Oracle® Retail Warehouse System

Release Notes

Release 14.0

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This document highlights the major changes for Release 14.0 of Oracle Retail Warehouse Management System.

Overview

Oracle Retail Warehouse Management System (RWMS) is an N-tier warehouse management system with a flexible and robust technical and scalable architecture. It supports GUI, Browser based, and Radio Frequency (RF) terminal clients.

RWMS is a proven foundation that allows retailers to profitably and efficiently execute core warehousing activities, including receiving, inventory control, order wave processing, picking, value added services, and shipping. It also supports commerce-anywhere retailing because of its capability to handle both retail store replenishments and consumer order fulfillment out of the same operation.

RWMS includes a comprehensive Task Management System to direct work assignments in an efficient manner based on configurable rules. Activities performed are tracked by the system and work progress can be monitored by an array of available operational dashboards.

Hardware and Software Requirements

See the *Oracle Retail Warehouse Management System Installation Guide, Release 14.0* for information about the following:

- Hardware and software requirements
- Oracle Retail application software compatibility

Functional Enhancements

The functional enhancements described below are included in this release of RWMS.

Task Management Solution

Task Management functionality has been completely redesigned and built to optimize the assignment of activities to workers. The system offers configurability for task assignment based on equipment, user profile, activity group assignment, zone restrictions, and location and item configuration.

Note: The term "task" is equivalent to an "activity" within the Oracle Retail Warehouse Management System.

For more information, see the latest *RWMS User Guide* and the *RWMS Implementation Guide*.

Prioritization of Tasks

As a user becomes available to perform the next available activity, the system makes the work assignment based on a combination of priority, proximity, and permissions.

- The **priority** for each activity type is initiated with a configured default level and can change based on conditions in the warehouse. For example, a replenishment pick can be promoted in importance when the forward picking location becomes empty.
- The **proximity** refers to the distance between a user's current position and the starting warehouse location for each available task.
- **Permission** is based on a combination of factors including each user's activity group and what activities are assigned to that group, and whether the user's current equipment is approved to perform the activity.
- A **threshold** can be set to designate the priority level, beyond which user proximity becomes more important than activity priority.

Aisle work assignment limits can be configured to eliminate user congestion.

Activity Groups and Interleaving

Based on the equipment needed for a set of activities, functional similarities and/or worker skill sets, warehouse zone proximity, or other factors, sites may choose to group certain activity types together. The system considers all activities in a group as eligible for assignment to workers belonging to that group. This functionality allows the system to interleave eligible activities and make work assignments for those activities based on priority, proximity, and permission. Activity assignments to group members can optionally be constrained to a set of warehouse zones.

Rules-Based Activity Prioritization

The priority level for every activity type can be assigned a default value between 1 and 99, with 1 being the highest priority and 99 the lowest. There are rules available for every workflow type that can be activated and configured by retailers that test for a condition. When that condition is true, the priority for all open activities of that type pertaining to that rule is changed to the expedited priority level. This validation ensures that every open warehouse activity being managed by the Task Management System is assigned at the proper time to the correct worker.

Rules are available for the following areas:

- Order picking
- Replenishment picking
- Cycle counting locations
- Loading containers to trailers
- Put-away and directed move operations

Location Coordinates and Shortest Path Calculations

In order to calculate a user's proximity to the next activity's starting location, the system must have XYZ coordinates for every location in the warehouse and must know the optimal travel path between any two points. This requirement is accomplished because of the following enhancements:

- Alternate XYZ coordinates are now included (in addition to standard XYZ coordinates) for use in designating drop-off locations for flow racks, where the replenishment occurs in aisles adjacent to the picking aisle.
- A reference point (used to designate the entry and exit points of an aisle for every location) is configured and used to determine how to reach any given location.
- A new Shortest Path algorithm calculates the proper travel path and distance to all locations in the warehouse.
- An "aisle" designation is available in the location setup process. The maximum number of users in an aisle is configurable to reduce worker congestion.

Equipment Classifications and Units

Equipment classes are set up to designate key information for each type of equipment. This includes the description, type, certification requirements, and number of pallets that can be handled, horizontal and vertical speeds, and so on. Equipment classes can optionally be restricted to operate in only certain zones.

A specific unit of equipment can be assigned to a class if the site wishes to track equipment usage at the unit level. Each unit of an equipment type would be assigned a unique identification number/code. By default, each unit inherits the data defined at the class level, but this step can be overridden. Users can log into Task Management at either the unit or equipment class level.

Indirect Activities

To facilitate a distribution center's (DC) ability to monitor all working time for employees (even time not managed by the warehouse management system) the ability to set up and manage indirect activities is included in this release. Each site can define the indirect activities it wishes to track, and then employees can enter time against these activities via an RF device or a regular computer.

Activity Command Queue

The Activity Command Queue screen shows all open (pending) activities, with the ability to filter the data by a variety of criteria. The screen can be used to manually update the priority or user assigned to an activity, or to a group of activities using the mass update function.

Task History

All user activity (whether system-directed or not) is tracked in the task history, and is viewable on screens and reports. Activity details include the item, user, start/end times, elapsed time, location, equipment used, and number of operations (pallets, cartons, and units).

DC Activity Monitoring Dashboards

To ensure that warehouse resources are properly allocated, dashboards have been added to give managers and supervisors an instant view of activities. These dashboards make it easy to monitor pending as opposed to completed work. Users

have the ability to filter and sort key data and export the details into a spreadsheet application. Dashboards are organized by functional area, with each having its own tab. Sub-tabs categorize the information further to offer a variety of views, as summarized below

Inbound

This provides data about all receiving activity by appointment type.

- A Daily Status tab shows pending, printed, in-progress, and completed (within the last 24 hours) appointments. Pie charts and spreadsheets illustrate the number of tasks and number of cases.
- The Scheduled Appointments tab shows the number of appointments scheduled for each of the next 30 days.
- The Unscheduled POs provides a view of potential upcoming deliveries not yet appointed.
- The Count History tab shows the number of completed appointments by type per day, for the number of days of history being retained.

Transport

The transport section includes both directed "moves" and "put-away" operations. A put-away is any movement destined for a storage location. Moves include anything directed to a non-storage location, including cross-dock containers, movements between processing or staging locations, and so on.

The **Moves** section includes:

- A Summary of pending, in-progress, and completed case and pallet moves.
- A Stores/Internal Locations tab showing groupings by destination.
- A Count History depicting the number of moves by date, for the number of days retained in history.
- Closure Times showing the number of moves performed within a range of time, to illustrate how quickly moves are being performed.

The **Put-away** section includes:

- A Summary of pending, in-progress, and completed case and pallet put-away operations.
- A Zones tab showing pallets, cartons, and units by destination zone.
- Count History depicts the number of put-away operations by date, for the number of days retained in history.
- Closure Times shows the number of put-away operations performed within a range of time frames, to illustrate how quickly moves are being performed.

Cycle Counting

Cycle counting is the regular inventory validation process that is run on a regular sampling basis. The dashboard includes:

- A Summary of pending, in-process, and completed counts by count type (system generated, manually marked, audit counts).
- A Zones tab that shows pallets, cartons, and units by zone.

- Count History that shows the number of counts by type by date, for the number of days retained in history.
- Closure Times that shows the number of locations counted within a range of time frames, to illustrate how quickly cycle counts are being performed.

Picking

Picking has separate sections for each of the major pick types: Bulk, Case, Forward Case, and Unit picks. For each of those types, the following tabs are provided:

- A Summary tab of pending, in progress, and completed picks by detailed pick type.
- Waves illustrating picking by wave number.
- Count History showing the number of picks performed by type, by date, for the number of days retained in history.
- Closure Times showing the number of picks performed within a range of time frames, to illustrate how quickly picking is being completed.

Outbound

The outbound section shows progress loading and shipping outbound trailers. The following is included:

- An Open Trailers tab showing the number of containers (pallets or cases) available to be loaded to each trailer and the number loaded so far. There is also a table illustrating the number of destinations for each trailer.
- An ASNs Out tab showing the total number of ASNs created by day, for the number of days retained in history.

Enhanced Support for Commerce Anywhere Retailing

Consumers want a relevant experience that allows them to shop and get their purchases where and when they want. Commerce Anywhere allows the retailer to ensure it is able to execute on this in a profitable and efficient way. A retailer can utilize planning, supply chain, merchandising, stores, commerce, and analytical processes and solutions that enable the enterprise to deliver on the brand promise.

End-to-end workflows have been created in RWMS to support customer order fulfillment out of the DCs, while continuing to support traditional store replenishment operations. This involved building several enhancements, including:

- The addition of configuration options that allow separate setup for customer orders without affecting store replenishment operations
- Supporting all picking types for customer orders
- Modifying the waving process to include proper handling of customer orders
- Adding QA, Packing, and Returns processing screens
- The introduction of item combinability control and order consolidation
- Integration enhancements
- Manifesting interface updates, designed around Kewill's Flagship system, but adaptable to other manifesting systems
- Support for Brazil Nota Fiscal documentation

Note: Some of the summaries below also address Integration Enhancements that were included to support the Commerce Anywhere retailing solution.

New System Parameters and Configurations

Consumer-direct orders often require configurations that differ from normal store replenishment operations. Those parameters identified to potentially be different have been separated into their own consumer-direct-specific parameters, allowing a retailer to configure one DC/warehouse to support both types of operations. When processing store orders, the normal parameters are used. When processing customer orders, the parameters particular to consumer-direct business are referenced.

Enhanced Waving Process

In order to utilize the separate configuration options (explained above) for the waving and distribution process, warehouse ship consumer-direct orders are placed on waves separate from store orders. The Stock Order Selection screen used to create waves has been enhanced to allow the user to designate either consumer or store orders, but not both at the same time. Having consumer fulfillment orders on separate waves also helps downstream workflows and ensures consistency.

Bulk and Case Picking Types Now Supported for Customer Orders

In addition to the traditional unit picking methods provided in past releases for consumer-direct operations ("pick-to-cart" and "put-to-order"), both case and bulk picking are now supported for consumer-direct waves. All picking methods used for warehouse ship customer orders are directed to the customer order QA/Packing stations.

Order Consolidation for Warehouse Ship Customer Orders

Some retailers prefer to consolidate containers/cartons for the same order coming from varying parts of the warehouse into a single outbound carton, or into as few cartons as possible. This is a choice between the labor cost of consolidation and any freight costs associated with shipping multiple containers for the same order. To address this need, the system offers a default configuration option, along with order-level override, that directs merchandise to a consolidation area. The need for consolidation would prompt the QA station not to package containers until after all containers for an order have reached the designated consolidation area. Users working in the consolidation area are directed by the RF device to take inbound containers to either an existing consolidation location for each order or to open a new one (when the first container for an order arrives).

Item Combinability Control for Warehouse Ship Customer Orders

Some items should not be packaged in the same carton with other/differing items. For example, a retailer may not want to package cleaning products with food items going on a customer fulfillment order.

To address this situation, Product Classification Codes have been established as an item-level field in both the Oracle Retail Merchandising System (RMS) and in RWMS. A retailer can now use these classification codes when setting up items. On the warehouse side, retailers can establish combinability rules that exclude certain product classifications from being packed with other specific product classifications. The

warehouse system then prevents any consumer-direct workflow from combining these products into the same carton.

Customer Order Data from RMS

RWMS receives customer fulfillment orders directly from RMS in the same interface as store transfers and allocations. To differentiate customer orders and to support downstream processing, additional data is added to the integration. These additions include:

- Full customer shipping address information.
- Field indicators designating the orders as customer-direct, including a shipping destination ID that emulates a virtual store.
- Indicators to designate orders that must be shipped complete.
- In addition to the customer order number, there will also be a fulfillment number to be included as part of the outbound data.

> **Note:** Some retailers may be using other merchandising systems or a previous version of RMS. They still have the option to integrate their order management system directly with RWMS if that better fits their needs.

Outbound ASN Enhancements

New fields have been added to the outbound ASN (shipment) data published by RWMS to support customer orders. These include the fulfillment number and carrier/tracking number information.

New QA and Packing Screen Workflows for Warehouse Ship Customer Orders

New screens and workflows have been created for customer orders. The assumption is that all orders require some level of QA and packing, which can be performed together. Because the workflows are somewhat different based on the picking type used to retrieve the merchandise (for example, unit-picked totes or cases picked to a pallet), there are three unique QA/Packing screens for the various picked containers. For unit-picked totes, configuration options can force the user to scan every UPC to ensure that the proper items and quantities have been retrieved for each order.

New Returns Processing

New returns processing screens have been added to support both electronic and paper-based Customer Returns. Electronic returns processing requires a Merchandise Authorizations (RMA) which is published by a third-party system and consumed by RWMS. Because paper-based usually requires additional data entry (for example, reason for return, desired resolution, and so on), the two types of returns have somewhat different screens/workflows.

Returns data is uploaded through the integration layer where it can be consumed by the retailer's order management system.

Enhanced Manifest System Integration

The RWMS manifesting interface was designed around Kewill's Flagship system. However, the interface can be adapted/customized as needed to fit other systems. Enhancements to the manifesting system interface include:

- In addition to retrieving carrier and tracking information, receipt of this data now triggers an update to the status of the outbound container to "Manifested". This saves the retailer from using traditional RF Load Container functionality for customer orders.
- When the manifesting system sends a message for a carrier pickup, RWMS updates all pending customer orders awaiting pickup by that carrier/service to "shipped" status. This eliminates the need to perform any RF shipping function.

Handling Customer Orders being Shipped to Stores

The option to ship customer orders to stores for either store shipment to customer or customer pickup in store is fully supported. While these orders are waved and processed in regular store picking waves, they are grouped and packaged separately to the extent possible. Any container that includes merchandise for a customer order is marked accordingly on the picking/shipping labels.

This process supports new workflows included in the Oracle Retail Store Inventory Management System (SIM) that can recognize these containers during receiving.

Support for Brazil Nota Fiscal Documentation

The ability to support printing of Brazil Nota Fiscal documents has been included in the RWMS QA/Packing and outbound workflows. However, at the time of release, the integration for this in the Oracle Retail Fiscal Management (ORFM) application does not yet exist.

Enhanced User Interface Navigation

This release introduces a new and enhanced user navigation interface, which leverages Oracle's Application Development Framework (ADF) version 11.1.1.6.

The traditional Oracle Forms editors have been encased in an Oracle Application Development Framework (ADF) navigation screen that offers expandable menu groupings on the left-hand side of the screen. The groups are arranged according to logical functional area.

By expanding the groupings, the list of available editors is displayed. Each additional editor opened by the user creates a new sub-tab (button) horizontally across the top of the screen, allowing the user to easily navigate between open editors by clicking the associated tabs/buttons for the desired screen.

Each user is able to create a list of his/her most commonly used editors in the Favorites grouping. Editors are added/removed from the favorites grouping by simply clicking on the star that precedes each screen name in its normal menu grouping.

A search capability is included that allows the user to easily find an editor by typing any part of its name. As text is typed in the search box, a list of resulting screens along with the name of their menu group is displayed. The user can select the desired editor from the drop-down list.

From the left menu, the user is able to open any editor, as well as the new dashboards. The dashboards open into a separate main tab at the top of the screen, allowing users to quickly switch between editors and dashboards by clicking the desired tab. The enhanced navigation system serves to provide access to both Oracle Forms editors and ADF dashboards within a single user interface/experience.

For more information, see the *RWMS Implementation Guide*.

Technical Enhancements

The technical enhancements described below are included in this release.

Software Operating Environment Upgrades

> **Note:** The list below announces the addition of Oracle Retail support for the technology described. See the Installation Guide requirements section for critical information, such as whether the enhancement below replaces previous versions or is supported in addition to already existing versions.

The technology below has been upgraded.

- Oracle Linux 6 for x86-64 (Actual hardware or Oracle virtual machine)
- Red Hat Enterprise Linux 6 for x86-64 (Actual hardware or Oracle virtual machine)
- Java 1.7.0+ 64 bit for the server side (JDK)
- Java JRE 1.7.0+ for the client browser

RF Technology Upgrades

- Update to Windows Server 2008R2
- Update/Addition from Windows Terminal Services 2003 to Remote Desktop Services 2008
- Addition of handheld software-Windows Embedded CE 6.0

Documentation Enhancement

Security Guide

This new guide addresses pre and post installation considerations and configuration for the infrastructure that supports RWMS, as well as infrastructure troubleshooting points. Topics about RWMS security include its security architecture, authentication techniques, administration, secure batch processing, and more.

Known Issues

The noteworthy defect fixes described below are included in this release.

- Consumer Direct
  - Distribution is not producing CF picks (CF is a pick type for Forward Case Pick) for Consumer Direct orders, where only the carrier is populated in the stock order table. This is functioning for all other supported pick types.
  - The system is unable to support "Promote to Bulk Pick" functionality for Consumer Direct orders. The pick type on the master pallet ID is being created with a null value, which prevents the creation of the Bulk Pick.

- If there are two Virtual Stores in Consumer Direct orders, the distribution is **not** generating Promote to Bulk B Picks.

- Dashboards
  - Put to Store unit picks and Put to Order unit picks are being displayed in the Put To Store metric dashboard, instead of being split into separate dashboard views.
- Display Issues
  - The Search popup appears behind the forms applet. The search results popup may be clipped by the Forms Editor applet. This may affect either the Menu Search popup or the Advanced Search results popup depending on which browser is being used.
- Distribution
  - Distribution is incorrectly creating a Detail Selected record in the stock order information upload table for an automatic type stock order with an expired pick not after date.
- Receiving
  - When the user exits the RF receiving process from the unload check screen after scanning the first container ID, the process is not clearing the user ID from "A" status containers.
- Split Container
  - There is an issue with the Split Container Screen in the following circumstance: if the container contains multiple items with multiple WIP codes, the inventory disposition codes are not being set correctly for split out containers.

Related Documentation

For more information, see the following documents in the RWMS, Release 14.0 documentation set:

- *Oracle Retail Warehouse Management Installation Guide*
- *Oracle Retail Warehouse Management Implementation Guide*
- *Oracle Retail Warehouse Management Operations Guide*
- *Oracle Retail Warehouse Management Radio Frequency User Guide*
- *Oracle Retail Warehouse Management User Guide*
- *Oracle Retail Warehouse Management Data Model*

See also the following:

- Oracle Retail Integration Bus documentation set, including the *Oracle Retail Enterprise Integration Guide*
- Oracle Retail Service Backbone documentation set

Supplemental Documentation on My Oracle Support

The following documents are available through My Oracle Support. Access My Oracle

Support at the following URL:

https://support.oracle.com

Enterprise Integration Guide (located in the Oracle Retail Integration Suite library on the Oracle Technology Network)

The Enterprise Integration Guide is an HTML document that summarizes Oracle Retail integration. This version of the Integration Guide is concerned with the two integration styles that implement messaging patterns: Asynchronous JMS Pub/Sub Fire-and-Forget and Web Service Request Response. The Enterprise Integration Guide addresses the Oracle Retail Integration Bus (RIB), a fully distributed integration infrastructure that uses Message Oriented Middleware (MOM) to integrate applications, and the Oracle Retail Service Backbone (RSB), a productization of a set of Web Services, ESBs and Security tools that standardize the deployment and run time of Web Service flows within Oracle Retail Suite of applications.

Commerce Anywhere Technical Integration Solution (ID 1598187.1)

This set of architectural diagrams and related business processes depict the Commerce Anywhere solution and its major integration points. The conceptual representation that is depicted is intended to support an integrated implementation of an Oracle Retail Commerce Anywhere solution that includes RMS, SIM, RWMS, and the POS Suite.

Commerce Anywhere Functional White Papers (ID 1598177.1)

This library contains a collection of white papers that outline functional aspects of the Commerce Anywhere solution in Oracle Retail applications. One document provides an overview of the solution from an enterprise perspective, and it is accompanied by product specific-papers addressing RMS, SIM, RWMS and the POS Suite.

Supplemental Training on My Oracle Support

Transfer of Information (TOI) Material (ID 732026.1)

Online training is available to Oracle supported customers at product release. These online courses provide release-specific product knowledge that enables your functional and technical teams to plan, implement and/or upgrade and support Oracle Retail applications effectively and efficiently.

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Value-Added Reseller (VAR) Language

Oracle Retail VAR Applications

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