OAT Merchandise Visibility
Installation and Configuration Guide
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Web site: https://support.oatsystems.com
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Preface

The OAT Merchandise Visibility Installation and Configuration Guide describes the procedure to install and configure OAT Merchandise Visibility and also any additional software.

Who should use this document?

This guide is intended for system administrators and implementers.

Assumptions

The OAT Merchandise Visibility Installation and Configuration Guide assumes the following:

- Software and hardware requirements for installing OATxpress have been completed. Refer to OFS Installation and Configuration Guide.
- The user has administrative privileges on the local host machine.

Additional Documentation

OAT, Inc. customers and partners can log on to https://support.oatsystems.com to access product release notes, hardware configurations for supported devices, and other information related to OAT products.

Document Conventions

Following are the conventions used in this document:

<table>
<thead>
<tr>
<th>Code Examples</th>
<th>Examples from an actual file or a sample command line appears as follows: cd/oat_install_dir/ofls/schema</th>
</tr>
</thead>
<tbody>
<tr>
<td>Navigation</td>
<td>The ‘greater than (&gt;)’ sign separates the navigation controls in a sequence to be performed. For example Admin &gt; Users</td>
</tr>
<tr>
<td>Admin &gt; Users</td>
<td>Indicates that you need to click the Admin tab and then the Users icon.</td>
</tr>
<tr>
<td>Notes</td>
<td>Notes convey important information. Following is an example: NOTE: In the user interface of the OATxpress Web application, fields with asterisks (*) are mandatory and require users to supply a value.</td>
</tr>
<tr>
<td>Cross-references</td>
<td>A cross-reference directs you to another location in the document for information. For example: See …Introduction. Click the text in blue, to traverse the</td>
</tr>
</tbody>
</table>
Example of a Screenshot in the Handheld Device

Example of a Screenshot in the Windows Browser
Chapter 1  Introduction

This document contains instructions for installing and configuring OAT Merchandise Visibility functionality on the OATxpress platform.

1.1 What is OAT Merchandise Visibility?

OAT Merchandise Visibility solution provides an end to end visibility of merchandises from manufacturing to distribution and throughout the store. It offers an insight into the location and quantity of all of the merchandise from source to store - integrating RFID at the point of manufacture, through logistics and distribution operations and throughout the stores.

1.2 OAT Merchandise Visibility Distribution Packet

The OAT Merchandise Visibility distribution packet consists of the following:

- OATxpress deployment files
  - Merchandise Visibility file: prod-c-apparel.oar
- Handheld device installation files (for installation on the handheld RFID devices)
  - OATmobile.CAB
  - OATMerchandiseVisibility.CAB

NOTE:
The installer file for the handheld device(s) is specific to each supported handheld device. “.cpy”, “.reg” and “.ink” files are packaged within the .CAB file and are not distributed separately.
Chapter 2  Pre-requisites

There are some pre-requisites that you need to fulfill before installing OAT Merchandise Visibility Solution. These include hardware and software that must be present before installing the OAT Merchandise Visibility Solution.

This chapter details these requirements and also describes the steps you need to perform before installing OAT Merchandise Visibility Solution.

2.1 Requirements

Following are the requirements to set up OAT Merchandise Visibility Solution:

2.1.1 Supported Platforms

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Database Software</th>
<th>Application Server</th>
<th>Handheld Devices Supported</th>
<th>Device Sync Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft Windows 7 Enterprise Edition 32bit/64bit</td>
<td>Microsoft SQL Server 2008 R2 Express Edition SP1</td>
<td>Apache Tomcat 6.0.26</td>
<td>Motorola MC 3090, Motorola MC 3190</td>
<td>Microsoft Windows Mobile Device Center</td>
</tr>
<tr>
<td>Ubuntu 10.04</td>
<td>Oracle 10g Express Edition</td>
<td>Apache Tomcat 6.0.26</td>
<td>Motorola MC 3090, Motorola MC 3190</td>
<td>NOTE: There is no sync software to connect with Ubuntu Operating System.</td>
</tr>
</tbody>
</table>
2.1.2 Software Requirement

- OAT Foundation Suite 8.0. Refer to OAT Foundation Suite Installation and Configuration Guide for the installation procedure.
- Adobe Flash Player – if Configuration for Zoning and Visualization is used.

2.1.3 Handheld Device Requirements

Supported handheld devices are:

- Motorola MC 3090
- Motorola MC 3190

2.1.3.1 Motorola MC 3090

Following are the software to be installed in the Motorola MC3090:

- Microsoft Windows Mobile 6.1 Classic
- MobileRFID 1.03.14
- Fusion WAN/WLAN Driver - 2.57.0.0.021B

Executable files that have to be installed in the Motorola MC 3090:

- NETCFv35.wm.armv4i.CAB
- NETCFv35.Messages.EN.wm.CAB

2.1.3.2 Motorola MC 3190

Following are the software to be installed in the Motorola MC3190:

- Microsoft Windows Embedded Handheld 6.5 Classic
- MobileRFID 2.2.5101
- Fusion WAN/WLAN Driver - 3.00.2.0.025R

Executable files that have to be installed in the Motorola MC 3190:

- NETCFv35.wm.armv4i.CAB
- NETCFv35.Messages.EN.wm.CAB

NOTE: Motorola MC 3190 has pre-installed NETvFv3.5.wm.armv4i.CAB files.

2.2 Before you begin

A. Do the following on the system in which you plan to add the OAT Merchandise Visibility solution:

1. Install the database software, see Requirements/Supported Platform.
2. Install OATxpress. Refer to the OFS Installation and Configuration Guide for installation procedure.
3. Ensure that the OATxpress installation has a valid license key and is working. Login as a user with administrative rights. Refer to the OAT Foundation Suite Installation and Configuration Guide for details.

B. If a commissioning table is necessary, set up the commissioning table using section Commissioning Table Set Up before using the Single SKU Commissioning Scenario.

C. Connect the handheld device to the computer. Refer to Connecting the Handheld Device to the Computer for details.

D. Set the appropriate Regional Settings in the handheld device. In Regional Settings, changing the language to any language other than English in the handheld device may distort the text alignment in the OAT Merchandise Visibility solution.

NOTE:
Only English is supported.

E. Perform the following steps to test the connection between the handheld device and the OATxpress server:

1. Click on Internet Explorer on the handheld device to open a browser window.

2. Type the IP address and port number in the location bar. Use the same IP address and port number as the OATxpress server.

   \texttt{http://<ipaddress>:<port>/oatedge}

3. If the OAT Foundation Suite login page is displayed then the handheld is connected to the computer. Proceed to next step F. If an error message appears and the login page is not displayed, check the connection between the handheld and the computer. Refer to Connecting the Handheld Device to the Computer for more information.

F. Copy OATMerchandiseVisibility.CAB on Windows Mobile Device Center for Windows 7 and windows 2008.

\section*{2.3 Connecting the Handheld Device to the Computer}

Following are the different ways to set up the handheld device depending on the Operating System:

1. Connecting the Handheld Device to Windows 7 or Windows 2008

2. Connecting the Handheld Device to Ubuntu

\subsection*{2.3.1 Connecting the Handheld Device to Windows 7 or Windows 2008}

Steps to establish connectivity to a handheld device on Windows 7 or Windows 2008:

1. Install Windows Mobile Center.
2. Connect the handheld device to your system using USB dongle. The device driver is automatically installed. If not, locate the device driver and install it.

Figure 1: Connecting Windows Mobile to Windows 7
3. Select “Connect without setting up your device”.

4. Restart your system.

5. Go to Start > Windows Mobile Device Center. The device is displayed as Connected.

6. Click on My Computer > <mobile-device-name> to explore the device.

### 2.3.2 Connecting the Handheld Device to Ubuntu

The following steps can be used to connect the handheld device to a computer running on Ubuntu. **Alternately**, you can use a Windows computer to connect and copy the files to the handheld device. After installation of OAT Merchandise Visibility on the handheld, it can connect to the OATxpress server on the Ubuntu server over a wireless connection.

Steps to establish connectivity to a handheld device with Windows Mobile on Ubuntu machine:

1. Click on the Applications menu in your system and click on "Accessories" and "Terminal Window", to open a terminal window.

**NOTE:**

*Other Linux distributions may have different ways of accessing the terminal.*

2. Run the following command in the terminal window:

```
sudo vi /etc/apt/sources.list
```
3. Add the following to the `sources.list` file:
   ```
   deb http://ppa.launchpad.net/synce/ubuntu <ubuntu_version> main
   deb-src http://ppa.launchpad.net/synce/ubuntu <ubuntu_version> main
   ```
   
   **NOTE:**
   Substitute your version of Ubuntu (Jaunty, Karmic, Lucid, Maverick, etc.) in place of `<ubuntu_version>`

4. Run the following command to ensure all your packages are up to date:
   ```
   sudo apt-get update
   ```
   Following warning message appears:
   ```
   W: GPG error: http://ppa.launchpad.net lucid Release: The following signatures couldn’t be verified because the public key is not available: NO_PUBKEY B152F042D246C25D
   ```

5. Press Enter to ignore the message and continue.

6. Run the following command to install the public key for the new repository:
   ```
   sudo apt-key adv --recv-keys --keyserver subkeys.pgp.net B152F042D246C25D
   ```

7. Install SynCE with the following command:
   ```
   sudo apt-get install synce-hal librra-tools librapi2-tools
   sudo apt-get install opensync-plugin-evolution
   ```

8. In the handheld device click on Start >Settings >Connections >USB. Check the RNDIS check box.

9. Click on the next menus to set up the ActiveSync USB connections: Start >Programs >ActiveSync >Connections. Check the ActiveSync USB check box.

10. Connect your handheld device with the computer using USB dongle.

11. Run the following command in the terminal window of the Ubuntu machine to ensure that the connection is active:
   ```
   synce-pls
   ```

12. Other commands that can be used are:
   ```
   synce-pls
   synce-psettime
   synce-install-cab
   synce-pmkdir
   synce-pshortcut
   synce-list-programs
   synce-pmv
   synce-pstatus
   synce-matchmaker
   synce-prm
   synce-registry
   synce-pcp
   synce-prmdir
   ```
Now you are ready to install OAT Merchandise Visibility on your handheld device.

```bash
synce-remove-program
synce-pkillall
synce-prun
synce-database
```
Chapter 3 Setting up OAT Merchandise Visibility

This chapter explains the procedure to add OAT Merchandise Visibility to OATxpress. If you are using handheld devices, in addition to the steps explained in this chapter, you also need to install the OAT Merchandise Visibility application on each handheld device. See Installing OAT Merchandise Visibility on Handheld Devices for more details.

3.1 Setup OAT Merchandise Visibility

To setup Merchandise Visibility, perform the following steps:

1. Ensure that OAT Foundation Suite Service OATTomcat_SITE is not running.

2. Copy the following .oar file:
   - prod-c-apparel.oar

   to the following location:
   
   `<OAT_install_dir>\ofs\ext`

   For example,

   `C:\OATxpress\ofs\ext`

3. In the Command Prompt type:

   `cd <OAT_install_dir>\ofs\bin`

4. After changing to the directory, type the following:

   `deploy.bat -f`

5. At the end of this process, the following message appears:

   “Done deploying property metadata”

   The deploy process finishes in a few minutes.

   Start OATxpress and login using one of the following methods:

   In the Start menu, click All Programs > OATxpress > OATxpress Server Manager

   Or

   Type the URL of the OATxpress server in a browser window.

6. In the OATxpress login page type the user name and password.
See the OATxpress User Guide for information on starting OATxpress, logging in and creating users and roles.
Chapter 4 Installing OAT Merchandise Visibility on Handheld Devices

This chapter explains the procedure to install and launch OAT Merchandise Visibility on a handheld device. You need to install the OAT Merchandise Visibility application on each handheld device when using multiple handheld devices.

4.1 Installing OAT Merchandise Visibility

Follow the steps given below in sequence to install OAT Merchandise Visibility on a handheld device connected to the computer:

1. Copy the appropriate handheld device’s executable files, OATmobile.CAB and OATMerchandiseVisibility.CAB file to MyDevice in the handheld device.

   o Click on OATmobile.CAB file.

   Figure 4: Installing OATmobile.CAB

   o Following screen is displayed if OATmobile application is already installed
Select the location in which OATmobile.CAB has to be installed.

Click Install to continue.
Installing OAT Merchandise Visibility on Handheld Devices

Figure 7: Installing OATmobile.CAB

- Following screen is displayed when the installation is complete.

Figure 8: OATmobile.CAB Installation Complete

- Click on OATMerchandiseVisibility.CAB file.
Installing OAT Merchandise Visibility on Handheld Devices

OAT Merchandise Visibility Installation and Configuration Guide

Figure 9: Installing OATMerchandiseVisibility.CAB

- Following screen is displayed if OAT Merchandise Visibility is already present.

Figure 10: OAT Merchandise Visibility – Already Present

- Click OK to continue.
3. This completes the installation of the OAT Merchandise Visibility application on the handheld device.

NOTE:
Installing OATMerchandiseVisibility.CAB before OATmobile.CAB will lead to an error.
4. Click on **Start > OATmobile** to launch the OAT Merchandise Visibility application.

**NOTE:**
*Ensure OATxpress is online and the handheld is connected whenever OAT Merchandise Visibility application is started. This synchronizes the system clock in the handheld device with the OATxpress. Once the connectivity is established it takes approximately 10 seconds to synchronize the time.***

5. If you have made modifications to the **HandheldUI.xml** file then you need to copy this file to **Program Files\OATmobile** directory OR save wherever OATmobile is installed.

**NOTE:**

- For information on configuring the HandheldUI.xml according to your needs, see the chapter Configuring OAT Merchandise Visibility.
Chapter 5 Configuring OAT Merchandise Visibility

This chapter provides details on configuring OAT Merchandise Visibility in OATxpress and on the handheld device.

To configure OAT Merchandise visibility, follow the steps listed below in sequence in OATxpress:

1. Define Product attributes
2. Create Products
3. Define Locations
4. Configure the Handheld Device
5. Configure Scenarios in OATxpress (optional)

5.1 Define Product attributes

Product attribute definitions can be specified using the Product Attribute Definition file. The sample file is available at ofs/bin/ProdAttrDefinition.xml, use this sample file for customization for ease of use. The customized Product Attribute Definition file should be loaded into OATxpress after installing OAT Merchandise Visibility. To create and upload product attribute definitions in OATxpress database, type the following in a Command Prompt:

```
cd <OAT_install_dir>\ofs\bin
(for example, cd C:\OATxpress\ofs\bin)
createdprodattrdefn.bat -fileName ProdAttrDefinition.xml
```

The product attribute file defines the attribute names and types for all products that can be customized as per the project requirements. There are some mandatory attributes which cannot be customized.

Following is a sample ProdAttrDefinition.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<x:ProductAttributes xsi:schemaLocation="urn:ProdAttrDefinition ../conf/ProdAttrDefinition.xsd" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:x="urn:ProdAttrDefinition">
  <x:Entity name="Product">
    <!-- Mandatory attributes -->
    <x:Attribute name="Size" display="Size" type="String"/>
    <x:Attribute name="Color" display="Color" type="String"/>
    <x:Attribute name="SalesFloorTarget" display="Sales Floor Target Quantity" type="Integer"/>
    <x:Attribute name="TradeItem" display="TradeItem" type="String">
      <x:EnumeratedAttributeValue value="YES"/>
      <x:EnumeratedAttributeValue value="NO"/>
    </x:Attribute>
  </x:Entity>
</x:ProductAttributes>
```
The following table provides the description for each component defined in the `ProdAttrDefinition.xml` file:

<table>
<thead>
<tr>
<th>Display Column</th>
<th>Description</th>
<th>Mandatory</th>
</tr>
</thead>
<tbody>
<tr>
<td>ProductAttributes</td>
<td>Top-level component for all attributes. This should not be modified.</td>
<td>Yes</td>
</tr>
<tr>
<td>Entity</td>
<td>Specifies that the attributes are defined for products. This should not be modified.</td>
<td>Yes</td>
</tr>
<tr>
<td>Attribute</td>
<td>Defines attributes associated with the products. There can be one or more custom attributes in the file. The maximum limit is 100 attributes in all. <strong>NOTE:</strong> “Size”, “Color”, “SalesFloorTarget”, and “TradeItem” are mandatory attributes.</td>
<td>Yes</td>
</tr>
<tr>
<td>name</td>
<td>Unique name of the attribute. This should not contain spaces. <strong>NOTE:</strong> The attribute cannot have special characters in its name. No two attributes can have the same name.</td>
<td>Yes</td>
</tr>
<tr>
<td>display</td>
<td>Display label for the attribute. The Product Add/Edit page displays the label of the attribute, not the name.</td>
<td>Yes</td>
</tr>
</tbody>
</table>
### Display Column | Description | Mandatory
--- | --- | ---
**type** | Defines the type of attribute. This can be one of the following: String, Integer, Double, Date, DateTime. **NOTE:** In OATxpress, you can select the date value from the pop up calendar for Date attribute type. Any attribute of the type Date should not have a hyphen (-) in the attribute name. | Yes

**EnumeratedAttributeValue** | Specifies the list of valid, enumerated values for an attribute. It is the sub-component of the Attribute. Empty value such as `<x:EnumeratedAttributeValue value=""/>` is not allowed. | No

### 5.2 Create Products

Define a product corresponding to each Trade Item/SKU in OATxpress. The product must have the following:

- a Description
- a SKU
- a Style Code
- a Unit of Measure
- an Encoding type (optional)

**NOTE:** Style Code should not contain any value while adding or uploading products.

OAT Merchandise Visibility lets the user do the following:

1. Configure multiple products.
2. Map products to product attributes, for example, Style, Size, Color, Brand, Department, Season etc.
3. Use multiple tag encoding schemes with a single product (GRAI, SGTIN).
4. To configure Products, click Products in OATxpress and further Add Product. The following screen appears:
Figure 13: Product Definition

NOTE: Select the encoding scheme as SGTIN/GIAI/GRAI/SSCC/USDOD/GID. Setup the prefixes and ranges to map to a product.
5.3 Define Locations

Locations represent the physical world that is hierarchical through parent-child relationship.

Click Locations in OATxpress to configure the locations.

These are the OAT Merchandise Visibility - specific attributes that need to be configured:

- Select the Location Type as Business Location, Readpoint Location or Site.
- **IsCycleCountLocation**: This attribute should be set to YES for locations where the Cycle Count Operation (via the handheld device) happens. This is to minimize the number of locations to choose from while initiating a Cycle Count and to consolidate the data for the Cycle Count Discrepancy Report.
- **IsDefaultBLForParent**: This attribute should be set to YES for business locations that represent their parent business locations. This is required since all item associations are done at the lowest business location level, and so cannot be done at parent business locations. However, sometimes there is a need to associate items to the parent business locations – for example, when Receive Items – Put-away scenario is used and the exact putaway location is not known to the operator, and the operator has to place items generically in the backroom instead of at specific locations within the backroom. In these cases, the child location with IsDefaultBLForParent=YES can be used as the substitute location for item associations.

For example:
If Cycle Count is to be performed at a parent location, sales zone, an equivalent child location, say, Sales Location has to be created under the parent location.
The parent location, sales zone should have the following configuration:
IsCycleCountLocation=NO
The equivalent child location, Sales Location should have the following configuration:
IsCycleCountLocation=YES and IsDefaultBLForParent=YES.
With the above configurations, Cycle Count can be performed in the child location - sales location. The sales zone location cannot be chosen for Cycle Count from the handheld device as IsCycleCountLocation attribute is set to NO. On Cycle Counting the handheld device will show inventory present in the sales zone and all its child locations.

**NOTE:**
*It is not mandatory to set the value for the above attributes. However, if a location uses these attributes then it is mandatory to set the value for the above attributes.*

- Site Sub Location Type (SSLT) value should be set for locations that represent sales floor, backroom, storage area, Lay-a-way and receiving area. These are mandatory for Business Locations.
- It is recommended that if there are distinct Read Points in these areas, the SSLT value is set for those Read Points as well.

Click Add Location to display the following screen:
Figure 14: Location Definition
Ensure to add a Read Point location of location type “Out of Site Location”. It will be used in the following scenarios, if configured:

- Retirement
- Enter Sold Items
- Retiring EPCs from the Missing/Inactive Items Report

Ensure to add a Business Location and Read Point location of location type “Out of Site Location”. It will be used in the following scenario, if configured:

- Cycle Counting scenario, when “Move missing items” is true

### 5.4 Configure the Handheld Device

Perform the following steps in OATxpress for the OAT Merchandise Visibility application in the handheld device to work:

- [Configuration Parameters for MV Handheld Association Scenario](#)
- [Configuration Parameters for MV Handheld Receive & Tag Scenario](#)

These scenarios need parameters such as name and ExternalId. Refer to [Configuration Parameters for Scalability](#) for more information.

### 5.4.1 Configuration Parameters for HandheldUI.XML

The configuration file, `HandheldUI.xml` for the handheld device lets you specify the following:

- Enable or disable use-cases such as Receiving, Cycle Counting and Enter Sold Items
- Settings for these use-cases
- Settings to capture and display product information
- Settings to capture location information

OAT Merchandise Visibility scenarios can function in harmony with OAT Asset Tracking Solution scenarios in the same handheld device, if configured in `HandheldUI.xml`.

#### 5.4.1.1 Scenario Type Details

The following table lists the valid values for the type attribute of the scenario element in the `HandheldUI.xml` file, in relation to the use-case:

<table>
<thead>
<tr>
<th>Use Case</th>
<th>Scenario Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receive and Tag items</td>
<td>RECEIVING</td>
</tr>
<tr>
<td>Receive and Tag Boxed Items</td>
<td>RECEIVING</td>
</tr>
<tr>
<td>Receive Items</td>
<td>RCVASSOCIATION</td>
</tr>
<tr>
<td>Receive Items - Put-away</td>
<td>RCVTAGGEDPUTAWAY</td>
</tr>
</tbody>
</table>
### Configuration Overview

Perform the following steps to configure the handheld device:

1. Customize the `HandheldUI.xml` file to setup the handheld device.

2. Copy the file `HandheldUI.xml` file with customizations to the handheld device in the directory `- Program Files\OATmobile`.

Following is a sample of Receive Items in the `HandheldUI.xml` that can be customized as per the project requirement:

```xml
<HandheldApplication>
  <Scenario name="Receive Items" type="RCVASSOCIATION"
    assembly="OATMerchandiseVisibilityLib"
    className="OATapparel.ScenarioAbstraction.UseCases.UseCaseReceiveItems"
    visible="true">
    <Parameter>
      <NameValuePair name="OfflineEnabled">
        <type xsi:type="OATBoolean" value="true" />
      </NameValuePair>
      <NameValuePair name="ResolveProduct">
        <type xsi:type="OATBoolean" value="true" />
      </NameValuePair>
      <NameValuePair name="ShouldReceiveExisting">
        <type xsi:type="OATBoolean" value="false" />
      </NameValuePair>
      <NameValuePair name="ResolveBatchSize">
        <type xsi:type="OATNumeric" value="10" />
      </NameValuePair>
      <NameValuePair name="IsProductDownloaded">
        <type xsi:type="OATBoolean" value="false" />
      </NameValuePair>
      <NameValuePair name="ProductDisplayAttributes" flag="NotConfigurable">
        <type xsi:type="OATList">
          <ListItem name="Size" />  
          <ListItem name="Color" />  
          <ListItem name="Style" />  
        </type>
    </NameValuePair>
  </Parameter>
</Scenario>
```
Configuring OAT Merchandise Visibility

<!NameValuePair>
<!Properties>
<!Parameter>
<!Scenario>
<!HandheldApplication>

NOTE:
If special characters are used, they have to be escaped according to the XML standards. If ‘&’ is used, it should be escaped to get reflected on the dashboard[& - &amp;].

The following table provides a description of the XML elements and attributes for each of the configuration parameters of scenarios in the HandheldUI.xml:

NOTE:
Submit after every 4000 EPCs are read.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NameValuePair</td>
<td>Specifies the property names, types and values.</td>
</tr>
<tr>
<td>type</td>
<td>Specifies the type of property. Valid Types are OATBoolean, OATNumeric, OATText and OATList.</td>
</tr>
<tr>
<td></td>
<td><strong>NOTE:</strong> In case of OATList, &lt;ListItem&gt; should be specified.</td>
</tr>
</tbody>
</table>
| value              | Specifies the valid values for the following Type:  
|                    | OATBoolean - true/false  
|                    | OATNumeric – Numeric value  
|                    | OATText – any string value  
|                    | OATList – Selected ListItem |

The following table provides descriptions for the common configurations defined in the HandheldUI.xml file:

<table>
<thead>
<tr>
<th>Element/Attribute</th>
<th>Description</th>
<th>Default Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>Specifies the name of the scenario displayed on the main menu of the application in the handheld device.</td>
<td>N/A</td>
</tr>
<tr>
<td>type</td>
<td>Defines the type of scenario.</td>
<td>N/A</td>
</tr>
<tr>
<td>visible</td>
<td>Specifies if the scenario will be displayed on the user interface.</td>
<td>N/A</td>
</tr>
<tr>
<td>Element/Attribute</td>
<td>Description</td>
<td>Default Values</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------</td>
<td>----------------</td>
</tr>
<tr>
<td>OfflineEnabled</td>
<td>Specifies if the scenario can be executed when OATxpress is unavailable. Set to True for the scenario to be executed in the offline mode. False, otherwise. <strong>NOTE:</strong> This parameter should be “false” for Locate Item and Restock scenarios.</td>
<td>Varies with scenario type.</td>
</tr>
<tr>
<td>ExternalId</td>
<td>Specifies the message identifier to be sent from the handheld device to OATxpress. This value should be the same value as provided while deploying the corresponding OATxpress scenario.</td>
<td>Default ExternalId is documented below. Refer to Configuration Parameters for Scalability.</td>
</tr>
<tr>
<td>ResolveProduct</td>
<td>Specifies if the products for the read EPCs in the scenario are to be resolved or not. Set to true for the scenario to resolve every EPC read. Set to false if product resolution is not required OR if more than 4000 EPCs are read. Applies to Cycle Counting, Receive Items, Receive Items - Put-away, Enter Sold Items, Put-away and Retire Items scenarios. <strong>NOTE:</strong> If set to true: Enter Sold Items and Retire Items will be resolved immediately. Receive Items and Receive Items-Put-away will be resolved</td>
<td>true (turned on)</td>
</tr>
<tr>
<td>Element/Attribute</td>
<td>Description</td>
<td>Default Values</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>immediately if</td>
<td>ShouldReceiveExisting parameter is set to false. If ShouldReceiveExisting is set to false, Receive Items and Receive Items - Put-away scenario will resolve only when Product Details is clicked. Cycle Count and Put-away scenario will resolve when Product Details is clicked.</td>
<td></td>
</tr>
<tr>
<td>ShouldReceiveExisting</td>
<td>Set to true - to receive items that were already received. Set to false - to receive the items again.</td>
<td>false</td>
</tr>
<tr>
<td>ResolveBatchSize</td>
<td>Specifies the minimum number of EPCs that should be taken to OATxpress for product resolution. Recommended values are: 10 for Retirement, Enter Sold items and Receiving Tagged Scenarios 150 for Cycle Count. Set to an optimum value of 150 while using the handheld device in a dense tag environment (say, 2500 tags within a 10ft aisle). Any value less than 50 and greater than 250 will result in slow resolution.</td>
<td>Scenario specific</td>
</tr>
<tr>
<td>ProductDisplayAttributes</td>
<td>Specifies the list of product related attributes to be displayed on the user interface.</td>
<td></td>
</tr>
</tbody>
</table>
### Element/Attribute

<table>
<thead>
<tr>
<th>Description</th>
<th>Default Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>A maximum of only 3 attributes are allowed.</td>
<td></td>
</tr>
</tbody>
</table>

**IsProductDownloaded**

This parameter is used to determine if OATxpress should download only the product ID or the full product information. This parameter should be set to true only when downloading up to 15000 products to handheld device.

**DisplayProductInfo**

To configure the attribute as the second part of the first line after the : (colon), usually the description of the product.

**LocationsInferredBy**

Specifies how the location is inferred, if LocationIdentifyBy is Barcode Scan.

Set "LocationInferredBy" as:
- "name" - name of the location as configured in OATxpress.
- "EPC" - EPC of the location in OATxpress.
- "UserAttribute" - User defined attribute of locations. If UserAttribute is specified, attribute value should also be specified.

N/A

### 5.4.1.3 Receive Items - Put-away

Following is the sample of the Receive Items – Put-away configuration in the HandheldUI.xml file:

```xml
<Scenario name="Receive Items - Put-away" type="RCVTAGGEDPUTAWAY" assembly="OATMerchandiseVisibilityLib" className="OATapparel.ScenarioAbstraction.UseCases.UseCaseReceiveItemsPutaway" visible="true">
  <Parameter>
    <Properties>
      <NameValuePair name="OfflineEnabled">
        <type xsi:type="OATBoolean" value="true" />
```
The following table provides the description for the components specific to Receive Items – Put-away scenario defined in the `HandheldUI.xml` file:

<table>
<thead>
<tr>
<th>Element/Attribute</th>
<th>Description</th>
<th>Default Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>LocationsIdentifyBy</td>
<td>To configure locations through barcode scan or listed names. Allowed values are “BarcodeScan” and “Names”. Names indicate all valid business locations with IsCycleCountLocation attribute configured to Yes. The locations can be limited using the Name Value pair property. <strong>NOTE:</strong> The locations should be migrated into the handheld.</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### 5.4.1.4 Receive & Tag Boxed Items

Following is the sample of the Receive and Tag Boxed Items configuration in the `HandheldUI.xml` file:

```xml
<Scenario name="Receive & Tag Boxed Items" type="RECEIVING"
    assembly="OATMerchandiseVisibilityLib"
    className="OATapparel.ScenarioAbstraction.UseCases.UseCaseReceiveBoxedItems"
    visible="true">
    <Parameter>
```
The following table provides the description for the components specific to Receive & Tag Boxed Items scenario defined in the HandheldUI.xml file:

<table>
<thead>
<tr>
<th>Element/Attribute</th>
<th>Description</th>
<th>Default Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>CreateProduct</td>
<td>This is used to create dummy product when an unknown SKU is read. If set to true, when an unknown SKU is read, a base product will be created using the PRD.&lt;scanned SKU&gt; as the name in OATxpress and a new manufacturer name will be created as GENERIC for the first time. No error will be displayed. This base product can be later edited for the complete product information. <strong>NOTE:</strong> Set to true only for standalone OATxpress.</td>
<td>true</td>
</tr>
</tbody>
</table>

### 5.4.1.5 EPC-Product Association Scenarios

Receive & Tag Items scenario scans a product SKU, then scans or read an EPC to associate the EPC to the product. This section describes configuration parameters specific to such scenarios.

Following is the sample of the Receive & Tag Items, Receive & Tag Items – Put-away and Retire Items scenario configuration in the HandheldUI.xml file:
<Scenario name="Receive & Tag Items" type="RECEIVING" assembly="OATMerchandiseVisibilityLib" className="OATapparel.ScenarioAbstraction.UseCases.UseCaseReceiveUnTagged" visible="true">
  <Parameter>
    <Properties>
      <NameValuePair name="OfflineEnabled">
        <type xsi:type="OATBoolean" value="true" />
      </NameValuePair>
      <NameValuePair name="CreateProduct">
        <type xsi:type="OATBoolean" value="true" />
      </NameValuePair>
      <NameValuePair name="EPCSenseMode">
        <type xsi:type="OATText" value="barcode" />
      </NameValuePair>
      <NameValuePair name="AutoSubmit">
        <type xsi:type="OATBoolean" value="true" />
      </NameValuePair>
      <NameValuePair name="RFVerification">
        <type xsi:type="OATBoolean" value="true" />
      </NameValuePair>
      <NameValuePair name="RFSingulationTries">
        <type xsi:type="OATNumeric" value="3" />
      </NameValuePair>
      <NameValuePair name="ProductDisplayAttributes" flag="Configurable">
        <type xsi:type="OATList">
          <ListItem name="Size" />
          <ListItem name="Color" />
          <ListItem name="Style" />
        </type>
      </NameValuePair>
      <NameValuePair name="IsProductDownloaded">
        <type xsi:type="OATBoolean" value="false" />
      </NameValuePair>
      <NameValuePair name="ProductIdentifiedBy" flag="Configurable">
        <type xsi:type="OATText" value="SKU" />
      </NameValuePair>
    </Properties>
  </Parameter>
</Scenario>

<Scenario name="Receive & Tag Items - Put-away" type="RCVUNTAGGEDPUTAWAY" assembly="OATMerchandiseVisibilityLib" className="OATapparel.ScenarioAbstraction.UseCases.UseCaseRecvUnTaggedPutAway" visible="true">
  <Parameter>
    <Properties>
      <NameValuePair name="CreateProduct">
        <type xsi:type="OATBoolean" value="true" />
      </NameValuePair>
      <NameValuePair name="EPCSenseMode">
        <type xsi:type="OATText" value="barcode" />
      </NameValuePair>
      <NameValuePair name="RFVerification">
        <type xsi:type="OATBoolean" value="true" />
      </NameValuePair>
    </Properties>
  </Parameter>
</Scenario>
The following table provides the description for the configurations specific to EPC – product association scenario (like Receive & Tag Items) defined in the HandheldUI.xml file:

<table>
<thead>
<tr>
<th>Element/Attribute</th>
<th>Description</th>
<th>Default Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPCSenseMode</td>
<td>Specifies the mode to sense the EPC - barcode scan or RFID read. Valid values are “barcode”</td>
<td>barcode</td>
</tr>
<tr>
<td>Element/Attribute</td>
<td>Description</td>
<td>Default Values</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------</td>
<td>----------------</td>
</tr>
<tr>
<td>AutoSubmit</td>
<td>Set to true - to submit the items automatically. The submit button will be disabled. <strong>NOTE:</strong> Last association is submitted on clicking on home page and log off. Clicking on back arrow button will prompt the user to submit and exit or cancel. Set to false – for the Submit button to be enabled.</td>
<td>true</td>
</tr>
<tr>
<td>RFVerification</td>
<td>This is applicable only if EPCSenseMode is barcode. Set to true, for the scenario to verify the barcode scanned EPC with a RF read. Set to false, for the barcode scan to be treated as EPC.</td>
<td>true</td>
</tr>
<tr>
<td>RFSingulationTries</td>
<td>This is applicable only if EPCSenseMode is RFID. Specifies the number of RF read cycles within which the EPC is singulated and identified. For each try, RF power is reduced by 5%. For example, if RF percentage is set to 20% the RFSingulationTries can be set to a maximum of 3.</td>
<td>3</td>
</tr>
</tbody>
</table>
| ProductIdentifiedBy| Specifies the way the scenario will use the attribute to display product information. It is used to specify a scan attribute for Receive & Tag Items, Receiving & Tag Boxed Items and Receive & Tag – Put-away scenarios. It is also used to display first line attributes for Receive Items, SKU for Receive & Tag Items and Receive Boxed Items scenarios. | SKU for Receive & Tag Items and Receive Boxed Items scenarios.
The items can be received using Receive & Tag Items and Receive & Tag Items – Put-away in the following three modes:

<table>
<thead>
<tr>
<th>Mode</th>
<th>Parameter Values</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mode 1</strong>: Product is barcode scanned and the EPC is barcode scanned, and then RFID read.</td>
<td>EPCSenseMode is set to ‘barcode’ RFVerification is set to ‘true’</td>
<td>The product SKU and then the EPC to be associated with the SKU are barcode scanned. This scanned EPC are verified by RFID read. Each time a new SKU is read, this mode differentiates between the product and the EPC, and automatically switches to a new product.</td>
</tr>
<tr>
<td><strong>Mode 2</strong>: Product is barcode scanned and EPC is barcode scanned.</td>
<td>EPCSenseMode is set to ‘barcode’ and RFVerification is set to ‘false’</td>
<td>The product SKU and then the EPC to be associated with the SKU are barcode scanned. Each time a new SKU is read, this mode differentiates between the product and the EPC, and automatically switches to a new product.</td>
</tr>
<tr>
<td><strong>Mode 3</strong>: Product is barcode scanned and EPC is RFID read.</td>
<td>EPCSenseMode is set to ‘rfid’, RFSingulationTries is set to a value between 1 and 20.</td>
<td>This mode is specific to hard tags, or soft tags without barcode of EPC. For each barcode scanned product SKU, an EPC is RFID read and associated.</td>
</tr>
</tbody>
</table>

### 5.4.1.6 Cycle Count

Following is the sample of the Cycle Count configuration in the *HandheldUI.xml* file:

```xml
<Scenario name="Cycle Count" type="CYCLECOUNT"
assembly="OATMerchandiseVisibilityLib"
className="OATapparel.ScenarioAbstraction.UseCases.UseCaseCycleCount"
visible="true">
  <Parameter>
    <Properties>
```
The following table provides the description for the components specific to Cycle Counting Scenario defined in the HandheldUI.xml file:

NOTE:
Submit after every 4000 EPCs are read.
<table>
<thead>
<tr>
<th>Element/Attribute</th>
<th>Description</th>
<th>Default Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>LocationsIdentifyBy</td>
<td>To configure locations through barcode scan or listed names. Allowed values are “BarcodeScan” and “Names”. Names indicate all valid business locations with IsCycleCountLocation attribute configured to Yes. The locations can be limited using the Name Value pair property. [NOTE: The locations should be migrated into the handheld.]</td>
<td>N/A</td>
</tr>
</tbody>
</table>
| MissingItemsThreshold  | Enter the threshold percentage between 0 and 100.  
  - For a value of 0 the operator will always be prompted to confirm if the cycle count is correct and if missing items can be moved. If the expected inventory at the location is 0 then there will not be any prompts.  
  - For any value between 1 and 99, for example, the threshold percentage is set to 20: if the cycle counted inventory is lesser than the expected inventory by 20% or less, those items will not be moved (nor will the operator be asked for confirmation). If the missing items are lesser than the threshold, it is assumed that the items considered missing are actually present and the reader missed to read those EPCs. If the difference is greater than 20%, the operator will get a pop-up message to confirm if the cycle count is correct and if the missing items can be moved. If Yes is selected, items will be moved. If No, items will not be submitted, and the operator is expected to continue | 20             |
<table>
<thead>
<tr>
<th>Element/Attribute</th>
<th>Description</th>
<th>Default Values</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>the cycle count operation.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• For a value of 100 (maximum tolerance) the operator will not be prompted and the missing items will not be moved.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>For threshold values greater than 0, the threshold applies only when the cycle counted inventory is lesser than the expected inventory. The operator will not be prompted and items will not be moved in the following cases:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• When the cycle counted inventory is greater than the expected inventory.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• When the expected inventory is 0.</td>
<td></td>
</tr>
<tr>
<td>CacheProduct</td>
<td>Specifies the resolved product information to be cached in memory.</td>
<td>true (turned on)</td>
</tr>
<tr>
<td></td>
<td>Set to true for EPCs and their resolved product information to be cached in memory.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Set to false to turn off caching.</td>
<td></td>
</tr>
<tr>
<td>DisplayUnresolvedCount</td>
<td>Set to true to display the number of item EPCs not resolved to a product.</td>
<td>true</td>
</tr>
<tr>
<td></td>
<td>Set to false otherwise.</td>
<td></td>
</tr>
<tr>
<td>Gen2Session</td>
<td>Specifies the RFID Gen2 session to use for the particular use-case. If the value is not specified it will value defined in Device configuration (AppConfig.gen2Session).</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>NOTE:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Change Gen2Session value in the HandheldUI.xml instead of Scenario Properties in the user interface.</em></td>
<td></td>
</tr>
</tbody>
</table>

### 5.4.1.7 Put-away

Following is the sample of the Put-away configuration in the *HandheldUI.xml* file:
<Scenario name="Put-away" type="PUTAWAY"
assembly="OATMerchandiseVisibilityLib"
className="OATapparel.ScenarioAbstraction.UseCases.UseCasePutaway"
visible="true">
  <Parameter>
    <Properties>
      <NameValuePair name="OfflineEnabled">
        <type xsi:type="OATBoolean" value="true" />
      </NameValuePair>
      <NameValuePair name="ResolveProduct">
        <type xsi:type="OATBoolean" value="true" />
      </NameValuePair>
      <NameValuePair name="ResolveBatchSize">
        <type xsi:type="OATNumeric" value="10" />
      </NameValuePair>
      <NameValuePair name="IsProductDownloaded">
        <type xsi:type="OATBoolean" value="false" />
      </NameValuePair>
      <NameValuePair name="ResolveIdleTime">
        <type xsi:type="OATNumeric" value="100" />
      </NameValuePair>
      <NameValuePair name="ProductDisplayAttributes" flag="Configurable">
        <type xsi:type="OATList">
          <ListItem name="Size" />
          <ListItem name="Color" />
          <ListItem name="Style" />
        </type>
      </NameValuePair>
      <NameValuePair name="LocationsIdentifyBy" flag="NotConfigurable">
        <type xsi:type="OATList" value="BarcodeScan">
          <ListItem name="BarcodeScan" />
        </type>
      </NameValuePair>
      <NameValuePair name="LocationsInferredBy">
        <type xsi:type="OATText" value="name" />
      </NameValuePair>
    </Properties>
  </Parameter>
</Scenario>

The following table provides the description for the components specific to Put-away scenario defined in the HandheldUI.xml file:

**NOTE:**
Submit after every 4000 EPCs are read.

<table>
<thead>
<tr>
<th>Element/Attribute</th>
<th>Description</th>
<th>Default Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>LocationsInferredBy</td>
<td>Specifies how the location is inferred, if LocationIdentifyBy is Barcode Scan. Set &quot;LocationInferredBy&quot; as:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- &quot;name&quot; - name of the location as configured in OATxpress.</td>
<td>N/A</td>
</tr>
</tbody>
</table>
### 5.4.1.8 Restock

Following is the sample of the Restock configuration in the *HandheldUI.xml* file:

```xml
<Scenario name="Restock" type="RESTOCK" assembly="OATMerchandiseVisibilityLib" className="OATapparel.ScenarioAbstraction.UseCases.UseCaseRestock" visible="true">
  <Parameter>
    <Properties>
      <NameValuePair name="OfflineEnabled" flag="NotConfigurable">
        <type xsi:type="OATBoolean" value="true"/>
      </NameValuePair>
      <NameValuePair name="MessageMode" flag="NotConfigurable">
        <type xsi:type="OATText" value="sync"/>
      </NameValuePair>
      <NameValuePair name="ProductDisplayAttributes" flag="NotConfigurable">
        <type xsi:type="OATList">
          <ListItem name="DESC"></ListItem>
          <ListItem name="Size"></ListItem>
        </type>
      </NameValuePair>
      <NameValuePair name="DependentMessageTypes" flag="NotConfigurable">
        <type xsi:type="OATList">
          <ListItem name="RECEIVING"></ListItem>
          <ListItem name="RCVASSOCIATION"></ListItem>
          <ListItem name="RCVUNTAGGEDPUTAWAY"></ListItem>
          <ListItem name="RCVTAGGEDPUTAWAY"></ListItem>
          <ListItem name="PUTAWAY"></ListItem>
          <ListItem name="CYCLECOUNT"></ListItem>
          <ListItem name="ADVANCED_CYCLECOUNT"></ListItem>
          <ListItem name="POS"></ListItem>
          <ListItem name="RETIREMENT"></ListItem>
        </type>
      </NameValuePair>
    </Properties>
  </Parameter>
</Scenario>
```

The following table provides descriptions for the Restock configurations defined in the *HandheldUI.xml* file:

<table>
<thead>
<tr>
<th>Element/Attribute</th>
<th>Description</th>
<th>Default Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;EPC&quot;</td>
<td>EPC of the location in OATxpress.</td>
<td></td>
</tr>
<tr>
<td>&quot;UserAttribute&quot;</td>
<td>User defined attribute of locations. If UserAttribute is specified, attribute value should also be specified.</td>
<td></td>
</tr>
<tr>
<td>Element/Attribute</td>
<td>Description</td>
<td>Default Values</td>
</tr>
<tr>
<td>---------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>MessageMode</td>
<td>Specifies if the scenario will be executed in the synchronous or asynchronous mode. Possible values are &quot;async&quot; (the default) and &quot;sync&quot;.</td>
<td>Varies with scenario type.</td>
</tr>
<tr>
<td></td>
<td>- If OfflineEnabled=True and MessageMode=sync - the scenario tries a synchronous call to OATxpress. If the synchronous call fails, the scenario submits the data to a reliable message queue. It does not count the first synchronous try in the Maximum Retry Count.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- If OfflineEnabled=True and MessageMode=async - the scenario submits the data to a reliable message queue.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- If OfflineEnabled=False and MessageMode=sync - the scenario tries a synchronous call to OATxpress. If the synchronous call fails an error is displayed to the user. No reliable message queue is considered.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- If OfflineEnabled=False and MessageMode=async - invalid configuration, hence the MessageMode will be assumed to be sync. The behavior is same as</td>
<td></td>
</tr>
</tbody>
</table>
### Configuring OAT Merchandise Visibility

<table>
<thead>
<tr>
<th>Element/Attribute</th>
<th>Description</th>
<th>Default Values</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>above.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Set MessageMode=&quot;sync&quot; for Locate Item and Restock scenarios.</td>
<td></td>
</tr>
<tr>
<td>DependentMessageTypes</td>
<td>Specifies the offline messages in the handheld device pending submission, a pop up message is displayed “Some dependent messages are in queue. The data you see may not be up-to-date.”.</td>
<td></td>
</tr>
</tbody>
</table>

### 5.4.1.9 Enter Sold Items

Following is the sample of the Enter Sold Items configuration in the *HandheldUI.xml* file:

```xml
<Scenario name="Enter Sold Items" type="POS"
assembly="OATMerchandiseVisibilityLib"
className="OATapparel.ScenarioAbstraction.UseCases.UseCasePOS"
visible="true">
  <Parameter>
    <Properties>
      <NameValuePair name="OfflineEnabled">
        <type xsi:type="OATBoolean" value="true" />
      </NameValuePair>
      <NameValuePair name="ResolveProduct">
        <type xsi:type="OATBoolean" value="true" />
      </NameValuePair>
      <NameValuePair name="ResolveBatchSize">
        <type xsi:type="OATNumeric" value="10" />
      </NameValuePair>
      <NameValuePair name="ResolveIdleTime">
        <type xsi:type="OATNumeric" value="100" />
      </NameValuePair>
      <NameValuePair name="IsProductDownloaded">
        <type xsi:type="OATBoolean" value="false"/>
      </NameValuePair>
      <NameValuePair name="ProductDisplayAttributes" flag="NotConfigurable">
        <type xsi:type="OATList">
          <ListItem name="Size" />
          <ListItem name="Color" />
          <ListItem name="Style" />
        </type>
      </NameValuePair>
    </Properties>
  </Parameter>
</Scenario>
```
5.4.1.10 Locate Item

Following is the sample of the Item Locator configuration in the HandheldUI.xml file:

```xml
<Scenario name="Locate Item" type="ITEMLOCATOR"
assembly="OATMerchandiseVisibilityLib"
className="OATapparel.ScenarioAbstraction.UseCases.UseCaseItemLocator"
visible="true">
  <Parameter>
    <Properties>
      <NameValuePair name="OfflineEnabled">
        <type xsi:type="OATBoolean" value="false" />
      </NameValuePair>
      <NameValuePair name="ScanAttribute">
        <type xsi:type="OATText" value="SKU" />
      </NameValuePair>
      <NameValuePair name="FilterAttributes">
        <type xsi:type="OATList">
          <ListItem name="Size" />
          <ListItem name="Category" />
        </type>
      </NameValuePair>
      <NameValuePair name="ProductDisplayAttributes" flag="Configurable">
        <type xsi:type="OATList">
          <ListItem name="DESC" />
          <ListItem name="Color" />
          <ListItem name="Style" />
        </type>
      </NameValuePair>
    </Properties>
  </Parameter>
</Scenario>
```

The following table provides a description for the configurations specific to the Locate Item Scenario defined in the HandheldUI.xml file:

<table>
<thead>
<tr>
<th>Element/Attribute</th>
<th>Description</th>
<th>Default Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>ScanAttribute</td>
<td>Specifies the product attribute information based on barcode scanned, which uniquely identifies the product.</td>
<td>SKU</td>
</tr>
<tr>
<td>FilterAttributes</td>
<td>Specifies the filter attributes based on which the products can be filtered.</td>
<td>From xml</td>
</tr>
<tr>
<td></td>
<td><strong>NOTE:</strong> Use the attribute name and not the display name as defined in the ProdAttrDefinition.xml Only up to three Filter Attributes can be specified.</td>
<td></td>
</tr>
</tbody>
</table>

5.4.1.11 Global Properties

Following is the sample of the Global Properties configuration in the HandheldUI.xml file:
<GlobalProperties>
  <NameValuePair name="LogOutIfInactive" flag="NotConfigurable">
    <type xsi:type="OATBoolean" value="true"/>
  </NameValuePair>
  <NameValuePair name="IdleTimeForLogOut" flag="NotConfigurable">
    <type xsi:type="OATNumeric" value="10"/>
  </NameValuePair>
  <NameValuePair name="ProductSyncIntervalDays" flag="NotConfigurable">
    <type xsi:type="OATNumeric" value="1"/>
  </NameValuePair>
  <NameValuePair name="ProductSyncStartTimeOfDay" flag="NotConfigurable">
    <type xsi:type="OATText" value="3:00"/>
  </NameValuePair>
  <NameValuePair name="ProductSyncRetryDurationHours" flag="NotConfigurable">
    <type xsi:type="OATNumeric" value="1"/>
  </NameValuePair>
  <NameValuePair name="ProductSyncMaxRandomDelaySeconds" flag="NotConfigurable">
    <type xsi:type="OATNumeric" value="120"/>
  </NameValuePair>
  <NameValuePair name="LogLevel" flag="Configurable">
    <type xsi:type="OATText" value="Debug"/>
  </NameValuePair>
  <NameValuePair name="DecodeSGTIN" flag="NotConfigurable">
    <type xsi:type="OATBoolean" value="false"/>
  </NameValuePair>
  <NameValuePair name="DecodeGRAI" flag="NotConfigurable">
    <type xsi:type="OATBoolean" value="true"/>
  </NameValuePair>
  <NameValuePair name="DecodeGID" flag="NotConfigurable">
    <type xsi:type="OATBoolean" value="true"/>
  </NameValuePair>
</GlobalProperties>

NOTE:
Do NOT add any comments in the Global Properties elements as it does not allow HandheldUI.xml to load.

The following table provides a description for the components specific to Global Properties defined in the HandheldUI.xml file:

<table>
<thead>
<tr>
<th>Element/Attribute</th>
<th>Description</th>
<th>Default Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>LogOutIfInActive</td>
<td>Set to true for the application to logout if the application is idle for time set in 'IdleTimeForLogOut'.</td>
<td>true</td>
</tr>
<tr>
<td>IdleTimeForLogOut</td>
<td>Specifies the time period in minutes during which the application is idle before it logs out.</td>
<td>10</td>
</tr>
<tr>
<td>Element/Attribute</td>
<td>Description</td>
<td>Default Values</td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>ProductSyncIntervalDays</td>
<td>Specifies the number of days after which synchronization of the products happen.</td>
<td>1</td>
</tr>
<tr>
<td>ProductSyncStartTimeOfDay</td>
<td>Set the time as hh:mm to start the product synchronization.</td>
<td>3:00</td>
</tr>
<tr>
<td>ProductSyncRetryDurationHours</td>
<td>Specify the time in hours for which the product synchronization will be tried.</td>
<td>1</td>
</tr>
<tr>
<td>ProductSyncMaxRandomDelaySeconds</td>
<td>Specifies the maximum random delay time to start the product sync process. In case of multiple handheld devices connected to OATxpress, this parameter ensures the order in which requests arrives at OATxpress.</td>
<td>120</td>
</tr>
<tr>
<td>LogLevel</td>
<td>Specifies the level of logging applied for the handheld application. There are four levels of logging:</td>
<td>Debug</td>
</tr>
<tr>
<td></td>
<td>• Error - only error messages</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Warn - error and warning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Info – error, warning and information (Recommended)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Debug - error information, warning and debug messages</td>
<td></td>
</tr>
<tr>
<td>DecodeSGTIN</td>
<td>If set to true the product information will be deduced from the EPC of the tag, else from OATxpress.</td>
<td>false</td>
</tr>
<tr>
<td>DecodeGRAI</td>
<td>If set to true the product information will be deduced from the EPC of the tag, else from OATxpress.</td>
<td>false</td>
</tr>
<tr>
<td>DecodeGID</td>
<td>If set to true the product information will be deduced from the EPC of the tag, else from OATxpress.</td>
<td>false</td>
</tr>
</tbody>
</table>

### 5.4.2 Configuration Parameters for Scalability

In order to support multiple handheld devices in a scalable way, multiple instances of OATxpress scenarios for handheld devices can be run, one for each handheld device. The scenario is matched to the corresponding handheld use-case using the ‘External ID’ parameter.
The ExternalId acts as a message identifier and it should be configured in the HandheldUI.xml and also in the OATxpress scenario. It helps route the data from the handheld device to the correct instance of the deployed scenario in OATxpress. Refer to Configuring OATxpress Scenarios for OAT Merchandise Visibility on a Handheld Device for the OATxpress parameters.

The configuration parameter – “Message identifier from mobile device” - should be specified during the scenario deployment, for example, “association1” for item_assn.xml. The scenario then waits for messages from the handheld use-case having the same ExternalId, that is, “association1”. The identifier specified at the OATxpress scenario during deployment is passed from the handheld device as a part of tag information.

Following are the configuration parameters for the handheld device:

- HandheldId – is created as a part of framework settings
- ExternalId – is part of OAT Merchandise Visibility Configuration setting. It can be provided in the HandheldUI.xml file for each scenario.

### Default ExternalId

The following table lists the default values for the ExternalId and the deployed OATxpress scenario name of the scenario type in the HandheldUI.xml file:

<table>
<thead>
<tr>
<th>Scenario Type</th>
<th>Deployed OATxpress scenario name</th>
<th>ExternalId</th>
</tr>
</thead>
<tbody>
<tr>
<td>RECEIVING</td>
<td>item_rcv.xml</td>
<td>receiving1</td>
</tr>
<tr>
<td>RCVUNTAGGEDPUTAWAY</td>
<td>item_rcv.xml</td>
<td>receiving1</td>
</tr>
<tr>
<td>RCVASSOCIATION</td>
<td>item_assn.xml</td>
<td>association1</td>
</tr>
<tr>
<td>RCVTAGGEDPUTAWAY</td>
<td>item_assn.xml</td>
<td>association1</td>
</tr>
<tr>
<td>PUTAWAY</td>
<td>item_assn.xml</td>
<td>association1</td>
</tr>
<tr>
<td>CYCLECOUNT</td>
<td>item_assn.xml</td>
<td>association1</td>
</tr>
<tr>
<td>POS</td>
<td>item_assn.xml</td>
<td>association1</td>
</tr>
<tr>
<td>RETIREMENT</td>
<td>item_assn.xml</td>
<td>association1</td>
</tr>
</tbody>
</table>

**Sample scenario configured with ExternalId**

Following is the sample scenario of the type RECEIVING with the ExternalId = receiving1. This data will be submitted to OATxpress with this ExternalId and routed to the item_rcv.xml scenario, deployed with the message filter “receiving1”.
NOTE:
If the ExternalId is set as blank in HandheldUI.xml, the scenario will refer to the default ExternalId.

```xml
<Scenario name="Receive Items" type="RCVASSOCIATION"
assembly="OATMerchandiseVisibilityLib"
className="OATapparel.ScenarioAbstraction.UseCases.UseCaseReceiveItems"
visible="true">
  <Parameter>
    <Properties>
      <NameValuePair name="OfflineEnabled">
        <type xsi:type="OATBoolean" value="true" />
      </NameValuePair>
      <NameValuePair name="ResolveProduct">
        <type xsi:type="OATBoolean" value="true" />
      </NameValuePair>
      <NameValuePair name="ShouldReceiveExisting">
        <type xsi:type="OATBoolean" value="false" />
      </NameValuePair>
      <NameValuePair name="ResolveBatchSize">
        <type xsi:type="OATNumeric" value="10" />
      </NameValuePair>
      <NameValuePair name="ResolveIdleTime">
        <type xsi:type="OATNumeric" value="100" />
      </NameValuePair>
      <NameValuePair name="ProductDisplayAttributes"
flag="NotConfigurable">
        <type xsi:type="OATList">
          <ListItem name="Size" />
          <ListItem name="Color" />
          <ListItem name="Style" />
        </type>
      </NameValuePair>
    </Properties>
  </Parameter>
</Scenario>
```
5.4.3 Configuring OAT Merchandise Visibility in Handheld Devices

To configure the handheld device follow the procedure outlined below.

1. Click on OAT Mobile in the Start Menu of your handheld device to display a start up dialog.
2. After Loading Components, Loading UI, Validating Configuration and Complete, the Log In Page is displayed.

3. Login with the following username and password for the first time:

   Username - oatmobile
   Password – apollo

   **NOTE:**

   To use the virtual keyboard to type the Username and Password, click on 📡.

4. The OAT Server screen appears:
5. Click the OAT server icon. The following OATServer screen appears:

6. Type values in the OAT HandheldID, OAT Server HostName or IP field and the OAT Server Port field. Do NOT select the option Enable HTTPS, as it is not supported.

7. Click Save to save these settings. In the OAT server configuration page click Close to exit the application.
8. Start the application.

9. Login with a valid username and password, as configured in OATxpress.

![Main Menu (i)](image1)

**Figure 20:** Main Menu (i)

![Main Menu (ii)](image2)

**Figure 21:** Main Menu (ii)

**NOTE:** Application Setup is available for only Super User.

**NOTE:**
The Main Menu can be customized in the HandheldUI.xml file available in the Program Files\OATmobile directory. Refer to [Configuration Parameters for HandheldUI.XML](#) for details.
In the toolbar that appears at the bottom of the Main Menu, select:

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Home page" /></td>
<td>Home page</td>
</tr>
<tr>
<td><img src="image" alt="Log off" /></td>
<td>Log off the user when logged in. Exit the application from Login screen.</td>
</tr>
<tr>
<td><img src="image" alt="Submit Button" /></td>
<td>Submit Button</td>
</tr>
<tr>
<td><img src="image" alt="Keyboard" /></td>
<td>Keyboard for user interface entry</td>
</tr>
<tr>
<td><img src="image" alt="Go back" /></td>
<td>Go back to the previous screen Close the pop up</td>
</tr>
</tbody>
</table>

In the Main Menu select:

<table>
<thead>
<tr>
<th>Button</th>
<th>Description</th>
<th>Visible in default Main Menu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Setup</td>
<td>To set up the OAT Merchandise Visibility application. This is available only for super user.</td>
<td>No</td>
</tr>
<tr>
<td>Receive &amp; Tag Items</td>
<td>To receive untagged items. The items received in the receiving area have only the SKU number. The tag is attached to the item. Used with encoding schemes which have no product information, for example, GIAI.</td>
<td>Yes</td>
</tr>
<tr>
<td>Receive &amp; Tag Boxed Items</td>
<td>To receive and associate multiple tagged items to a SKU. Used with encoding schemes which have no product information, for example, GIAI.</td>
<td>Yes</td>
</tr>
<tr>
<td>Receive Items</td>
<td>To receive pre-tagged items. The items received at the store have both the SKU and EPC number attached to it. Used with encoding schemes which have product information, for example, SGTIN.</td>
<td>Yes</td>
</tr>
<tr>
<td>Put-away</td>
<td>Process by which items received into the store are transferred to specific locations.</td>
<td>Yes</td>
</tr>
<tr>
<td>Cycle Counting</td>
<td>Cycle Count is conducted to update the inventory at a particular location.</td>
<td>Yes</td>
</tr>
<tr>
<td>Button</td>
<td>Description</td>
<td>Visible in default Main Menu</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>Restock</td>
<td>Restock displays items for which the sales floor inventory is zero but have inventory in the backroom/storage locations which can be used for restocking.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td><strong>NOTE:</strong> Restock functionality does not work when the handheld device is in offline mode.</td>
<td></td>
</tr>
<tr>
<td>Enter Sold Items</td>
<td>Enter Sold Items is where the items that were sold are recorded.</td>
<td>Yes</td>
</tr>
<tr>
<td>Retire Items</td>
<td>Retirement is a process by which a tag is retired with a selected reason for retirement. Inventory is updated to reflect that the item is no longer available. If the tag is re-usable, it can now be used for another item.</td>
<td>Yes</td>
</tr>
<tr>
<td>Receive &amp; Tag Items-Put-away</td>
<td>The items received in the receiving area have only the SKU number. The tag is attached to the item at the store and transferred to specific locations.</td>
<td></td>
</tr>
<tr>
<td>Receive Items – Put-away</td>
<td>To receive pre-tagged items. The items received at the store have both the SKU and EPC number attached to it and transferred to specific locations.</td>
<td>Yes</td>
</tr>
<tr>
<td>Locate Item</td>
<td>Locate Item is used to look for items of a scanned product or its related products. Products related to the scanned attribute (typically SKU) are listed with the filter attributes. One or more products from the list of products are selected. Those products’ locations are retrieved, and the items are located by guiding the operator to each item. Beeps and a visual progress bar aid the operator in locating each item. <strong>NOTE:</strong> Locate Item functionality does not work when the handheld device is in offline mode.</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**NOTE:**
- The item_rcv.xml scenario should be deployed in OATxpress in case of Receive & Tag Items and Receive & Tag Boxed Items, Receive & Tag Items - Put-away.
The item_assn.xml scenario should be deployed in OATxpress in case of Receive Items, Receive Items - Put-away, Cycle Count, Enter Sold Items and Retire Items.

5.4.4 Configuration Menu

Use the Configuration Menu to configure - server, locations, device, products, application settings and reliable messaging.

Click Application Setup to go to the OAT Merchandise Visibility Configuration Menu.

![Configuration Menu](image)

**Figure 22: Configuration Menu**

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OAT Server</td>
<td>To modify the IP address/ hostname and the Handheld ID</td>
</tr>
<tr>
<td>Device</td>
<td>To configure RFID and Barcode devices</td>
</tr>
<tr>
<td>Locations</td>
<td>To configure locations</td>
</tr>
<tr>
<td>Products</td>
<td>To configure products</td>
</tr>
<tr>
<td>Reliable Messaging</td>
<td>To configure the queue size, threshold etc.</td>
</tr>
<tr>
<td>Application Settings</td>
<td>To configure Receiving, POS, Retire, Returns and Miscellaneous</td>
</tr>
</tbody>
</table>

5.4.4.1 Configuring OAT Server

Click OAT Server in the Configuration Menu to change the IP address/Hostname.
5.4.4.2 Configuring a Device

Click Device in the Configuration Menu and make changes in the following screen:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OAT Handheld ID</td>
<td>Enter a unique ID for the handheld device.</td>
</tr>
<tr>
<td>OATxpress Hostname or IP</td>
<td>Enter the hostname or the IP address of the OAT Server.</td>
</tr>
<tr>
<td>OATxpress Port</td>
<td>Enter the port number.</td>
</tr>
<tr>
<td>Enable HTTPS</td>
<td>Check the box to enable secure HTTP.</td>
</tr>
<tr>
<td></td>
<td><strong>NOTE:</strong> Do NOT select the option Enable HTTPS, as it is not supported.</td>
</tr>
</tbody>
</table>

Click Save to save the details entered and return to the Configuration Menu.
## Figure 24: Configuring Device

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF Power level (%)</td>
<td>Set the RF Power Level(%) using the up or down arrow button. Valid values range from 1 to 100.</td>
<td>100</td>
</tr>
<tr>
<td>Beep On Reading Tag</td>
<td>Check this box to have the handheld device beep when it reads a tag or scans a barcode.</td>
<td>Checked</td>
</tr>
<tr>
<td>Enable Barcode Types</td>
<td>Check the box for the required barcode types. This should be recognized by the handheld device. These are listed in script number barcode format.</td>
<td></td>
</tr>
<tr>
<td>Enable all Barcode Types</td>
<td>Check this box to select all the Barcode Types.</td>
<td>Unchecked</td>
</tr>
<tr>
<td>Session</td>
<td>Possible values are S0, S1, S2, S3. <strong>NOTE:</strong> If the Session is left blank it takes the default value. Select S0 to report the nearest tag first then the farthest – here the tag will not go to sleep and it is powered up immediately. This</td>
<td>S0</td>
</tr>
</tbody>
</table>

---

**Gen2 Settings:**

Session: 6

---

---
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default Values</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>should be selected only when you want to read the tag always. For Locate Item, S0 should be selected.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>NOTE:</strong> While Cycle Counting in a dense tag environment the read rate performance may be low. Use with caution.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select S1 to read a tag, which will be reported only after 2 to 5 seconds— Here the tag will sleep for 0.5 to 5 sec. To be selected only when you read the tag always.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>NOTE:</strong> While Cycle Counting in a dense tag environment the read rate performance may be low. Use with caution.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select Session S2/S3 while Cycle Counting in the dense tag environment.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>NOTE:</strong> This will not report the same tag read within 2 minutes.</td>
<td></td>
</tr>
<tr>
<td>StartingQ</td>
<td>Starting Q is used to avoid stray tags reading. If the Q size is big - there will not be any stray tags, but the time taken to read will be more. If the Q size is less - there is a possibility to get stray reads, but the response from the tag will be much faster.</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td><strong>NOTE:</strong> The preferred value for Session is S0 and Starting Q is 4 OR Session is S1 and Starting Q is 6.</td>
<td></td>
</tr>
<tr>
<td>Save</td>
<td>Saves the settings.</td>
<td></td>
</tr>
<tr>
<td>Cancel</td>
<td>To reset the data to the last saved settings and return to the Configuration Menu.</td>
<td></td>
</tr>
</tbody>
</table>
|             | **NOTE:** Cancel does NOT reset the data to the
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default Values</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>default settings.</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:**
The RF Power Level and Barcode Types settings take effect only when the application restarts. The preferred values for Session is "S0" and StartingQ is "4" OR Session "S1" and StartingQ "6" for best tag read rates. These settings should be done manually.

5.4.4.3 Configuring Locations

Click Locations in the Configuration Menu.

![Figure 25: Location - Choose Site](image)

1. Enter the Web Service Client Timeout in seconds. Default value is 30.
2. Select the Site from the drop down list. You can also select All Sites from the dropdown list.
3. Click Save to save the downloaded locations.
4. View Migrated Locations link will be enabled only after the locations are downloaded. This will be available only after Step 3 and opening the Locations page again.
5. Click on View Migrated Locations link once it is enabled.
6. Click Close to close the migrated location page.

**NOTE:**
Following screen is displayed if there are no sites configured in the server.

**Figure 26:** Migrated Locations

**Figure 27:** Locations – No Site Configured

**NOTE:**
Following screen is displayed if the server is not reachable.
7. Click **Save** to save the migrated locations and return to the **configuration menu**.

### 5.4.4.4 Configuring Products

1. Click **Products** in the **Configuration menu**.
Figure 30: Products (i)

Figure 31: Products (ii)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web service Client Timeout (seconds).</td>
<td>Enter the time in seconds.</td>
</tr>
<tr>
<td></td>
<td>Default Value is 300.</td>
</tr>
<tr>
<td>Select one of the following radio</td>
<td></td>
</tr>
</tbody>
</table>
Configuring OAT Merchandise Visibility

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>buttons</td>
<td>To clear the product information in the database and disable background product sync. Do not select this for OAT Merchandise Visibility.</td>
</tr>
<tr>
<td>Clear now, disable sync</td>
<td>To clear the product information in the database.</td>
</tr>
<tr>
<td>Clear now, sync later</td>
<td>To manually synchronize the products available for download in OATxpress. Products are automatically synchronized at 3:00 A.M. Not mandatory.</td>
</tr>
</tbody>
</table>

Click **Save** to save the selections made and return to the **Configuration menu**.

### 5.4.4.5 Configuring Application Settings

Select **Application Settings** in the **Configuration menu**. Application Settings consists of various tabs which allow you to configure the process-steps for specific scenarios. The configuration settings typically involve selection of the Business Locations and/or Read Points. Select the **Receiving** tab at the bottom of the page.

**Figure 32**: Receiving

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select Business Location</td>
<td>Select the business location for Receiving from the dropdown list.</td>
</tr>
<tr>
<td>Select Read Point Location</td>
<td>Select the readpoint location configured for Receiving from the dropdown list.</td>
</tr>
</tbody>
</table>
RFID Verification Timeout (Seconds)  
Select the RFID Verification timeout in seconds using the up or down arrow buttons. 
Default is 5. 
Applicable only for Receive & Tag Items and Receive & Tag –Put-away Items.

**NOTE:**  
This tab is applicable for Receive Items, Receive & Tag Items and Receive & Tag Boxed Items scenarios. Ensure to select leaf business location or non-parent business location to prevent data loss.

Select the Retirement tab at the bottom of the page.

![Application Settings](image)

*Figure 33: Default retirement reasons*
Configuring OAT Merchandise Visibility

## Configuring OAT Merchandise Visibility

### OAT Merchandise Visibility Installation and Configuration Guide

---

**Figure 34: Retirement**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select Read Point Location</td>
<td>Select the Read Point location from the dropdown list.</td>
</tr>
<tr>
<td>Default retirement reason</td>
<td>Select one reason from the dropdown list of retirement reason-codes.</td>
</tr>
<tr>
<td>Update Retirement Reason code</td>
<td>Click to update the reason for retirement.</td>
</tr>
</tbody>
</table>

**NOTE:** Each time the Retirement Reason is modified or updated, click “Update Retirement Reason Codes” to update the reasons.

The Retirement reason-codes can be customized in the mv.properties file at `<OATxpress Install folder>/ofs/conf`.

Following is a sample `mv.properties` file displaying the retirement reason codes.

```properties
# For modifying retirement codes, only properties file needs to be modified;
# on startup they'll be synchronized with database table 'retirement_reason'.
ret_code.ITEM_SOLD=Item is sold
ret_code.ITEM_SHIPPED=Item is shipped from store
ret_code.ITEM_MISSING=Item is confirmed missing
ret_code.ITEM_UNKNOWN=Item is unknown; detached tag
ret_code.ITEM_DESTROYED=Item is destroyed
ret_code.TAG_MISSING=Tag missing from item; will retag
ret_code.TAG_FAILED=Tag failed; will retag
ret_code.TAG_WRONG_FOR_ITEM=Tag wrong for item; will retag
```

---

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Select the *Enter Sold Items* tab at the bottom of the page.

![Application Settings](image)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select Read Point Location</td>
<td>Select the read point location configured for POS from the dropdown list.</td>
</tr>
<tr>
<td>Default POS Retirement Reason</td>
<td>Select one reason from the dropdown list. This is configured as the retirement reason-code corresponding to Enter Sold Items.</td>
</tr>
</tbody>
</table>
Figure 36: Item Locator

Select the Item Locator tab at the bottom of the page.

Following is a sample mv.properties file displaying Locate Item by product scan:

```plaintext
## Configuration for related attributes (used in Locate Item)
## Specify the attributes that relates/groups products. Two or more
## products are considered
## related when the values of their attribute(s) are equal.
## For example, if two products have the same Category or Department
## then they can be considered
## to be related.
#products.related_attributes=Category
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSSI Scale</td>
<td>Select the minimum and maximum value in RSSI Scale.</td>
<td>Min-0 Max-70</td>
</tr>
<tr>
<td>When Item Is Found</td>
<td>Check the checkbox Beep for the handheld device to beep while locating the item.</td>
<td>Checked</td>
</tr>
</tbody>
</table>
Select the RF Power Setting tab from the bottom of the page.

![Application Settings](image)

**Figure 37: RF Power Settings**

Set the RF Power Level (%) for the following:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Default values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receive and Tag Items</td>
<td>10</td>
</tr>
<tr>
<td>Receive Items</td>
<td>33</td>
</tr>
<tr>
<td>Cycle Counting</td>
<td>100</td>
</tr>
<tr>
<td>Putaway</td>
<td>10</td>
</tr>
<tr>
<td>Enter Sold Items</td>
<td>33</td>
</tr>
<tr>
<td>Retire Items</td>
<td>33</td>
</tr>
</tbody>
</table>

**NOTE:**
Above settings should be applicable to Receive Items and Put-away, Receiving & Tag - Put-away scenario types.
Select the *Miscellaneous* tab at the bottom of the page.

![Application Settings]

### Figure 38: Miscellaneous

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracked Messages Count</td>
<td>Select the number using the up or down arrow button. This parameter controls the number of messages that will be tracked in the message status display (obtained by clicking on the message status icon).</td>
<td>10</td>
</tr>
<tr>
<td>View Queued Messages</td>
<td>Click this link to list the tracked messages in queue.</td>
<td></td>
</tr>
<tr>
<td>EPC-Product Cache Expiry</td>
<td>Enter the time in minutes. EPC-Product cache stores the product for each EPC read for a certain number of minutes. After this time the entry expires, and if the product for that EPC is required it will be fetched from the server.</td>
<td>10</td>
</tr>
<tr>
<td>EPC-Product Cache Entries</td>
<td>Enter the size of the EPC-Product cache. This parameter controls the maximum number of EPCs to products in the cache.</td>
<td>1000</td>
</tr>
</tbody>
</table>
Select the EPC Detection tab at the bottom of the page.

In order to identify and validate an EPC correctly, the following parameters can be configured.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default</th>
</tr>
</thead>
</table>
| Hexadecimal EPC Length             | Select the length of the hexadecimal EPC. If more than one EPC length is used (say 16 and 24 digits), select a value lesser than 16 to force the Merchandise Visibility application to ignore this criteria.  

Default Value is 24.                                                                 |         |
| EPC Prefix (not part of EPC)       | If EPC barcodes are printed with a prefix to identify them, enter the prefix for EPC. This could be another easy way to identify an EPC accurately. The prefix value will be stripped from the scanned value and the hexadecimal EPC alone will be taken. This prefix could be any string, and its sole purpose is to identify the scanned value as |         |
Configuring OAT Merchandise Visibility

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Few Characters Of Hexadecimal EPC</td>
<td>Enter the first few characters of hexadecimal EPC. If the same encoding</td>
</tr>
<tr>
<td></td>
<td>scheme is used for all item EPCs, all the hexadecimal EPCs will have the</td>
</tr>
<tr>
<td></td>
<td>same first characters. These can be specified here to identify the EPC.</td>
</tr>
</tbody>
</table>

The scenarios where these rules are applicable are:

- Receive and Tag Items
- Receive and Tag Items - Put-away
- Retire Items

Select the Advanced tab at the bottom of the page.

![Application Settings](image)

**Figure 40: Advanced**

Select Web Service Time Out for scenarios in seconds in the following:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Default Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restock Items</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Product EPC Look Up</td>
<td>300</td>
<td></td>
</tr>
<tr>
<td>Default</td>
<td>30</td>
<td>30 - This is used for other web service calls.</td>
</tr>
</tbody>
</table>

### 5.4.4.6 Configuring Reliable Messaging

Click on Reliable Messaging in the Configuration menu.
### Configuring OAT Merchandise Visibility

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**Figure 41: Reliable Messaging (i)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Type</td>
<td>Not in use. Select one from the dropdown list: Time Based Policy – is based on the time specified in Time to Live, after</td>
<td>Count Based Policy</td>
</tr>
<tr>
<td>Maximum Retry Count</td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>Time To Live (minutes)</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Retry Interval (seconds)</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>OATxpress Connectivity Check Interval (seconds)</td>
<td></td>
<td>60</td>
</tr>
<tr>
<td>Web Service Client Timeout (seconds)</td>
<td></td>
<td>50</td>
</tr>
</tbody>
</table>

**Figure 42: Reliable Messaging (ii)**

- Retry Interval (seconds): 10
- OATxpress Connectivity Check Interval (seconds): 60
- Web Service Client Timeout (seconds): 50
- Queue Size: 50
- Queue Size Threshold (%): 80
- Disk Space Threshold (%): 80

---

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<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>which the messages are not sent to OATxpress, and are not available in the queue. The messages are archived. Count Based Policy – is based on the number of retries specified in Maximum Retry Count, up to which messages are in the queue. <strong>NOTE:</strong> On selection of one, the other is disabled.</td>
<td></td>
</tr>
<tr>
<td>Maximum Retry Count</td>
<td>Not in use. Enter the permitted number of tries. For example, if the value entered is 30, the total number of tries will be only 30. It will NOT be 1 try and 30 retries. <strong>NOTE:</strong> This is used only when Count based Policy is used.</td>
<td>30</td>
</tr>
<tr>
<td>Time to Live (in minutes)</td>
<td>Not in use. This configuration is only enabled while using Time Based Policy. Enter the time in minutes after which the messages are not sent to OATxpress, and are not available in the queue. Default is 5.</td>
<td></td>
</tr>
<tr>
<td>Retry Interval (Seconds)</td>
<td>Enter the time in seconds, after which the messages will be retried to be sent to OATxpress. <strong>NOTE:</strong> Interval between two retries should be set to minimum of 10 seconds, to prevent data loss.</td>
<td>10</td>
</tr>
<tr>
<td>OATxpress Connectivity check Interval (seconds)</td>
<td>Enter the time in seconds for the handheld device to check the status of the connection with the OATxpress server.</td>
<td>60</td>
</tr>
<tr>
<td>Web Service Client Timeout (seconds)</td>
<td>Enter the time in seconds for the Web Service Client to timeout.</td>
<td>50</td>
</tr>
<tr>
<td>Queue Size</td>
<td>Enter the number of messages that can be stored when the OATxpress</td>
<td>50</td>
</tr>
</tbody>
</table>
### Parameter Configuration Table

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Queue Size Threshold (%)</td>
<td>Enter the value in percentage. It is the threshold limit of messages when the OATxpress server connection is unavailable after which a warning will be displayed.</td>
<td>80</td>
</tr>
<tr>
<td>Disk Space Threshold (%)</td>
<td>Enter the value in percentage. It is the amount of “Application storage” disk space that can be used to store information when the OATxpress server connection is unavailable.</td>
<td>80</td>
</tr>
</tbody>
</table>

Select **Save** to save the **Application Settings**. Close the OAT Merchandise Visibility application. Your handheld device is now ready to communicate with OAT Merchandise Visibility.

### 5.4.5 OAT Merchandise Visibility in Offline mode

Handheld device scenarios for OAT Merchandise Visibility can also be used in cases where the OATxpress server is not reachable by handheld devices. It allows storing of sent messages in persistent storage before forwarding them to OATxpress when it is reachable.

The application goes into the offline mode if:

- Network is unavailable
- OATxpress server is not reachable
- OATxpress server is not running

While running the offline enabled scenario in the offline mode:

- Messages are stored in a persistent storage.
- Offline messages are sent to the OATxpress server once the connection is restored, in the same order.
- If the OAT Merchandise Visibility application is shutdown, or the handheld device is cold booted, the messages continue to be persisted. On restarting OAT Merchandise Visibility application, the saved offline messages are processed, if OATxpress is available.

The following table lists the activities available in the offline mode:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Availability in Offline mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receive &amp; Tag Items</td>
<td>Yes</td>
</tr>
<tr>
<td>Receive Items</td>
<td>Yes</td>
</tr>
</tbody>
</table>
### 5.5 Configure Scenarios in OATxpress

The following section explains the procedure to configure the OATxpress scenario.

#### 5.5.1 Single SKU Commissioning Scenario

Single SKU Commissioning scenario is used at the DC and at the store to commission/encode the tag and associate SKU with the tag.

The scenario can be run in two modes:

- **Tag Association** - The SKU is associated with the item tag. In this mode, the tag already has the EPC number and only the association of the SKU with the tag happens.

- **Tag Association and Commissioning** – In this mode, a new tag is commissioned. Commissioning refers to the process of generating a new EPC number based on the configuration, and writing that EPC number to the tag. The scenario generates the EPC based on tag encoding configuration, and writes it on the tag. The SKU is then associated to the tag. In this mode, the EPC number can be determined by the SKU itself, or it can be pre-configured and independent of the SKU.

See [Configuration Parameters for Single SKU Commissioning Scenario](#) for the parameter description.

#### 5.5.1.1 Commissioning Table Set Up

Do the following to set up the commissioning table to use the Single SKU Commissioning Scenario:

1. Set the Barcode scanner as hands free or in handheld mode.
2. Install the RFID reader under the table.
3. Install the RFID antenna attached under the table top.
4. Set up the stack of lights to provide feedback to the operator.

5. Ensure the following:
   - Barcode Scanner and the RFID reader are connected to the network.
   - Stack of lights is connected through RFID reader GPIO Ports.

5.5.1.2 Configuration Parameters for Single SKU Commissioning Scenario

Use the following sections to configure parameters prior to running the OATxpress Single SKU Commissioning scenario. Parameters listed below correspond to the fields displayed in the configuration user interface.

Section 1: General

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario Mode</td>
<td>Select from the dropdown list:</td>
</tr>
<tr>
<td></td>
<td>- Tag Association – to associate tag with the SKU.</td>
</tr>
<tr>
<td></td>
<td>- Tag Association and Commissioning – to commission a tag and associate</td>
</tr>
<tr>
<td></td>
<td>with SKU.</td>
</tr>
<tr>
<td></td>
<td><strong>NOTE:</strong> All the parameters have to be configured for Tag Association</td>
</tr>
<tr>
<td></td>
<td>and Commissioning and only the enabled parameters have to be configured for Tag Association.</td>
</tr>
<tr>
<td>Barcode Scan Product UOM</td>
<td>Select from the dropdown list the UOM of product that will be barcode scanned.</td>
</tr>
<tr>
<td>Barcode Scan Product Style Code</td>
<td>Enter the Style Code of product that will be barcode scanned.</td>
</tr>
<tr>
<td>Item Association Business Location</td>
<td>Select the leaf-level Business Location from the dropdown list to associate the item. A leaf-level business location does not have any child locations.</td>
</tr>
<tr>
<td>Item Association Read Point Location</td>
<td>Select the Read Point Location from the dropdown list to associate the item.</td>
</tr>
</tbody>
</table>
## Section 2: Tag Commissioning

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encoding Scheme for EPCs</td>
<td>Select the Encoding Scheme from the dropdown list to write on tag.</td>
</tr>
<tr>
<td>Configure Product for Commissioning</td>
<td>Select Yes to configure the product for commissioning the tags, which will be associated to the barcode scanned SKU. In this case, the SKU value does not indicate the encoding information, the product configured below does. Use this where generic encoding schemes, without a product component, are being used. Select No to commission the tag based on encoding scheme indicated by the SKU.</td>
</tr>
<tr>
<td>Product SKU</td>
<td>Enter the SKU of the product. This is valid only if Configure Product for Commissioning is set to Yes.</td>
</tr>
<tr>
<td>Product UOM</td>
<td>Select the Unit of Measurement of the product from the dropdown list. This is valid only if Configure Product for Commissioning is set to Yes.</td>
</tr>
<tr>
<td>Style Code</td>
<td>Select the Style Code of the product from the dropdown list. This is valid only if Configure Product for Commissioning is set to Yes.</td>
</tr>
</tbody>
</table>

## Section 3: Device

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barcode Scanner</td>
<td>Select the Barcode Scanner from the dropdown list.</td>
</tr>
<tr>
<td>Reader/Antenna</td>
<td>Select the Reader/ Antenna from the dropdown list.</td>
</tr>
<tr>
<td>Device Online Check Interval (ms)</td>
<td>Enter the time in milliseconds after which the online status of barcode scanner and RF reader is checked.</td>
</tr>
</tbody>
</table>
Section 4: Tag Operation

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tag Singulation Timeout</td>
<td>Enter the time in millisecond within which the reader singulates and identifies a tag in the field.</td>
</tr>
<tr>
<td>Number of retry attempts</td>
<td>Enter the number of attempts allowed to write to a tag.</td>
</tr>
<tr>
<td>Use mask when encoding tag</td>
<td>Select: Yes – to use mask while encoding the tag to ensure only one tag is encoded at a time. No – otherwise. Not to be configured in case of Tag Association.</td>
</tr>
</tbody>
</table>

Section 4: Digital Outputs

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>On Device OK</td>
<td>In the popup window, configure the digital output, to which the scenario sends signal when the devices, barcode scanner and RF reader are online.</td>
</tr>
<tr>
<td>On Device Error</td>
<td>In the popup window, configure the digital output, to which the scenario sends signal when the devices, barcode scanner or RF reader or both are not online.</td>
</tr>
<tr>
<td>On Valid SKU</td>
<td>In the popup window, configure the digital output, to which the scenario sends signal for a valid SKU.</td>
</tr>
<tr>
<td>On Invalid SKU</td>
<td>In the popup window, configure the digital output, to which the scenario sends signal for an invalid SKU.</td>
</tr>
<tr>
<td>On No Tag Read Error</td>
<td>In the popup window, configure the digital output, to which the scenario sends signal when the tags are read without error.</td>
</tr>
<tr>
<td>On Multiple Tags Read Error</td>
<td>In the popup window, configure the digital output, to which the scenario sends signal when the tags are read without error.</td>
</tr>
</tbody>
</table>
### Parameter | Description
--- | ---
 | there are multiple tags in the field.
**On Tag Association/Commissioning Error** | In the popup window, configure the digital output, to which the scenario sends signal when there is an error while writing/associating the tag.
**On Tag Association/Commissioning Success** | In the popup window, configure the digital output, to which the scenario sends signal when the tag is associated/commissioned successfully.
**On System Error** | In the popup window, configure the digital output, to which the scenario sends signal on system error.

### 5.5.2 Fixed Reader Receiving Scenario

Fixed readers are typically used at the Receiving Dock doors in larger stores or in DCs. The Receiving Dock Door portals offer an alternative to the manual receiving process when items are already tagged by the suppliers or at the DC. Fixed readers are typically used at large stores (with the floor space of 10,000 square feet or more).

**Automated mode**

As the store associates unload the cartons/trolleys and carry them past the Receiving Door, the system detects the tagged items and updates the store inventory accordingly.

**Manual mode**

The store associates also have the option to access the OATxpress application to monitor the Receiving activity. The OATxpress Receiving user interface displays counts of items (by SKU/GTIN) being received. The tags should be encoded with the product information, for example, SGTIN-96.

The OATxpress fixed reader receiving scenario contains the core functionality to receive items. It is deployed at the dock door or receiving door and the items received are assigned to the backroom or receiving area. This can be decided at the time of configuration or during the runtime.

It allows you to:
- Capture the item attributes.
- Read item EPCs.
- Receive an item to the specified location.
• Receive an item which has already been received before. This is useful in case of reusing the tags.

### 5.5.2.1 Configuration Parameters for Fixed Reader Receiving Scenario

Use the following sections to configure parameters prior to running the OATxpress Fixed Reader scenario. Parameters listed below correspond to the fields displayed in the configuration user interface.

**Section 1: Define Devices**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFID antenna read point location</td>
<td>Select one of the Read Point locations from the dropdown list, where the RFID reader’s antenna is configured.</td>
</tr>
<tr>
<td>Specify the digital input device for starting and stopping multi item movement</td>
<td>Select one from the configured list displayed.</td>
</tr>
<tr>
<td>Turn on the reader only during the session (for session)</td>
<td>Select No to keep the reader on, all the time. Select Yes to turn on the reader only during receiving session.</td>
</tr>
</tbody>
</table>

**Section 2: Receiving Process**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>How is the receiving done?</td>
<td>Select one of the following:</td>
</tr>
<tr>
<td></td>
<td>Items moved in bulk without an active session – for the reader to stay on all the time, there is no stop processing instruction.</td>
</tr>
<tr>
<td></td>
<td>Each load is received within a defined session – to receive the items in definite batches.</td>
</tr>
<tr>
<td>Should items already in site be received again?</td>
<td>Select Yes to receive the items that are already received in the site. Select No otherwise.</td>
</tr>
<tr>
<td></td>
<td><strong>NOTE:</strong> This parameter should be set to false when the tags are reused or when receiving happens in an environment where already received tags may be read.</td>
</tr>
</tbody>
</table>
### Configuration of OAT Merchandise Visibility

#### Section 3: Receiving Process - Session Start

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>How does the session start?</td>
<td>Select one of the following: Photocell or motion detector used to start the receiving process – to start the session automatically by photocell or motion detector. User starts session from display – to start the session manually by clicking a button.</td>
</tr>
<tr>
<td>Specify the digital input trigger state to start receiving</td>
<td>Select state (On or Off) that starts the receiving process in case of using photocell or motion detector to start the receiving process.</td>
</tr>
</tbody>
</table>

#### Section 4: Receiving Process - Session Close

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>How does the session close?</td>
<td>Select one of the following: Photocell or motion detector is used to stop the receiving process – to stop the session automatically by photocell or motion detector. User stops session from display – to stop the session manually by clicking the button.</td>
</tr>
<tr>
<td>Specify digital input trigger to stop receiving</td>
<td>Select state (On or Off) that stops the receiving process in case of using photocell or motion detector to stop the receiving process.</td>
</tr>
<tr>
<td>Stop receiving after the configured time (ms)</td>
<td>Specify the time period in milliseconds, after which the system will stop receiving in case of using timeout above.</td>
</tr>
</tbody>
</table>
Section 5: Load Verification - applicable for session

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you want to verify the load quantity?</td>
<td>Select Yes to verify the load quantity.</td>
</tr>
<tr>
<td></td>
<td>For example, ten items in a particular session.</td>
</tr>
<tr>
<td>Do you want to verify the number of SKUs received?</td>
<td>Select Yes to verify the number of SKUs received.</td>
</tr>
<tr>
<td></td>
<td>For example, ten SKUs in a particular session.</td>
</tr>
</tbody>
</table>

Section 6: Putaway Process

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Putaway location for items on normal receiving</td>
<td>Select from the list of configured locations at which the items should be received.</td>
</tr>
<tr>
<td>After the closure of receiving allow the operator to expedite the putaway (for Session)</td>
<td>Select from the following:</td>
</tr>
<tr>
<td></td>
<td>Always – to always allow the operator to expedite Putaway.</td>
</tr>
<tr>
<td></td>
<td>If validation is defined and it failed – operator logs in to a different location.</td>
</tr>
<tr>
<td></td>
<td>Never.</td>
</tr>
<tr>
<td>Parent putaway location for items on expedited receiving</td>
<td>In case of multilevel hierarchy, select a location to be displayed as a parent location.</td>
</tr>
</tbody>
</table>

Section 7: Display

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>For timeline view, items received are displayed in blocks. Block size in minutes</td>
<td>Enter the time in minutes.</td>
</tr>
<tr>
<td></td>
<td>Time window in which EPCs are counted and displayed in the timeline.</td>
</tr>
<tr>
<td>For timeline view, items read beyond this configured period are ignored (for Sessionless). Time period in minutes, subject to a ceiling of 1 day</td>
<td>Enter time in minutes.</td>
</tr>
<tr>
<td></td>
<td>For example, 60 minutes is entered in this prompt and 10 minutes in the above prompt.</td>
</tr>
<tr>
<td></td>
<td>There will be 6 blocks of a 10 minutes window each.</td>
</tr>
</tbody>
</table>
Parameter | Description
--- | ---
How to show the product description | Configure the relevant product information in the popup window.

### 5.5.3 FSBS (*Front Store Back Store*) Scenario

Merchandise Visibility offers the capability to automatically track items moving back and forth between the sales floor and the backroom. RFID Portals installed at the transition doors leading from the backroom to the sales floor can be used to infer the direction of the movement as store associates carry items to the sales floor for stocking or bring them back to the backroom; and update the inventory status of the items (for example, backroom or Sales floor) accordingly.

#### 5.5.3.1 Features of FSBS Scenario

Following are the features of the FSBS Scenario:

**Item EPC Capture**

The FSBS scenario supports the movement of single and/or multiple items at a time. The EPC can be captured by the RFID read.

If configured for single item processing, alerts can be generated in case where more than one item is found at the same time. If configured for processing multiple items at the same time, then multiple items are read, and are processed in chronological order.

**Direction Inference**

If an item EPC is new to the system, the movement has to be configured either as inbound or outbound. If an item EPC is repeatedly detected within a fixed window of time, then the movement direction is treated as being unchanged from the last time, the item was detected in the specified time frame.

Following are the methods for detecting the direction of Items and their parameters:

- **Reader:** Direction of item’s movement is provided by the RFID device.
  - **Device Direction Event:** is the event which provides the item’s direction of movement.
  - **Read Point:** is the entry or exit point where a reader is located. The reader’s location can be placed either under an inbound or an outbound zone, or outside the two zones.

- **Previous Location of Tag:** Logical inference of the movement of the item is based on the previous location of the item.
  - **Inbound Zone:** the area where an item is considered to be inbound. Typically, this is a parent location in OATxpress that comprises all inbound child locations. But there may be a group of child or parent locations in the zone.
Confusing OAT Merchandise Visibility

- **Outbound Zone**: the area where an item is considered to be outbound. Typically, this is a parent location in OATxpress that comprises all outbound child locations. But there may be a group of child or parent locations in the zone.

- **Read Point**: is the entry or exit point where a reader is located. The reader’s location can be placed either under an inbound or an outbound zone, or outside the two zones.

- **Reads at Multiple Read Points**: The direction of an item is inferred using multiple antennas by configuring them as IN and OUT.
  - **Flow Definition**: is to define the direction based on the first read point and the next read point.
  - **First Read Point**: is the entry point where a reader is located. The reader’s location can be placed either under an inbound zone or outside the two zones.
  - **Second Read Point**: is the exit point where a reader is located. The reader’s location can be placed either under an outbound zone, or outside the two zones. The read points can be swapped.

- **Motion sensors**: The direction of an item is inferred using Motion sensors by setting its state to ‘On’ or ‘Off’.
  - **Motion Sensor Event**: is the event which decides the item direction movement.
  - **Read Point**: is the entry or exit point where a reader is located. The reader’s location can be placed either in an inbound or an outbound zone, or outside the two zones.

The purpose of this functionality is to find the direction of the items as they enter and exit certain zones in the store that are of interest for the purpose of inventory tracking. Following are a few examples:

- Track items as they are taken to the sales floor for stocking or as they are being returned to the backroom (through the sales floor transition door – also known as FSBS portal).
- Track items moving in and out of trial rooms or alteration areas.

**Location to assign item**

The item is associated with an inbound or outbound location, depending on the movement inferred. An EPC associated to a (parent) location is also assumed to be associated to its child location.

**5.5.3.2 Configuration options for item processing methods**

Following are the different configuration options for item processing methods:

- Multi-item processing: Provides the ability to identify the direction of multiple items as a batch. A collective direction is inferred and applied to all items in the batch. The following are the three configuration options to determine the start and end of the batch:
  - Digital trigger: Photocell or Motion detectors are used to start and stop the scanning process.
o Time-out: This is based on a specified period of time. The Items are scanned for the configured time.

o Multiple items processed individually: Provides the ability to process one or more items simultaneously. Each item’s direction is inferred individually. No collective direction is applied.

**NOTE:**
While using with Multiple Read Points or Motion-Sensor based algorithms, location categories need to be set correctly for the scenario to work. The 2 locations at which the 2 antennae/readers or motion sensors are located SHOULD be of different categories. If the 2 locations were to be of the same category, or if no category was set for both locations, the scenario fails to infer direction of movement correctly. Categories for locations can be set in the ‘Add/Edit Location’ page.

### 5.5.3.3 Configuration parameters for FSBS (Front Store Back Store) Scenario

Use the following sections to configure parameters prior to running the OATxpress FSBS scenario. Parameters listed below correspond to the fields displayed in the configuration user interface.

#### Section 1: Determine Item Movement Direction

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specify parameters for direction inference</td>
<td>Configuration is through a popup window. See <a href="#">Section 1.1: Directionality Algorithm and Rules Configuration</a> for details.</td>
</tr>
<tr>
<td>Ignore multiple reads of same item, if read within (sec)</td>
<td>The item may be read more than once depending on the reader position and speed at which the item moves. Specify the time in seconds within which the subsequent read of the same item will be ignored.</td>
</tr>
</tbody>
</table>

#### Section 1.1: Directionality Algorithm and Rules Configuration

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direction inferred by</td>
<td>Select one of the following: Reader Previous location of tag Reads at multiple read points Motion Sensor</td>
</tr>
</tbody>
</table>
Configuring OAT Merchandise Visibility

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default Direction</td>
<td>Assigns a direction to an item that is either new to the system or if the direction inference algorithm is unable to decide the direction. NOTE: Selecting UNKNOWN as the default direction should be avoided. If selected, IN is chosen as the direction.</td>
</tr>
<tr>
<td>If the item direction inference algorithm chosen is ‘Reader’</td>
<td>For details see <em>Section 1.1.1: Rules Configuration for Reader based Directionality Algorithm</em></td>
</tr>
<tr>
<td>If the item direction inference algorithm chosen is ‘Previous location of item’</td>
<td>For details see <em>Section 1.1.2: Rules Configuration for Previous location of item based Directionality Algorithm</em></td>
</tr>
<tr>
<td>If the item direction inference algorithm chosen is ‘Reads at multiple antennas’</td>
<td>For details see <em>Section 1.1.3: Rules Configuration for Reads at multiple read points based Directionality Algorithm</em></td>
</tr>
<tr>
<td>If the item direction inference algorithm chosen is ‘Motion Sensor’</td>
<td>For details see <em>Section 1.1.4: Rules Configuration for Motion Sensor based Directionality Algorithm</em></td>
</tr>
</tbody>
</table>

**Section 1.1.1: Rules Configuration for Reader based Directionality Algorithm**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direction</td>
<td>IN or OUT; will be the inferred direction.</td>
</tr>
<tr>
<td>Device Direction</td>
<td>Device event for direction inference. The event name is based on the device.</td>
</tr>
</tbody>
</table>
### Section 1.1.2: Rules Configuration for Previous location of item based Directionality Algorithm

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direction</td>
<td>IN or OUT; this will be the inferred direction.</td>
</tr>
<tr>
<td>Previous Location</td>
<td>Select one or more locations to be considered as previous locations.</td>
</tr>
</tbody>
</table>

**NOTE:**
- If a parent location consisting of multiple child locations is selected, all child locations are considered as previous locations.
- Previous Location for IN and OUT cannot be the same.
- None; cannot be selected as it does not imply any location.

### Section 1.1.3: Rules Configuration for Reads at multiple read points based Directionality Algorithm

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direction</td>
<td>IN or OUT</td>
</tr>
</tbody>
</table>

**NOTE:**
- Direction has to be configured to IN, when using Reads at multiple read points based Directionality algorithm.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Read</td>
<td>Select Read Point 1 or Read Point 2. The actual read point will be configured later in – Define Devices.</td>
</tr>
</tbody>
</table>

**NOTE:**
- If the First Read was Read Point 1 then the next has to be Read Point 2 and Vice Versa.
- They cannot be the same for both IN and OUT.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Next Read</td>
<td>Select Read Point 1 or Read Point 2. The actual read point will be configured later in – Define</td>
</tr>
</tbody>
</table>
Configuring OAT Merchandise Visibility

### Parameter Description

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
</table>
| Devices.        | *NOTE:*  
|                 |    - If the First Read was Read Point 1 then the next has to be Read Point 2 and Vice Versa.                                                    |
|                 |    - They cannot be same for both IN and OUT.                                                                                               |

| Min. time diff  | Specify the minimum time in milliseconds to move from First Read to Next Read.  
|                 | *NOTE:* Reader device has to be configured correctly for this to work. A reader in polling mode should have a “Time between reads (ms)” value lesser than this parameter’s value. Refer to the OATxpress User Guide for configuring devices. |

| Max. time diff  | Specify the maximum time in milliseconds to move from First Read to Next Read.  
|                 | *NOTE:* Timeout event is created as soon as the first tag is read. This timeout logically groups the tag reads in case of multiple item reads into a batch. If other timeouts/batch quantity is configured then this event will affect them. |

### Section 1.1.4: Rules Configuration for Motion Sensor based Directionality Algorithm

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
</table>
| Direction       | IN or OUT  
|                 | *NOTE:* Direction has to be configured to IN only, for Motion Sensor based Directionality algorithm.                                                                                     |

| Motion Sensor   | Select Motion Sensor 1 or Motion Sensor 2 for IN and OUT direction.  
|                 | *NOTE:* They cannot be same for both IN and OUT.                                                                                               |

| State           | Select ON or OFF                                                                                                                                  |

<p>| Timeout         | Specify the timeout in milliseconds to wait for                                                                                                 |</p>
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timeout event</td>
<td>The EPC read event is expected within this time.</td>
</tr>
<tr>
<td>NOTE:</td>
<td>Timeout event is created as soon as the first tag is read. This timeout logically groups the tag reads in case of multiple item reads into a batch. If other timeouts/ batch quantity is configured then this event will affect them.</td>
</tr>
</tbody>
</table>

## Section 2: Define Devices

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFID antenna read point</td>
<td>Select from the list of configured read points. This read point is mandatory for all the direction inference algorithms.</td>
</tr>
<tr>
<td>NOTE:</td>
<td>In case of 'Reads at multiple read points' algorithm, this is the first read point.</td>
</tr>
<tr>
<td>Second RFID antenna read point (if using multiple read points)</td>
<td>Select from the list of configured read points. This read point is necessary only for 'Reads at multiple read points' algorithm, and is the second Read Point.</td>
</tr>
<tr>
<td>NOTE:</td>
<td>This parameter has to be configured only if there are multiple read points.</td>
</tr>
<tr>
<td>Specify the digital input device for starting inbound item movement</td>
<td>Select from the list of digital input points. This is mandatory for Motion Sensor based direction inference.</td>
</tr>
<tr>
<td>NOTE:</td>
<td>This is the Motion Sensor 1.</td>
</tr>
<tr>
<td>Specify the digital input device for starting outbound item movement</td>
<td>Select from the list of digital input points. This is mandatory for Motion Sensor based direction inference.</td>
</tr>
<tr>
<td>NOTE:</td>
<td>This is the Motion Sensor 2.</td>
</tr>
</tbody>
</table>

## Section 3: Specify Handling of Multiple Items

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is a photocell or motion detector used to start</td>
<td>Select Yes to specify if the photocell or motion detector is used to start the inbound or outbound item movement.</td>
</tr>
</tbody>
</table>
### Section 4: Specify Location to Assign Item

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specify inbound location to assign</td>
<td>Select the actual location to which the item needs to be assigned when it is inbound.</td>
</tr>
<tr>
<td>Specify outbound location to assign</td>
<td>Select the actual location to which the item needs to be assigned when it is outbound.</td>
</tr>
<tr>
<td>Specify inbound location to assign on validation failures</td>
<td>Select the inbound location to which the item needs to be assigned when validation fails.</td>
</tr>
<tr>
<td>Specify outbound location to assign on validation failures</td>
<td>Select the outbound location to which the item needs to be assigned when validation fails.</td>
</tr>
</tbody>
</table>

### Section 5: Actions to Perform on Reading an Item Tag

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
</table>
| Send digital output when EPC is invalid             | In the popup window, configure the digital output, to which the scenario sends signal for every item tag that has failed EPC validation.  
**NOTE:**  
This configuration is applicable to both inbound and outbound items. |
| Send digital output signal when EPC is valid        | In the popup window, configure the digital output, to which the scenario sends signal for |
### Section 6: Miscellaneous

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Send digital output on unknown error</td>
<td>In the popup window, configure the digital output to which the scenario sends signal for any unhandled error.</td>
</tr>
</tbody>
</table>

### 5.5.4 Fixed Reader at POS Scenario

Fixed Reader at POS is used to auto-retire the tagged items at Point Of Sale. Following are two options according to which the configuration of parameters can be done:

- RFID readers placed at POS terminals are managed by OATxpress to detect the RFID tags on items being sold. The OFS scenario activates the reader by the external system trigger, POS barcode scan etc. There is no user interface. The POS terminal displays the items purchased based on bar-code scan of items. Tag deactivation is supported.

- OATxpress receives an inbound message from an external system containing the tags that are part of the POS and proceeds to retire these tags in OATxpress.

Readers which are supported in OAT Merchandise Visibility for tag deactivation are:

- Impinj Speedway, preferably with CS-777 Brickyard Near-Field Antenna
- Sirit Infinity510

6. Other readers are supported for tag reads and retirement, but not for tag deactivation.

### 5.5.4.1 Configuration Parameters for Fixed Reader at POS Scenario

Use the following sections to configure parameters prior to running the OATxpress Fixed Reader at POS scenario. Parameters listed below correspond to the fields displayed in the configuration user interface.

### Section 1: Essential Configuration

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>How is the POS retirement process started</td>
<td>Select one from the dropdown list.</td>
</tr>
<tr>
<td></td>
<td>Digital Input (Photocell, Motion Sensor, etc.)</td>
</tr>
<tr>
<td></td>
<td>Barcode scan of SKU</td>
</tr>
<tr>
<td></td>
<td>POS system trigger</td>
</tr>
</tbody>
</table>
### Section 2: Parameters for Digital Input As Start Trigger

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specify the digital input device for starting POS retirement process</td>
<td>Select the digital input device from the dropdown list for starting the POS retirement process.</td>
</tr>
<tr>
<td>Specify the digital input trigger state to start POS retirement process</td>
<td>Select on or off to specify the digital input trigger state to start POS retirement process.</td>
</tr>
</tbody>
</table>

### Section 3: Parameters for POS System As Start Trigger

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identifier for this scenario, for sending message</td>
<td>Enter a string value that corresponds to the particular POS terminal. Note that one scenario should be deployed for each POS station/terminal. This string should be sent with the trigger message as well, so that the trigger can be delivered to the correct scenario.</td>
</tr>
</tbody>
</table>

### Section 4: Parameters for Barcode Scan As Start Trigger

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barcode scanner for scanning SKU</td>
<td>Select the barcode scanner to scan SKUs from the dropdown list.</td>
</tr>
<tr>
<td>Validate tag against scanned SKU</td>
<td>Select Yes to validate the tag against scanned SKU.</td>
</tr>
<tr>
<td>Stop waiting and read tags if no barcode scans are received for this period (in ms)</td>
<td>Enter the time in ms for the system to read tags, if no barcode scans are received for this period.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>period</td>
<td>period. Default is 2500.</td>
</tr>
</tbody>
</table>

### Section 5: Tag Deactivation

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deactivate (kill) tags?</td>
<td>Select Yes to deactivate tags after they are read.</td>
</tr>
<tr>
<td>If Yes is chosen above, provide the tag password (leave as 0 if tags don’t have a password; common for all tags)</td>
<td>Enter the tag password to deactivate the tags. If tags do not have a password, leave the value as 0.</td>
</tr>
<tr>
<td>Digital output if at least one tag fails to be deactivated</td>
<td>Configure to show the digital output signal even if killing one tag fails.</td>
</tr>
</tbody>
</table>

### Configuring Web Service for POS

In Web Service for POS, OATxpress receives an inbound message from an external system containing a list of EPCs in hex format to be retired and a location name from where the message is sent.

Following are the steps to integrate POS with the external system using web service.

1. Configure locations in `ofs/conf/PosLocation.xml` as follows:

   ```xml
   <locations>
   <location name="pos station1" readpointlocation="xpress readpoint location name"/>
   </locations>
   ```

   Where location name is POS station name and readpoint location is the reader location in OATxpress.

2. A web service “PosService” is available in “http://localhost:8080/axis/services/PosService?wsdl”. The method is `registerSoldEpcs(String[] epcs, String location)`. Parameter ‘epcs’ should contain an array of EPCs in hex format and location is the POS station name. Both fields are mandatory.

3. If the POS service is executed successfully, it will return the output from the scenario.

   If there is an error, it is sent in the following format

   “<response type="error”><error> errorMsg</error></response>”
5.5.5 Label Print Scenario

The Label Print scenario commissions new tags for the SKU entered by the user. The scenario is administered using OATxpress Administration user interface pages.

An RFID printer/encoder programs an RFID chip embedded in a smart label, then prints text, graphics, and barcodes on the label surface.

5.5.5.1 Encoding and Printing

To print a label define Printer and label template. Digital alerts are configured to let the operator know the status of the printer before printing and to also indicate the success or failure of printing. Product details such as SKU and UOM are gathered dynamically by the scenario using the floor user interface.

5.5.5.2 Validations

Product details such as SKU and UOM are validated. The scenario checks that the configured SKU, UOM are captured and printed.

Following are the validations available:

- Product Validation: Labels are printed only for those products that satisfy the configured EPC encoding scheme. Choose product details such as SKU and UOM. Only SKUs and UOMs available for the configured encoding scheme are displayed. If the operator enters an unsupported SKU and tries to print labels, the scenario will not accept the entered combination and an error message is displayed.

5.5.5.3 Label Print Scenario Configuration Parameters

The following sections describe the parameters of the scenarios to be configured.

Section 1: General

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encoding scheme</td>
<td>Select the EPC encoding scheme from the dropdown list.</td>
</tr>
<tr>
<td>Tag Commissioning Association Location</td>
<td>Select the location from the dropdown list.</td>
</tr>
<tr>
<td>Display dropdown list for SKU</td>
<td>Select Yes or No</td>
</tr>
</tbody>
</table>

Section 2: Product Attributes

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Attributes to Print</td>
<td>Select the product attributes to print in the pop up window.</td>
</tr>
</tbody>
</table>
Section 3: Printing Configuration

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Print template path</td>
<td>Select the label template for the labels to be printed.</td>
</tr>
<tr>
<td>Maximum number of line items</td>
<td>Enter the maximum number of line items for a single print run.</td>
</tr>
<tr>
<td></td>
<td><strong>NOTE:</strong> One line item corresponds to one set of values of the SKU, UOM, and Quantity of labels to be</td>
</tr>
<tr>
<td></td>
<td>printed. Only one line item is specified for an instance of the callable scenario, using the ‘SKU’</td>
</tr>
<tr>
<td></td>
<td>and ‘UOM’ configuration parameters (above).</td>
</tr>
<tr>
<td>Maximum number of labels allowed per line item (U)</td>
<td>Enter the maximum number of labels (Quantity) allowed per line item.</td>
</tr>
<tr>
<td></td>
<td><strong>NOTE:</strong> If more number of labels are needed for a particular product (combination of SKU and UOM),</td>
</tr>
<tr>
<td></td>
<td>two (or more) separate line items are specified for the same product, such that the sum of quantities</td>
</tr>
<tr>
<td></td>
<td>across these line items matches the required number of labels to be printed.</td>
</tr>
<tr>
<td>Number of labels per EPC serial number</td>
<td>Enter the number of labels required per EPC serial number.</td>
</tr>
<tr>
<td>Maximum number of labels per EPC serial number</td>
<td>Enter the maximum number of labels allowed per EPC serial number.</td>
</tr>
<tr>
<td>Verify printer status before writing</td>
<td>Select Yes to check the printer status (online/offline) before printing.</td>
</tr>
<tr>
<td>Verify tag after writing</td>
<td>Select Yes to verify the tag after printing.</td>
</tr>
</tbody>
</table>

Section 4: Digital Output

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>On print failure</td>
<td>Configure to show digital output signal when printing fails.</td>
</tr>
<tr>
<td>On print start</td>
<td>Configure to show digital output signal when printing starts.</td>
</tr>
<tr>
<td>On print succeeded</td>
<td>Configure to show digital output signal when printing succeeds.</td>
</tr>
</tbody>
</table>
5.5.6 Configuring OATxpress Scenarios for OAT Merchandise Visibility on a Handheld Device

The following section explains the procedure to configure those OATxpress scenarios, which should always be started for the OAT Merchandise Visibility application in the handheld device to work:

5.5.6.1 Configuration Parameters for MV Handheld Association Scenario

Use the following sections to configure parameters for MV Handheld Association scenario in OATxpress prior to running Cycle Count, POS, Put-away or Retirement scenarios in the handheld device. This scenario has to be running while the any of these scenarios in the handheld device are in use and also before retiring tags using the Missing/Inactive Items report. The report can be executed and results seen without running this scenario. The scenario is specifically required for retiring tags from the report. Parameters listed below correspond to the fields displayed in the configuration user interface.

Section 1: Handheld setup

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message identifier from mobile device</td>
<td>Enter the ExternalId. Here ‘association1’.</td>
</tr>
</tbody>
</table>

Section 2: Handling Missing Items

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Should missing items be moved to another location after a cycle count?</td>
<td>Select Yes to move the missing items to another location after cycle count, else No.</td>
</tr>
<tr>
<td>Specify business location to assign items found missing during a cycle count</td>
<td>Select the location from the dropdown to assign the items found missing during cycle count. This location should be of type ‘Out of Site Location’.</td>
</tr>
<tr>
<td>Specify read point to assign items found missing during a cycle count</td>
<td>Select the read point location from the dropdown to assign the items found missing</td>
</tr>
</tbody>
</table>
### Section 3: Receiving Process

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Should items already in site be received again?</td>
<td>Set to Yes – to receive the items already received items, present in the store. Set to No – otherwise.</td>
</tr>
</tbody>
</table>

#### 5.5.6.2 Configuration Parameters for MV Handheld Receive & Tag Scenario

Use the following sections to configure parameters for MV Handheld Receive & Tag Scenario in OATxpress prior to running Receive & Tag scenario in the handheld device. This scenario has to be running while any of the above said scenarios in the handheld device is in use. Parameters listed below correspond to the fields displayed in the configuration user interface.

### Section 1: Handheld setup

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message identifier from mobile device</td>
<td>Enter the ExternalId. Here ‘receiving1’.</td>
</tr>
</tbody>
</table>
Chapter 6  Customizing Reports

This chapter gives details about customizing the OAT Merchandise Visibility Reports. Following is the list of customization information discussed in this chapter:

- UI Components for BIRT Report Parameters for MV.
- Refresh time of the database in Oracle Report Database Refresh on Oracle.

Refer to Appendix J – Customizing Reports in the OAT Foundation Suite Installation and Configuration Guide for information on the following:

- modifying and customizing the properties file
- description of report parameters
- UI components for BIRT report parameters

6.1 Out Of Stock Report Scheduling

Out Of Stock Report database scheduling is done in mv.properties file in <OATxpress>\ofs\conf\mv.properties as given below:

```
oat.task.oosprocess.enabled=true
oat.task.oosprocess.schedule=0 8,20 * * *
```

- The property implies that the task has to run at 8 AM and 8 PM every day. The space-separated fields are:
  - Minute: Minutes after the hour (0-59).
  - Hour - 24-hour format (0-23).
  - Day - Day of the month (1-31).
  - Month - Month of the year (1-12).
  - Weekday - Day of the week. (0-6; the 0 refers to Sunday).

6.2 Customizing Locations in Out Of Stock Report

The default Out Of Stock location subtypes are backroom, storage area, sales floor and Lay-a-way. The location subtypes list can be customized for the Out of Stock Report.

Perform the following steps to add or modify the location subtypes:

1. Go to Start > All Programs > MS SQL Server 2008 > SQL Server Management Studio Express
2. Enter the Server Type, Server Name, SQL Server Authentication - Login and Password.

![Figure 43: SQL Server Authentication](image)

3. Go to oatdb > Tables > dbo.oos.sslt_dim

4. Right click on dbo.oos_sslt_dim and select Open Table.

![Figure 44: MS SQL Server Management Studio Express](image)
Figure 45: Open Table
5. To delete – Select the location type id to be deleted and right click on that row and choose delete.

![Figure 46: Delete Location Type](image)

6. To add a new location type first get its corresponding sslt_id from the sslt table and then open the oos_sslt_dim table as shown earlier. In the table, go to the last row that is marked as * and type the sslt_id number to be added in the second column. Do not enter any value in the first column. Click on the next row or outside the table for the changes to be persisted.
Figure 47: Add New Location Type

Alternatively, the above can be achieved using a query with the help of the Management Studio Query Analyzer, by following the steps given below:

1. Click on New Query. Type the following query to fetch the Out of Stock enabled Location Subtypes from the `oos_sslt_dim` table.

   ```sql
   select osd.oos_sslt_id, osd.sslt_id, sslt.code, sslt.name, sslt.description, sslt.profile
   from oos_sslt_dim osd
   join sslt on osd.sslt_id = sslt.sslt_id and sslt.deleted = 'F'
   ```

2. To add or remove Location types type the following in the query:
   - select * from sslt to get the screen below:

   ![Query](image)

   **Figure 48: Query**

   - Insert a new Location type - add single quoted location types inside the "in ()". For example,

     ```sql
     insert into oos_sslt_dim(sslt_id) select sslt_id from sslt
     where deleted = 'F' and name in ('Staging Area')
     ```

   - Delete an existing Location type - add single quoted location types inside the "in ()". For example,
delete from oos_sslt_dim where sslt_id in (select sslt_id from sslt where name in ('Lay-a-way'))

6.3 UI Components for BIRT Report Parameters for MV

The following is a list of UI components to be used in addition to the UI components described in OAT Foundation Suite Installation and Configuration Guide:

<table>
<thead>
<tr>
<th>Property value / Class name</th>
<th>Writer or Validator</th>
<th>Behavior</th>
<th>Additional parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>com.oatsystems.raf.service.birt.BIRTProductAttrsParameterWriter</td>
<td>Writer</td>
<td>Output a dynamic widget for product attribute selection, containing a SKU text input and table for selected products.</td>
<td>None</td>
</tr>
<tr>
<td>com.oatsystems.raf.service.birt.BIRTProductAttrsParameterValidator</td>
<td>Validator</td>
<td>Retrieve the selected product attribute as a specially formatted String for internal processing.</td>
<td>None</td>
</tr>
</tbody>
</table>

6.4 Report Database Refresh on Oracle

In the Oracle Express database, some report information is persisted as materialized views for faster access and display. These materialized views have to be refreshed periodically. This refresh automatically happens around midnight. Optionally, another refresh can be done during the day. Refresh can take up to half an hour, depending on the data volume. Note that this applies only when OAT Merchandise Visibility is deployed with Oracle Express as the database. On SQLServer databases there is no need for a refresh.

Whether or not a refresh is needed during the day, and the time at which the day-time refresh will happen can be configured in the mv.properties file. You can enable day-time refresh by using the following property:

```
oat.task.dbrefresh.mid_day_refresh_required = [true/false]
```

Set to true to enable day-time refresh task to be carried out at a configured time. The time at which the day-time refresh happens is configured with the following property:

```
oat.task.dbrefresh.period=30 12 * * *
```

- The property implies that the task has to run at 12:30 PM every day.
  The space-separated fields are:
- Minute: Minutes after the hour (0-59).
- Hour - 24-hour format (0-23).
- Day - Day of the month (1-31).
- Month - Month of the year (1-12).
- Weekday - Day of the week. (0-6; the 0 refers to Sunday)

For Example, */5 * * * *
The task will run every 5 minutes.

Midnight report updating is non-configurable and takes place automatically at 11:30 P.M.
Chapter 7 Configuration for Zoning and Visualization

This chapter explains the procedures to configure and use Visualization and Zoning. Visualization helps the user to graphically locate items on the screen. Zoning represents the zone as X and Y coordinates. For more details on the use of Visualization refer to the OAT Merchandise Visibility User Guide.

Map and Zone configuration is based on the visualization_configuration.xml in the OFS_INSTALL/ofs/conf/ directory. Following can be configured in visualization_configuration.xml file:

- Map Configuration
- Calibration
- Zone Configuration
- Visualization Properties Configuration

7.1 Map Configuration

A Map refers to an image of an area in a site that may have one or more sub locations called Zones. A “Zone” is defined as a set of polygon points in a map image that correspond to specific predefined locations. Map and Zone configuration helps designate which maps according to their hierarchy and which zones and sub zones must be made available through Visualization. It is important to know the exact polygon points of locations on map such that when the data is received, the tag is associated to the location.

Following is the default visualization_configuration.xml file.

```
<ZoneConfiguration>
  <Maps/>
  <Zones/>
  <Navigation/>
  <ZoneConfig>
    <UIStatus/>
    <BusinessLocationHierarchy/>
    <RPMapping/>
  </ZoneConfig>
</ZoneConfiguration>
```

Following is the sample of map configuration in visualization_configuration.xml file:

```
<Maps>
  <Map mapId="backroom" borderThreshold="15" description="Map of back room" name="Store Backroom" relativeHttpUrl="images/maps/StoreBackroom.jpg" height="815" width="1055">
    <Calibration deviceEpc="dummy_calibration">
    <PreCalibrated>
```
The description of the Attributes on tag <map> is as follows:

<table>
<thead>
<tr>
<th>Attributes on &lt;Map&gt; tag</th>
<th>Description</th>
<th>Optional/Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>mapId</td>
<td>Unique id for each map(should not contain spaces)</td>
<td>Required</td>
</tr>
<tr>
<td>borderThreshold</td>
<td>The distance around the zone in pixels that needs to be considered as inside the zone (default 0).</td>
<td>Optional</td>
</tr>
<tr>
<td>description</td>
<td>Description of the map</td>
<td>Optional</td>
</tr>
<tr>
<td>name</td>
<td>Display name for the map</td>
<td>Required</td>
</tr>
<tr>
<td>relativeHttpUrl</td>
<td>Map image file url. All map images are expected to be placed in the: &lt;oat_install_dir&gt;/jakarta-tomcat-6.0.26/webapps/oatedge/images folder.</td>
<td>Required</td>
</tr>
<tr>
<td>height</td>
<td>Height of the map</td>
<td>Required</td>
</tr>
<tr>
<td>width</td>
<td>Width of the map</td>
<td>Required</td>
</tr>
</tbody>
</table>

### 7.2 Calibration

Calibration is the information required to transform a device coordinate system to the image coordinate system. An Antenna/RF reader reports X,Y in feet or meter. Calibration is used to map the device X,Y to map image X,Y. Each map can have more than one calibration. Each calibration must be linked to an antenna.

### 7.3 PreCalibrated Map

Precalibration is when the source and the destination position is the same.

Following is the sample configuration for a PreCalibrated map in visualization_configuration.xml file:

```xml
<Calibration deviceEpc="dummy_calibration">
  <PreCalibrated>
    <Property name="a11" value="1" />
    <Property name="a12" value="0" />
    <Property name="a13" value="0" />
    <Property name="a21" value="0" />
    <Property name="a22" value="1" />
    <Property name="a23" value="0" />
  </PreCalibrated>
</Calibration>
```
7.4 Zone Configuration

A Zone can represent a whole map, a section of a map, or a dummy node for navigation.

Following is the sample of zone configuration in visualization_configuration.xml file:

```xml
<Zone Configuration clickable="true" visible="true">
  ...
  </Maps>
  <Zones>
    <Zone zoneId="backroomZone" mapId="backroom"
          name="BackRoom Zone" parentZoneId="store1" isDefault="true" />
    <Zone zoneId="aisle1_shelfA_level1_1"
          name="aisle1_shelfA_level1_1" parentZoneId="backroomZone"
          isBusinessLoc="true">
      <Polygon>
        <Point order="1" x="68" y="586" />
        <Point order="2" x="106" y="576" />
        <Point order="3" x="106" y="698" />
        <Point order="4" x="68" y="714" />
      </Polygon>
    </Zone>
  </Zones>
  ...
</Zone Configuration>
```

In the above example zone “backroomZone” is defined as a polygon on zone "backroom". Since “BackRoom Zone” has a mapId, it must have a map definition identified as "backroom". Zone polygons are always defined against the lowest level map. The relationship between two zones on a map can only be containment or disjoint. No two zones can intersect with each other. One zone can contain another zone completely but cannot overlap partially.

### 7.4.1 Attributes on `<Zone>` tag

<table>
<thead>
<tr>
<th>Attributes on <code>&lt;Zone&gt;</code> tag</th>
<th>Description</th>
<th>Optional/Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>zoneId</td>
<td>Unique id for the zone (should not contain spaces).</td>
<td>Required</td>
</tr>
<tr>
<td>name</td>
<td>Display name.</td>
<td>Required</td>
</tr>
<tr>
<td>mapId</td>
<td>Map of the zone, If not specified it means that this zone / location doesn't have map.</td>
<td>Optional</td>
</tr>
<tr>
<td>parentZoneId</td>
<td>Parent zone for the current zone. Helps define the hierarchy of the zones (If not defined, the parent is root).</td>
<td>Optional</td>
</tr>
<tr>
<td>isDefault</td>
<td>Defines if the Zone is default or not.</td>
<td>Required</td>
</tr>
<tr>
<td>isBusinessLoc</td>
<td>Defines if a zone should be associated to a business location and thus used for zoning. If not specified the default value is “NO”.</td>
<td>Optional</td>
</tr>
</tbody>
</table>
### Attributes on `<Zone>` tag

<table>
<thead>
<tr>
<th>Attributes on <code>&lt;Zone&gt;</code> tag</th>
<th>Description</th>
<th>Optional/Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clickable</td>
<td>Defines if a zone is clickable on the map to view properties. If not specified the default value is based on the clickable attribute on the <code>&lt;ZoneConfiguration&gt;</code> tag. The Clickable flag is always set to ‘true’.</td>
<td>Required</td>
</tr>
<tr>
<td>Visible</td>
<td>Defines if the zone should be visible on map. If not specified the default value is based on the clickable attribute on the <code>&lt;ZoneConfiguration&gt;</code> tag. The Visible flag is always set to ‘true’.</td>
<td>Required</td>
</tr>
<tr>
<td>OfflineEnabled</td>
<td>Specifies if the scenario can be executed when OATxpress is unavailable. Set to True for the scenario to be executed in the offline mode. False, otherwise.</td>
<td>Varies with scenario type.</td>
</tr>
</tbody>
</table>

**NOTE:**
This parameter should be "false" for Locate Item and Restock scenario.

### 7.4.2 Navigation Tag

Zones that are not associated to any predefined business locations but are used as dummy nodes for creating a meaningful hierarchy are defined under this section. These zones will not have maps and will not be used for zoning. For example: A zone by name "store" can be used as a top level navigational node but it will not represent a real zone on map.

Following is the sample Navigation tag in `visualization_configuration.xml` file:

```xml
<Navigation>
  <Zone zoneId="store1" name="XYZ Store"/>
</Navigation>
```

In the above example “store1” represents the top level zone which is not defined as a polygon but it serves as a root node in the hierarchy.

### 7.4.3 ZoneConfig Tag

ZoneConfig tag can help define overall zone properties like zone status etc. When a property is defined with ZoneConfig it will be applied to all the zones that are defined.

Following is the sample of ZoneConfig tag in `visualization_configuration.xml` file:

```xml
<ZoneConfig>
  <UIStatus>
    <Status name="full" bgcolor="FF0000"/>
    <Status name="empty" bgcolor="00FF00"/>
  </UIStatus>
</ZoneConfig>
```
The name for status can be any valid string. The color is represented as RGB with each representing value between 00-FF. Colors as string such as "red", "green", "blue", etc., are not supported, they have to be converted to RGB format. When scenarios change the status of zones / business locations to one of the status strings, then the Visualization user interface will reflect the zone background with the appropriate color.

### 7.4.4 BusinessLocationHierarchy Tag

This tag defines the zones versus business locations mappings. Since OAT scenarios are associated with business locations, any scenario based changes at those business locations will be reflected in the respective zones (in the Visualization user interface) as long as a relationship is established in the "BusinessLocationHierarchy" tag.

Following is the sample of BusinessLocationHierarchy tag in `visualization_configuration.xml` file:

```xml
<BusinessLocationHierarchy>
<!-- Aisle 1 Shelf A -->
  <BusinessLocation zoneId="aisle1_shelfA_level1_1" location="aisle1_shelfA_level1_1" />
</BusinessLocationHierarchy>
```

### 7.4.5 RPMapping Tag

This section defines the association between zones and read point locations. Each zone used for zoning must be mapped to a read point location. This helps the ZoneFilter to associate the zone with a location EPC for logging add / remove read events.

Following is the sample of RPMapping in `visualization_configuration.xml` file:

```xml
<RPMapping>
  <RPMap rpLocation="Aisle_1_RP" zoneId="backroomZone" />
</RPMapping>
```

**NOTE:**

All business locations and read point locations must be defined prior to using them in the visualization configuration for zone mapping.

### 7.5 Visualization Properties Configuration

This section describes the configurations to customize the user interface parts of Visualization such as Item icons, size, background and component configurations such as tab sizes, user interface styles etc.

Properties configuration is specified in the “app_properties” properties file located in the: `<oat_install_dir>/jakarta-tomcat-6.0.26/webapps/oatedge/WEB-INF/classes` directory

Following are the Visualization specific variables that can be defined in the app.properties properties file:
• **VIZ_DEFAULT_PIN_ICON**: Relative URL for the default image icon to use for displaying items.

  For example: `VIZ_DEFAULT_PIN_ICON: =images/default.jpg`

  Value is typically “images/default.jpg”. It is expected that all the images are placed in the `<oat_install_dir>/jakarta-tomcat-6.0.26/webapps/oatedge/images` folder.

• **VIZ_GROUP_PIN_ICON**: Relative URL for the group icon image for grouped items.

  For example: `VIZ_GROUP_PIN_ICON: =images/group.jpg`

• **VIZ_DEFAULT_PIN_COLOR**: Default background color for the item icon.

  For example: `VIZ_DEFAULT_PIN_COLOR=black`

• **VISUALIZATION_REFRESH_TIME**: The time interval before the application sends a request to get updated item information. Though visualization aims at displaying realtime data, the application waits for a data refresh based on this time interval. This interval can be as low as 10 secs and is always specified in milliseconds.

  For example: `VISUALIZATION_REFRESH_TIME=10000`

• **VISUALIZATION_TAB_NAMES**: A comma separated string of content headings to be displayed on the visualization’s properties pane. For example: Scenarios, Reports. This can be customized to have any textual heading depending on the data that is supposed to be displayed. The order of the heading in this comma separated string will be the order in which the lists of data will be displayed on the properties pane.

  For example: `VISUALIZATION_TAB_NAMES=Scenarios,Reports`

• **VISUALIZATION_TAB_SIZES**: A comma separated string of the percentage of area a data list should occupy in the zone properties panel. The order of the sizes / percentage values in the comma separated string, should be in sync with the order defined for `VISUALIZATION_TAB_NAMES` and `VISUALIZATION_TAB_IDS`

  For example: `VISUALIZATION_TAB_SIZES=50`

• **VISUALIZATION_TAB_IDS**: A comma separated list of IDs to identify the correct data list.

  For example: `VISUALIZATION_TAB_IDS=scenario,report`

• **VISUALIZATION_TAB_LIST_STYLE**: A comma separated string of list styles that determine style for all the list elements within each list. 'Bullets' and 'Numbers' are the two styles that are currently supported.

  For example `VISUALIZATION_TAB_LIST_STYLE=bullets,numbers`

• **VIZ_QUERY_RELATION_ATTRIBUTE**: This variable can be any attribute of a product from the product definition. This value is used in the quick search query such that it establishes a relation between all the products based on this relational attribute. Default value for this variable is “name”. This variable takes only one product attribute as value.

• **VIZ_QUERY_SKU_DISPLAY_COLUMN**: This variable can be any attribute of a product from the product definition. It defines the label for representing a specific SKU in the Product Properties tab in the properties panel. The default value is sku.

• **VIZ_APPTYPE=MV**: Determines if the OAT Merchandise Visibility Visualization application is active. When OAT Merchandise Visibility solution is deployed this value is set automatically such that the Merchandise Visibility visualization user interface is presented to users.
7.6 Setting up Visualization

To set up customized Visualization, follow the steps given below:

1. Stop OATxpress.

2. Replace visualization_configuration.xml file with the customized new visualization_configuration.xml at C:\OATxpress\ofs\conf

3. Start OATxpress.

This completes the installation and configuration instructions for OAT Merchandise Visibility. Refer to the OAT Merchandise Visibility User Guide to deploy scenarios for both handheld devices and OATxpress.
Appendix  A Internationalization

MV application can be used in local languages too. The resource files for non-English languages should be bundled with the application during compilation. OAT Professional Services will take care of this process. During run-time, the application picks up the resources for the set locale to display in forms.

A.1 To change the Language/Locale

To change the language settings in the handheld device follow the steps given below for different handhelds. Ensure appropriate locale is set before creating the database to avoid any discrepancy of data.

NOTE:
If the OAT Merchandise Visibility application does not have the resources for the locale packaged during compile-time, it will use the resources from the default locale.

Motorola MC 3090:

1. Start >Settings
2. Go to System tab, Click on Regional Settings and select the desired language from the dropdown list.

Motorola MC 3190:

1. Start >Settings
2. Go to System tab, Click on Regional Settings and select the desired language from the dropdown list.
For installing OATxpress in a server with Ubuntu as an operating system, login as non-root user and follow the steps given below:

- Ensure to run the following command before installing OATxpress for the first time.
  ```bash
  sudo ln -fs /bin/bash /bin/sh
  ```
- Install OATxpress using the following “sudo” Command:
  ```bash
  sudo ./setup.bin
  ```
- After installation, user must logout and login again using the following user credentials:
  
  User ID: oat
  
  Password: secret

- For configuring multiple handheld devices for multiple scenarios to improve the performance execute the following command in Oracle 10g Xpress Edition:
  ```sql
  alter system set processes=150 scope=spfile;
  ```
Appendix  C Exceptions while using Handheld Device

C.1 Exceptions in case of Motorola MC 3090

Following is the exception in case of Motorola MC 3090:

- The OAT Merchandise Visibility application stops reading EPCs if the Low Level Reader Protocol (LLRP) is not running. Start the LLRP in My Device->Application->LLRP->MobileLLRP. It is not necessary to restart the application.