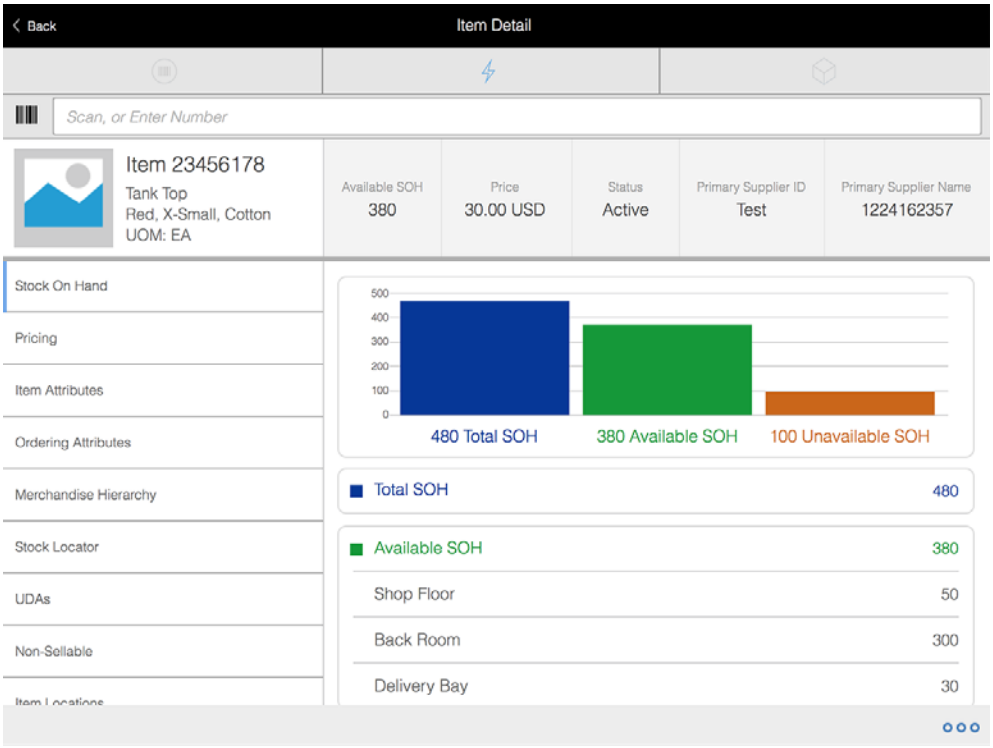
Figure 3–11 Item Lookup Flow



To look up an item:

1. Tap **Item Lookup** from the Drawer/Menu. The Item Lookup screen opens.
2. Scan or enter the item number you want to look up. To filter the list of items, tap **Search Criteria**. The Item Lookup Search Criteria screen opens.
3. Select the search criteria and tap **Apply**. The Item Lookup screen is updated based on the criteria.
4. Tap an entry in from the list. The Item Detail screen opens with the stock on hand details displayed.

Figure 3–12 Item Detail Screen



The following tables show the tabs that are displayed on this screen. The details contain the same information shown on the PC.

Field	Description
Item Detail	The following details are shown for the item: ▪ Image (if the item has an image and the system is configured to display images) ▪ Item ID ▪ Description ▪ Item's standard unit or measure
Available SOH	Available stock on hand for the item.
Price	Price of the item.
Status	Status of the item.
Primary Supplier ID	ID of the item's primary supplier.
Primary Supplier Name	Name of the item's primary supplier.

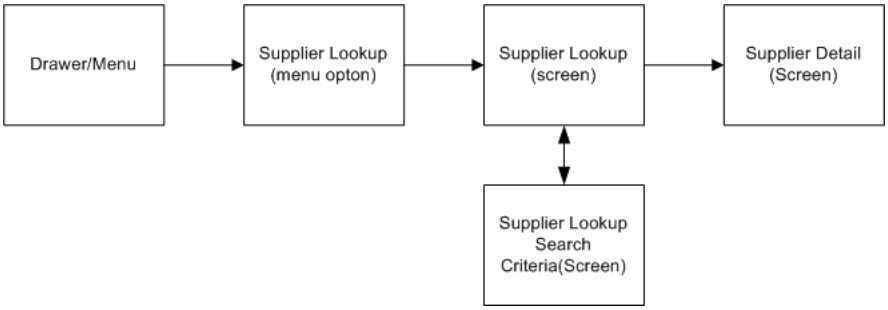
Field	Description
Stock On Hand	Displays the item's stock information. If the display sequenced fields configuration setting in SIM is turned on, detailed stock information buckets are shown.
Pricing	Displays the item price history information.
Item Attributes	Displays the item's attributes.

Field	Description
Order Attributes	Displays the item's order attributes.
Merchandise Hierarchy	Displays the item's merchandise hierarchy and differentiator information.
Stock Locator	Displays item stock information in other stores.
UDA	Displays this item's user defined attribute information.
Non-Sellable	Displays this item's non-sellable inventory information. This tab will not be present if non-sellable types are turned off in the system.
Item Locations	Displays this item's sequenced locations. This tab will not be present if sequencing is turned off.
Incoming Deliveries	Displays any incoming deliveries of this item.
Show Packs	Displays any pack items that contain this item.
Show Components	Displays all component items of this item. This tab will not be present if this item is not a pack item.
Related Items	Displays all items related to this item. The user can select any related item in this list and be taken to the details of that related item.
Customer Orders	Displays customer order information for orders containing this item.
UINs	Displays unique identification number information about this item. This tab will not be present if this item is not a UIN item or if UINs have been turned off in the system.
Additional Suppliers	Displays additional (non-primary) suppliers for this item.

Supplier Lookup

You can look up all details about any supplier, either as an inquiry or as part of another SIM task.

Figure 3–13 Supplier Lookup Flow



To look up a supplier:

1. Tap **Supplier Lookup** from the Drawer/Menu. The Supplier Lookup screen opens.
2. Scan or enter the item ID for the supplier you want to look up. To filter the list of suppliers, tap **Search Criteria**. The Supplier Lookup Search Criteria window opens.

3. Select the search criteria and tap **Apply**. The Supplier Lookup screen is updated based on the criteria.
4. Tap an entry in the list. The Supplier Detail screen opens.

Figure 3–14 Supplier Detail Screen

The following information is displayed for the supplier:

Field	Description
Supplier ID	ID of the supplier.
Supplier Name	Supplier name that corresponds to the supplier ID.
Status	Status of the supplier.
Returns Allowed	Indicates whether the supplier allows returns.
Return Authorization Required	Indicates whether the supplier requires an authorization number when creating an RTV.
Deliver Discrepancy	Indicates whether the DSD delivery can be discrepant for the supplier. Possible values: ■ Allow any discrepancy ■ Allow overages but not short receipts ■ Do not allow any discrepancies
HQ Address	Address of the supplier's headquarters.
Address Tabs	Tabs available to display various address information available for the supplier. The available tabs are dependent on the addresses available for the supplier. Some examples of addresses include the following: ■ Postal Address ■ Order Address ■ Return Address ■ Invoice Address

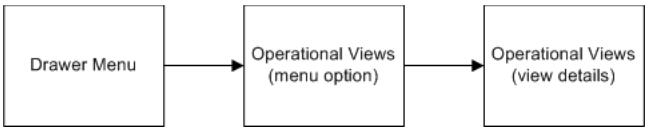
Operational Views

Operational views allow the user to review business exceptions or events taking place.

The following operational views are available:

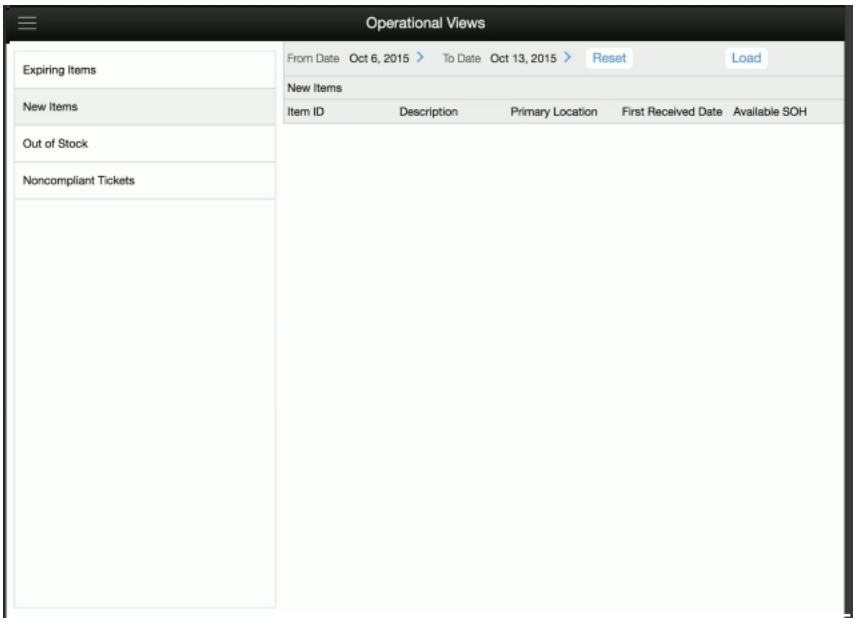
- Expiring Items
- New Items
- Noncompliant Ticket
- Out of Stock

Figure 3–15 Operational Views Flow



To access a view, select the view from the menu.

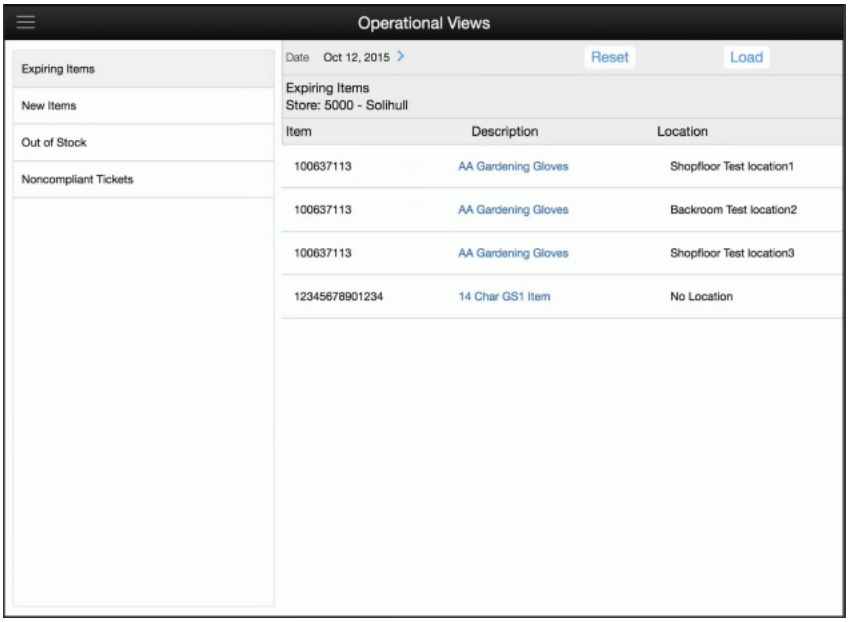
Figure 3–16 Operational Views Screen



Expiring Items

The Expiring Items view takes in an expiration date and returns the list of items that have an expiration date that meets the selected date. All transactions where the Sell By or Use By dates are captured are considered when creating the list.

Figure 3–17 Expiring Items Operational View



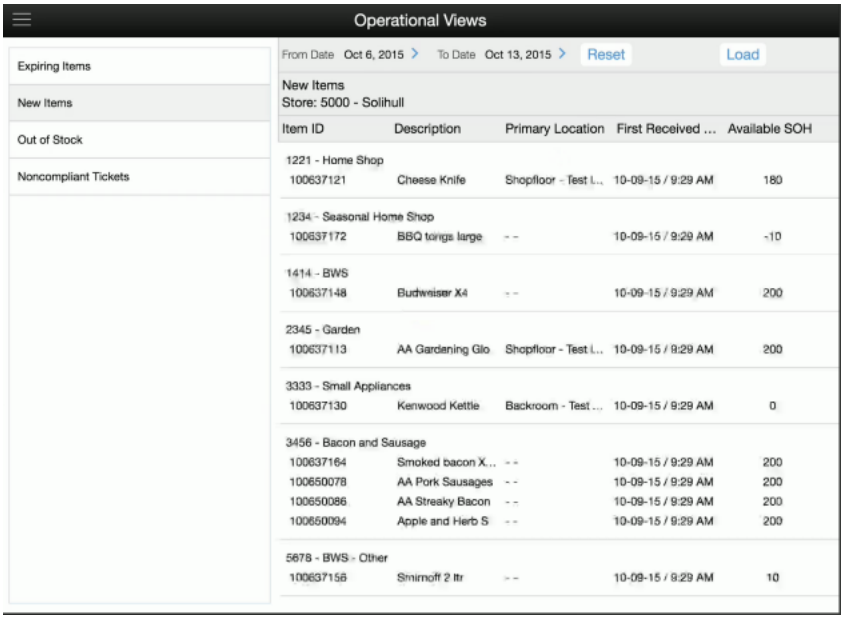
The following information is shown in this view:

Field	Description
Store	Store ID and name.
Expiration Date	Selected expiration date.
Item	Item ID.
Description	Item description.
Location	Macro location for the item if sequencing is used.

New Items

The New Items view displays items received for the first time items within a range of dates. This view is oriented towards the retailer that wants to ensure that new assortments of items have made it to the shop floor and are not forgotten on the receiving dock.

Figure 3–18 New Items Operational View



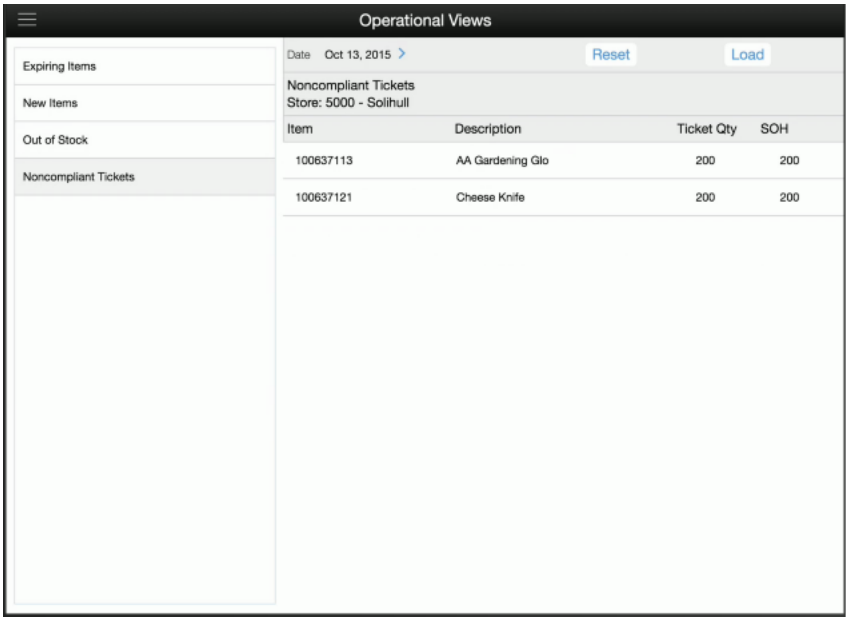
The following information is shown in this view:

Field	Description
Store	Store ID and name.
From Date To Date	Date range covered in the view.
Dept	Sub-header with the department ID and name is shown for each department. All items for the same department are grouped/listed under that sub-header.
Item	Item ID.
Description	Item description.
Primary Location	Primary macro location for the item if sequencing is used.
First Received Date	Date/time the item was first received.
Avail. SOH	Available stock on hand for the item

Noncompliant Ticket

The Noncompliant Tickets view reviews regular price changes going into effect for a specific date and compares them against tickets and labels generated for that date. Any discrepancies likely will be due to not labeling correctly.

Figure 3–19 Noncompliant Ticket Operational View



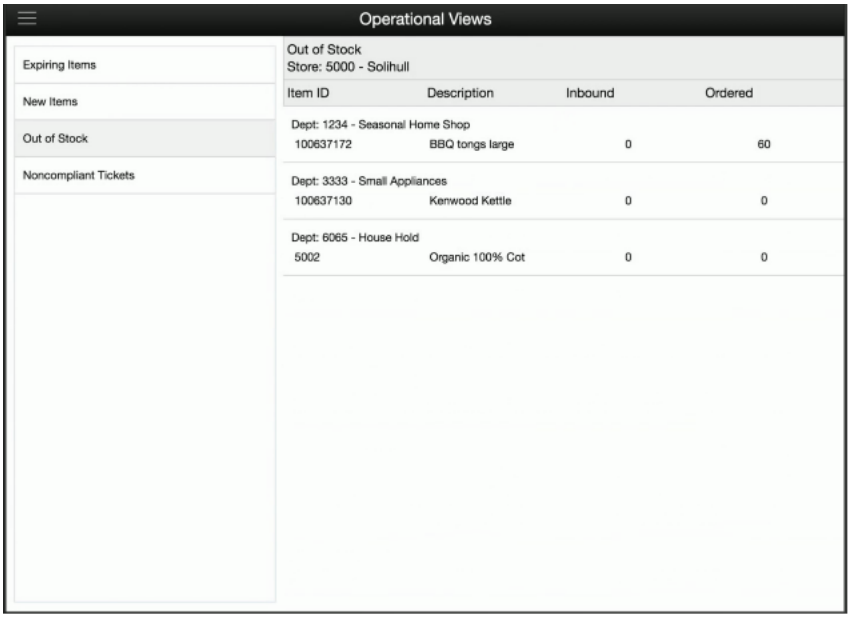
The following information is shown in this view:

Field	Description
Store	Store ID and name.
Date	Date selected for the view.
Item	Item ID.
Description	Item description.
Ticket Qty	Total quantity of tickets that need to be printed for the item.
SOH	Total stock on hand for the item.

Out of Stock

The Out of Stock view provides a list of active items with no available stock, that is, the available stock on hand is less than or equal to zero.

Figure 3–20 Out of Stock Operational View



The following information is shown in this view:

Field	Description
Store	Store ID and name.
Dept	Sub-header with the department ID and name is shown for each department. All items for the same department are grouped/listed under that sub-header.
Item	Item ID.
Description	Item description.
Inbound	Inbound quantity for the item.
Ordered	Ordered quantity for the item.

4

Technical Overview

This chapter describes the architecture of SIM Tablet.

Architecture

The SIM Mobile application is built using Oracle Mobile Application Framework (MAF). MAF is a cross-platform framework that uses web technologies (HTML5 and CSS) for the User Interface (UI), Java for application business logic, and Apache Cordova for access to the device features.

MAF defines a feature as a reusable, self-contained module of application functionality. A MAF feature can use one of three content types: AMX, Local HTML, or Server (Remote) HTML. The SIM feature is built using AMX.

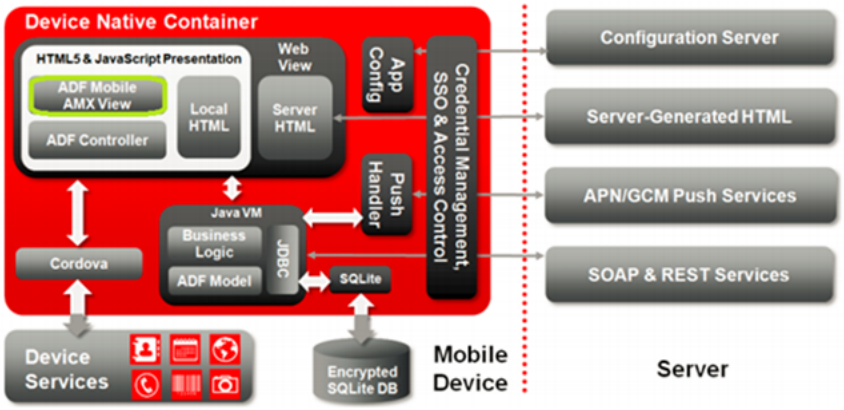
For an introduction to MAF, see Section 1.1, Introduction to Mobile Application Framework, in Developing Mobile Applications with Oracle Mobile Application Framework on the Oracle Help Center:

https://docs.oracle.com/middleware/maf212/mobile/develop-maf/maf-about.htm#ADFMF1150

Runtime Architecture

The runtime architecture of the SIM Mobile application is provided by MAF. For an overview of the runtime architecture of MAF, see Developing Mobile Applications with Oracle Mobile Application Framework on the Oracle Help Center.

Figure 4–1 Runtime Architecture



Security

Security is a top priority for mobile application development given that mobile devices are at a higher risk of loss or theft. For more information, see the *Oracle Retail Store Inventory Management Security Guide*.

Authentication

SIM Mobile uses MAF-based security to authenticate users to log in and view application features. MAF determines whether access to the application feature requires user authentication when an application feature is secured by an authentication server.

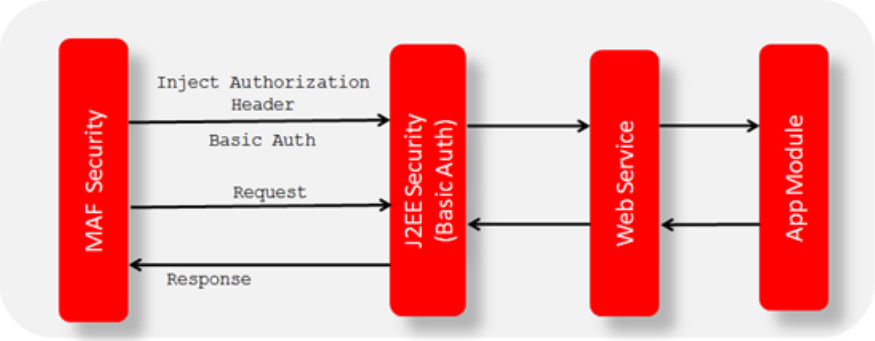
MAF supports the following authentication modes: Basic Auth, OAuth, and Web Single Sign On (SSO). MAF applications can use either the default login page provided by MAF or a customized login page that is written in HTML.

Service Authentication and Authorization

RESTful web services are secured using a basic authentication mechanism and access controlled using the standard J2EE authorization model. For more information on the J2EE authorization model, see the following web site:

http://docs.oracle.com/cd/E28280_01/web.1111/e13711/thin_client.htm#SCPRG133

Figure 4–2 Service Authentication and Authorization



Authorization

SIM Mobile implements similar access control functionality as other SIM platforms. Users' permissions are based upon assigned roles.

Deployment

> **Note:** The Basic Authentication application and Access Control Service are deployed together in the same EAR, but only one instance of the Access Control Service is used by SIM at runtime. For more information, see "Application Configuration".

Service Endpoint Assembly:

SIM services are assembled as part of the application EAR file.

Typically, the services used are deployed on separate domains. It is also valid for the services to be deployed on a single domain.

Configuration

This section describes the configuration that is required (and some that is optional) prior to building and deploying the SIM Mobile application.

Application Configuration

Configuring the application includes allowing the application to authenticate users, connect to web services, and in certain cases, access remote images.

Feature	Connection (Type)
Configuration	ConfigServiceLogin (Login) ConfigService (URL)
SIM Mobile	SimMobileLogin (Login) SimMobileService (URL)

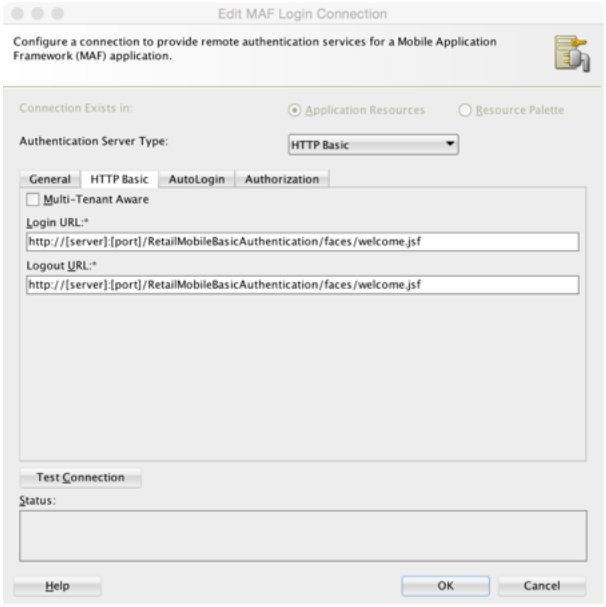
SIM Mobile is delivered with placeholder connections for each of the connections listed above. It is possible to build and install the application without updating the included connections and then use the Configuration feature to update the connections after the application is installed on a device. For more information, see "Configuration Service Setup".

Another option is to update the placeholder connections with valid URLs prior to building the application so that the application is ready to run immediately after installation on a device. In either case, it is always possible to update the connections used on the device at a later time through the Configuration feature.

Security Configuration

The Authorization feature uses the LoginServer connection and must be configured for HTTP Basic authentication. Configure HTTP Basic authentication on the HTTP Basic tab of the Edit MAF Login Connection window by replacing [server]:[port] with the correct values for your environment.

Figure 4–3 Edit MAF Login Connection Page HTTP Basic Tab



For more information on accessing and configuring login connections, see the Configuring MAF Connections section in the MAF documentation available at the following web site:

http://docs.oracle.com/middleware/maf212/mobile/develop-maf/maf-securing.htm#ADFMF1024

Note: These updates must be made prior to building the application and cannot be updated through the Configuration feature.

Adding Remote Image URLs to the Application Whitelist

The SIM Mobile feature may show images on several screens. By default, these are read from the SIM Managed Server or from the device itself. Any customization of images from remote URLs must contain references in maf-application.xml to the remote domain.

For more information on adding domains to the whitelist in maf-application.xml, see the section How to Create a Whitelist (or Restrict a Domain) in Developing Mobile Applications with Oracle Mobile Application Framework for MAF 2.1.2.0.0 available at the following web site:

http://docs.oracle.com/middleware/maf212/mobile/develop-maf/maf-ui-remote-url.htm#BABHEHDE

Configuration Service Setup

If you are using the Configuration feature to update the connections.xml file on a mobile device after the application has been installed, it is necessary to host the connections.xml file at a secured location (HTTP Basic authentication).

The hosted connections.xml file should contain valid URLs for all connections being used by the application (including the ConfigService and ConfigServiceLogin connections). Some connections may not be in use (see above).

The connections.xml file must be named connections.xml and be located at a path that ends with the application identifier. For example, if the application identifier is com.company.SIM, the connections.xml could be located at the following URL:

http://server:port/SomeLocation/com.company.SIM/connections.xml

You need two URLs to complete the configuration process:

- Configuration URL: This is the base URL up to, but not including, the application identifier. For example:

  http://server:port/SomeLocation

  (Note that this is also the value that can be pre-populated in the ConfigService connection.)

- Configuration Login URL: This is a complete URL to a secured resource on the same domain as the connections.xml file. For example:

  http://server:port/SomeLocation/SomeSecuredResource

  (Note that this is also the value that can be pre-populated in the ConfigServiceLogin connection.)

If the application is deployed with placeholder (non-valid URLs) in the connections.xml file and the user is required to use the Configuration feature to get valid connections, it is recommended that you configure the application to prompt the user to set up configuration on the initial launch of the application (until configuration has been completed).

To configure the application to prompt the user:

1. Locate and open the adf-config.xml file in JDeveloper under Application Resources > Descriptors > ADF META-INF.
2. In the source view, locate the adf-property tag with the name value RETAIL_INITIAL_CONFIGURATION_REQUIRED.
3. Change the value to true.

Navigation Configuration

Note: There is no need to update the navigation configuration unless changes in organization, labeling, and so on are desired.

The springboard is configured by a navigation.json file in the application controller project. The file has the following structure:

```
{
    bundles : {
        <alias> : <full bundle name>,
        ...
    },
    menus : {
        name : <Application name>,
        options : [
            {
                name : <Feature group name>,
                options : [
                    {
                        name : <Feature name>,
```

```
                        id : <ID of feature to link to>,
                        options : <Optional submenu>
                    },
                ...
                ]
            },
            ...
        ]
    }
    footers : [
        {
            label : <Label for footer item>,
            featureId : <ID of feature to link to>
        },
        ...
    ]
}
```

The bundles section allows the declaration of aliases to XLIFF bundles. Translated strings can then be used for name/label with [Alias.Key], similar to the usage in AMX pages (after using loadBundle). If an alias is not declared, the full bundle path must be used instead of the alias.

The menus section begins with the root node of the hierarchy. The name of this node is displayed on the switcher page of the springboard. The nodes under it are the feature groups to display on the switcher page. Finally, the next level of nodes are the features within the group. If no name is provided, the name of the feature referenced is used. If the options property is specified, another level of feature nodes can be placed in it to form a submenu (the springboard does not support nesting submenus), and name is required in this case. Tapping on a feature item in the group or a submenu allows you to navigate to the provided feature identifier.

The footers section allows for setting up feature links that should be displayed regardless of current feature group. A feature link is included by specifying the featureId and optionally a label.

User Interface Customization

This section describes the supported customizations of the Oracle Retail SIM Mobile application. Customizations require familiarity with developing mobile applications using Oracle Mobile Application Framework (MAF).

For more information on the specifics about MAF customizations, see Chapter 10 Customizing MAF Application Artifacts with Metadata Services (MDS) available at the following web site:

http://docs.oracle.com/middleware/maf212/mobile/develop-maf/maf-apps-customize-mds.htm#ADFMF25118

Also see Chapter 18, Customizing MAF AMX Application Feature Artifacts, in Developing Mobile Applications with Oracle Mobile Application Framework available at the following web site:

http://docs.oracle.com/middleware/maf212/mobile/develop-maf/maf-mds-ui-components.htm#ADFMF24124

Note: For more information on the scope of customizations allowed under the MAF Foundation license that is provided with Oracle Retail SIM Mobile, see the Restricted Use Licenses chapter in the *Oracle Retail Licensing Guide*.

Understanding Metadata Services

For more information on MDS and the MAF artifacts that can be customized, see Developing Mobile Applications with Oracle Mobile Application Framework available at the following web site:

http://docs.oracle.com/middleware/maf212/mobile/develop-maf/toc.htm

Understanding JDeveloper Roles

The JDeveloper IDE runs using a given role. Usually, developers use the Studio Developer role to develop mobile applications with MAF. However, MDS-based customizations must be done using the Customization Developer role.

The Customization Developer role limits what you can do. For example, source code generally cannot be edited directly and new files cannot be created. When changes are made to files using the IDE, the changes are saved separately from the actual source by MDS. MDS applies the changes on top of the source documents. This allows the customizations to be preserved when the source documents are updated.

Customization Setup

There are several setup steps that must be completed before one can begin customizing the SIM Mobile application with MDS. MDS has a notion of customization layers that must be set up before customization can begin. The supported customization layers must be configured in the CustomizationLayerValues.xml file. Java customization classes must be created for the layers you support. The customization classes need to be added to the SIM Mobile classpath and then referenced in the adf-config.xml file in the SIM Mobile workspace.

For more information, see Developing Mobile Applications with Oracle Mobile Application Framework available at the following web site:

http://docs.oracle.com/middleware/maf212/mobile/develop-maf/toc.htm

Note: Oracle Retail recommends that customization classes be created in a separate JDeveloper workspace that produces a JAR that is consumed by the SIM Mobile workspace. For more information, see Developing Mobile Applications with Oracle Mobile Application Framework.

Customizing the Application Id

You will have to update the Application Id in order to deploy your company's version of the SIM Mobile application. There are two approaches to customizing the Application Id. The recommended approach depends on whether you plan on performing additional customizations or not. If you do not plan on performing additional MDS-based customizations, you can simply update the Application Id in maf-application.xml under the Studio Developer role. Afterwards, update the Application Bundle Id referenced by the deployment profiles you are using to match your new Application Id (if they do not match already).

Note: If you later decide to upgrade SIM Mobile, you will have to revert your changes to the Application Id in maf-application.xml to properly perform the upgrade. After upgrading the application, you can reapply the change to maf-application.xml and the deployment profiles you are using.

If you do plan on customizing the application, Oracle Retail recommends you customize the Application Id using JDeveloper's Customization Role and MDS. That way, you can upgrade your workspace without having to revert your Application Id change temporarily.

To customize the Application Id:

1. Open JDeveloper using the Customization Developer role.
2. Open the maf-application.xml file.
3. Update the Application Id.
4. Save your changes.
5. After the Application Id has been updated in the maf-application.xml file, you should update any deployment profiles you are using to ensure their Application Bundle Ids match your new Application Id. Upon an upgrade, you may need to reapply your Application Bundle Id to the deployment profiles, since deployment profile changes are not saved by MDS; however, the change made to the Application Id in maf-application.xml does not need to be reapplied since it was saved by MDS.

Note: Always ensure that the Application Id in the maf-application.xml and the Application Bundle Id in your deployment profiles match. They are used for different purposes within MAF applications, but for proper functioning of the SIM Mobile application, they must be set to the same value.

Customizing Application Branding

The application branding consists of the application icon as shown in various contexts and the splash screens when launching the application. The application branding can be customized by replacing the icons and images that are referenced by the application.

The following steps assume that a workspace has already been created from the Oracle Retail SIM Mobile MAA file and that the appropriate-sized icons or images have been added to the workspace created from the MAA file:

1. Open JDeveloper in the Studio Developer role.
2. Follow the steps outlined in Developing Mobile Applications with Oracle Mobile Application Framework for more information on how to configure your custom images.

Note: Since MDS is not aware of changes made to this image configuration, any customizations are overridden by upgrading to a newer version of Oracle Retail SIM Mobile.

Customizing Application Skins

The overall look and feel of the SIM Mobile application is controlled by a skin. Since MAF supports MDS customizations of the maf-skins.xml and maf-config.xml files, it is possible to apply a custom skin to the application. If the SIM Mobile application is upgraded to a newer version at a later date, the skinning customizations are still applied on top of the upgraded version by MDS.

The following steps assume that a workspace has already been created from the Oracle Retail SIM Mobile MAA file:

1. Open JDeveloper in the Studio Developer role.
2. Open the SIM Mobile workspace created from the delivered MAA file.
3. Create a new CSS skin file in the SIMApplicationController project. For more information on how to create CSS skin files and how MAF skinning works, see Chapter 7, Skinning MAF Applications, in Developing Mobile Applications with Oracle Mobile Application Framework.
4. Switch JDeveloper to the Customization Developer role by selecting the Tools menu and then Switch Roles > Customization Developer.
5. When JDeveloper has restarted in the Customization Developer role, open the maf-skins.xml file.
6. In the Structure Pane, right click the adfmf-skins node and select Insert Inside adfmf-skins > skin.
7. Fill in the fields in the popup. Note that the style-sheet-name should reference the CSS skin file created in Step 3.
8. If the skin should be versioned, in the Structure Pane, right click the skin element just created, and select Insert Inside skin > version.
9. Fill out the popup with the skin version information. For more details on configuring skins in maf-skins.xml, see Chapter 7, Skinning MAF Applications, in Developing Mobile Applications with Oracle Mobile Application Framework.
10. Save the changes.
11. Open the maf-config.xml file.
12. Update the skin-family element with the name of the custom skin family that should be applied to the entire application.
13. Update the skin-version element if the custom skin was defined with a different version. If the custom skin does not have a version, remove the skin-version element.
14. Save the changes.
15. Deploy the application to iOS Simulator to verify that the new skin is being picked.

After upgrading to a new SIM Mobile version, the custom skin changes are still applied over the base application.

Customizing String Resources

In order to support localization, Oracle Retail SIM Mobile references application string resources in the XLIFF resource bundles.

Since Oracle MAF does not support MDS customizations of XLIFF resource bundles, the Customization Developer role does not allow you to make changes to the XLIFF

resource bundles. Any changes made in the Studio Developer role to the XLIFF resource bundles delivered in the SIM Mobile application are overridden when the application is upgraded at a later date, so this approach is not recommended.

In order to add custom string resources to the SIM Mobile application in a future-proof way, you must create new resource bundles under the Studio Developer role, add strings to these new bundles, and then reference strings from these new resource bundles in customizations to AMX pages or other customizable artifacts under the Customization Developer role. For more information about this process, see Enabling Customizations in Resource Bundles in Developing Mobile Applications with Oracle Mobile Application Framework.

Customizing the Application Name

The application name cannot be customized, so for most use cases, it is not recommended to create a new application-level resource bundle as described in the MAF documentation. Instead, create new resource bundles in the projects where you want to add your custom strings.

Customizing Application Strings in the SIM Mobile Feature

The SimMobileViewController project contains the string resources used by the SIM feature. If you want to change strings used in the feature, create a new resource bundle (while in the Studio Developer role) under the SimMobileViewController project, add your custom strings to it, and then in the JDeveloper Customization Developer role, customize the files to reference these new strings.

Springboard Navigation

The SimMobileApplicationController project contains application name string resources referenced by the application Springboard. They are referenced in the navigation.json file. To customize the name of features as they show up on the Springboard, create a new resource bundle (while in the Studio Developer role) under the SimMobileApplicationController project, add your custom strings to it, and then update the navigation.json file to reference your new strings.

To update the navigation.json file, you must first add a new property that maps the key you decide to use for your new resource bundle's basename in the bundles object. For example, if you created a new bundle whose basename is customer.custom.bundle.CustomBundle, you would add a property key that maps to a bundle basename:

customBundle : customer.custom.bundle.CustomBundle

The complete bundles object may look like the following example:

```
"bundles" : {
"SimMobileApplicationControllerBundle" :
"oracle.retail.sim.mobile.client.application.SimMobileApplicationControllerBundle"
,
"simmobileviewcontrollerBundle" :
 "oracle.retail.sim.mobile.client.SimMobileViewControllerBundle"
}
```

Next, you need to update the name attribute of the application name you plan to update. If the new customBundle contains the string under the ID NEW_APP_NAME, the reference would follow this format: [customBundle.NEW_APP_NAME] where customBundle is the reference to the resource bundle you defined in the bundles.

Note that the navigation.json file must be updated under the Studio Developer role since you cannot modify this file under the Customization Developer role. Additionally, the customizations to the navigation.json are not managed by MDS, so they are lost whenever you upgrade the SIM Mobile application.

Application Level

The SimMobileViewController project contains the string resources used by the SIM Mobile application for some of its application-level features such as the About page. To add your own custom strings to these features, create a new resource bundle (while in the Studio Developer role) under the SimMobileViewController project, add your custom strings to it, and then in the JDeveloper Customization Developer role, customize the files in the project to reference these new strings.

Note: Some strings displayed on the UI may not be customizable through MDS since the data could originate from web services or be programmatically constructed.

Removing Features from the Application

Oracle Retail SIM Mobile can be customized to remove features. Features that have been removed are not accessible by users when the application is deployed.

To remove features from the application:

1. Open the SIM Mobile workspace under the Customization Developer role.
2. Open the maf-application.xml file.
3. Select the Feature References tab.
4. Select the feature that you wish to remove from the application.
5. Click the X icon just above the table of features to delete the selected feature.
6. Save your changes.

Note: Any updates to the navigation.json file are overridden by SIM Mobile upgrades.

Adding New Features to the Application

Oracle Retail SIM Mobile can be customized to add new custom features. The recommended approach to adding new features to SIM Mobile is to develop the feature in a separate workspace, deploy a Feature Archive (FAR) file containing the feature, and add the FAR as a library to the SIM Mobile application.

For more information on FARs, see Reusing MAF Application Content of Developing Mobile Applications with Oracle Mobile Application Framework available at the following web site:

http://docs.oracle.com/middleware/maf212/mobile/develop-maf/maf-apps-feature-archive.htm#ADFMF25114

Note: Adding new features to the application requires a MAF license. For more information on restricted licenses, see the Restricted Use Licenses chapter of the *Oracle Retail Licensing Guide*.

To add a new feature:

1. Open JDeveloper in Studio Mode.
2. Create a new MAF application for your custom feature development.
3. Develop your custom feature.
4. Test your custom feature by deploying it to an iOS Simulator before adding it to the SIM Mobile application to verify it is working as expected. This is a recommended step.
5. Create a FAR deployment profile as described in the MAF documentation.

   Note: If your feature references connections from the connections.xml file, change the Connections Include option from Connection Name Only to Connection Details (excluding secure content) in the MAF Feature Archive Deployment Profile Properties window. When you later add the FAR you generate to an application, the connection details (that is, URLs) are copied into that application's connections.xml file.

6. Deploy your feature as a FAR.
7. Add the FAR as an application library as described in the MAF documentation to the SIM Mobile workspace.
8. Save your changes.
9. Switch to the JDeveloper Customization Developer role.
10. Open the maf-application.xml file.
11. Add a Feature Reference in maf-application.xml for the feature coming from your FAR. Note:

    Note: Oracle Retail recommends that the platform.mobile.authorization feature remain as the first feature in the list of Feature References.

12. If you want the feature to appear on the springboard, update the navigation.json file to reference it. The order that features appear on the springboard comes from the order they are defined in the navigation.json file. In order to add a reference to your feature on the springboard, insert a JSON object with the following structure to the desired location in the navigation.json file:

```
{"name": "The name of your feature", "id": "the feature ID of your feature."}
```

Customizations to the maf-application.xml file are preserved across application upgrades, but changes to the navigation.json file are not. After upgrading, you may need to add the FAR as an application library to the SIM Mobile application again. This again updates any connections in the connections.xml file that may have been removed during the upgrade process.

Customizing the User Interface

Since the SIM Mobile UI is built using MAF artifacts, many of them can be customized. For a full list of components that can be customized, see Chapter 18, Customizing MAF AMX Application Feature Artifacts, available at the following web site:

http://docs.oracle.com/middleware/maf212/mobile/develop-maf/maf-mds-ui-components.htm#ADFMF24124

Following are examples of UI customizations that can be performed:

Adding a New Component to the User Interface

To add a new UI component to the UI:

1. Open the SIM Mobile application under the JDeveloper Customization Developer role.
2. Open the AMX page or page fragment you want to customize with a new UI component.
3. Use one of the standard ways of adding UI Components to the page (right click a component in the Structure pane and select one of the insert options, drag and drop a component from the Component pane to the location in the source where you wish to add the component, and so on). For more information on adding UI Components to a page, see Chapter 13, Creating the MAF AMX User Interface, available in Developing Mobile Applications with Oracle Mobile Application Framework.
4. Save your changes.

Updating Attributes of User Interface Components

If you want to change the text label of a component on the UI or change one of its other attributes:

1. Open the SIM Mobile application under the JDeveloper Customization Developer role.
2. Open the AMX page or page fragment containing the component you wish to customize.
3. Find the component you wish to change in the AMX source code.
4. Click anywhere in the source code of the component you wish to change. The Properties pane updates to display the properties of the selected component.
5. Update the properties in the Properties pane that you wish to change. Note that several key properties appear to be disabled in the Properties pane when under the JDeveloper Customization Developer role (for example, the text property of the amx:commandButton component). Although the property input field is disabled, you can usually still access the menu to the right of the property input field to change its value using the Expression Builder or Select Text Resource options and make updates to the property input field using those UIs.
6. Save your changes.

Removing a Component from the User Interface

If you want to remove a component from the UI (for example, a field on the UI that is not important to your application users):

1. Open the SIM Mobile application under the JDeveloper Customization Developer role.
2. Open the AMX page or page fragment containing the component you wish to remove.
3. Find the component you wish to remove in the Structure pane.

4. Right click the component.
5. Select Delete from the menu that appears.
6. Save your changes.

Customizing Platform Features

Some features in SIM Mobile, such as the application Springboard, come from a FAR file generated from a separate Mobile Platform workspace. In order to customize these Platform features, you must make the customizations in the Platform workspace first. The following steps assume you have created a workspace from the PlatformMobileArchive.maa file and have prepared it for customization:

1. Open JDeveloper in the Customization Developer role.
2. Open the workspace you created from the PlatformMobileArchive.maa file.
3. Make any of the above supported customizations to the features in the PlatformMobileViewController project.
4. Save your changes.
5. Right click the PlatformMobileViewController project.
6. Select Deploy > Platform Mobile Features from the menu.
7. To deploy the feature archive JAR file, click Finish in the Deploy PlatformMobileFeatures window.
8. Overwrite the existing PlatformMobileFeatures.jar file in the lib folder of your SIM Mobile workspace with the PlatformMobileFeatures.jar you just created.
9. Open the SIM Mobile workspace.
10. Deploy the SIM Mobile application.

Note: Whenever you upgrade the SIM Mobile workspace to a newer version, you need to redeploy your customized PlatformMobileFeatures.jar file and overwrite the existing PlatformMobileFeatures.jar file in the lib folder.

Upgrading to a New Version

Customizations are applied on top of the new upgraded version of SIM Mobile. However, the following are examples of updates that need to be reapplied after upgrading:

- The addition of any libraries or JARs to the application-level Libraries and Classpath. Note this includes the following:
  - The JARs containing your customization classes.
  - Any FARs that were added to add new feature content to the SIM Mobile application.
- Any changes to the navigation.json file.
- Any changes to the application branding.
  - Any images you added should be preserved in the upgraded version, however, the application-level configuration to use your new images will be overwritten.

- Any changes to the connections.xml file.
- Any changes made under the Studio Developer directly to delivered resource bundles.

> **Note:** Making these kinds of changes is not recommended since it is not upgrade-safe.

For more information on upgrading a MAF Application that is built from a MAA file such as SIM Mobile Section, see Upgrading a MAF Application with Customizations available at the following web site:

http://docs.oracle.com/middleware/maf212/mobile/develop-maf/maf-apps-customize-mds.htm#ADFMF24079

> **Note:** Although JDeveloper creates a backup copy of the workspace, it is usually a best practice to create your own backup in case the JDeveloper backup fails for some reason.

Unsupported Customizations

The following non-exhaustive list provides some examples of customizations that are not supported:

- Adding new pages to a feature:
  - Although MDS supports customizations to task flows and AMX pages, it currently is not very upgrade-friendly to add new pages to a feature. The Customization Developer role does not allow new pages to be added, so they would have to be added under the Studio Developer role. Upon upgrading, any new pages you have added are preserved. However, adding pages usually changes the DataBindings.cpx file, which is overridden by the upgrade process.
  - The recommended customization is to add a new feature to the application instead of trying to add new pages to a given feature.
- Modifying business logic:
  - Most business logic is implemented outside of the artifacts that are customizable by MDS, so this is unsupported.
- Modifying ReST service calls:
  - Similar to modifying business logic, service calls cannot be customized to add additional request parameters, accept different responses, and so on.

MDS Customizations and Configuration Services

If the SIM Mobile application is deployed with configuration services enabled, and you run the configuration services, any changes in subsequent deployments are not picked up by the application at runtime. In order to make sure changes in subsequent deployments of the application are picked up at runtime, first delete the existing installation of the application on the device before deploying the latest version. (Note that this is necessary only if you run the configuration services.)

JDeveloper Bugs

You many encounter issues with the JDeveloper Customization Developer role. These bugs may interfere with your ability to customize the application. Following are some common issues you may encounter and recommended workarounds:

Unable to Customize the Application

Sometimes the JDeveloper UI indicates that changes can be made to files that support customization, however, it does not seem to respond to changes. For example, sometimes the menu to the right of a field in the Properties pane is unavailable, and you need to access that menu to select a text resource. Usually restarting JDeveloper in the Customization Developer role fixes these kinds of issues.

The Customization Developer role does not let you directly modify source code in the source editor. If you are unable to modify the source code in the source editor, that is the expected behavior.

Exception Stacktraces

At various times during customization (for example, switching between certain files, deployment, and so on), JDeveloper may display an exception stack trace dialog for an error that has occurred. In most cases, the dialog allows you to file a bug for the error or ignore it. Although the error has occurred, usually upon dismissing the window you are able to successfully continue with your customization.

Internationalization

Internationalization is the process of creating software that can be translated more easily. Changes to the code are not specific to any particular market. Oracle Retail applications have been internationalized to support multiple languages.

Translation

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

- Graphical user interface (GUI)
- Error messages

The following components are not translated:

- Documentation (online help, release notes, installation guide, user guide, operations guide)
- Batch programs and messages
- Log files
- Configuration tools
- Reports
- Demonstration data
- Training materials

Translating Text Resources

Oracle Retail SIM Mobile stores text resources in XLIFF (XML Localization Interchange File Format) resource bundles, the standard for Oracle Mobile Application Framework (MAF). For more information about XLIFF, see the following web site:

http://docs.oasis-open.org/xliff/xliff-core/xliff-core.html

See the Developing Mobile Applications with Oracle Mobile Application Framework documentation for MAF's requirements for localized XLIFF files. New localized versions of delivered resources bundles can be added to the workspaces built from the Retail Mobile Platform and SIM Mobile MAA files.

When the SIM Mobile application is deployed to an iOS device, the version of the resource bundles that is used by the application depends on the language set on the device.

Delivered XLIFF Resource Bundles

The following sections describe the XLIFF resource bundles used by the mobile application:

Retail Mobile Resource Bundles

The following table lists the resource bundles that are packaged in the Retail Mobile Platform MAA file:

Base XLIFF Resource Bundle	Text Resource Descriptions
PlatformMobile/PlatformMobileApplicationController/src/oracle/retail/apps/platform/mobile/PlatformMobileBundle.xlf	Default string resources referenced by Retail Mobile Platform AMX fragments.
PlatformMobile/PlatformMobileViewController/src/oracle/retail/apps/platform/mobile/PlatformMobileViewControllerBundle.xlf	String resources for the Configuration Services feature, the Springboard feature, and so on.

SIM Mobile Platform Resource Bundles

The following table lists the resource bundles that are packaged in the SIM Mobile MAA file:

Base XLIFF Resource Bundle	Text Resource Descriptions
SimMobile/.adf/META-INF/SimMobileBundle.xlf	Text resource for the application name.
SimMobile/SimMobileViewController/src/oracle/retail/sim/mobile/SimMobileViewControllerBundle.xlf	Text resources for the SIM Mobile feature.
SimMobile/SimApplicationController/src/oracle/retail/sim/mobile/client/application/SimMobileApplicationControllerBundle.xlf	Text resources for the application names as shown on the springboard.

Changing Language on a Deployed Application

Oracle MAF applications choose the resource bundle to load based on the iOS language settings. For example, if the language is set to Spanish in iOS Settings and there is a localized Spanish version of the XLIFF resource bundle deployed with the

application, the localized Spanish XLIFF resource bundle is used at runtime instead of the base English XLIFF resource bundle.

Note: In order to run the SIM Mobile application in Brazilian Portuguese, the device language must be set to Brazilian Portuguese and the device region setting should be set to Brazil. After updating the language in the iOS settings, the application should be closed and reopened for the new language settings to take effect.

Figure 4–4 Language & Region Page