

**Oracle® Retail Merchandising**  
Implementation Guide  
Release 13.1.5

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- Does the structure of the information help you with your tasks?
- Do you need different information or graphics? If so, where, and in what format?
- Are the examples correct? Do you need more examples?

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# Preface

This implementation guide provides a high-level view of how the Merchandising Operations Management applications integrate with each other. The guide includes the following:

- **Installation Overview**

This chapter is a high-level overview of the process required for a successful installation of the Oracle Retail Merchandising Operations Management applications. In addition, this chapter provides hardware and software requirements and the order in which the applications must be installed. Note that this does not replace existing installation guides, but it does provide a single reference to requirements and what to expect when installing the Merchandising Operations Management applications.

- **Chapters for Oracle Retail Applications**

These chapters provide an overview of the Merchandising Operations Management applications. They provide a detailed look at how each application integrates with the other Merchandising Operations Management applications, as well as the information passed back and forth between those applications (that is, the information RMS provides to other applications and the information other applications provide to RMS). These chapters also describe the users that must be created for each application as well as the security settings that these applications can employ.

## Audience

The Implementation Guide is intended for the Oracle Retail Merchandising Operations Management applications integrators and implementation staff, as well as the retailer's IT personnel.

## Related Documents

For more information, see the following documents:

- *Oracle Retail Merchandising Batch Schedule*
- *Oracle Retail Merchandising Data Conversion Operations Guide*
- *Oracle Retail Merchandising Licensing Information*
- Oracle Retail Allocation documentation
- Oracle Retail Invoice Matching documentation
- Oracle Retail Merchandising System documentation
- Oracle Retail Trade Management documentation
- Oracle Retail Sales Audit documentation
- Oracle Retail Price Management documentation
- Oracle Retail Active Retail Intelligence documentation

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<https://metalink.oracle.com>

When contacting Customer Support, please provide the following:

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

## Review Patch Documentation

If you are installing the application for the first time, you install either a base release (for example, 13.0) or a later patch release (for example, 13.0.2). If you are installing a software version other than the base release, be sure to read the documentation for each patch release (since the base release) before you begin installation. Patch documentation can contain critical information related to the base release and code changes that have been made since the base release.

## Oracle Retail Documentation on the Oracle Technology Network

In addition to being packaged with each product release (on the base or patch level), all Oracle Retail documentation is available on the following Web site (with the exception of the Data Model which is only available with the release packaged code):

[http://www.oracle.com/technology/documentation/oracle\\_retail.html](http://www.oracle.com/technology/documentation/oracle_retail.html)

Documentation should be available on this Web site within a month after a product release. Note that documentation is always available with the packaged code on the release date.

## Conventions

**Navigate:** This is a navigate statement. It tells you how to get to the start of the procedure and ends with a screen shot of the starting point and the statement “the Window Name window opens.”

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**Note:** This is a note. It is used to call out information that is important, but not necessarily part of the procedure.

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This is a code sample  
It is used to display examples of code

[A hyperlink appears like this.](#)

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# Installation Overview

This chapter is a high-level overview of the process required for a successful installation of the Oracle Retail Merchandising Operations Management applications. For complete step-by-step installation details, see the installation guide for each application.

## Preinstallation

Preinstallation requirements are tasks that should be researched and completed prior to starting the actual installation process.

Hardware requirements vary among applications. See the installation guide for each of your applications for specific hardware requirements. The amount, capabilities, and types of hardware required for each implementation vary based on the retailer's needs and objectives.

Software requirements vary among applications. See the installation guide for each of your applications for specific software requirements.

For information related to enabling applications in this guide to use Oracle Application Server Single Sign-On, see the Single Sign-On documentation (Oracle Identity Management).

## Database Partitioning Strategy

Establishing a database partitioning strategy is a mandatory step that must be completed prior to installing any of the Oracle Retail Merchandising Operations Management applications. A spreadsheet is included with the installation materials that define requirements for both mandatory and optional partitioning. This enables the resource in charge of implementing the partitioning strategy to determine the correct strategy.

See [Appendix: Partitioning](#) for information on a partitioning strategy.

## Installation Order

See the installation guides for each Oracle Retail Merchandising application for the required order of installation.

## Installation Processes

Some of the Oracle Retail Merchandising Operations Management applications provide installers to facilitate the installation process, while others require a manual installation. The following are the processes used to install each application.

Application	Installation Process
Allocation	Installer
ARI	Manual installation
ReIM	Installer
RMS	Installer
RPM	Installer

## Product Compatibility

The Merchandising Implementation Guide provides a high-level view of the interaction between Oracle Retail Merchandising Operations Management applications. However, some Oracle Retail Merchandising Operations Management applications can be integrated with other Oracle products. These additional integration examples are not discussed in this guide.

## Oracle Retail Workspace

Oracle Retail Workspace (ORW) provides a single point of access to Oracle Retail applications used by your business. It gives a business an integrated platform from which to access operational and analytical information through dashboards and reports from both internal and external sources. See ORW documentation for details.

## Oracle E-Business Suite

RMS, Oracle Retail Sales Audit (ReSA) and Oracle Retail Invoice Matching (ReIM) can be integrated with Oracle E-Business Suite. This integration allows RMS to obtain the following data from Oracle E-Business Suite:

- General ledger accounting data
- Supplier and supplier site data
- Currency rates
- Freight terms
- Payment terms

See the *Oracle Retail Merchandising System Operations Guide Volume 3 – Back-End Configuration and Operations Guide* for additional details.



## Oracle Retail Strategic Store Solutions

The integration between RMS and Oracle Retail Strategic Store Solutions has been tested for this release. Oracle Retail Merchandising System, Oracle Retail Sales Audit (ReSA), and Oracle Retail Price Management (RPM) can be integrated with the following Oracle Retail Strategic Store Solutions applications:

- Oracle Retail Point-of-Service
- Oracle Retail Back Office
- Oracle Retail Central Office

For information on the integration, see the *Oracle Retail Strategic Store Solutions Implementation Guide*.

## Oracle Retail Advanced Inventory Planning (AIP)

Oracle Retail Merchandising System (RMS) can be integrated with Oracle Retail Advanced Inventory Planning (AIP). See AIP and RMS documentation for more information.

## Oracle Retail Predictive Application Server (RPAS)

Oracle Retail Merchandising System (RMS) can be integrated with Oracle Retail Predictive Application Server (RPAS). See RMS and RPAS documentation for more information.



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# Merchandising Operations Management Applications

This chapter briefly describes each of the Merchandising Operations Management applications. See the chapters that follow for more detailed descriptions.

## Oracle Retail Merchandising System

Oracle Retail Merchandising System (RMS) is the foundation system that records and controls virtually all data in the retail enterprise and ensures data integrity across all integrated systems. RMS includes key functions such as item maintenance, inventory management, and replenishment. This functionality provides easy access to the information that is crucial to the day-to-day merchandising activities within a retail organization, providing the ability to focus on key decisions that help achieve sales and profit targets.

RMS streamlines business practices and unifies business systems across retail channels to better serve customers. Because RMS has been developed as a Web-based, scalable product, it fully supports the large volumes found in retail, leaving more time for retailers to concentrate on the bottom line.

## Oracle Retail Trade Management

Oracle Retail Trade Management (RTM) is an import management system designed to integrate and streamline the international trade transaction process. RTM links multiple departments together for all import functions. RTM provides immediate online visibility to the status, location, and disposition of products as they move through the import cycle.

RTM links partners in the supply chain (such as suppliers, agents, bank, transportation providers, freight consolidators, and customs brokers) to share a constant flow of information needed to manage the movement of goods from sources to destinations across international borders.

Because RTM is coupled with RMS, the import purchase order process also ties in with regular purchase order features such as open-to-buy, updating stock ledger, and inventory. RTM provides the facility to track and capture expenses incurred in the import process, and to apportion the expenses to the actual landed cost of the inventory. The application also provides letter of credit payment processing, which is typically used in import purchase orders.

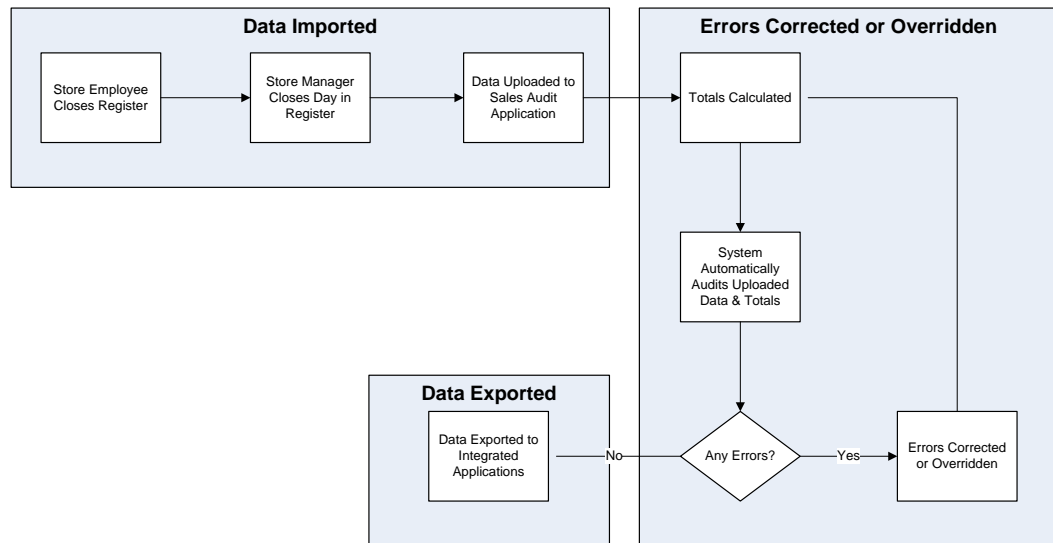
## Oracle Retail Sales Audit

Oracle Retail Sales Audit (ReSA) is an auditing system that provides a simplified sales audit process that accepts raw point of sale (POS) data and provides clean data to downstream applications, while ensuring integrity of audited data. The application supports automatic and interactive auditing of POS sales data. The application is designed to focus on exception conditions, while allowing clean data to flow through thus increasing productivity.

Flexibility is provided in the creation of user defined rules and totals to configure exceptional conditions. User-defined audit rules fine-tune the system to focus validation on potential problem areas, and custom totals are created online for validation of calculations such as data entry or over/short.

Interactive audit functionality allows auditors to focus on exceptions and the auditor navigate through resolution to ensure a clean data load to integrated applications. The application validates and balances POS transactions and tender data, and detects and corrects errors according to predefined rules. It allows sales balancing at store/register or cashier levels. The application helps identify, review, and resolve errors and irregularities in a timely manner.

The diagram below illustrates the audit process.



Information Maintained by Oracle Retail Sales Audit

## Oracle Retail Allocation

Oracle Retail Allocation enables retailers take advantage of up-to-date sales and inventory information. The application also has the flexibility to allow allocations to be calculated months in advance, for vendor commitment purposes.

You can select multiple parameters when creating an allocation. The application determines store need based on metrics that fit the product, store characteristics, and product life cycle. The result is an allocation based on individual store need, the key to maximizing sales and profits.

In Oracle Retail Allocation, you have the option to execute a plan, history, or forecast at any level of the hierarchy. You can allocate a collection of products using a class plan, or allocate one item using its history. You can create and reuse templates to save time and produce consistent results.

Oracle Retail Allocation reacts to current trends. The application uses sophisticated rules to compare current selling to a plan and create a forecast on which to base an allocation. You can allocate in advance to give vendor commitments, and you can allocate at the last minute, using up-to-date sales and inventory information to determine individual store needs.

## Oracle Retail Invoice Matching

Invoice matching is a control procedure designed to ensure that the retailer pays the negotiated cost for actual quantities received.

Oracle Retail Invoice Matching (ReIM) supports the invoice verification process with accuracy and efficiency, focusing resources on exception management. ReIM accepts electronic invoice data uploads through Electronic Data Interchange (EDI) and provides rapid online summary entry of invoices. ReIM supports automated and online processes that allow one or more invoices to be matched against one or more receipts. When the cost and quantities of an invoice are matched within tolerance, the invoice is ready for payment and staged to a table to be extracted to the accounts payable application.

If a cost or quantity difference between the invoice and receipts is outside tolerance, a discrepancy is recognized and must be resolved. A flexible resolution process allows discrepancies to be directed to the most appropriate user group for disposition. Reviewers can assign one or more reason codes that they are authorized to use to resolve the discrepancy.

Each reason code is associated with a type of action (for example, create chargeback or receiver cost adjustment). Many reason codes can be associated with a particular action type, allowing for more granular reporting. Actions drive document creation and EDI downloads to suppliers, inventory adjustments, and accounting activities. Actions also allow an invoice to be extracted by the retailer and posted for payment.

## Oracle Retail Price Management

Oracle Retail Price Management (RPM) is a pricing and promotions execution system. RPM functionality includes the definition, maintenance, and review of price changes, clearances, and promotions. RPM capabilities range from simple item price changes at a single location to complex buy-get promotions across zones.

RPM has three primary pricing execution dialogs to create and maintain regular price changes, clearances, and promotions. Although each of the three pricing activities is unique, the system displays these dialogs using a common look and feel. Each of these dialogs uses the conflict checking engine that leverages the RPM future retail table. The future retail table provides a view of all pending approved pricing events that affect an item at a given location.

RPM pricing events are defined against the zone structure. The zone structure represents groups of locations organized to support a retailer's pricing strategy. RPM allows the user to break out of the zone structure and create location level events as needed.

RPM supports the definition and application of price guides to these pricing events. Price guides allow the retailer to smooth retails and provide ends-in rounding logic to derive a final consumer price.

RPM supports pricing strategies you can use to define how item retails are proposed when pricing worksheets are generated. The strategies are defined at department, class, or subclass to represent which items are affected.

RPM also supports creation of vendor-funded promotions, by either associating an existing deal from RMS with the promotion, or by creating a new deal in RMS based on the information provided for the promotion.

## Oracle Retail Active Retail Intelligence

Oracle Retail Active Retail Intelligence (ARI) is an exception management and workflow tool driven by business rules. It spans the Oracle Retail Merchandising Operations Management applications and provides a central repository for alert notifications and associated actions across all Oracle-based applications.

ARI can be uniquely configured for each client to fit individual business needs.

ARI provides the capability to build three categories of rules:

- Exception reporting
- Workflow management
- Enterprise process modification

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# Oracle Retail Merchandising System

This chapter is an overview of the Oracle Retail Merchandising System (RMS).

## Information Maintained by RMS

The following topics describe the categories of information maintained within the RMS application.

### Seed Data

RMS contains data that must be populated at the time of installation. Either the data is required by the application, or the data is static and can be loaded for any client. The code tables (CODE\_HEAD and CODE\_DETAIL) are examples of tables with system-required values that should be loaded at installation. Additional codes can be added as needed to these tables after installation, using either the online forms or additional client scripts. The STATE table is an example of static data that can be used by a U.S. client without modification, although clients in other countries may want to remove the U.S. states and add the abbreviations for their own states or provinces prior to loading the data.

Additionally, some configuration tables must be populated for the application to open and function correctly, even though the configuration values can be modified later. The system options tables (SYSTEM\_OPTIONS and UNIT\_OPTIONS) are examples of tables required for initial start-up that can be updated prior to implementation, to reflect final configuration.

### Foundation Data

Foundation data is the base for all future information on which RMS builds. This information needs to be present before you begin using the system. The majority of foundation data can be set up online; more commonly, a client performs a data conversion process to import this information from legacy systems.

Foundation data consists of three types of information:

- Organizational hierarchy
- Merchandise hierarchy
- Supplier and partner management

## **Organizational Hierarchy**

The organizational hierarchy allows you to create the relationships necessary to support the operational structure of your company. You can create a preferred organizational structure to support consolidated reporting at various levels of the company. You can also assign responsibility for any level of the hierarchy to one or more people to satisfy internal reporting requirements.

The organizational hierarchy also supports three types of stores to satisfy wholesale and franchise requirements:

- Wholesale
- Franchise
- Company

Company stores act as traditional stores in RMS. Wholesale and franchise stores are used to support wholesale and franchise business models only. Other applications, such as RPM and RWMS, view wholesale and franchise stores as they would view any other store in RMS; however, RMS performs special processing based on those store types.

## **Merchandise Hierarchy**

The merchandise hierarchy allows you to create the relationships necessary to support the product management structure of your company. You can assign a buyer and merchandiser at the division, group, and department levels of the merchandise hierarchy. You can also link a lower level to the next higher level. For example, you can indicate to which group a department belongs, or to which division a group belongs.

## **Supplier and Partner Management**

Supplier and partner management provides functionality to create and store valid merchandise suppliers and partners. You can maintain a variety of information about suppliers such as financial arrangements, inventory management parameters, types of EDI transactions, and invoice matching attributes. Suppliers are typically created in a financial system and interfaced into RMS; supplier information is maintained in RMS.

The supplier structure can be extended to supplier-parent and supplier-site relationships, to accommodate financial systems that support this configuration. A supplier site is a location from which the supplier ships merchandise.

## **Item Maintenance**

RMS is responsible for the creation and maintenance of all items. RMS uses a flexible data hierarchy for items, with levels that allow you to model items any way you want. The hierarchy consists of up to three levels, highest (level 1) to lowest (level 3). Within the defined levels for an item family, one level is denoted as the transaction level. This is the level at which all inventory and sales transactions take place. This model gives retailers the flexibility to create families of items that share common characteristics.

RMS can create several different types of items, such as regular items, deposit items, packs, concession items, consignment items, and transformable items.

Through item maintenance, RMS also maintains the relationships of items with other entities such as suppliers, locations, and attributes.



## Purchasing

The Purchase Order module allows you to create and maintain purchase orders in a variety of ways. It ultimately provides commitments to vendors for products in specific amounts for specified locations. Purchase orders are created manually or automatically through replenishment or from an external system. They can be created against entered contracts and deals, or directly through direct store delivery or Vendor Managed Inventory (VMI). RMS also provides the ability to maintain the items, locations, and quantities ordered for purchase orders.

## Contracts

The contract dialog gives you the ability to create, maintain, submit, and approve contracts. A contract is a legally binding agreement with a supplier to supply items at a negotiated cost.

In RMS, the contracting functions fit closely with the replenishment and ordering functions. The main functions of the Contracts window are to book manufacturing time, track supplier availability and commitments, and match them with business requirements. The main business benefit of contracting is to achieve supplier involvement during the planning phase of a retailer's business.

## Deals

Deals management allows you to create and maintain deals with partners or suppliers. Deal partners can be suppliers, wholesalers, distributors, and manufacturers. Within a deal, clients create deal components, specify the items for each deal component, and define thresholds.

Components are deals or parts of deals that a retailer receives from a supplier. There can be multiple components in a single deal. After you add the components, you must define thresholds to define the quantity or amount that must be purchased or sold to receive the deal. RMS components include off-invoice deals, rebates, vendor-funded promotions, vendor-funded markdowns, and fixed deals.

You also define the items and locations for which the deal can be applied. You can choose to include or exclude locations as necessary.

You also define the proof of performance (POP) terms for a deal. POP terms are defined by the deal vendor that offers the deal. For deals, POP terms are defined at the deal, deal/component, or deal/component/item-location combination. For fixed deals, POP terms are defined at the deal level.

The deal pass-through functionality allows a percentage of a deals discount to be passed from a warehouse to a wholesale/franchise store. This functionality applies to wholesale and franchise stores.

For clients who use supplier sites with RMS 13.1.1, deals are managed at the supplier parent level.

## Cost Management

For cost changes, the Cost Management dialog gives you the ability to:

- Accept cost changes received through EDI (flat files)
- Create a cost change
- Edit a cost change
- View a cost change

A cost change is an adjustment to the supplier cost of an item, either up or down. Before you create a cost change, you must create a list of user-defined cost change reasons and then apply a reason to each cost change. This is useful in reporting.

The initial cost of an item is established at item setup. The cost of the item is adjusted in the item record until the status of the item is Approved. After the item is approved, any cost changes needs to be handled through the cost change dialogue.

When a cost change is submitted through EDI, the EDI cost change is reviewed and released to create a cost change document. The cost change document is then viewed and submitted for approval.

When a cost change document is created through the online dialog, you enter the cost change, an event description, an effective date, and a reason code, and then submit the cost change for approval.

After a cost change is approved, the item/supplier cost record is updated. Any outstanding purchase order line items with no received units are recalculated, if recalculation is indicated on the cost change.

Additionally, you use the Cost Management dialog to create cost zone groups for zone-type expenses for item estimated landed cost. Zone-type expenses are incurred when imported goods are moved from the discharge port to the purchase order receiving location. Because the expenses can vary depending on the distance between the discharge port and the receiving location, cost zones can be configured to appropriately reflect the expenses. The locations (stores and physical warehouses) should be grouped to reflect the expense variances for moving the goods. Normally a zone strategy is used for these cost zone groups, but it is possible that every location within the company has different expenses to move the goods from the discharge port. If that is the case, a store strategy would be used. If every location within the company has the same transportation costs from the discharge port, a corporate strategy is adequate (but not when multiple currencies are being used). After these cost zone groups are defined, they are added to new items as they are created, in anticipation of the expense profiles that are needed for the items.

## Wholesale / Franchise Pricing

Wholesale/franchise pricing determines the price that wholesale or franchisee partners are charged for an item. Pricing for these stores is maintained in the future cost table. For wholesale and franchise locations, pricing is determined by setting up cost templates in RMS and associating these templates with item/wholesale/franchise locations.

Wholesale/franchise pricing also adds any landed costs and applicable deals (through deal pass-through) to the final pricing.

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**Note:** Wholesale/franchise pricing is required before wholesale/franchise ordering can be performed.

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## Multiple Sets of Books

Support for multiple sets of books provides better integration with financials systems that support multiple sets of books within a single installation. Clients who opt to use multiple sets of books must set up additional location-specific foundation data, including:

- Organizational units
- Transfer entities
- Set of books IDs

## Inventory Control

Inventory functionality in RMS is the core of the application. Inventory is tracked perpetually and financially in RMS. The following describes perpetual inventory tracking. See [Stock Ledger](#) below for information about RMS financial inventory tracking.

RMS achieves inventory control through functions that include transfers, return to vendor (RTV), inventory adjustments, purchase order receipts (shipments), and stock counts.

### Transfers

Transfers in RMS provide an organized framework for monitoring the movement of stock within the organization. RMS creates and maintains transfers; however, you can also interface transfer information into RMS from other systems.

RMS supports a number of different types of transfers such as intercompany transfers, book transfers, PO-linked transfers, externally generated transfers, and customer orders. Transfer functions also support the movement of one or more items between two internal RMS locations, and multi-leg transfers in which the intermediate location is considered a finisher location. Finishers are locations where work is performed on merchandise, such as dyeing fabric and attaching labels.

Mass return transfers are used to reallocate merchandise to locations or to return merchandise to the supplier.

Wholesale/franchise transfer types are wholesale order, franchise order, wholesale return, and franchise return. These types of transfers are created by the wholesale dialog in response to wholesale orders and returns. The wholesale/franchise transfer types are used by RMS to drive processing, such as the stock ledger; however, wholesale/franchise transfer are viewed no differently by external systems.

### Returns to Vendor

Return to vendor transactions (RTV) are used to send merchandise back to a vendor. The RTV transaction in RMS allows one or more items to be returned to a single vendor. For each transaction, the items, quantities, and costs are specified. Upon shipment out of a location, inventory is removed from the stock on hand.

RTVs are created manually in RMS or imported from an external system. RMS also provides the ability to maintain RTVs. Shipped RTVs create a debit memo or credit note request (based on supplier configuration) in the invoice matching staging table in RMS, for export to Oracle Retail Invoice Matching.

## Inventory Adjustments

Inventory adjustments are used to increase or decrease inventory to account for events that occur outside the normal course of business (for example, receipts, sales, stock counts). Inventory adjustments are created in RMS or imported from an external system (store or warehouse application). RMS supports two types of inventory adjustments; stock on hand or unavailable inventory. Inventory adjustments can also be created by locations for multiple items, by item for multiple locations, or through a product transformation for a specific location.

## Purchase Order Receipts (Shipments)

Purchase order receipts (shipments) record the increment to on-hand when goods are received from a supplier. Weighted average cost (WAC) is recalculated at time of receipt using the PO landed cost. Transaction audit records are created for financial audit, and the receiver is made available for invoice matching.

## Stock Counts

Stock counts are the processes by which inventory is counted in the store and compared against the system inventory level for discrepancies. RMS supports two types of stock counts:

- Unit stock counts adjust the on hand quantities for the item-locations affected and create an inventory adjustment transaction for the stock ledger.
- Unit and value stock counts adjust the on hand quantities for the item-locations affected and adjust the stock ledger to the results of the stock count.

## Replenishment

Automated replenishment constantly monitors inventory conditions. Based on inventory conditions, purchase orders or transfers are created to fulfill consumer demand.

Automated replenishment parameters are set up at the supplier, supplier/department, supplier/location or supplier/department/location level. These parameters include:

- Review cycle and order control
- Due order processing
- Investment buy attributes
- Scaling constraints
- Rounding attributes
- Supplier minimums
- Truck splitting constraints

Items can be set up for automated replenishment through the Item Maintenance dialog, either individually or through item lists.

Automated replenishment also supports different methods to determining whether purchase orders are created and quantities ordered. These replenishment methods are applied at the item/location level and are as follows:

- **Constant** is a stock-oriented method for which the item is replenished when the inventory level falls below a specified level.
- **Min/Max** is a stock-oriented method for which the item is replenished up to the maximum when the inventory level falls below a specified minimum stock level.
- **Floating Point** is a stock-oriented method for which the item is replenished when the inventory level falls below a dynamic system-calculated maximum stock level.

- **Time Supply** is a stock-oriented method for which replenishment is based on the number of days of supply for the item a retailer wants in inventory. This method requires a forecasting system.
- **Time Supply Seasonal** is the same as Time Supply, but it takes seasonality and terminal stock into account. This method requires a forecasting system.
- **Time Supply Issues** is used only by warehouses. It is the same as Time Supply, but it uses warehouse issues forecast rather than store sales forecast. This method requires a forecasting system.
- **Dynamic** is a method for controlling inventory with dynamic calculations (order point and order quantities) based on a number of factors, including forecast sales over order lead time, review lead time, inventory selling days, lost sales factor, and safety stock. This method requires a forecasting system.
- **Dynamic Seasonal** is similar to the Dynamic method, but it takes into account seasonality and terminal stock. This method requires a forecasting system.
- **Dynamic Issues** is by warehouses only. It is the same as the Dynamic method, but it uses warehouse issues forecast rather than store sales forecast. This method requires a forecasting system.
- **Store Orders** allows replenishment to look at the store order need quantity when determining the recommended order quantity. Wholesale and franchise stores can only be set up for this method of replenishment.

## Stock Ledger

The stock ledger in RMS records the financial results of the merchandising processes such as buying, selling, price changes, and transfers. All of these transactions are recorded in the RMS stock ledger and rolled up to the subclass/location level for days, weeks, and months, depending on calendar settings. The aggregate levels in the stock ledger are used to measure inventory amounts and merchandise profitability. The stock ledger is mainly used for reporting purposes; however, there is some online visibility as well.

The stock ledger supports multiple currencies. All transaction-level information is stored in the local currency of the store or warehouse where the transaction occurred. As transaction-level information is rolled up to the aggregated levels in the stock ledger, records are kept in local currency and converted to primary currency. This allows corporate reporting to be performed in the primary currency of the company, while still providing visibility by location to the profitability in the local currency.

The stock ledger supports both the retail and cost methods of accounting. The cost method can use standard cost or average cost, depending on how the system is configured. The stock ledger supports both the retail (4-5-4) and the normal (Gregorian) calendar. If the retail calendar is used, data is maintained by the 4-5-4 month and the week. If the normal calendar is used, data is maintained only by the Gregorian month. Data can also be maintained daily using the retail (4-5-4) or normal (Gregorian) calendar. Transactions for wholesale or franchise locations (orders to these stores and returns from them) are logged against the warehouse for the item involved in the transaction. Stock ledger information is not maintained for wholesale or franchise stores because they are not managed by the company.

RMS supports multiple sets of books. Clients that use multiple sets of books assign RMS locations to a particular set of books defined in an external financial system. Changes to the stock ledger affect the set of books with which a particular transaction is associated.

## Investment Buy

Investment buy facilitates the process of purchasing inventory in excess of the replenishment recommendation in order to take advantage of a supplier deal or to leverage inventory against a cost increase. The inventory is stored at the warehouse or in outside storage to be used for future issues to the stores. The recommended quantity to investment buy (that is, to order) is calculated based on the following:

- Amount of the deal or cost increase
- Upcoming deals for the product
- Cost of money
- Cost of storage
- Forecasted demand for the product, using warehouse issue values calculated by Oracle Retail Demand Forecasting
- Target return on investment (ROI)

The rationale is to purchase as much product as profitable at the lower cost and to retain this profit rather than passing the discount on to customers and stores. The determination of how much product is profitable to purchase is based on the cost savings of the product versus the costs to purchase, store and handle the additional inventory.

Investment buy eligibility and order control are set at one of these four levels:

- Supplier
- Supplier-department
- Supplier-location (warehouse locations only)
- Supplier-department-location

Warehouses must be enabled for both replenishment and investment buy on the RMS WH (warehouse) table. In a multi-channel environment, virtual warehouses are linked to the physical warehouse.

The investment buy opportunity calculation takes place nightly during the batch run, after the replenishment need determination, but before the replenishment order build. The investment buy module IBCALC.PC attempts to purchase additional inventory beyond the replenishment recommendation in order to achieve future cost savings. Two distinct events provide the incentive to purchase investment buy quantities:

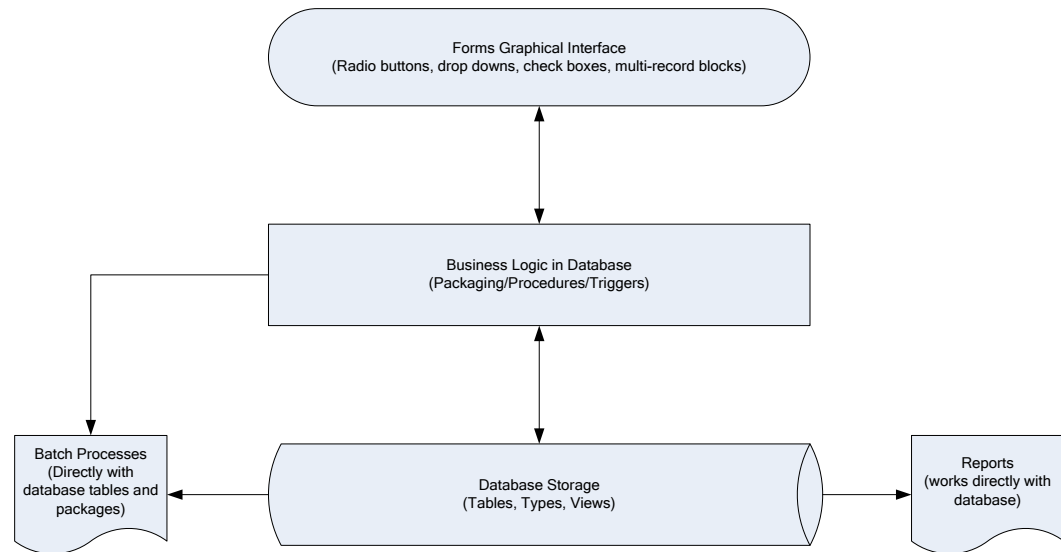
- A current supplier deal ends within the look-ahead period.
- A future cost increase becomes active within the look-ahead period.

The calculation determines the future cost for a given item-supplier-country-location for physical warehouse locations only.

If the order control for a particular line item is buyer worksheet, it may be modified in the buyer worksheet dialog, and can be added to either new or existing purchase orders.

## RMS Integration with Other Applications

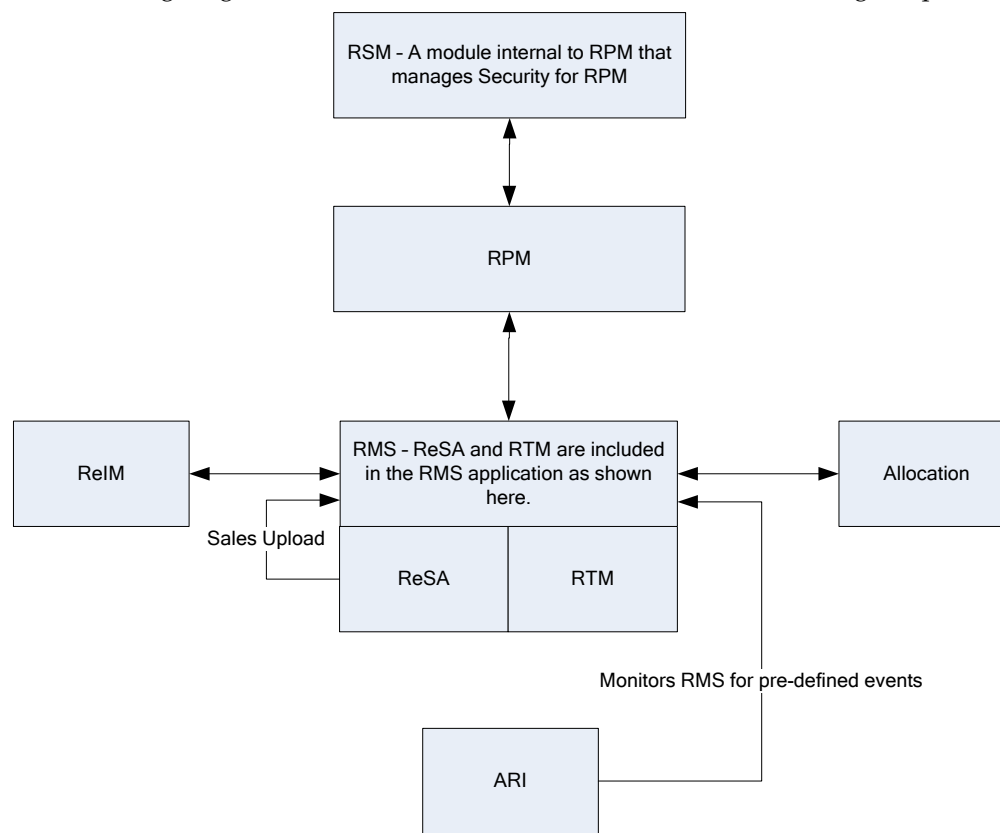
RMS is a Web-based forms application that provides direct database access and has database logic as outlined in the diagram below. Since other Oracle Retail Merchandising Operations Management applications share the same database schema as RMS, information is primarily shared through calls to RMS packages and procedures or through direct database access.



RMS provides essential information to all Oracle Retail Merchandising Operations Management applications (ReSA, RTM, RPM, ReIM, Allocation, and RDW), and it interacts with all of them. RMS exists on the same database schema as all of the other applications, which provides flexibility in how information is shared between RMS and the other Oracle Retail Merchandising Operations applications.

Information is shared with other Oracle Retail Merchandising Operations Management applications through direct reads from Oracle Retail Merchandising Operations Management application tables, calls to Oracle Retail Merchandising Operations Management application packages, batch processes, and the Oracle Retail Integration Bus (RIB) if the client is using this option.

The following diagram illustrates the RMS location in the merchandising footprint.



## RMS and RTM

Oracle Retail Trade Management (RTM) and RMS share the same database instance. When RTM is enabled in an RMS instance, certain import specific data maintenance is required for country, supplier, partners and items. These are directly updated into the RMS database and subsequently used in RTM.

## RMS and ReSA

Oracle Retail Sales Audit (ReSA) and RMS share the same database. ReSA shares some of its master data with RMS. Foundation data (such as stores, company/location close dates, location traits, bank setup, and tender types) are maintained in RMS and used in ReSA.

### Sales Upload Process

Current reference data is retrieved from RMS into ReSA by the batch program SAGETREF. The data is extracted into multiple data files. The data in the files is used by the batch program SAIMPLOG as reference data for doing validation checks on the POS transaction data during the data upload from Point of Sales (POS) to ReSA. Having the reference in data file formats increases the performance of the SAIMLOG process. SAGETREF generates the following reference files: Items, Wastage, Sub-transaction level items, Primary variant relationships, Variable weight PLU, Store business day, Code types, Error codes, Credit card validation, Store POS, Tender type, Merchant code types, Partner vendors, Supplier vendors, Employee IDs, Banner IDs.



All clean and audited sales and returns data is extracted from ReSA into a POSU file by the batch program SAEXPRMS. All sale and return transactions that do not have RMS errors are extracted into the file. The sales audit system options parameter, work unit, controls the export of data into files in case of the presence of RMS errors in the POS transaction data. The batch program POSUPLD loads the data from the POSU file into the RMS tables.

## RMS and RPM

RPM exists on the same database schema as RMS, which allows information to be shared between applications through direct database reads, package calls, and batch processes. RPM uses APIs to facilitate the exchange of information with RMS.

### From RPM to RMS

- **Regular Price Change Approval/Modification/Deletion**  
Regular price change creation, modification, or deletion triggers a call to an RMS API to generate (or remove if deleting) the ticket request information.
- **Promotional Price Change Approval/Modification/Deletion**  
Promotional price change creation, modification, or deletion triggers a call to an RMS API to generate (or remove if deleting) the ticket request information.
- **Clearance Price Change Approval/Modification/Deletion**  
Clearance price change creation, modification, or deletion triggers a call to an RMS API to generate (or remove if deleting) the ticket request information.
- **Price Change Execution**  
When regular, promotional, or clearance price changes are set to go into effect or end, the PriceEventExecutionBatch owns the process. Once the pricing event has been processed by the batch program it updates item/location pricing in RMS by interfacing with the RMSSUB\_PRICECHANGE API in RMS.
- **Initial Pricing**  
Initial pricing for items in RMS is dependent upon the primary zone group for the item defined in RPM and characteristics of that zone group. These characteristics include markup percent, markup percent type, and pricing guides. RPM provides this information to RMS through an API (MERCH\_RETAIL\_API\_SQL).
- **Deal Creation**  
RPM creates and associates Deals with regular, promotional, and clearance price changes. When this occurs RPM uses an RMS API (PM\_DEALS\_API\_SQL) to create the deal in RMS.
- **Wholesale/Franchise Item Pricing**  
RPM generates recommended retails for wholesale/franchise partners based on the wholesale/franchise pricing generated by RMS for these stores. This information is used by the Wholesale/Franchise Item Catalog in RMS. This information is maintained on the future retail table and is directly accessed by RMS.

## From RMS to RPM

- **Foundation Data** is essential to RPM functionality. To successfully setup price changes RPM requires RMS merchandise hierarchy, organizational hierarchy, and suppliers. RPM is able to access this information through the RMS database.
- **Item:** Any price change created in RPM ultimately relates to an item/location within RMS. RPM needs to know all eligible items currently in the merchandising system, the locations at which they are eligible (item/location relationships in any status but D – delete requested), and suppliers associated with the items. RPM is able to access this information through the RMS database.
- **Competitive Pricing Information**  
RPM has the ability to create price changes based off competitive activity in the marketplace. RPM is able to access this information through the RMS database.
- **Deals** can be associated with price changes in RPM (including vendor funded promotions). In order to associate a price change to an existing deal RPM needs visibility to the deals currently available in the RMS system. RPM is able to access this information through the RMS database.
- **Wholesale/Franchise Item Pricing**  
RMS determines wholesale/franchise item pricing, which is maintained in the future cost table. RPM uses this information to generate recommended retails for wholesale/franchise business partners.
- **Event Notification**  
There are certain events (outlined below) that can occur in RMS that RPM needs to be notified of to ensure the appropriate processing occurs.
  - **Store/Warehouse Creation**  
When new stores and warehouses are created in RMS, RPM needs to add them to a zone structure. To do this RMS provides RPM with the store and/or virtual warehouse being added, its pricing location, and its currency (to ensure it is the same as the zone it is being added to). A store/virtual warehouse creation event in RMS triggers an API call to RPM to execute the necessary processing.
  - **Item/Location Creation**  
When new item/location relationships are established, RPM needs to verify that no future retail records currently exist, create an initial future retail record (for sellable items), and determine if there are any existing price changes that would affect the item resulting in a future retail record for the price change as well. An item/location creation event in RMS triggers an API call to RPM to execute the necessary processing.
  - **Item Modification**  
This event is used to notify RPM when an item is reclassified. The details of the reclassification are written to an item modification table in RPM for the next batch processing run. An item modification creation event in RMS triggers an API call to RPM to execute the necessary processing.
  - **Department Creation**  
This event is used to notify RPM when new departments are created in RMS. RPM creates aggregation level information for the new department using predefined system defaults. A department creation event in RMS triggers an API call to RPM to execute the necessary processing.

## RMS and Allocation

This section describes the information provided by the RMS and Allocation applications.

### From RMS to Allocation

- **Foundation Data**  
This information is essential to all areas of Allocation including valid locations to allocate to and from, location groupings, and valid merchandise hierarchies to allocate within.
- **Item**  
Allocations are generated at the item location level so it is necessary that the Allocation application understand what items and item/locations are eligible in the system.
- **Purchase Order** is one the sources from which a user can allocate from is Purchase Orders. Allocation relies on RMS to provide Purchase Order information.
- **Transfer** is one of the sources from which a user can allocate. Allocation relies on RMS to provide Transfer information.
- **Bill Of Lading (BOL)** is one of the sources from which a user can allocate. Allocation relies on RMS to provide BOL information.
- **Advance Shipment Notices (ASN)** is one of the sources from which a user can allocate. Allocation relies on RMS to provide ASN information.
- **Inventory**  
To determine the correct need at an item location level before performing an allocation the application needs visibility to the current on hand inventory at each location being allocated to. Allocation relies on RMS to provide inventory information at the item/location level.
- **Sales Information**  
Allocation can use historical sales, forecast sales, and plan sales in order to determine the need at an item/location level for an allocation. Allocation interfaces this information in from external planning system to an Allocation table.

### From Allocation to RMS/RTM/ReSA

- **Allocations**  
Once allocations have been moved to Approved or Reserved status the Allocation is written to RMS tables to give visibility to the allocation results.
- **Purchase Orders created by What-if process in Allocation**  
If this option is enabled in Allocation the client can create a simulated allocation based on current need and then automatically create a purchase order from that Allocation in RMS to fulfill that need. Allocation uses an RMS API to build the purchase order in RMS.

## Invoice Matching and RMS

This section describes the information provided by the Invoice Matching and RMS applications.

### RMS to Invoice Matching

- **Foundation Data**  
This information is essential to all parts of invoice matching including valid locations for Invoices to be executed at, valid suppliers to receive invoices from, and supplier addresses to send credits and debits based on invoice matching results.

- **Item**  
This information is essential to the invoice matching process as item information ensures that invoices being received are valid for the business. For example an item received on an invoice is carried by the client, is supplied by the supplier who sent the invoice, and is carried in the locations for which the item was received.
- **Purchase Orders** are used by Invoice Matching to facilitate the invoice matching process which is performed at the purchase order location level.
- **Shipments**  
Shipment information is used by Invoice Matching to determine if a PO has been received yet which affects the matching algorithm used by the AutoMatch batch program in Invoice Matching.
- **Deals and Rebate**  
Invoice Matching creates credit memos, debit memos, and credit requests based on deal and rebate information in RMS for processing by the financial (AP) system. This is performed by the ComplexDealUpload and FixedDealUpload batch processes that read from RMS staging tables.

### Invoice Matching to RMS

- **Invoice Matching Results for Shipments**  
Shipment records are updated with the invoice matching results from the invoice match process (this involves updating the match status and quantity matched of the shipments in question). The matching process is handled by the AutoMatch batch process in Invoice Match which attempts to match all invoices in ready-to-match, unresolved, or multi-unresolved status.
- **Receiver Cost Adjustments**  
When invoice matching discrepancies are resolved through a Receiver Cost Adjustment, information is added to a staging table in Invoice Matching for export to RMS to perform the cost adjustment on the affected purchase order and shipment. The ReasonCodeActionRollup batch in Invoice Matching is responsible for inserting these records on a staging table in Invoice Matching for export to RMS. A trigger on the Invoice Matching staging table completes the transaction by updating RMS with the cost adjustment information.
- **Receiver Unit Adjustments**  
When invoice matching discrepancies are resolved through a Receiver Unit Adjustment, information is added to a staging table in Invoice Matching for export to RMS to perform the unit adjustment on the affected order and shipment. The ReasonCodeActionRollup batch in Invoice Matching is responsible for inserting these records on a staging table in Invoice Matching for export to RMS. A trigger on the Invoice Matching staging table completes the transaction by updating RMS with the unit adjustment information.
- **Closing Unmatched Shipments**  
Invoice matching closes the invoice matching status for shipments in RMS after a set period of time (defined by the client in system options). This updates the invoice matching status of the shipment on the shipment table in RMS. This process is managed by the ReceiptWriteOff batch program.

### RMS and ARI

ARI is a monitoring system that interacts with any applications database (including RMS). As such, it does not use any information from RMS; rather it monitors the RMS database for events defined by a client and notifies the client when said events occur.

## RMS Users and Security

User roles must be created within RMS and provide users with a mechanism for accessing the system. When security is leveraged, it controls a user's access to individual application functions and data sets.

Users in RMS are setup by the database administrator using a user creation script. RMS users are database users that connect directly to the database to access RMS. Each database user has synonyms to the master RMS schema and is able to update and modify data within that schema but is unable to change the structure of the tables and objects. This user structure is specific to RMS, ReSA and RTM. Applications such as RPM, Allocation and ReIM use other means to manager users. User management for each application is discussed within its respective section.

In order to ensure users are limited to parts of the application and information that is relevant to their business role, RMS has a three-tier security structure.

The three levels of security offered by RMS are:

- Database level security is a built in feature of Oracle Database, based on database roles.
- Application level security is form or screen level security based on database roles.
- Data level security is built into RMS to give a client the ability to further limit user access to information.

### Database Level Security

Database level security is a feature provided by the Oracle Database and can be used by RMS. Since this is a database feature, this level of security is wholly maintained within the database and is not configurable through RMS. In order to take advantage of this feature, a client needs to associate all users in the system to an Oracle Role. Oracle Roles are defined in terms of business roles for a client as it is the business role of a user that should drive that user's security requirements. Developer, Inventory Planner, Assistant Buyer, Merchandiser are sample roles.

Database security is set up by first identifying the different business roles that exist within a client's organization. These roles need to have their responsibilities mapped to the appropriate table operations, table access, package calls, and form access. These roles are then defined as Oracle Roles with the corresponding table operations and access. At this point users are associated with the appropriate Oracle Roles, which define database security for the users.

Database security also provides an additional feature by allowing a client to define Oracle Roles as Secure Application Roles. This allows a client to attach a procedure to granting a user Secure Application Roles. The procedure is defined by the client and contains the logic for determining what attributes a user needs to have to be given access to the role in question. This provides an additional layer of security for a client around how a user can gain access to a specific role, effectively limiting how people can gain access to privileged information.

## Application Level Security

Application level security restricts the user's access to either entire areas of the system (for example, Purchase Orders) or restricts the modes in which users can access areas (for example, viewing Purchase Orders only). Application Level security consists of five primary components:

- **Menu Level Security** allows a client to determine which menu options are available to a user based on that user's Oracle Role. Menu level security is set up using the SEC\_FORM\_ACTION and SEC\_FORM\_ACTION\_ROLE tables to define what options each Oracle Role has access to for the various menus in RMS.
- **Navigator**  
When RMS is launched the user operates from a folder driven interface on the Oracle Retail Start form. These folders provide access to all of the functional areas available in RMS. Navigator security is established through the Start Tree Administration form. From here the client defines the folder tree structure in the system in addition to defining security access to forms throughout the tree by Oracle Role. A client could also develop a script to perform these updates. The updates affect the NAV\_FOLDER, NAV\_ELEMENT, NAV\_ELEMENT\_MODE, and NAV\_ELEMENT\_MODE\_ROLE tables. Like the form (which updates these tables) these tables control the folder tree structure, the forms accessible from the tree structure, and the user roles cleared for access to the different forms.
- **Find Forms** is the most common entry point into RMS's core functionality. Within this form the user typically has the option to elect what type of action they want to perform (New, Edit, or View) from an action list box. Find form security is set up through the P\_SECURITY package within the find forms. This logic is hard coded into each of the find forms. As a result these packages need to be modified once Oracle Roles have been defined for a client if customized security is required.
- **Hierarchy Forms** differ from find forms in that they have New, Edit, and View buttons. Hierarchy form security is managed through the P\_SECURITY package within the forms. However, it differs from the find forms in that it leverages the SEC\_FORM\_ACTION and SEC\_FORM\_ACTION\_ROLE tables to drive what options each Oracle Role has access to.
- **Form Link Security**  
The FORM\_LINK tables allow a client to restrict access and visibility of certain item maintenance sub forms by Oracle Role.

## Data Level Security

Data level security restricts a user's access to specific data within the merchandising system. The client has the ability to limit user's data access both from a merchandise hierarchy perspective in addition to an organizational hierarchy perspective. For example, a buyer for the Small Appliances department could have data level security put in place so that they only have the ability to access items within the Small Appliances department. This prevents users from accessing information that does not pertain to their job.

Unlike the other layers of security, the user can configure this level of security in the RMS application as follows:

1. Define groups within the organization and the merchandise hierarchy and group hierarchy information these groups should have.
2. Use the Security Group Maintenance form to establish each of the groups defined in Step 1.

3. Use the Filter Level Group Hierarchy Maintenance form to establish the relationships between the groups built in Step 2, as well as the merchandise and organizational hierarchy components they are cleared to access (based on analysis from Step 1).
4. Use the Security User/Group Link form to establish the relationships between the groups defined in Step 2 and the users tied to those groups (as established in Step 1).

Users not associated to a security group (or associated to a security group that is not tied to any parts of the organizational or merchandise hierarchy) are considered super users in terms of data. In other words, they have access to all data within the system.

When all security tools for RMS are effectively leveraged, a user can become a powerful tool to not only grant access to a system, but to ensure that employees are systematically focused on the aspect of the business for which they are responsible.

## Internationalization

See the Oracle Retail Merchandising System documentation for information about the languages supported by the application.

## Configuring RMS for Single Sign-on

Single Sign-On (SSO) is a term for the ability to sign onto multiple web applications through a single user ID/Password. There are many implementations of SSO – Oracle currently provides three different implementations: Oracle Single Sign-On (SSO), Java SSO (with the 10.1.3.1 release of OC4J) and Oracle Access Manager (provides more comprehensive user access capabilities).

Most, if not all, SSO technologies use a session cookie to hold encrypted data passed to each application. The SSO infrastructure has the responsibility to validate these cookies and, possibly, update this information. The user is directed to log on only if the cookie is not present or has become invalid. These session cookies are restricted to a single browser session and are never written to a file.

Another facet of SSO is how these technologies redirect a user's Web browser to various servlets. The SSO implementation determines when and where these redirects occur and what the final screen shown to the user is.

Most SSO implementations are performed in an application's infrastructure and not in the application logic itself. Applications that leverage infrastructure managed authentication (such as deploying specifying Basic or Form authentication) typically have little or no code changes when adapted to work in an SSO environment.

## What Do I Need for Oracle Single Sign-On?

The nexus of an Oracle Single Sign-On system is the Oracle Identity Management Infrastructure installation. This consists of the following components:

- An Oracle Internet Directory (OID) LDAP server, used to store user, role, security, and other information. OID uses an Oracle database as the back-end storage of this information.
- An Oracle Single Sign-On servlet, used to authenticate the user and create the SSO session cookie. This servlet is deployed within the infrastructure Oracle Application Server (OAS).

- The Delegated Administration Services (DAS) application, used to administer users and group information. This information may also be loaded or modified through standard LDAP Data Interchange Format (LDIF) scripts.
- Additional administrative scripts for configuring the OSSO system and registering HTTP servers.

Additional OAS servers are needed to deploy the business applications leveraging the OSSO technology.

## Can Oracle Single Sign-On Work with Other SSO Implementations?

Yes, OSSO has the ability to interoperate with many other SSO implementations, but some restrictions exist.

## Oracle Single Sign-On Terms and Definitions

This section provides definitions for terms pertaining to Single Sign-On.

### Authentication

Authentication is the process of establishing a user's identity. There are many types of authentication. The most common authentication process involves a user ID and password.

### Dynamically Protected URLs

A Dynamically Protected URL is a URL for which the implementing application is aware of the OSSO environment. The application may allow a user limited access when the user has not been authenticated. Applications that implement dynamic OSSO protection typically display a Login link to provide user authentication and gain greater access to the application's resources.

### Identity Management Infrastructure

The Identity Management Infrastructure is the collection of product and services which provide Oracle Single Sign-on functionality. This includes the Oracle Internet Directory, an Oracle HTTP server, and the Oracle Single Sign-On services. The Oracle Application Server deployed with these components is typically referred as the Infrastructure instance.

### MOD\_OSSO

mod\_osso is an Apache Web Server module an Oracle HTTP Server uses to function as a partner application within an Oracle Single Sign-On environment. The Oracle HTTP Server is based on the Apache HTTP Server.

### Oracle Internet Directory

Oracle Internet Directory (OID) is an LDAP-compliant directory service. It contains user ids, passwords, group membership, privileges, and other attributes for users who are authenticated using Oracle Single Sign-On.



## Partner Application

A partner application is an application that delegates authentication to the Oracle Identity Management Infrastructure. One such partner application is the Oracle HTTP Server (OHS) supplied with the Oracle Application Server. OHS uses the MOD\_OSSO module to configure this functionality.

All partner applications must be registered with the Oracle Single Sign-On server. An output product of this registration is a configuration file the partner application uses to verify a user has been previously authenticated.

## Realm

A Realm is a collection users and groups (roles) managed by a single password policy. This policy controls what may be used for authentication (for example, passwords, X.509 certificates, and biometric devices). A Realm also contains an authorization policy used for controlling access to applications or resources used by one or more applications.

A single OID can contain multiple Realms. This feature can consolidate security for retailers with multiple banners or to consolidate security for multiple development and test environments.

## Statically Protected URLs

A URL is considered to be Statically Protected when an Oracle HTTP server is configured to limit access to this URL to only OSSO authenticated users. Any attempt to access a Statically Protected URL results in the display of a login page or an error page to the user.

Servlets, static HTML pages, and JSP pages may be statically protected.

## What Single Sign-On is Not

Single Sign-On is NOT a user ID/password mapping technology.

However, some applications can store and retrieve user IDs and passwords for non-SSO applications within an OID LDAP server. An example of this is the Oracle Forms Web Application framework, which maps OSSO user IDs to a database logins on a per-application basis.

## How Oracle Single Sign-On Works

Oracle Single Sign-On involves a couple of different components. These are:

- The Oracle Single Sign-On (OSSO) servlet, which is responsible for the back-end authentication of the user.
- The Oracle Internet Directory LDAP server, which stores user IDs, passwords, and group (role) membership.
- The Oracle HTTP Server associated with the web application, which verifies and controls browser redirection to the OSSO servlet.
- If the web application implements dynamic protection, then the web application itself is involved with the OSSO system.

### **Statically Protected URLs**

When an unauthenticated user accesses a statically protected URL, the following occurs:

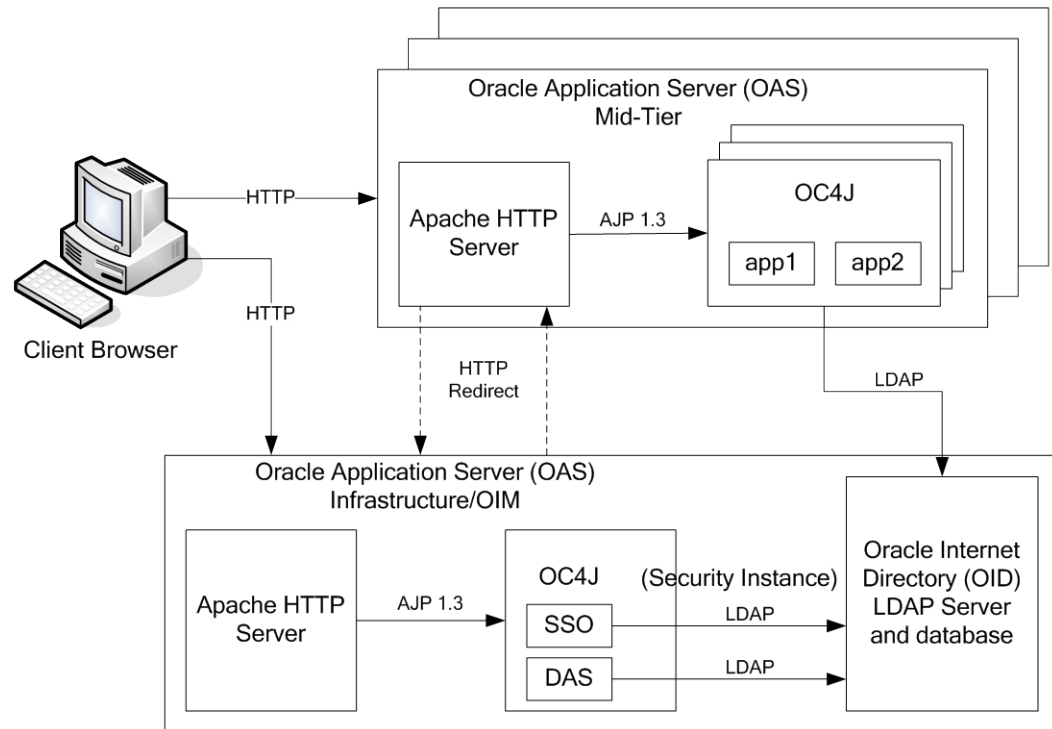
1. The Oracle HTTP server recognizes the user has not been authenticated and redirects the browser to the Oracle Single Sign-On servlet.
2. The OSSO servlet determines the user must authenticate, and displays the OSSO login page.
3. The user must sign in through a valid user ID and password. If the OSSO servlet has been configured to support multiple Realms, a valid realm must also be entered. The user ID, password, and realm information is validated against the Oracle Internet Directory LDAP server.
4. The OSSO servlet creates and sends the user's browser an OSSO session cookie. This cookie is never persisted to disk and is specific only to the current browser session. This cookie contains the user's authenticated identity. It does NOT contain the user's password.
5. The OSSO servlet redirects the user back to the Oracle HTTP Server, along with OSSO specific information.
6. The Oracle HTTP Server decodes the OSSO information, stores it with the user's session, and allows the user access to the original URL.

### **Dynamically Protected URLs**

When an unauthenticated user accesses a dynamically protected URL, the following occurs:

1. The Oracle HTTP server recognizes the user has not been authenticated, but allows the user to access the URL.
2. The application determines the user must be authenticated and sends the Oracle HTTP server a specific status to begin the authentication process.
3. The Oracle HTTP Server redirects the user's browser session to the OSSO Servlet.
4. The OSSO servlet determines the user must authenticate, and displays the OSSO login page.
5. The user must sign in through a valid user ID and password. If the OSSO servlet has been configured to support multiple Realms, a valid realm must also be entered. The user ID, password, and realm information is validated against the Oracle Internet Directory LDAP server.
6. The OSSO servlet creates and sends the user's browser an OSSO session cookie. This cookie is never persisted to disk and is specific only to the current browser session. This cookie contains the user's authenticated identity. It does NOT contain the user's password.
7. The OSSO servlet redirects the user back to the Oracle HTTP Server, along with OSSO specific information.
8. The Oracle HTTP Server decodes the OSSO information, stores it with the user's session, and allows the user access to the original URL.

## Single Sign-on Topology



## Installation Overview

Installing Oracle Single Sign-On consists of installing the following components:

1. Installing the Oracle Internet Directory (OID) LDAP server and the Infrastructure Oracle Application Server (OAS). These are typically performed using a single session of the Oracle Universal Installer and are performed at the same time. OID requires an Oracle relational database and if one is not available, the installer installs this as well.  
The Infrastructure OAS includes the Delegated Administration Services (DAS) application as well as the OSSO servlet. The DAS application can be used for user and realm management within OID.
2. Installing additional OAS 10.1.2 midtier instances for the Oracle Retail applications, such as RMS, that are based on Oracle Forms technologies. These instances must be registered with the Infrastructure OAS installed in step 1).
3. Installing additional application servers to deploy other Oracle Retail applications and performing application specific initialization and deployment activities.

## Infrastructure Installation and Configuration

The Infrastructure installation for OSSO is dependent on the environment and requirements for its use. Deploying an Infrastructure OAS to be used in a test environment does not have the same availability requirements as for a production environment. Similarly, the Oracle Internet Directory (OID) LDAP server can be deployed in a variety of different configurations. See the *Oracle Application Server Installation Guide* and the *Oracle Internet Directory Installation Guide* for details.

### **OID User Data**

Oracle Internet Directory is an LDAP v3 compliant directory server. It provides standards-based user definitions out of the box.

The current version of Oracle Single Sign-On only supports OID as its user storage facility. Customers with existing corporate LDAP implementations may need to synchronize user information between their existing LDAP directory servers and OID. OID supports standard LDIF file formats and provides a JNDI compliant set of Java classes as well. Moreover, OID provides additional synchronization and replication facilities to integrate with other corporate LDAP implementations.

Each user ID stored in OID has a specific record containing user specific information. For role-based access, groups of users can be defined and managed within OID. Applications can thus grant access based on group (role) membership saving administration time and providing a more secure implementation.

### **OID with Multiple Realms**

OID and OSSO can be configured to support multiple user Realms. Each realm is independent from each other and contains its own set of user IDs. As such, creating a new realm is an alternative to installing multiple OID and Infrastructure instances. So a single Infrastructure OAS can be used to support many environments (development and test) by defining one realm for each environment.

Realms may also be used to support multiple groups of external users, such as those from partner companies. For more information on Realms, see the *Oracle Internet Directory Administrator's Guide*.

## **User Management**

User Management consists of displaying, creating, updating or removing user information. There are two basic methods of performing user management: LDIF scripts and the Delegate Administration Services (DAS) application.

### **OID DAS**

The DAS application is a web based application designed for both administrators and users. A user may update their password, change their telephone number of record, or modify other user information. Users may search for other users based on partial strings of the user's name or ID. An administrator may create new users, unlock passwords, or delete users.

The DAS application is fully customizable. Administrators may define what user attributes are required, optional or even prompted for when a new user is created.

Furthermore, the DAS application is secure. Administrators may also what user attributes are displayed to other users. Administration is based on permission grants, so different users may have different capabilities for user management based on their roles within their organization.

### **LDIF Scripts**

Script based user management can be used to synchronize data between multiple LDAP servers. The standard format for these scripts is the LDAP Data Interchange Format (LDIF). OID supports LDIF script for importing and exporting user information. LDIF scripts may also be used for bulk user load operations.

### **User Data Synchronization**

The user store for Oracle Single Sign-On resides within the Oracle Internet Directory (OID) LDAP server. Oracle Retail applications may require additional information attached to a user name for application-specific purposes and may be stored in an application-specific database. Currently, there are no Oracle Retail tools for synchronizing changes in OID stored information with application-specific user stores. Implementers should plan appropriate time and resources for this process. Oracle Retail strongly suggests that you configure any Oracle Retail application using an LDAP for its user store to point to the same OID server used with Oracle Single Sign-On.

### **Setting up RMS for Single Sign-on**

To set up Forms for Single Sign-on, the Forms framework must know and/or be configured to use SSO. To do this, the Forms framework configuration file `formsweb.cfg` must be configured to enable SSO and the mid-tier HTTP Server must be registered with the Oracle Single Sign-On server. In addition, the Forms framework uses resource access descriptors (RAD), to map OSSO user IDs to Database connect strings.

### Configuring formsweb.cfg

For each Forms application instance there are two attributes in the Forms framework configuration file `formsweb.cfg` that control SSO behavior:

Name	Value	Description
<code>ssoMode</code>	<code>true/false</code>	Enables/disables SSO
<code>ssoDynamicResourceCreate</code>	<code>true/false</code>	Enables/disables the dynamic RAD entry creation

### Creating a RAD Entry

There are three ways by which a RAD entry (mapping an OSSO user ID to a Database connect string) may be created:

- Administrator Created  
An administrator uses the Delegated Administration Services (DAS) web application that comes with the infrastructure server and that can be launched using the URL `http://<host>:port/oiddas`.
- User Created  
The user can dynamically create a RAD entry when the Forms framework prompts the user for information. This however requires that the `ssoDynamicResourceCreate` attribute be set to `true`. If a RAD already exists, the user may also create additional RADs through the DAS application.
- LDIF Script  
See the My Oracle Support document 244526.1 for more information about how to use an LDIF script to create a RAD entry.

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# Oracle Retail Trade Management

This chapter is an overview of Oracle Retail Trade Management (RTM).

## Master Data

Oracle Retail Trade Management (RTM) shares the same database with RMS. RTM is enabled in an RMS instance by the following system options parameter settings:

- Simplified RTM Indicator is N
- Import Indicator is Y

RTM requires certain master data maintenance such as outside locations, Freight Type, Freight Size and Standard Carrier Alpha Codes (SCAC). Import specific data maintenance is required for country, supplier, partners and items. For calculation of tax and duties applicable on import merchandise, the Harmonized Tariff Schedule (HTS) files need to be uploaded into the system.

## Landed Cost

Landed cost is the total cost of an item received from a vendor inclusive of the supplier cost and all costs associated with moving the item from the supplier's warehouse or factory to the purchase order receiving location. RTM facilitates the setting up of various cost components, associating them to the purchase orders, calculating the estimated landed costs at the time of purchase order creation. It also facilitates the tracking and booking of the actual costs after the receipt process.

Estimated Landed Cost (ELC) is composed of cost components from the Supplier, Trading Partners, Item and Origin Country, which are brought together during Purchase Order creation to develop an estimate of costs associated with purchasing a particular item on the current PO.

The components of landed cost are defined using Expenses, Assessments, and Computation Value Bases (CVBs).

## Expenses

Expenses are direct and indirect costs incurred in moving a purchased item from the supplier's warehouse/factory to the purchase order receiving location. Expenses should not be confused with upcharges which allow add-on costs from an initial receiving location to a final retail location and are not part of the landed cost.

An example of a direct expense is the packing cost or insurance cost. Charges incurred for clearing and loading goods at the lading port are an example of indirect costs. Expenses are either added to the base inventory value or booked as a separate expense. Expenses apportioned to inventory affect the weighted average cost (WAC) of the item. Expenses can be assigned to a particular country, supplier, or partner. Expenses are tracked at two levels – country or zone level, which are detailed below.

### Country Level Expenses

Country level expenses track the costs of bringing merchandise from the origin country, through the lading port, to the import country's discharge port. For example, track expenses for a silk blouse from China, through the lading port, Hong Kong, to the discharge port, Los Angeles.

## Zone Level Expenses

Zone level expenses track the costs of bringing merchandise from the import country's discharge port to the purchase order receiving location. Example: Track expenses for a silk blouse from discharge port, Los Angeles., through to the retailer's New York City warehouse and to the retailer's Chicago warehouse. Costs are different based on the final destination (such as longer truck route and railroad).

Zones are defined using the Cost Zone dialog (see [Cost Management](#)). Once the zones are created, they are used to define expenses at the supplier level (by zone) for default to items.

## Assessments

Assessments are the cost components that make up the total tax and duty charges for an item. Computation formulas and specific tax types contained in the harmonized tariff schedule (HTS) determine most assessments. The harmonized tariff schedule is defined for an import country.

The HTS comprises a hierarchical structure for describing all goods in trade for duty, quota and statistical purposes. The HTS structure is based on the international Harmonized Commodity Description and Coding System (HS), administered by the World Customs Organization in Brussels, Belgium.

There are two components used to track HTS within the system:

- HTS chapter tables
- HTS tariff item tables

The HTS chapter tables are organized by the first four digits of the tariff schedule classification. The HTS tariff item tables are organized around the ten-digit tariff item number. The item level tariff codes do vary among GATT (General Agreement on Trades and Tariffs) countries. Each tariff item has various duty rates assigned to it. Classification of goods in this system must be done in accordance with the country specific rules. For example in the U.S. it should be done as per General and Additional U.S. Rules of Interpretation, starting at the four digit heading level to find the most specific provision and then moving to the subordinate categories. Other assessments, such as taxes, fees, countervailing charges, and anti-dumping charges are also assigned at the tariff item level.

RTM also allows the retailer to set up the quota restrictions imposed by the government on an item. The quota is linked to the HTS classification.

Computation value bases (CVB) are mechanisms used to create a compound expense. CVBs provide the ability to set up complex expenses that depend on other expense components. They also allow expenses to be a certain percentage of a group of other expenses and assessments rather than just of one value.



## Purchasing

If RTM is enabled in an RMS instance, then import orders can be created in RMS. The purchase order dialog provides additional import functionalities along with standard PO information, if the import purchase order indicator is checked. Throughout each step of the import purchase order creation, there are several options available to capture additional information specific to ordering imported merchandise.

The menu options within the PO Header Maintenance window are used to attach shipping, letter of credit, order dates, attributes, required documents, and timeline information. The menu options within the PO Item Maintenance window are used to attach HTS, required documents, and timeline information for line items on the PO. The PO Item/Location window provides the option to assign expenses at the Item/Location level. All of the expense components are brought together in one view in the Order Item Expense Maintenance window.

## Letter of Credit

A letter of credit (LC) is a bank instrument used by most retailers to finance purchase of imported goods. LCs are a preferred method of international settlement because the conditions of the purchase, such as required documents and special instructions are detailed in the text of the LC and reviewed by the bank for compliance before the release of payment. They provide importers with a secure method to pay for merchandise and vendors with a secure method to receive payment for merchandise. Letters of credit can be created and applied to purchase orders. Activity against the letter of credit can also be tracked. Once goods have shipped and shipping documents are available, the seller presents documents at the desk of the advising bank, and if there are no discrepancies, collects the specified payment amount. The advising bank debits the issuing bank for the amount of the negotiation as well as any charges, and the issuing bank makes payment and notifies the retailer of the amount of the principal draw down and associated charges.

RTM also supports the exchange of bank letter of credit (LC) information with a bank in the internationally recognized SWIFT (Society for Worldwide Interbank Financial Telecommunications) format.

## Transportation

The transportation functionality in RTM provides a facility to track information from trading partners as merchandise is transported from the manufacturer through customs clearance in the importing country. Information is recorded at various levels such as: This information is recorded at various levels: vessel/voyage, bill of lading (BOL), container, PO/item, commercial invoice. Transportation information is most often received through EDI. Once entered, the information is tracked and edited, as it changes.

The Transportation module is used to track the following information: shipments, deliveries, licenses and visas, claims, missing documents, packing, dates, timelines, commercial invoices, inland freight, and totals.

When a transportation record is complete, the record is finalized. Finalized transportation records are used to automatically create customs entries. The goods are then tracked as they move through customs.

## Customs Entry

The Customs Entry module manages entries of merchandise for clearance through customs while providing the information required for government documentation and reporting. Government duties, taxes and fees are calculated in accordance with the country of import. Entry information is prepared for transmission to the customs broker for entry submission. The Customs Entry module provides the ability to track the arrival of a shipment at customs, the customs clearance or associated delays, customs exams, and entry and liquidation payment amounts.

When the charges and assessments are complete, the retailer can choose to allocate the costs to the actual landed cost module. When the customs entry is complete, the custom entry record needs to be confirmed. Non-merchandise invoices are created automatically from confirmed customs entries.

## Obligations

As an item progresses through the import process, bills are received from various service providers. As commercial invoices are received from trade partners and suppliers, they can be recorded in the obligations module. They are allocated over the shipment, orders and items that they cover, and the system proportionally allocates the charges to the line item level. Approving an obligation allocates the costs to the actual landed cost module. Approving an obligation creates a non-merchandise invoice in approved status.

## Actual Landed Costs

RTM helps to track the actual landed cost incurred when buying an import item. The module reports variances between estimated and actual landed costs by cost component and shipment. The Actual Landed Cost (ALC) dialogues provide the flexibility to view information about actual and estimated landed costs for any item on a purchase order or invoice obligation. The information can be organized by obligation, obligation cost component, shipment, or location. Duties, fees and taxes are posted directly to the Actual Landed Cost module bypassing the obligations maintenance process. While finalizing the ALC at a purchase order level, the user can also choose whether or not to update weighted average cost (WAC) for each purchase order. For those circumstances where goods may be partially or completely processed through a distribution center to another location prior to assembly and calculation of ALC, it may be more accurate to have WAC be determined by ELC to stand rather than updating it with an ELC/ALC variance.

## RTM Integration with Other Applications

This section explains how RTM integrates with other applications.

### Integration with RMS

Oracle Retail Trade Management (RTM) and RMS share the same database schema. When RTM is enabled in an RMS instance, certain import specific data maintenance is required for country, supplier, partners and items. These are directly updated into the RMS database and subsequently used in RTM.

### Integration with Oracle Retail Invoice Matching

RTM, RMS and ReIM share the same database schema.

- **Customs Entry Record**  
Finalization of the customs entry record, inserts an approved non-merchandise invoice record into the Invoice Matching staging tables for extract and upload into ReIM.
- **Obligations Entry**  
Finalizing the obligations entry also inserts an approved non-merchandise invoice record into the Invoice Matching staging tables for extract and upload into ReIM.

### Integration with External Partners

RTM automates the international import transaction data. Four components of RTM - customs entry, harmonized tariff schedule, letter of credit, and transportation - have batch-processing modules that facilitate the flow of data between RTM and external applications and files.

#### Sharing the Letter of Credit Data with the Trading Partners

Letter of credit batch modules process letter of credit applications and amendments to banks, and upload confirmations, drawdown notifications, and related information from banks. Letter of credit downloads and uploads data in an internationally recognized standard format called S.W.I.F.T. (Society for Worldwide Interbank Financial Telecommunications).

The batch program LCADNLD extracts approved letter of credit applications to banks. The LCMT700 Perl script converts the LC applications from an RTM file format to the S.W.I.F.T. (MT 700) format.

The issuing bank sends the retailer a confirmation once it agrees to stand as guarantee for the LC. The LCMT730 Perl script converts letter of credit confirmations from a S.W.I.F.T. format (MT730) to an RTM flat file format. The batch program LCUPLD uploads the converted data from the table to the RTM database tables.

The issuing bank informs the retailer when credit draw downs are made against the LC or when bank charges the retailer the bank fees. The LCMT798 Perl script converts draw downs and bank fees data from a S.W.I.F.T. file format to an RTM format. The batch program LCUP798 uploads the converted data from the table to the RTM database tables.

At times after a LC has been issued and confirmed, the retailer may want to make amendments to the LC. An amendment to a LC is valid once all parties involved agree to the new conditions and the agreement has been registered. Retailer initiated amendments are extracted by the batch program LCMDNLD.

## Integration with Customs Broker

The batch program CEDNLD (customs entry download) extracts custom entry information from the RTM database to custom brokers. Custom Entry (CE) transactions that are in a Sent status are written into a flat file. One flat file is written per broker. Information contained in the files include: order items, bill of lading / airway bill information, shipment information, container information, license and visa information, broker charges and missing documents information.

The output file could be FTP to the broker. This process has to be handled during implementation and is outside the scope of the RTM.

### Upload of HTS Data

U.S. Government publishes the HTS data in file format. The RTM batch program HTSUPLD uploads the data from the file into the RTM/RMS database. The program handles both the initial HTS information load as well as mid-year HTS updates that are supplied by the U.S. government. The initial upload is handled by inserting information from the file into the tables. HTS information already available in the tables is handled by adjusting the effective dates of the existing HTS records and inserting a new set of HTS records into the tables. The files provided by the U.S. government include HTS Chapters, HTS classification, HTS Tax, HTS Fee, HTS OGA, Tariff Treatments, Tariff Treatment Exclusions.

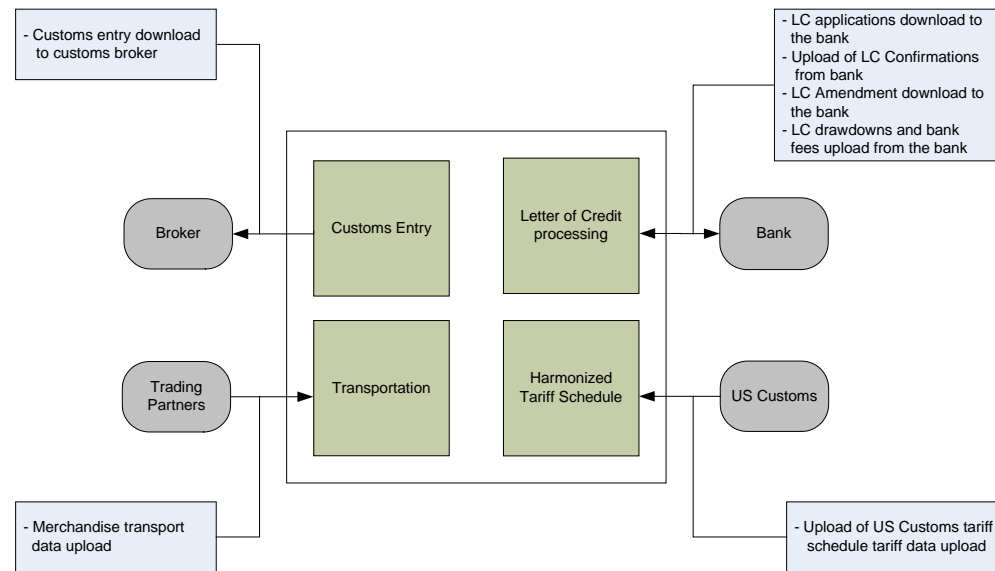
The files provided by the U.S. Government should be placed in the proper input directory, so that the batch program HTSUPLD can pick up the file and process the same.

## Integration with Supply Chain Partners

As the merchandise moves from manufacturers' warehouse/factory to the discharge port at the import country, the supply chain partners share information with the retailer in a specified file format. The batch program TRANUPLD uploads the information provided in the files into the transportation tables in RTM/RMS database, thus providing online visibility of the merchandise in the supply chain.

The files provided by the supply chain partners should be placed in the proper input directory, so that the batch program HTSUPLD can pick up the file and process the same. In case the files provided by the supply chain partners differ from the expected file format, custom program must be written to convert the data from the original file format to the required file format.

The following diagram illustrates the interaction between RTM and external agencies.



## User Setup and Security

As RTM and RMS share the same instance, the application shares the security framework of RMS. The user setup, role assignment and access permission are done in the RMS framework.

For details on the user and security setup in RMS refer to the RMS Users and Security section of this guide.

## Simplified RTM Configuration

Simplified RTM is a simplified version of Oracle Retail product suite targeted at mid-tier retailers. The Simplified Oracle Retail Merchandising Operations applications support basic retail processes needed by a mid-tier retailer. Advanced features are turned-off through system parameters, with the goal to reduce implementation complexity and enabling faster implementation and lower total cost of ownership.

If the system option parameter Simplified RTM indicator is enabled, then the following RTM functionality is not available in the application:

- Setting up RTM specific master data such as freight type, freight size, and standard carrier alpha codes (SCAC)
- Letter of credit functionality
- Transportation functionality
- Customs entry functionality
- Obligation maintenance
- Actual landed costs

If both the Simplified RTM indicator and the Import indicator are enabled, then some import related functionality is available in RMS. With this setup, the retailer has the option to setup the HTS data and use it in the purchase order process. The retailer can also choose letter of credit as a payment option in the Purchase Order header level, but all other related LC functionality is not available. It is assumed that the retailer is using some other external system for LC processing.

If the import indicator is not enabled then no RTM functionality is available in the application. See the *Oracle Retail Merchandising System Installation Guide* for information about setting the value of the `system_options` table.

## Other Features

As RTM is related to import purchases and may use foreign currency, it is important that the current exchange rate between the primary currency and the supplier's currency is maintained in the application. RMS does maintain currency exchange rates and can accept currency updates.

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# Oracle Retail Sales Audit

This chapter is an overview of Oracle Retail Sales Audit (ReSA).

## Information Maintained by ReSA

The following information is maintained through the ReSA application.

### System Options

Oracle Retail Sales Audit (ReSA) contains a set of system options that is different from the RMS system options set. These system options control functionality in ReSA. One of the important system option parameters is the balancing level. The balancing parameter could be Cashier or Register. If the balancing parameter is Cashier, the totals are balanced for each cashier. If the balancing parameter is Register, the totals are balanced for each register. Another important option is the unit of work. This determines whether transactions are exported prior to the elimination of all errors for the store/day. Other parameters include defining the escheatment party and the details of the clearinghouse. Certain business rules like duplicate and missing transaction number checks are also controlled through the system options setting.

### Foundation Data

ReSA requires a certain amount of foundation data to start working. ReSA shares some of its foundation data with RMS, while the rest of the foundation data needs to be maintained in ReSA.

Foundation data in ReSA includes company/location close dates, location traits, bank setup, tender types, reference maintenance, error codes and store-specific foundation data.

### Totals

ReSA allows retailers to define the totals needed for their business. A total in ReSA can be a ReSA calculated value from raw transaction data or a total that comes from the POS through the RTLOG. ReSA calculates a total based on raw transaction data or on existing totals. Totals are used for performing store balancing - over/short analysis within ReSA. Totals are also used to create extract data for external systems such as General Ledger. By assigning an audit rule to the total business validation is built in ReSA. For example, the retailer defines a ReSA calculated total of total cash tendered at a register for a store/day. He defines another total, a POS-declared total, for the total cash declared at the register for a store/day. He defines an audit rule to compare both the totals for over/short analysis. Totals are used to export consolidated data to an external system. So, while defining a total, the retailer defines the systems to which the total is exported.

### Audit Rules

Rules are used in ReSA to perform custom data validation against transactions and totals. Audit rules run on POS transaction data and totals during the automated and interactive audit process. When the rule is broken an exception error is thrown that must be edited or overwritten by the auditor. ReSA comes with some standard pre-configured rules and also provides flexibility to the retailers to define rules needed for their business.

## Error Codes

Error codes provide information to the auditor about the type of error and the remedial action needed to solve the error, thus increasing the effectiveness of the audit process. When setting up audit rules for automated audit process, an error code is associated to the rule. The error code contains an explanation of why the rule failed, as well as a recommended solution. The error code also contains security settings to determine if the error can be overridden at the store or headquarters. When a rule fails, the error code is available to the auditor in the error list. Additionally the specific location where the error has occurred is available in the transaction details, thus helping the auditor to quickly understand and correct the error.

## Automatic Audit Process

Automatic auditing is done in ReSA using batch programs. The goal of the automatic audit process is to accept transaction data from point-of-sale (POS) applications and move the data through a series of processes that culminate in clean data. ReSA uses several batch-processing modules to perform the following activities:

- Import POS transaction data from RTLOGS
- Perform initial validation of data during upload of data from RTLOGs to ReSA database
- Produce totals using user-defined totaling calculation rules that are user reviewable during the interactive audit
- Validate transaction and total data with user-defined audit rules and generate errors whenever data does not meet the criteria. The user reviews these errors during the interactive audit
- Create and export files of clean data in formats suitable for transfer to other applications
- Update the ReSA database with adjustments received from external systems on previously exported data

## Interactive Audit Process

Auditors use the interactive audit process to view and correct errors. This process is done after the automated audit is completed. This process allows the auditors to view errors at summary or detail level, fix or override errors, update the totals and close the store/day. In addition, it is also possible to review and edit data of missing transactions or transactions that have passed automated audit, add transactions and delete invalid or missing transactions.

## Summary Views

ReSA provides summary views for the auditor to identify and fix the problem areas quickly. A store/day summary view form contains the following information about a store/day: the audit status, the data status, the number of transactions, the number of errors and the over/short amount. The auditor has access other options from the store/day summary form such as: the error list, the balancing level summary, over/short, miscellaneous totals, missing transactions and the import/export log.

ReSA provides two other summary views: the Tender Summary and the Item Summary.



## Single or Multi-Level Auditing

It is common to have one of the following workflows for the sale audit:

- Single level audit, with all audits being performed at the head office
- Multi-level audit process in which some audit occurs at the store and the final auditing happens at the head office.

For the multi-level audit it is important that the store auditors must perform their audits before the head – quarter’s auditors, making workflow management very important.

Single or multi-level auditing in ReSA is achieved through proper assignment of employees to stores and headquarters.

## Automated Clearing House (ACH) Processing

Automated Clearing House (ACH) is a U.S. based banking network used to electronically transfer funds. Retailers use ACH to enable them to have access to funds before the funds have been physically deposited in the bank. This is done by estimating the following day’s bank deposit and sending this amount to the consolidating bank through the ACH network. In this way, the cash to be received from the stores is hedged.

## Escheatment Processing

Escheatment is the process of forwarding monies of outstanding, non-expiring vouchers to the proper government authorities (state or country) after a defined period of time from the date of issuance. Some government authorities require that unredeemed vouchers be escheated after a specific period of time has passed. Escheatment is the process of forwarding monies of outstanding, non-expiring vouchers to the proper government authorities (state or country) after a defined period from the date of issuance. When a voucher is escheated, an invoice is generated that initiates payment of the escheated voucher amount to the government authority. Government authorities then attempt to locate the consumers owed the monies.

To accommodate Escheatment, a new total should be added to Sales Audit to create escheatment totals. ReSA automatically totals sales transactions based on calculation definitions setup for the total.

## Audit Trail

The audit trail functionality provides the store and headquarters employees with the capability of tracking all changes to transactions and totals. ReSA maintains versions of all modified transactions thus enabling easy tracking of changes.

Totals for General Ledger that are impacted by a revised transaction are reversed and both the reversal and the new total are extracted for the General Ledger.

## Reporting

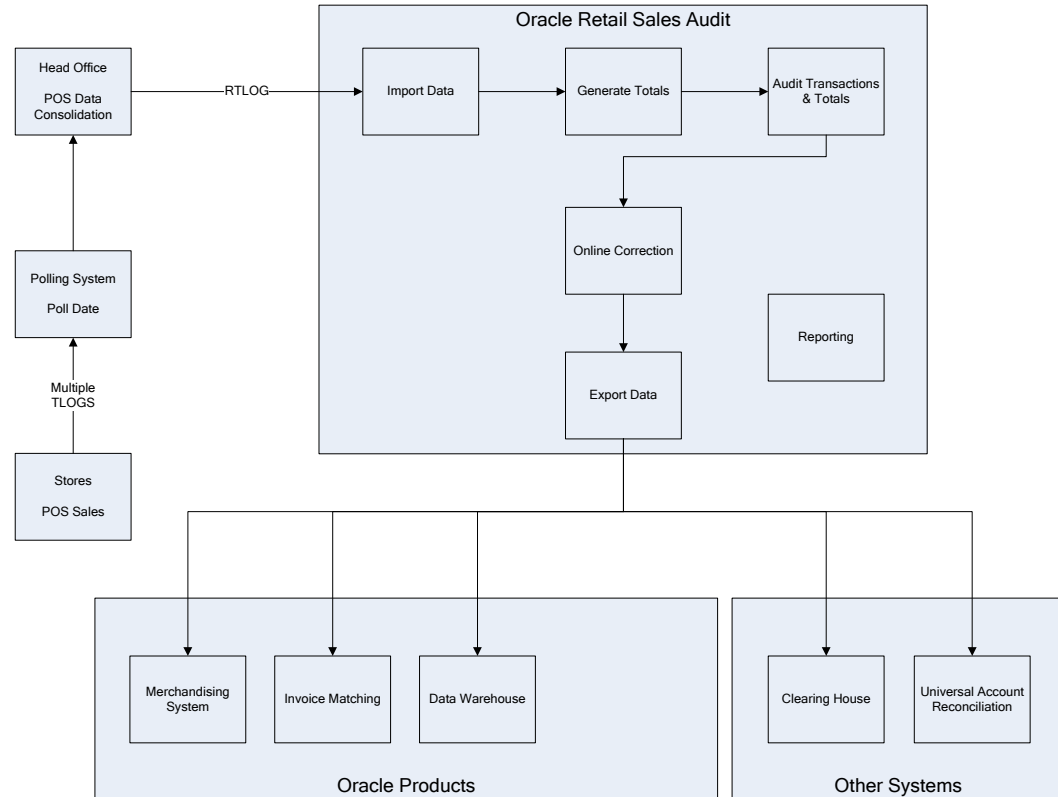
ReSA provides some basic online reporting that allows users to view sales audit data that is in the system. The following reports are available in ReSA:

- Credit Card Summary report
- Flash Sales report
- Flash Totals report
- Voucher Activity report

## Integration with Other Applications

Oracle Retail Sales Audit interfaces with the following Oracle products:

- Oracle Retail Merchandise System
- Oracle Retail Data Warehouse
- Oracle Retail Invoice Matching System



Oracle Retail Sales Audit also interfaces with the following third-party applications:

- Automated Clearing House
- Universal Account Reconciliation System

## Integration with Oracle Retail Merchandising System

ReSA and RMS share the same database. ReSA shares some of its master data with RMS. Foundation data (such as items, stores, company/location close dates, location traits, bank setup, and tender types) are maintained in RMS and used in ReSA.

Current reference data is retrieved from RMS into ReSA by the batch program SAGETREF. The data is extracted into multiple data files. The data in the files are used by the batch program SAIMPLOG as reference data for doing validation checks on the POS transaction data during the data upload from POS to ReSA. Having the reference in data file formats increases the performance of the SAIMLOG process. SAGETREF generates the following reference files: Items, Wastage, Sub-transaction level items, Primary variant relationships, Variable weight PLU, Store business day, Code types, Error codes, Credit card validation, Store POS, Tender type, Merchant code types, Partner vendors, Supplier vendors, Employee IDs, Banner ids.

All clean and audited sales and returns data is extracted from ReSA into a POSU file by the batch program SAEXPRMS. All corrected sale and return transactions that do not have RMS errors are extracted into the file. The sales audit system options parameter work unit controls the export of data into file in case of presence of RMS errors in the POS transaction data. The batch program POSUPLD loads the data from the POSU file into the RMS tables.

## Integration with Point-of-Service

Sales, returns and other POS transaction data is loaded into ReSA from the point-of-service application. The point-of-service should provide a standard RTLOG file. The point-of-service data is loaded into ReSA either in trickle mode or once a day. If the data is uploaded in the trickle mode, then corporate inventory reflects a more accurate intra-day stock position. The data from the RTLOG is loaded into ReSA using the batch program SAIMPLOG for end of day processing or SAIMPTLOGI for trickle processing. If trickle processing is used the final RTLOG for the day must include a count of all RTLOG files for the store/day.

## Integration with Oracle Retail Data Warehouse

The batch program SAEXPRDW collates all corrected sale and return transactions that do not have any Oracle Retail Data Warehouse (RDW) errors from the ReSA database tables for transmission to the RDW. The data is sent at the store day level. SAEXPRDW provides four output files:

- RDWT for sales transactions
- RDWF for tender transactions
- RDWC for cashier over/short
- RDWS for other user totals

It is the responsibility of the implementation team to ensure that the output files are transferred to the input directory of RDW.

## Integration with Oracle Retail Invoice Matching

In the normal course of business, payments are made to vendors at the store level. Payments for merchandise purchases done at store level are booked against a corresponding merchandise invoice. Payments of non-merchandise purchases or miscellaneous services availed at the store are booked against a corresponding non-merchandise invoice. These transactions are passed from the POS to ReSA as specially designated PAID OUT transactions (sub-transaction type of EV – Expense Vendor or MV – Merchandise Vendor). All these invoices are assumed paid. The batch program SAEXPIM transfers the PAID OUT type of transactions to the Invoice Matching staging tables.

The batch program SAEXPIM is also used for escheatment processing. Unclaimed monies of outstanding, non-expiring vouchers are totaled after a defined period of time from the date of issuance of the voucher and posted to the Invoice Matching staging tables as a Non-merchandise Invoice by SAEXPIM. The unclaimed amount is paid out as income to the issuing retailer. In the United States, for some states, it is paid out to the State (based on configuration). ReSA determines who receives this income and accordingly posts a non-merchandise invoice for the partner. These invoices are assumed not paid.

The batch job EDIDLINV is used to extract the invoices from the Invoice Matching staging tables and load as EDI invoices to ReIM.

## Integration with Oracle General Ledger

The batch program SAEXPGL transfers the sales data from ReSA into the financial staging tables in RMS. This batch program executes only if the external financial system is set to O for Other (for Oracle E-Business Suite or some other external financial application, based on system options configuration).

SAEXPGL directly inserts the data into financial stage tables of RMS.

## Integration with Automated Clearing House

ReSA determines the estimated bank deposit for each store/day. The batch program SAEXPACH posts the store/day deposits into a database table and creates the standard ACH format file. The output file is sent to a Clearing House. The output file conforms to the requirements imposed by the National Automated Clearing House Association (NACHA). The nature of the ACH process is such that as much money as possible must be sent as soon as possible to the consolidating bank. Any adjustments to the amount sent can be made front-end. This batch assumes that there is only one total to be exported for ACH per store/day.

## Integration with Universal Account Reconciliation Solution

The batch program SAEXPUAR extracts specified TOTALS to a flat file that is interfaced to an account reconciliation application such as the Driscoll UAR application. For each store day, all specified totals are posted to their appropriate output files. All the stores and totals with usage type starting with UAR are exported.

## User Setup and Security

Access to forms and records in ReSA is controlled at two levels: RMS security and ReSA specific security.

Since ReSA and RMS share the same instance, ReSA utilizes the basic security functionality defined within RMS. ReSA users must have an Oracle User ID and must have the appropriate product and location security defined within RMS. In addition to the general RMS security, additional security must be defined for ReSA users.

Security setting at ReSA level includes classifying the employee as a store employee or a headquarters employee and then defining some field level access. These security settings affect the forms and fields to which an auditor is given access, and at what point in the auditing process the access is granted.

The employee maintenance form in ReSA is used to define the employee type. The employee is also assigned the stores for which he can perform an audit process. Note that the employee still has the option of viewing all stores to which they have been assigned RMS security. Additionally the POS IDs can be assigned to the user on the form. Based on a ReSA system option setting, the user id of the cashier is validated during the RTLOG upload and the employee's POS ID is used for cashier validation. Stores are assigned to headquarter employees through the use of location traits.

Field level access provides the setup of security for nine specially-designated fields based on the Oracle Role. Since both store and headquarters use the same forms and have access to the same data, additional controls for data security are needed. This additional security is provided by the field level access control in select forms.

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# Oracle Retail Allocation

This chapter is an overview of Oracle Retail Allocation.

## Information Maintained by Allocation

The following is a list of the information maintained in the Allocation application.

- **Item Source**  
Oracle Retail Allocation provides a number of sources from which to allocate product, including the following:
  - Purchase Orders
  - Advanced Shipping Notices (ASN)
  - Transfers
  - Bill of Lading (BOL)
  - Warehouse inventoryUsers have more access and control to existing transactions as a result of the different item sources which results in increased supply chain efficiencies.
- **Advanced Need Determining Calculations**  
Allocations are calculated in real time by advanced internal algorithms that calculate store need based on the rule parameters established by the client and the current perpetual inventory and sales for the items being allocated.
- **What-if Allocations** are similar to regular allocations with the exception being an infinite amount of product available to allocate. This allows a client to determine the true need for the locations being allocated to, and if they choose, create a purchase based on the allocation to fulfill that need.
- **Allocation Templates**  
Oracle Retail Allocation provides clients with the ability to create standard templates to apply to allocations to save time and produce consistent results. Two types of templates can be created, location template or rule template.
- **Rules**  
Oracle Retail Allocation requires the selection of a rule for the calculation of an allocation. The rule defines where data used in the calculation of the allocation comes from and other parameters that are used in the calculation.
- **Split Allocations**  
Oracle Retail Allocation allows the user to react to changes (such as: short ships, delays, and cancelled product) by splitting an allocation. Using this functionality a user is able to split one or many items off from an existing allocation and onto their own allocation.
- **Pre-pack Allocations**  
A pre-pack is a package containing multiple items for distribution. Oracle Retail Allocation has the capability to define optimum pre-packs for clients in addition to allocating them. This function is used to minimize shipping and handling costs.

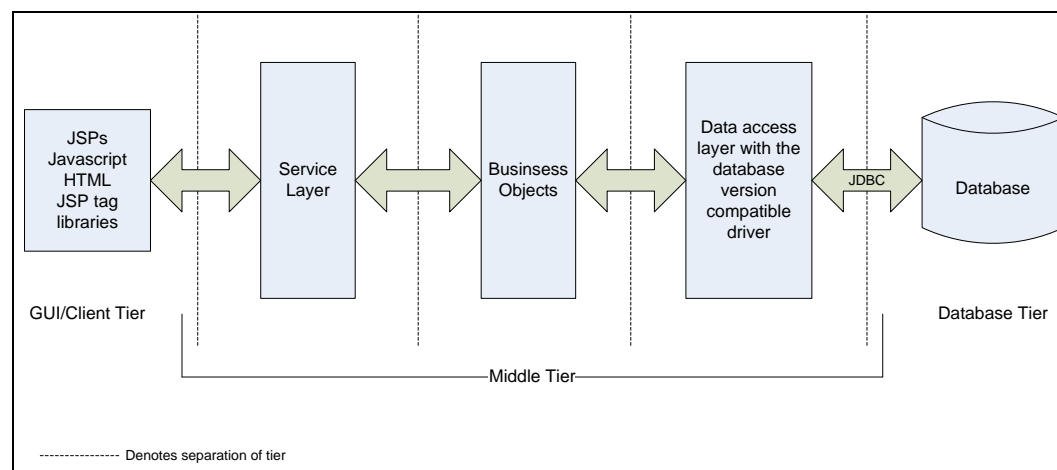
## Integration with Other Applications

Oracle Retail Allocation uses a Java architecture built on a layered model. Layers of the application communicate with one another through an established hierarchy and are only able to communicate with neighboring layers. The application is divided into a presentation layer, a middle tier consisting of services and business objects, and a database access/driver layer.

The segregation of layers has the following advantages, among others:

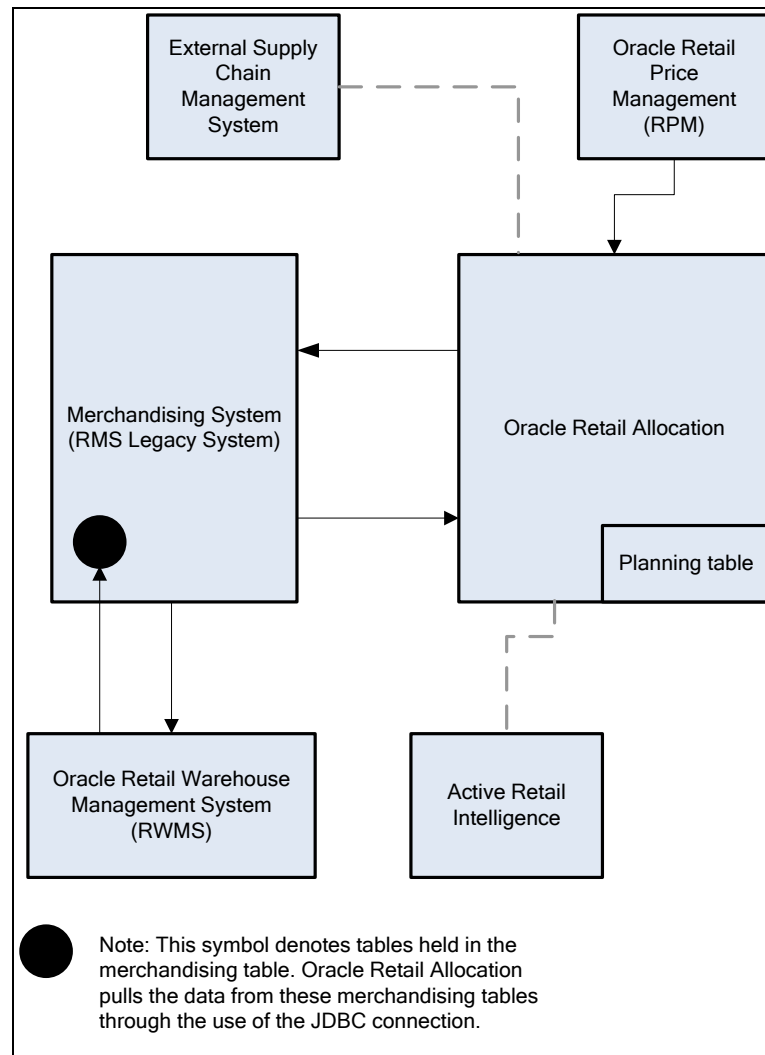
- The separation of presentation, business logic, and data makes the software cleaner, more maintainable, and easier to modify.
- The look and feel of the application is updated more easily because the GUI is not tightly coupled to the back end.
- A layered architecture has become an industry standard.
- Portions of the data access layer (DAL) can be radically changed without effecting business logic or user interface code.
- The application takes advantage of Java database connectivity (JDBC), minimizing the number of interface points that must be maintained.
- Market-proven and industry-standard technology is utilized (for example, JSPs and JDBC).

The diagram below illustrates the Allocation n-tier architecture:



RMS owns virtually all of the information that Oracle Retail Allocation needs to operate and the information that Oracle Retail Allocation provides is of primary interest/use for RMS. As a result Oracle Retail Allocation has limited interaction with other Oracle Retail Merchandising Operations Management applications. For Oracle Retail Merchandising Operations Management applications that Oracle Retail Allocation does interact with it is managed through direct reads from Oracle Retail Merchandising Operations Management application tables, direct calls to Oracle Retail Merchandising Operations Management packages, and Oracle Retail Allocation packages based on Oracle Retail Merchandising Operations Management application tables.

The following diagram outlines where Oracle Retail Allocation lives within the merchandising footprint.



## Allocation and RMS

This section describes the information provided by the RMS and Allocation application.

### RMS to Allocation

- **Foundation Data** is essential to all areas of Oracle Retail Allocation including valid locations to allocate to and from, location groupings, and valid merchandise hierarchies within which to allocate.
- **Item**  
Allocations are generated at the item location level so it is necessary that the Allocation application understand what items and item/locations are eligible in the system.
- **Purchase Order** is one of the sources from which a user allocates. Oracle Retail Allocation relies on RMS to provide Purchase Order information.
- **Transfer** is one of the sources from which a user allocates. Oracle Retail Allocation relies on RMS to provide Transfer information.

- **Bill of Lading (BOL)** is one of the sources from which a user allocates. Oracle Retail Allocation relies on RMS to provide BOL information.
- **ASN** is one of the sources from which a user allocates. Oracle Retail Allocation relies on RMS to provide ASN information.
- **Inventory**  
To determine the correct need at an item location level before performing an allocation, the application needs access to the on-hand inventory at each location being allocated to. Oracle Retail Allocation relies on RMS to provide Inventory information at the item/location level.
- **Shipping Information**  
One of the sources which the Oracle Retail Allocation application allocates from is an Advance Shipment Notice (ASN). Oracle Retail Allocation relies on RMS to provide ASN information.
- **Sales Information**  
Oracle Retail Allocation uses historical sales, forecast sales, and plan in order to determine the need at an item/location level for an allocation. Oracle Retail Allocation interfaces this information in from external planning system to an allocation table.

#### **Allocation to RMS**

- **Allocations**  
Once an allocation has been moved to Approved or Reserved status, the allocation is written to RMS tables to give visibility to the allocation results.
- **Purchase Orders created by What-if process in Allocation**  
If the user selects the What-if option when creating an allocation, the allocation is created based on current need. RMS builds a Purchase Order from the allocation to fulfill the need. Oracle Retail Allocation uses an RMS API to build the purchase order in RMS.

#### **Allocation and RTM**

No information is exchanged.

#### **Allocation and ReSA**

No information is exchanged.

#### **Allocation and RPM**

RPM provides the following to Allocation:

- **Future Retail**  
When the option is enabled Oracle Retail Allocation has the ability to get future retail prices for items being allocated. This allows a client to calculate the total retail of an allocation based off from the pricing when an allocation is physically executed which may vary from the time the allocation is created. Oracle Retail Allocation uses an RPM API call to access this information from RPM tables.
- **Promotions**  
Users in Oracle Retail Allocation can select a promotion from RPM to associate an allocation with.

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**Note:** Allocation provides no information to RPM.

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## Allocation and ReIM

No information is shared between these applications.

## Allocation and ARI

ARI is a monitoring system that interacts with any applications database (including Oracle Retail Allocation). As such it does not use any information from Oracle Retail Allocation; rather it monitors the Oracle Retail Allocation database for events defined by a client and notifies the client when said events occur.

## Allocation Users and Security

Users in Oracle Retail Allocation must be set up by a DBA. They are managed through a user table on the Oracle Retail Allocation database called ALC\_USERS. When a user logs onto Oracle Retail Allocation their user name and password are authenticated against the ALC\_USERS table. If the user/password exists, they are granted access. Valid users in Oracle Retail Allocation have access to all functionality in Oracle Retail Allocation

Once a user has been authenticated to use the Oracle Retail Allocation application the system provides a single tier security structure that provides data level security based on the merchandise hierarchy.

## Data

Users are authorized to access different information within the Oracle Retail Allocation system based on which departments they are authorized for.

Users in Oracle Retail Allocation are setup with data level security at the department level in Oracle Retail Allocation. A user has access to one or many departments in the application and this authorization determines the items that a user is able to allocate per the merchandise hierarchy. Users are setup with data level security by having a system administrator update the ALC\_USER\_DEPTS table with the departments they are authorized to perform allocations for.

## Internationalization

See the Oracle Retail Allocation documentation for information about the languages supported by the application.



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# Oracle Retail Invoice Matching

This chapter is an overview of Oracle Retail Invoice Matching (ReIM).

## Information Maintained by ReIM

The following is a list of information maintained in the ReIM application.

- **Multi-dimensional matching** utilizes complex matching logic designed to maximize match rates and processing productivity for both invoice and credit note matching.
- **Discrepancy routing** identifies cost and quantity discrepancies when a match has not occurred after a user-specified period of time and automatically routes discrepancies to user groups capable of efficient and effective disposition.
- **Resolution dialog** offers a powerful, streamlined approach to handling invoice discrepancies where reviewers can disposition a discrepancy based on a set of user-defined reason codes.
- **Self-billing and deals bill-back integration** provides robust integration with the Oracle Retail Merchandising System that supports supplier billing for RTVs, rebates and other deals, consignments, direct store delivery, evaluated receipts, and other non-merchandise billings from obligations and customs entry.
- **Receiver adjustments integration** provides direct updates of receiver cost and quantity adjustments initiated from the matching/resolution process to inventory valuation and positions in the RMS.
- **Best terms date** uses payment terms rankings (predetermined by the user) to identify the invoice or purchase order term best supporting the retailer's cash management objectives. Payment terms and terms date information is exported to the retailer's accounts payable solution to support payment of the invoice.
- **Debit reversals** allows the user to efficiently convert a supplier-disputed debit memo into an editable credit memo with supplier comments for resolution—allowing for flexible handling through the routing process or central processing.
- **Matching tolerances** offers the flexibility to set up tolerances by monetary range, nominal amount, or percent. Separate tolerances can be applied for quantity and cost and for discrepancies in either the retailer's or its supplier's favor. Tolerances are set at supplier, merchandise department, and system levels.

## Integration with Other Applications

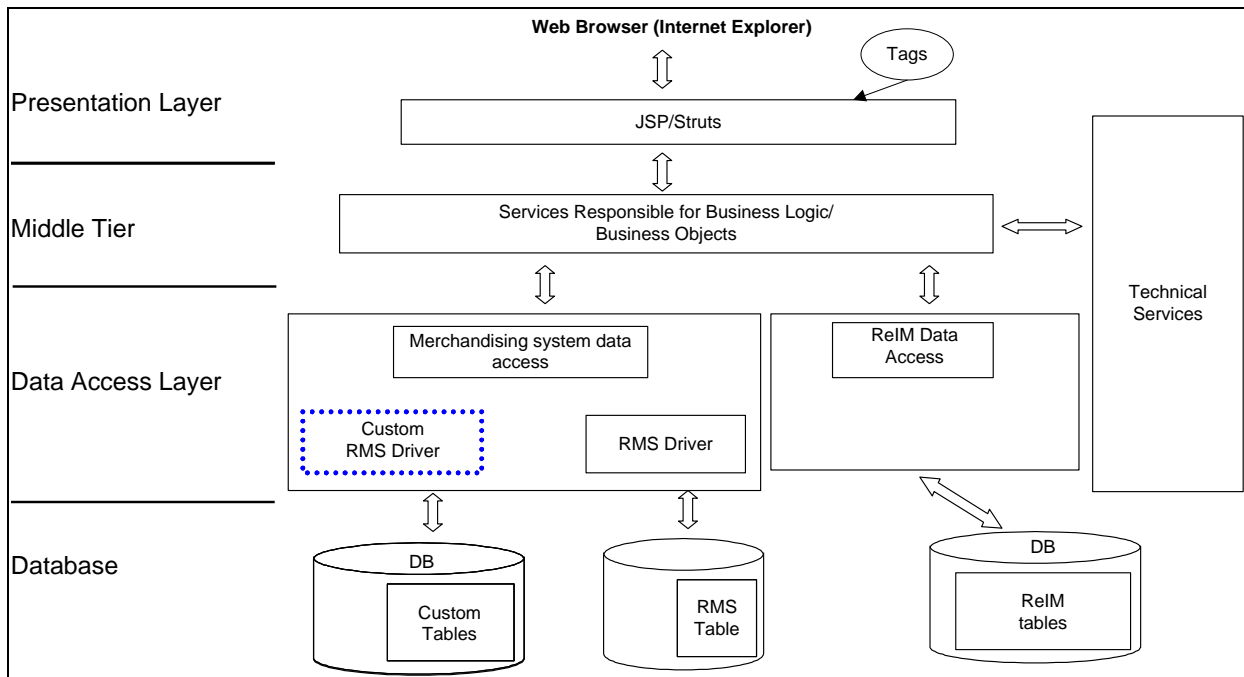
Invoice Matching uses a Java architecture built on a layering model. Layers of the application communicate with one another through an established hierarchy and are only able to communicate only with neighboring layers. The application is divided into a presentation layer, a middle tier consisting of services and business objects, and a database access/driver layer.

The segregation of layers has the following advantages, among others:

- The separation of presentation, business logic, and data makes the software cleaner, more maintainable, and easier to modify.
- The look and feel of the application is more easily updated because the GUI is not tightly coupled to the back end.

- A layered architecture has become an industry standard.
- Portions of the data access layer (DAL) can be radically changed without affecting business logic or user interface code.
- The application takes advantage of Java database connectivity (JDBC), minimizing the number of interface points that must be maintained.
- Market-proven and industry-standard technology is utilized (for example, JSPs, JDBC, and so on).

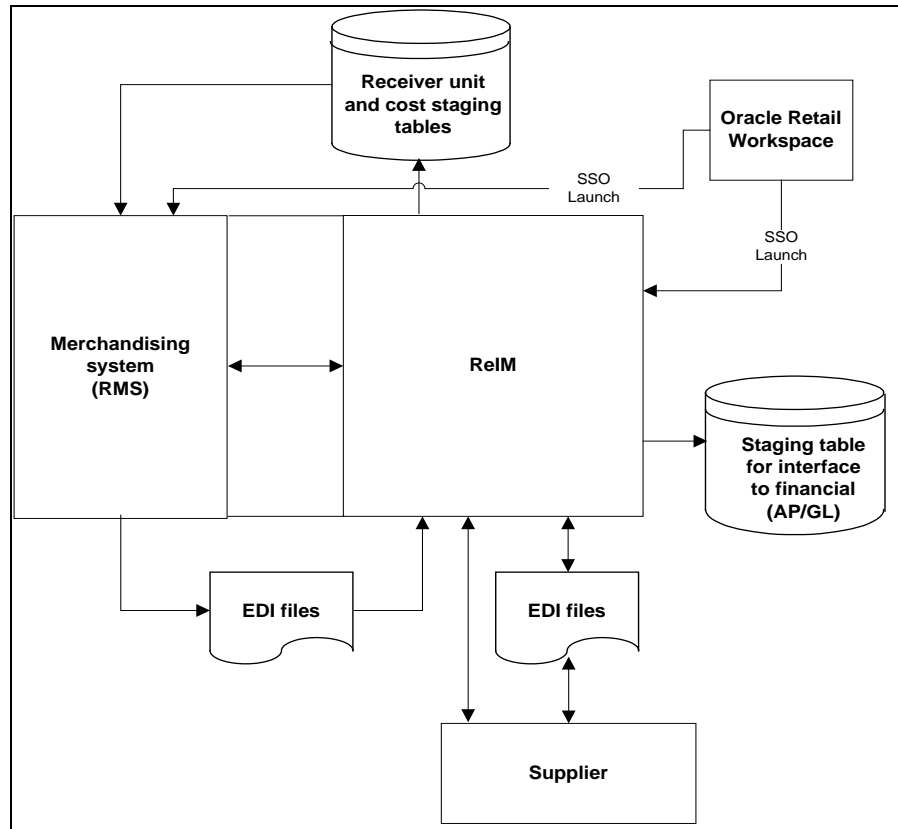
The diagram below illustrates the Invoice Matching architecture:



The Invoice Matching application’s primary purpose is to match invoices so they can be exported to Accounts Payable (AP) to be paid. Invoice Matching has limited interaction with the Oracle Retail Merchandising Operations Management applications with the exception of RMS. RMS is the owner of the information that Invoice Matching needs to match Invoices it receives.

Information from the Invoice Matching application is shared with Oracle Retail Merchandising Operations Management applications through direct reads from Oracle Retail Merchandising Operations Management application tables, calls to Oracle Retail Merchandising Operations Management application packages, Invoice Matching packages based on Oracle Retail Merchandising Operations Management application tables, and batch processes.

The diagram below illustrates how Invoice Matching interacts within a client’s merchandising systems.



ReIM Dataflow across the Enterprise

## Invoice Matching and RMS

This section describes the information provided by the Invoice Matching and RMS applications.

### RMS to Invoice Matching

- **Foundation Data** is essential to all parts of invoice matching, including valid locations for invoices to be executed at, valid suppliers to receive invoices from, supplier addresses to send credits and debits based on invoice matching results, and more.
- **Item** is essential to the invoice matching process as item information ensures that invoices being received are valid for the business. For example an item received on an invoice is carried by the client, is supplied by the supplier who sent the invoice, and is carried in the locations for which the item was received.
- **Purchase Orders** are used by Invoice Matching to facilitate the invoice matching process which is performed at the purchase order location level.
- **Shipments**  
Shipment information is used by Invoice Matching to determine if a PO has been received yet, which affects the matching algorithm used by the AutoMatch batch program in Invoice Match.

- **Deals and Rebate**  
Invoice Matching creates credit memos, debit memos, and credit requests based on deal and rebate information in RMS for processing by the financial (AP) system. This is performed by the ComplexDealUpload and FixedDealUpload batch processes that read from RMS staging tables.
- **Staged Accounts Payable Transactions**  
Accounts payable documents created in RMS for consignment invoices, Obligations invoices, customer entries invoices, payment transactions sent through ReSA, and Return to Vendor chargebacks (either debit memos or credit note requests) are staged to Invoice Matching staging tables in RMS and extracted using the batch EDIDLINV to be loaded as EDI documents into Invoice Matching.

### Invoice Matching to RMS/RTM/ReSA

- **Invoice Matching Results for Shipments**  
Shipment records are updated with the invoice matching results from the invoice match process (this involves updating the match status and quantity matched of the shipments in question). The matching process is handled by the AutoMatch batch process in Invoice Matching, which attempts to match all invoices in ready-to-match, unresolved, or multi-unresolved status.
- **Receiver Cost Adjustments**  
When invoice matching discrepancies are resolved through a Receiver Cost Adjustment, a resolution action is created that initiates a ReIM trigger. The ReIM trigger calls an RMS package that executes the receiver cost adjustment on the affected purchase order and shipments. (Cost adjustments affect all unmatched shipments for the order.) The ReasonCodeActionRollup batch in Invoice Matching verifies the cost adjustment actually occurred.
- **Receiver Unit Adjustments**  
When invoice matching discrepancies are resolved through a Receiver Unit Adjustment, a resolution action is created that initiates a ReIM trigger. The ReIM trigger calls an RMS package that executes the receiver unit adjustment on the affected purchase order and shipment. The ReasonCodeActionRollup batch in Invoice Matching verifies that the unit adjustment actually occurred.
- **Closing Unmatched Shipments**  
Invoice matching closes the invoice matching status for shipments in RMS after a set period of time (defined by the client in system options). This updates the invoice matching status of the shipment on the shipment table in RMS. This process is managed by the ReceiptWriteOff batch program.

### Invoice Matching and RTM

RTM provides the following information to Invoice Matching:

- **Finalized Customs Entry**  
When Customs Entries are confirmed in RTM a non-merchandise invoice is automatically created in Invoice Matching staging tables.
- **Approved Obligations**  
When an Obligation is approved in RTM a non-merchandise invoice is automatically created in Invoice Matching staging tables.

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**Note:** Invoice Matching provides no information to RTM.

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## Invoice Matching and ReSA

ReSA provides the following information to Invoice Matching:

- **Store Level Purchasing**  
Payments for merchandise purchases done at store level are booked against a corresponding merchandise invoice. Payments of non-merchandise purchases or miscellaneous services availed at the store are booked against a corresponding non-merchandise invoice. These transactions are passed from the POS to ReSA as specially-designated PAID OUT transactions. All these invoices are assumed paid. The batch program SAEXPIM transfers the specially-designated PAID OUT type of transactions to the Invoice Matching staging tables for extract to the Invoice Matching application.
- **Escheatment Processing**  
Unclaimed monies of outstanding, non-expiring vouchers are totaled after a defined period from the date of issuance of the voucher and posted to Invoice Matching staging tables as a Non-merchandise Invoice by SAEXPIM. The unclaimed amount is paid out as income to the issuing retailer. In the United States, for some states, it is paid out to the State. ReSA determines who receives this income and accordingly posts a non-merchandise invoice for the partner. These invoices are assumed not paid.

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**Note:** Invoice Matching provides no information to ReSA.

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## Invoice Matching and RPM

Information is not shared between these applications.

## Invoice Matching and Allocation

Information is not shared between these applications.

## Invoice Matching and ARI

ARI is a monitoring system that interacts with any applications database (including Invoice Matching). As such, it does not use any information from Invoice Matching; rather it monitors the Invoice Matching database for events defined by a client and notifies the client when said events occur.

## Invoice Matching and Financial Systems

Invoice Matching exports data to financial staging tables through the FinancialPosting batch program. If integrated with Oracle E-Business Suite, there is a standard interface of data to Accounts Payable and General Ledger. However, if clients use any other financials system, they must create their own interface to deliver this information to the applicable financials system.

## Invoice Matching and External Suppliers

Invoice Matching gets invoices from external suppliers in one of two ways, EDI or hardcopy. When EDI is used the EdiUpload batch program is responsible for uploading the invoice details from the vendor using a standardized file format. When a hardcopy is used, the client needs to manually enter the invoice in the system before matching can proceed.

Notification to suppliers of charge backs and requests for credit notes is provided in a flat file extracted by EdiDownload batch process.

## Invoice Matching Users and Security

Users in Invoice Matching can be set up either using LDAP or the database through the IM\_USER\_AUTHORIZATION table. If clients have existing applications that use LDAP, Invoice Matching can be configured to point toward the retailer's LDAP server to prevent the creation of multiple user IDs for the same user. Retailers must determine which method works best for them during implementation.

Users logging into Invoice Matching are validated against LDAP or the database to authenticate the user prior to beginning an application session. A system administrator is responsible for setting up new users in the system (LDAP or the database).

Once a user has been authenticated, Invoice Matching provides a two-tier security structure to limit the functions and information that they are authorized to use.

### Application Level Security

This security type limits the functionality that users can access in the ReIM application. For Invoice Matching, there are three levels of access:

- **Edit:** The user group has full access to the functionality in question.
- **View:** The user group can access and view information in a functional area, but users cannot alter the information.
- **No Access:** The user group is prevented from accessing the functional area in question.

Application Level Security for ReIM is maintained through the IM\_BUSINESS\_ROLES table and is associated to users through the IM\_BUSINESS\_ROLE\_MEMBER table.

### Data Level Security

This security type limits the information that users can access in ReIM. For Invoice Matching, there are three types of information:

- **Dept/Class:** Limits a user group to performing Discrepancy Resolution functions for specific department/classes. This information is maintained through the IM\_BUSINESS\_ROLES\_DEPT table.
- **Location:** Limits a user group to performing Discrepancy Resolution functions for specific locations. This information is maintained through the IM\_BUSINESS\_ROLES\_LOC.
- **Reason Codes:** Limits a user group to specific reason codes. This information is maintained through the IM\_BUSINESS\_ROLES\_REASON\_CODES table.

Business roles are used to implement the security structure. Business roles are unique to each retailer and must be defined during the implementation effort. Business roles should accurately represent the different types of users that access ReIM and the types of functions and information those roles require.

Business role are set up by using the User Group dialogue, through which users are associated to a respective business role (User Group). The user inherits the security characteristics of that user group. The relationship between a user and a user group is one-to-one.

### Internationalization

See Oracle Retail Invoice Matching documentation for information about the languages supported within the software.



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# Oracle Retail Price Management

This chapter provides an explanation of the Oracle Retail Price Management application.

## Functional Design

Oracle Retail Price Management (RPM) is a highly configurable, strategy based pricing solution that suggests and assists with pricing decisions. RPM empowers retailers to automate and streamline pricing strategies across the organization, yielding a more predictable and profitable outcome. It provides decision support by placing all pricing-focused business information at the retailer's fingertips to validate and approve new retails and markdown suggestions. This approach results in improved margins and strengthened productivity, all while remaining competitive.

RPM supports the creation and execution of manual price changes and clearances. It also provides semi automated pricing functionality through the execution of a pricing strategy. Pricing strategies allow the retailer to define parameters that propose retail prices based on competitive information, margin targets, or clearance objectives.

RPM is part of the Oracle Retail Enterprise footprint. It uses several methods of integration; RIB, Batch, RETL and RSL. RPM is the system of record for all retail pricing. However, it supports the importing of retail pricing from the Store Inventory Management System (SIM) as well as legacy applications.

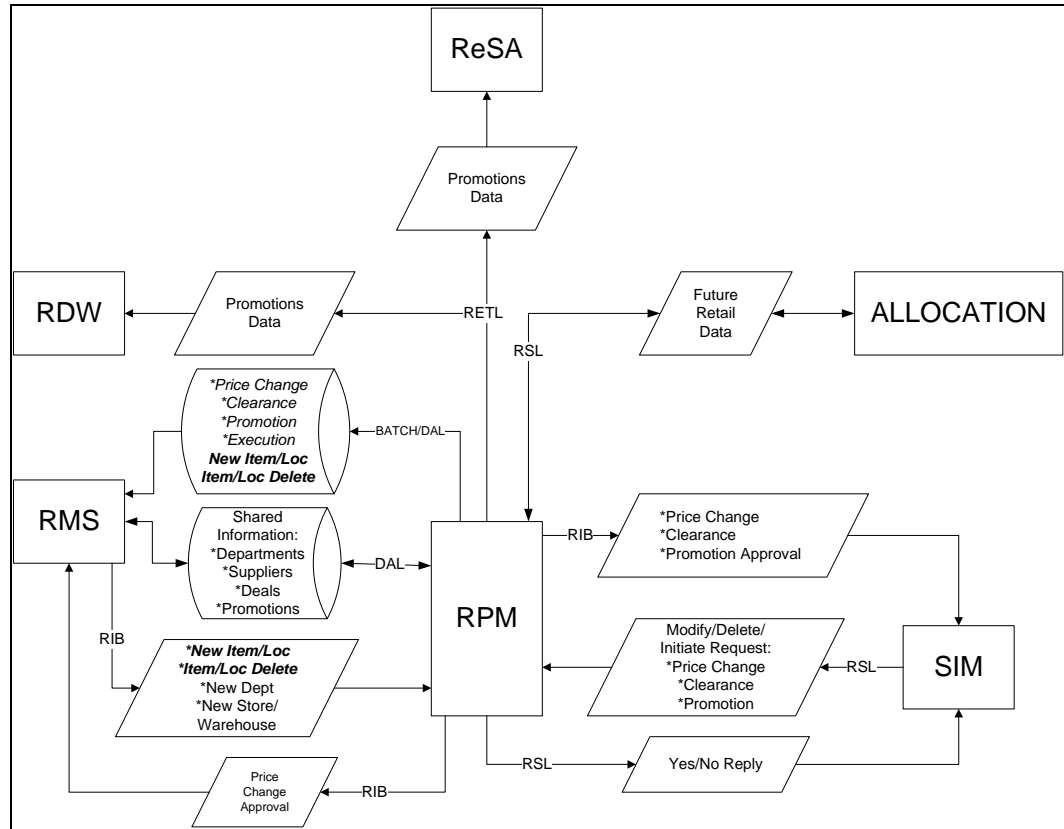
## System Options and Defaults

RPM includes a system options and defaults menu that allows the client to configure system settings as well as default values for certain dialogs. (These are described in detail later in this chapter.) Additionally, there are columns in the worksheet, worksheet status, price change and clearance dialog that can be displayed or hidden at the global level. This hide/show definition does not need to be supported with a GUI. It is important that, during installation and implementation of the application, these system options are reviewed and set based on client business needs and/or preferences.

There are system options and system defaults that exist both in the table and the UI. In addition, listed in each section is a default value for each system option/default field. This default value is populated upon entering the RPM application; however, values are not stored in the database. The user must save the values in the system options user interface to commit the values to the database. This gives the user the options to change the values per business processes before committing any values to the RPM system options table.

## RPM in the Oracle Retail Footprint

The following flowchart illustrates the position of RPM in relation to other Oracle Retail modules:



RPM illustrated as part of the Oracle Retail Footprint

## Foundation Data

During installation and implementation, RPM requires some initial data setup to create and execute price changes, clearances, promotions and pricing strategies. This foundation data includes aggregation level, link codes, market basket codes, zone structures, price guides, calendar, and candidate rules. The following is a general overview of each functional area, including examples of lessons learned in the field. This information is to be used as reference when encountering issues or to avoid issues when implementing RPM.

### Aggregation Data Functional Overview

The merchandise hierarchy allows the client to create the relationships required to support the product management structure of a company. Key information about how inventory is tracked, priced and reported is stored at the department level. It is very important that departments are set up in appropriate order for subsequent systems such as RPM to utilize. Departments are associated to zone groups, which assist in calculating the initial price for an item when created, approved and ranged to a location. The following is important information about using hierarchy information in RPM.

## Adding a New Hierarchy in RMS

When creating merchandise hierarchy in RMS, it is important that the department, class and subclass are set up correctly. Inappropriate setup causes performance concerns in supporting applications such as RPM. Below are the correct and incorrect ways of creating Merchandise Hierarchical data.

### Suggested approach for creating Merchandise Hierarchy in RMS:

- **Department:** The next level below group in the merchandise hierarchy of a company. A group can have multiple departments. Key information about how inventory is tracked and reported is stored at the department level.
- **Class:** The next level below department in the merchandise hierarchy of a company. A department can have multiple classes. A class provides the means to group products within a department.
- **Subclass:** The next level below class in the merchandise hierarchy of a company. A class can have multiple subclasses. A subclass provides the means to classify products within a department/class combination.

Example:

- Department: Active Wear
- Class: Women's Active Wear
- Subclass: Women's Running Active Wear

### Alternative approach to creating Merchandise Hierarchy in RMS:

In this example the department is set up by designer; the department spans all locations. Once used in RPM, it causes performance issues. RPM was intended to support department data in order to create/execute price events under the Oracle Retail definition of what a department is in a retail store.

Example:

- Department: Prada (The department is set up by designer but spans many locations.)
- Class: Prada Women's Apparel
- Subclass Prada: Women's Apparel-Active Wear

## Deleting an Existing Department from RMS

In the event a client is not using the RIB, there is a manual process to ensure department data is deleted properly and appropriate tables are in sync. If a department is deleted from the DEPS table, it should also be removed from the aggregation table in RPM. If the two tables are not in sync, the RPM application errors out with a fatal exception when entering the Aggregation Level user interface.

## Markup Definition

For each Department (or Class or Subclass, if the Primary Zone Group has been defined at either of those levels), the client must specify the Initial Markup Percentage. This is used to determine the initial retail price for new items. Whether this percentage should be applied as a Cost or Retail Markup must be specified.

The markup definition is defined in two places. The first is RMS in the DEPT form. The second is under the Maintain Primary Zone Group Definition. Even though there are two places where the setup can be defined, RPM reads and uses this information in the Maintain Primary Zone Group Definition--and all settings should be controlled there. Therefore, all modifications made to markup % should be done in RPM.

When the Markup Type and Markup percent is NULL for a department or primary zone group does not exist, an embedded system default (DEF\_MARKUP\_TYPE) defaults the markup type to RETAIL(R).

## Link Codes Functional Overview

Link codes should be used for identical items that always share the same retail price (for example, the retailer wants all frozen vegetables to carry the same price). They are used for ease of data entry and considered a point in time price event. Once the link code price event is created and effective, it is considered complete and does not inherit new items/locations.

Link codes can be created at the Zone Group, Zone, or individual location levels and are held at an item/location level in RPM; only one may be assigned per item/location. For link code price changes, the Apply button validates the item/locations for which a price change is being created/edited has link codes attached and prohibits the user from applying the new/edited price change. Once a price change is approved, this validation is not required, as the state of the link when that price change was approved is respected. (The state of the link means which items/locations were affected when the price change was approved--at that point in time). If any of the item/locations in the link code fail conflict checking, the entire link code price change fails conflict checking. The user is not allowed to create a price change through the price change dialogue that affects an item/location that has a link code assigned.

Link code functionality is not available in clearances. For worksheets, there are certain rules that need to be followed to determine how items with link codes should be handled in the worksheet. For each item/zone pulled by the extract program (assuming strategy is setup at a zone level), validation is performed to verify if there are any link codes that exist across all of the locations in the zone for the item. If there are varying link codes across the item/locations, the item is not pulled into the worksheet. A NULL link code counts and is considered different than an item/location that has a link code assigned. Every item in the link at the locations must also be represented in the worksheet, or the item is not pulled into the worksheet.

For price changes created in SIM that affect a link code, the price change must be converted into a link code/location price change so the price change can be created in RPM (that is, the price change fails if it stays in a sku/location form and affects a link code).

## Link Codes and Inheritance

Link codes should be used as a grouping mechanism for items that should be priced the same for a particular price event and assumes all items that exist for the link code at the time the price is effective is represented. Link codes do not inherit price events, nor is the link code dynamic and able to add details. As stated, it represents a point-in-time price event and should not be assumed or used group items for future events, such as new item location, and location move.

- Proper use of a link code  
Create a link with a grouping of cola that should be priced the same for an event. All items exist and when price change is created. New retail price is reflected.
- Improper user of a link code  
Create a link with a grouping of cola that should be priced the same for an event. Create a new item and add to the link code. The link code price change already in effect does not reflect the new item unless a new price change is created.

## Link Codes and Worksheets/Merchandise Extract

Link codes can be used within the worksheet/pricing strategy functionality. The link code must be the same for an item across all locations in the zone, and all items in the link code must be present.

Example:

Primary Area	Secondary Area
Link Code A	Link Code A
Item 1	Item 1
Item 2	Item 2
Item 3	Link Code B
Link Code B	Item 4
Item 4	Item 6
Item 5	Link Code C
	Item 7
Item 6	
Item 7	Item 3
Item 8	Item 8

- A price change to Link Code A should propose a retail for Link Code A in the secondary area. This would apply to items 1 and 2.
- A price change to Link Code B should propose a retail for Link Code B in the secondary area. This would apply to items 4 and 6
- Link Code C does not exist in the primary area and therefore no retail is proposed, it should be thrown out of the secondary area worksheet.
- Item 3 is in the link code in the primary area but is not in the link code in the secondary area. Because item 3 was not an individual item in the primary area, it should not be an individual item in the secondary area and should be thrown out.

- Item 6 was a single item in the primary area but is not in the link code in the secondary area. Item 6 should be represented within the link code in the secondary area and should have its retails proposed from the link code, not the item 6 change of the primary area.
- Item 8 is a single item in the primary area and single item in the secondary. No unique processing is needed.
- If an item does not exist in the primary area but exists in the secondary area but is not a part of any link code in the secondary area, throw it out. There are multiple errors that can be triggered by merchandise extract batch when a link code is not set up properly.

### **Error Descriptions**

- **INVALID\_SECONDARY\_ITEM**

This error occurs when the items in the secondary are mismatched with primary and, therefore, the secondary is not able to receive the primary's proposed retail for that secondary item. To rectify this error, determine whether the following conditions are true:

- Item does not belong to any link code, whereas the same item belongs to a link code in the primary area.
- Item does not exist in the primary area AND does not belong to any link code in the secondary area.
- Item belongs to a link code that does not exist in the primary area.

- **MISSING\_LINK\_ITEM**

This error occurs when one or more item from an item-link code/zone group is missing the entire group is excluded. To rectify this error, consider the following:

- If any one item from a Link code is present in the worksheet, all items in the same Link code must also be present in the worksheet.
- Items sharing the same Link code should have the same Basis UOM.
- Items sharing the same Link code should all have the same Class Vat Indicator settings.
- For Margin and Maintain Margin Strategies, items sharing the same Link code should have the same Margin Market Basket code.
- For Competitive Margin Strategies, items sharing the same Link code should have the same Competitive Market Basket code.

- **VARIABLE\_LINK\_CODE**

This error occurs when the item does not have the same Link Code at all locations in the zone. In order to rectify this, modify your link code to reflect the locations and ensure the link is setup with all locations used in the pricing strategy.

- **VARIABLE\_LINK\_MBC**

This error occurs when the items sharing a market basket code do not have the same Link Code at all locations in the zone. In order to rectify this, compare the items in the market basket code to the item/locations in the link code.

- **VARIABLE\_LINK\_SELLING\_UOM**

This error occurs when the items sharing a link code do not have the same Basis UOM at all locations in the zone. In order to rectify this, verify the basis UOM for all the items in the Link code at the locations in the zone.

- VARIABLE\_LINK\_VAT\_IND

This error occurs when the items sharing a link code do not have the same vat indicator at all locations in the zone. In order to rectify this, check for the existence of the item on the VAT tables in RMS in comparison to the locations.

### Link Codes and New Item Location Batch

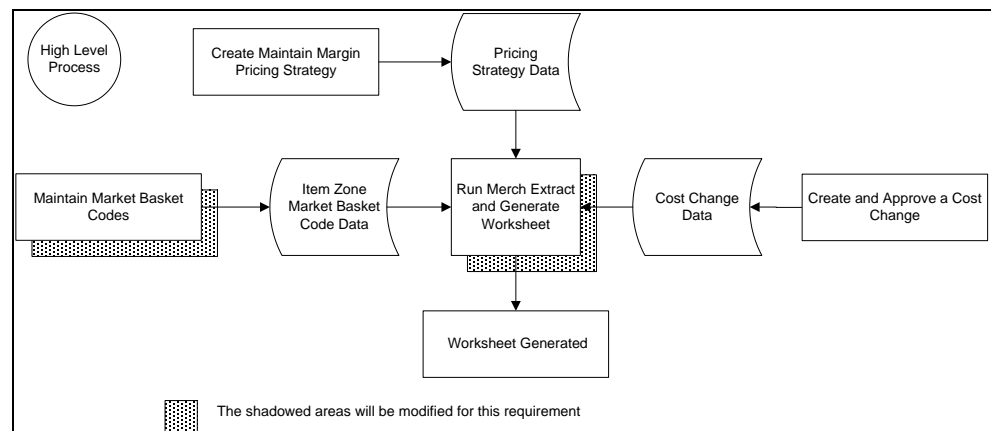
The user must execute the NewItemLocation batch to populate RPM\_FUTURE\_RETAIL with an item location record. When a user creates a link code, the UI utilizes the item location table in RMS to verify the item/location exists. Potential issues can occur when a link code is created after the item is ranged in RMS and populated on ITEM\_LOC but before the NewItemLocation batch has been executed. If a price event is created against the link code before the batch is execute, price events are not reflected since seed data does not exist on the RPM\_FUTURE\_RETAIL table. The correct approach is to range an item, execute the NewItemLocation batch job and then create the link code.

## Market Basket Codes Functional Overview

The maintain market basket codes area allows the client to assign market baskets codes to an item/zone. The items can be associated to the code through the merchandise hierarchy, at the item level, or through item attributes such as diff or diff type. They are used in Competitive Strategies to match, price above or price below the competitor price. Margin and Maintain Margin Strategies can set different targets by market basket code. The market basket codes are used to group items together with similar pricing characteristics. Only one market basket code per item/location can exist.

For example, price all items in the A market basket code at 30% margin while all items in the B market basket code items have a target of 20% margin: A market basket code could group highly competitive or margin sensitive merchandise together. The user can set up two market basket codes per item/zone – one to be used with the Competitive Pricing Strategy, and the other to be used with the new Maintain Margin Pricing Strategy. When the merchandise extract batch program run, the program identifies the pricing strategy being executed and associate the proper market basket code.

Market Basket Codes need to be created and maintained by the Database Administrator (DBA). There is no UI to create the LOV. The table is RPM\_MBC\_LOV\_VALUES. The table includes MKT\_BASKET\_CODE (the market basket code), NAME (description of the code), and TYPE, which indicates if MBC is for Margin strategies (1) or competitive strategy (0). Market Basket Functionality is not available in simplified (SE) RPM. Provide segmentation of items within a strategy.



The high level process is as follows.

1. User assigns market basket codes to item/zones in the new Market Basket Code dialog.
2. User creates a Maintain Margin Pricing Strategy and assigns margin values to the market basket codes.
3. User creates a cost change and approves it in RMS.
4. Merchandise Extract is run and it identifies the cost change in RMS and generates a worksheet using the maintain margin pricing strategy and its corresponding market basket code.

#### **Market Basket Codes and Link Codes**

Items set up in a market basket code also can be in a Link code. The items in the market basket are considered a grouping of items with similar pricing attributes, such as competitive, and within that grouping the items are then instructed to be priced the same within a link code. In this scenario of using a link code/market basket code together, items must have the same Link Code at all locations in the zone in order to avoid merchandise extract batch errors.

### **Zone Structures Functional Overview**

Zone structures in RPM allow you to define groupings of locations for pricing purposes and eliminate the need to manage pricing at a location level. At the highest level, these groupings are divided into categories called zone groups. While these zone groups may be flexibly defined, they are primarily defined by their pricing scheme. The three types of zone groups in RPM are regular zone groups, clearance zone groups, and promotion zone groups. In addition to being defined by pricing, zone groups are defined by the items being priced. The following are examples of zone groups:

- Regular price beverage zone group
- Regular price footwear zone group
- Promotion price beverage zone group

Within zone groups in RPM are groupings of locations (stores and/or warehouses) called zones. The function of these zones is to group locations together in a manner that best facilitates company pricing strategies. These zones may be flexibly defined. For example, the client may choose to create zones based on geographic regions, such as the following:

- US East region
- US West region
- Mexico stores

Similarly, the client may create zones with locations with similar characteristics, such as the following:

- US urban stores
- US rural stores



Contained within zones are locations. These locations can be stores or warehouses.

There are no restrictions on the number of locations a zone can contain. However, there are two rules that apply to the relationship between locations and zones:

1. A location cannot exist in more than one zone within a zone group. A location can, however, exist in multiple zone groups. For example, a New York City store might exist in the US urban stores zone group as well as the US East region zone group.
2. All locations within the same zone must use the same currency.

Once zone groups have been created in RPM, users are able to assign them to primary zone group definitions. The primary zone group definition allows the user to specify the zone structure to use when pricing merchandise hierarchies, and how to initially price items in these hierarchies (markup %, markup type). These definitions can be created at the department, class, or subclass level.

When RMS publishes a new location or Warehouse (*if Warehouses are recognized as locations per a system option*) the message includes a pricing location. RPM takes the pricing location of the new location or WH and attempt to add the new location to every zone group/zone in which the pricing location exists. This includes Regular, Clearance and Promotion Zone Groups. If the Pricing location and the New location are not of the same currency, the new location is added to every Zone Group where the pricing location exists; but the system creates a new zone for the location with the same currency as the new location.

### **RMS Zone Structure and RPM Zone Structure**

There is no relationship between the RPM zone structure and the RMS zone structure. They are entirely independent and do not share identifiers or anything else. Pre-RPM11 the zone structure was owned by RMS. With RPM11 the zone structure moved to RPM. However, a location level zone group (with an ID of 1) was defaulted into RMS during installation. The zone structure forms in RMS were removed so that the defaulted zone structure could not be modified or new zone groups could not be added. In a RMS location level zone groups, every location is placed in its own zone and the zone ID is set equal to the location ID.

The RMS zone structure tables are as follows:

- PRICE\_ZONE\_GROUP
- PRICE\_ZONE
- PRICE\_ZONE\_GROUP\_STORE
- ITEM\_ZONE\_PRICE (changed to a view)

The ITEM\_ZONE\_PRICE table held retail for every item for every zone in the RMS structure. When we dictated that RMS use a location level zone group, this table became a problem with volume (essentially, it held a row for every possible item/location combination in the system). It was changed from being a table to being a view on the ITEM\_LOCATION table to alleviate the volume problem.

### **Empty Zones and Price Events**

A user can create an empty zone and add locations to the zone at a later date. They can create price events against the zone with no locations; however, conflict does not run, and records are not generated on RPM\_FUTURE\_RETAIL or ZONE\_FUTURE\_RETAIL. Therefore, when the new item location batch is executed for items/locations in that zone, nothing is inherited.

### **Open Zone Use and Flexibility**

The Open Zone Use System defines whether or not different Zone Group types can be used in all the pricing dialogs or if the type of the Zone Group limits where it can be used. For example, if set to No (unchecked), then Promotion Zone Groups cannot be used in the clearance and price change dialogs or in the pricing strategies definition. It is recommended during implementation to set this as unchecked or No initially and allow the business team/leadership to decide if this is appropriate or not. It allows great flexibility in how/which zones can be used for certain price events and once checked or set to Yes, it cannot be unchecked.

### **Deleting and Adding a Location after Zone Exists**

When a user adds or deletes a location from or to an existing zone, the location move functionality is leveraged to move that location in or out of the zone. A location move is created in Approved status and moves to scheduled once the scheduling batch is executed. It is important to note that the location is not added to the zone until it is properly moved in or out through a location move which is scheduled automatically when the user presses the delete/add button.

## **Price Guides Functional Overview**

The pricing guide helps users create a uniform pricing strategy. They are used to smooth the proposed retails in order to maintain a consistent set of price points by “rounding” or applying ends in logic to retail values. Pricing guides may be set up at the Corporate or Department level. Department pricing guides can also link into corporate pricing guides. After pricing guides are defined, they can then be used when setting up pricing strategies, creating price changes, creating clearances, creating promotions, and are very useful when performing what-if analysis in the worksheet. The user may edit a pricing guide at any time, regardless of whether it is attached to a strategy, price change, promotion, or clearance. Edited guide details affect only retails derived by the guide from that point on. It does not affect/overwrite any retails that have already been derived based on the old guide details.

## **Calendar**

Calendars are set up in RPM for the primary purpose of attaching them to pricing strategies. Calendars span a user-defined period of time and contain review periods that occur once or many times over the duration of the calendar.

## **Candidate Rules Functional Overview**

This set of rules is run against the items/locations being extracted from the merchandise system to determine if they should be flagged for review. They are defined at the corporate level and can contain variables at the department level. Candidate rules can be inclusive or exclusive. If they are inclusive, and the candidate rule is met, the item/location is flagged in the worksheet. When exclusive candidate rules are met, the item/location is excluded from the review when the merchandise extract program builds the worksheet. Candidate rules can also be active or inactive, allowing the user to suspend rules that are only needed at certain times of the year. Candidate rules are only run against the worksheet the first time the worksheet is created.

**Exceptions:**

Each review period has an indicator stating whether or not to run exceptions. If the indicator is set to Yes, the merchandise extract should tag those Item/Location records that are pulled into the worksheet with an exception flag if any of the following occur during a review period where exceptions are processed: competitor regular retail price changes, cost changes, and new item/location relationships.

For every item/location pulled into the worksheet, RPM attempts to propose a new retail based on the strategy attached to that item/location. When the worksheet is first created, the details of the strategy are saved. Updates to the strategy do not affect any worksheets that are currently being reviewed. The updates are only reflected in worksheets generated after the updates to the strategy are made. Until the worksheet has been locked, new retails should continue to be proposed using the strategy details every night the batch program is run.

**Candidate Rules and Worksheets**

Each review period has an indicator stating what kind of Candidate Rules to run, if any. The options on the calendar are to run only inclusion rules, only exclusion rules, both inclusion rules and exclusion rules, or none of the rules. Each item/location from the strategy to which the calendar is attached should be run against the rules. If the strategy is at the zone level, then any item/location within that zone that meets an exclusion rule should exclude the entire worksheet line item. Also, if there is a primary area that is being brought into the worksheet, the secondary areas attached to the primary area should run through all candidate rules as well.

There are two types of candidate rules that can be run:

- Inclusion (to flag an item on a worksheet as having met a rule)
- Exclusion (to prevent the item from making the worksheet)

For regular price strategies, when an item meets an inclusion rule, the rule column on the worksheet populates and the user can see the rules met. Note that regular price strategies are flags or alerts; no processing takes place against them.

For the clearance strategy, when an item meets an inclusion rule the system is triggered to propose a markdown, and populating the Rule column. The markdown that is proposed is not related to the specific rule that was met, just that the rule was met and clearance proposed. The markdown is based on the clearance strategy and which markdown is next in that item's markdown lifecycle.

All items in the hierarchy level of the worksheet make it into the worksheet (unless they meet an exclusion rule). Candidate rules are applied at the transaction item/location level. If any transaction/location meets a rule we propose the markdown for the transaction/zone. The user can decide if the rule met is inclusive of enough locations in the zone to take action or not. In order to take action against other SKUs in a parent or parent diff (or even a related style) it is important that we have also brought in the other items into the worksheet.

## Candidate Rule Condition Definition Fields

Field Name	Operators	Values
Class	=, <, >, <=, >=, <>	LOV – Classes (Dept must be selected first.)
Clearance	=	Yes / No
Current Margin %	=, <, >, <=, >=, <>	Numeric
Department	=, <, >, <=, >=, <>	LOV—Departments
Diff ID	=, <>	LOV—Diff IDs
First Received Date	=, <, >, <=, >=, <>	Date
Weeks since First Received Date	=, <, >, <=, >=, <>	Numeric
Item #	=, <, >, <=, >=, <>	LOV—(Dept, Class, or Subclass must be selected first.)
Item List	=, <>	LOV—Item Lists
Last Received Date	=, <, >, <=, >=, <>	Date
Weeks since Last Received date	=, <, >, <=, >=, <>	Numeric
Markdown #	=, <, >, <=, >=, <>	Numeric
Margin Market Basket Code	=, <>	LOV—Margin market Basket Codes
Competitive Market Basket Code	=, <>	LOV—Competitive Market Basket Codes
Supplier	=, <, >, <=, >=, <>	LOV—Suppliers
Projected Sales	=, <, >, <=, >=, <>	Numeric
Promotions	=	Yes / No
Replenishment Indicator	=	Yes / No
Retail Label Type	=	LOV—Label type
Retail Label Value	=, <, >, <=, >=, <>	Numeric (Retail Label Type must be selected first.)
Seasonal Sell Thru	=, <, >, <=, >=, <>	Numeric
Season Code	=, <, >, <=, >=, <>	LOV—Season Codes
Phase Code	=, <, >, <=, >=, <>	LOV – Phase codes (Season Code must be selected first)
Sell Thru	=, <, >, <=, >=, <>	Numeric
Package Size	=, <, >, <=, >=, <>	Numeric
Package UOM	=	LOV—UOMs (Package size must be selected first.)
Store On Order	=, <, >, <=, >=, <>	Numeric
Store On Hand	=, <, >, <=, >=, <>	Numeric

Field Name	Operators	Values
Subclass	=, <, >, <=, >=, <>	LOV – Subclasses (Department and Class must be selected first.)
UDA - Value Type	=, <>	LOV—UDAs (Value Type)
UDA - Date Type	=, <>	LOV—UDAs (Date Type)
UDA - Free Form Text	=, <>	LOV—UDAs (Free Form)
UDA Date Value	=, <, >, <=, >=, <>	Date (UDA Date Type must be selected first)
UDA Value	=, <, >, <=, >=, <>	LOV UDA values (UDA—Value Type must be selected first)
VPN	=, <, >, <=, >=, <>	LOV VPNs (Supplier must be selected first.)
Weeks of Sales Exposure	=, <, >, <=, >=, <>	Numeric
WH On Order	=, <, >, <=, >=, <>	Numeric
WH On Hand	=, <, >, <=, >=, <>	Numeric

## Price and Promotion Data

This section defines types of price and promotion information.

### Price Changes

Price changes are the pricing events in RPM that affect the regular retail price. When a price change is created, the following information is specified:

- Item for which the price change applies
- Where the price change is occurring
- How the price is changing
- When the price change takes effect
- Reason for the price change

When price changes are approved in RPM, they are made available to RMS for ticketing purposes.

### Promotions

Promotions are events in RPM that discount the price of an item for a defined amount of time. Promotions are set up to apply to the regular retail price, the clearance retail price, or both, and when the promotion ends, the price reverts back to the retail price or clearance retail if the item/location is on clearance. When a promotion is entered in RPM, the retailer specifies the duration of the promotional price, what kind of promotion takes effect, and to which items/locations the promotional price applies.

### Clearances

Clearances in RPM are defined as a markdown or a series of markdowns designed to increase demand and therefore move inventory out of a store. Subsequent clearances always result in the price of an item decreasing. When a clearance is created, the retailer is specifying the items and locations where the clearance is in effect and the discount or set price for the markdown.

## Promotion Constraints

Users are stopped if they are creating a price change within a set number of days of the start of an approved promotion or vice versa. Conflict checking stops the user from approving the price change or promotion. The number of days is determined by a promotion constraint variable that is stored at the subclass/location level.

When the user runs conflict checking on a price change record, promotion record, or worksheet status record, promotion constraint checks are run. If a promotion constraint is violated, the user sees a conflict in either the price change or promotion dialog, and the price event is not approved. The user is able to optionally select to ignore promotion constraints on individual price change, promotion or worksheet detail record so promotion constraint checks are not performed when conflict checking is run.

## Pricing Strategies

The pricing strategies front end allows a retailer to define how item retails are proposed when pricing worksheets are generated. The strategies are defined at department, class, or subclass in order to represent which items are affected.

RPM offers five types of pricing strategies:

- **Area Differential Pricing** allows retailers to set prices for items at a particular zone or zone group differently than another zone or zone group. The price differential is based on the rules a retailer defines. Area differentials are used when a retailer creates a price change to ensure consistent pricing. Differential pricing cannot be applied to other pricing events, such as clearances or promotions.
- **Clearance Pricing** allows retailers to define the method used to clear merchandise by creating markdowns or a series of markdowns.
- **Competitive Pricing** allows retailers to define a pricing strategy for their items based on their primary competitor's prices. All locations in a competitive pricing strategy must use the same currency.
- **Clearance Default** allows the user to specify clearance defaults as low as the subclass level and apply the subsequent markdowns in the manual clearance dialog. Pricing worksheets are not generated for this pricing strategy.
- **Margin Pricing** allows retailers to define a pricing strategy for items based on margin targets.
- **Maintain Margin Pricing** allows retailers to define the pricing strategy for items based on future cost changes. The proposed retails can be based on current or market basket margin percentages.

## Price Inquiry

Price inquiry is designed to allow retailers to retrieve the price of an item at an exact point in time. This price may be the current price of a particular item or the future price. You can search for prices based on the following search criteria:

- Merchandise hierarchy
- Item
- Zone group
- Zone
- Location
- Location (warehouse or store)
- Date

## Worksheet

The RPM worksheet functionality is designed to allow for the maintenance of automatically generated price change and clearance proposals resulting from the RPM merchandise extract batch program. These proposed price changes/clearances are the product of existing strategies, calendars and item/location information.

## Location Moves

Location moves in RPM allow you to select a location that exists in a zone and move to a different zone within a zone group on a scheduled date. The user chooses to approve the location move. A batch processes all approved location move records, run them for conflict checking and update them to scheduled status. The batch runs immediately before the Location Move Execution batch.

After conflict checking is complete, the process also allows the location to persist most valid pricing events through the move and to smoothly transition out of their old zone pricing strategies into the new zones' pricing strategies. System options provide the user the flexibility to configure location moves.

## Integration with Other Applications

RPM uses a Java architecture built on a layering model. Layers of the application communicate with one another through an established hierarchy and are only able to communicate with neighboring layers. The application is divided into a presentation layer, a middle tier consisting of services and business objects, and a database access/driver layer.

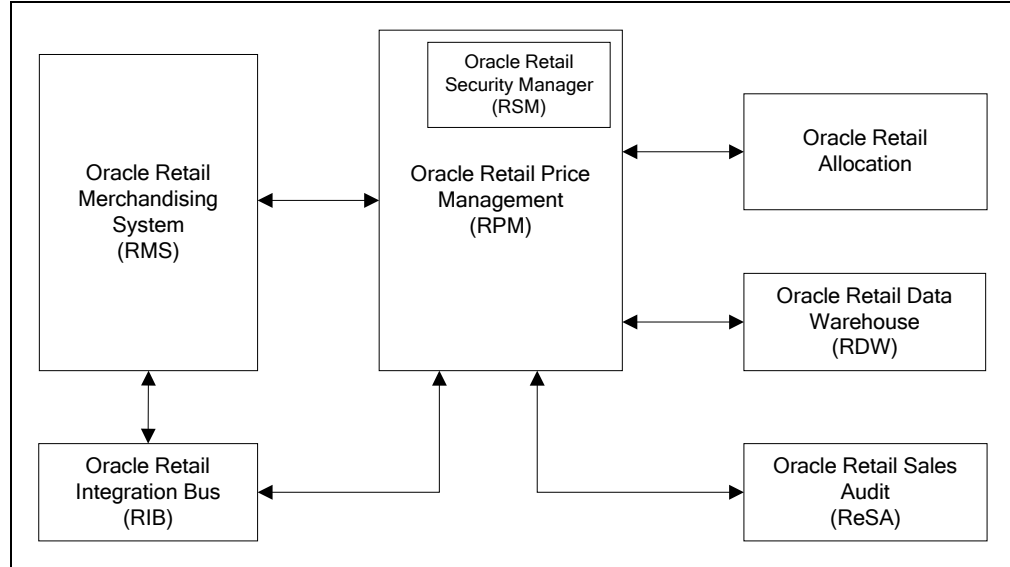
The segregation of layers has the following advantages, among others:

- The separation of presentation, business logic, and data makes the software cleaner, more maintainable, and easier to modify.
- The look and feel of the application is easily updated because the GUI is not tightly coupled to the back end.
- A layered architecture has become an industry standard.
- Portions of the data access layer (DAL) can be radically changed without effecting business logic or user interface code.
- The application takes advantage of Java database connectivity (JDBC), minimizing the number of interface points that must be maintained.
- Market-proven and industry-standard technology is utilized (for example, JSPs, JDBC, and so on).

RPM exists on the same database schema as all the other Oracle Retail Merchandising Operations Management applications. As a result, there are a significant number of options for sharing information between applications

Information from the RPM application is shared with and retrieved from other Oracle Retail Merchandising Operations Management applications by reading directly from Oracle Retail Merchandising Operations Management application tables, by creating RPM views based on Oracle Retail Merchandising Operations Management application tables, by directly calling Oracle Retail Merchandising Operations Management application packages, by allowing other Oracle Retail Merchandising Operations Management applications to call RPM packages, batch processes, and RIB.

The diagram below illustrates the various applications with which RPM interacts in the Merchandising footprint:



## RPM and RMS / RTM / ReSA

RPM and RMS provide a client with flexible options for how to implement both solutions. RPM exists on the same database schema as RMS which allows information to be shared between applications from direct database reads, package calls, and batch processes. RPM also interacts with RMS by using the RIB. RPM offers the flexibility to forgo using the RIB for RMS and RPM installations through the use of a system setting. If RIB functionality is disabled, RPM uses APIs to facilitate the exchange of information with RMS that would otherwise be conducted through the RIB. It is the client's responsibility to disable existing database triggers that support the RIB functionality should they choose not to implement it.

### RPM to RMS (for RIB implementation)

- **Regular Price Change Approval/Modification/Deletion**  
If using the RIB implementation RPM publishes regular price change messages when a regular price change is created, modified, or deleted (for approved price changes). RMS subscribes to this message to generate (or remove if deleting) ticket request information for the regular price change request.
- **Promotional Price Change Approval/Modification/Deletion**  
If using the RIB implementation RPM publishes promotional price change messages when a promotional price change is created, modified, or deleted (for approved promotions). RMS subscribes to this message to generate (or remove if deleting) ticket request information for the promotional price change request.
- **Clearance Price Change Approval/Modification/Deletion**  
If using the RIB implementation RPM publishes clearance price change messages when a clearance price change is created, modified, or deleted (for approved promotions). RMS subscribes to this message to generate (or remove if deleting) ticket request information for the clearance price change request.



- **Price Change Execution**  
When regular, promotional, or clearance price changes are set to go into effect or end the PriceEventExecutionBatch owns the process. Once the pricing event has been processed by the batch program it updates pricing in RMS by interfacing with the RMSSUB\_PRICECHANGE API in RMS.
- **Initial Pricing**  
Initial pricing for items in RMS is dependent upon the primary zone group for the item defined in RPM and characteristics of that zone group. These characteristics include markup percent, markup percent type, and pricing guides. RPM provides this information to RMS through an API (MERCH\_RETAIL\_API\_SQL).
- **Deal Creation**  
RPM creates and associates Deals with regular, promotional, and clearance price changes. When this occurs RPM uses an RMS API (PM\_DEALS\_API\_SQL) to create the deal in RMS.
- **Wholesale/Franchise Item Pricing**  
RPM generates recommended retails for wholesale/franchise partners based on the wholesale/franchise pricing generated by RMS for these stores. This information is used by the Wholesale/Franchise Item Catalog in RMS. This information is maintained on the future retail table and is directly accessed by RMS.

#### **RPM to RMS (for non-RIB implementation)**

- **Regular Price Change Approval/Modification/Deletion**  
When a client is performing a non-RIB implementation, regular price change creation, modification, or deletion triggers a call to an RMS API to generate (or remove if deleting) the ticket request information.
- **Promotional Price Change Approval/Modification/Deletion**  
When a client is performing a non-RIB implementation, promotional price change creation, modification, or deletion triggers a call to an RMS API to generate (or remove if deleting) the ticket request information.
- **Clearance Price Change Approval/Modification/Deletion**  
When a client is performing a non-RIB implementation, clearance price change creation, modification, or deletion triggers a call to an RMS API to generate (or remove if deleting) the ticket request information.
- **Price Change Execution**  
When regular, promotional, or clearance price changes are set to go into effect or end, the PriceEventExecutionBatch owns the process. Once the pricing event has been processed by the batch program it updates pricing in RMS by interfacing with the RMSSUB\_PRICECHANGE API in RMS.
- **Initial Pricing**  
Initial pricing for items in RMS is dependent upon the primary zone group for the item defined in RPM and characteristics of that zone group. These characteristics include markup percent, markup percent type, and pricing guides. RPM provides this information to RMS through an API (MERCH\_RETAIL\_API\_SQL).
- **Deal Creation**  
RPM creates and associates Deals with regular, promotional, and clearance price changes. When this occurs, RPM uses an RMS API (PM\_DEALS\_API\_SQL) to create the deal in RMS.

- **Wholesale/Franchise Item Pricing**  
RPM generates recommended retails for wholesale/franchise partners based on the wholesale/franchise pricing generated by RMS for these stores. This information is used by the Wholesale/Franchise Item Catalog in RMS. This information is maintained on the future retail table and is directly accessed by RMS.

### **RMS to RPM**

- **Foundation Data** information is essential to RPM functionality. To successfully setup price changes RPM needs to know the merchandise hierarchy, the organizational hierarchy, suppliers, and more. RPM is able to access this information through the RMS database.
- **Item**  
Any price change created in RPM ultimately relates to an item/location. RPM needs to know all approved items currently in the merchandising system, the active, discontinued, or inactive item/location relationships for those items, suppliers with which the items are associated, and more. RPM is able to access this information through the RMS database.
- **Competitive Pricing Information**  
Through RPM, retailers can create price changes based off competitive activity in the marketplace. RPM is able to access this information through the RMS database.
- **Deals** can be associated to price changes (including vendor funded promotions) in RPM. In order to associate price changes to an existing deal RPM needs visibility to the deals currently available in the system. RPM is able to access this information through the RMS database.
- **Wholesale/Franchise Item Pricing**  
RMS is responsible for determining wholesale/franchise item pricing which is maintained on the future cost table. RPM uses this information to generate recommended retails for wholesale/franchise business partners.
- **Event Notification**  
To ensure accurate processing, RPM must be notified of selected events that occur in RMS (see below).

### **RMS to RPM (for RIB implementation)**

- **Store/Warehouse Creation**  
When new stores and virtual warehouses are created in RMS, RPM must add them to a zone structure. To do this, RMS provides RPM with the store and/or virtual warehouse being added, its pricing location, and its currency (to ensure it is the same as the zone it is being added to). When retailers use RIB for an implementation, this notification process is handled through message publication and subsequent RPM subscription.
- **Item/Location Creation**  
When new item/location relationships are established RPM needs to verify that no future retail records currently exist, create an initial future retail record (for sellable items), and determine if there are any existing price changes that affect the item resulting in a future retail record for the price change as well. When retailers use the RIB for an implementation, this notification process is handled through message publication and subsequent RPM subscription.

- **Item Modification** is used to notify RPM when an item has been reclassified. The details of the reclassification are written to an item modification table in RPM for the next batch processing run. When a client is using the RIB for an implementation, this notification process is handled through message publication and subsequent RPM subscription.
- **Department Creation** event is used to notify RPM when new departments are created in RMS. RPM creates aggregation level information for the new department using predefined system defaults. When a client is using the RIB for an implementation, this notification process is handled through message publication and subsequent RPM subscription.

### RMS to RPM (for non-RIB implementation)

- **Store/Warehouse Creation**  
New stores and virtual warehouses created in RMS must be added to a zone structure through RPM. To do this RMS provides RPM with the store and/or virtual warehouse being added, its pricing location, and its currency (to ensure it is the same as the zone it is being added to). When a client is using a non-RIB implementation a store/warehouse creation event in RMS triggers an API call to RPM to execute the necessary processing through a batch process.
- **Item/Location Creation**  
When new item/location relationships are established RPM needs to verify that no future retail records currently exist, create an initial future retail record (for sellable items), and determine if there are any existing price changes that affect the item resulting in a future retail record for the price change as well. When a client is using a non-RIB implementation, an item/location creation event in RMS triggers an API call to RPM to execute the necessary processing through a batch process.
- **Item Modification** is used to notify RPM when an item has been reclassified. The details of the reclassification are written to an item modification table in RPM for the next batch processing run. When a client is using a non-RIB implementation, an item modification creation event in RMS triggers an API call to RPM to execute the necessary processing through a batch process.
- **Department Creation** is used to notify RPM when new departments are created in RMS. RPM creates aggregation level information for the new department using predefined system defaults. When a client is using a non-RIB implementation a department creation event in RMS triggers an API call to RPM to execute the necessary processing through a batch process.

### RPM and RTM

No information is exchanged.

### RPM and ReSA

RPM provides ReSA with Promotion Information through a RETL extract program. It is used by ReSA to validate promotional sales transactions.

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**Note:** ReSA provides no information to RPM.

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## RPM and Oracle Retail Allocation

RPM provides the following to Allocation:

- **Future Retail Price Data**  
Allocation uses future retail price data stored in RPM to provide the total retail value of an allocation. This interface is optional for a retailer and must be configured during implementation. Oracle Retail Allocation uses an API to access this information from RPM.
- **Promotions**  
Users in Oracle Retail Allocation can select a promotion from RPM to associate an allocation with.

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**Note:** Allocation provides no information to RPM.

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## RPM and ReIM

No information is exchanged.

## RPM and ARI

ARI is a monitoring system that interacts with any applications database (including RPM). As such it does not use any information from RPM; rather, it monitors the RPM database for events defined by a client and notifies the client when said events occur.

## RPM and RDW

RPM provides promotion information to RDW through a RETL extract program (prcilddm.ksh).

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**Note:** RDW provides no information to RPM.

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## RPM Users and Security

RPM has its security managed through an internal system, RSM. RSM is the part of the RPM application that provides a centralized method of authenticating and authorizing system users.

RSM uses a directory service that complies with Light Directory Access Protocol (LDAP) to maintain and authenticate valid users. It is the system administrator's responsibility to ensure all users are setup in LDAP. If a client has an existing LDAP server where users are currently managed, RSM can be pointed to that server to eliminate the redundancy of maintaining multiple user names/passwords for the same user across a clients applications.

RSM provides a two-tier security structure that consists of application and data level security. RSM provides centralized administration screens for system administrators to create application and data level permissions.

## Application Level Security

Application level security allows applications to limit the business functionality users can access in the system and how they can interact with those functions. To determine the business functionality a user can access, RSM uses named permissions.

Named permissions are pieces of business functionality around which the application has security. For example, if RPM has Promotions functionality surrounded by security, RPM creates a promotions named permission. Named permissions data is sent to the RSM database during installation.

To determine the actions a user can perform for the named permissions, RSM has defined actions for each named permission.

Actions define how the user interacts with the functionality contained by the named permission. The types of actions attached to a named permission are as follows:

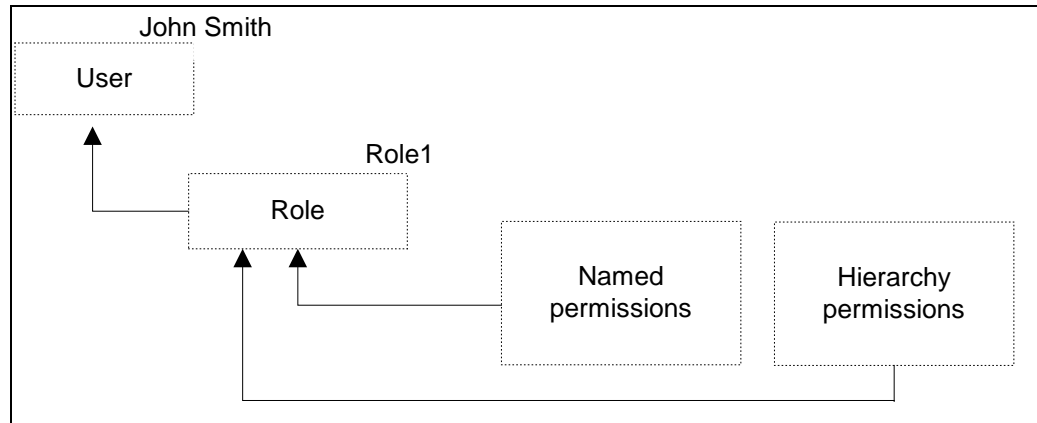
- **None:** Users associated to the role have access to the permission but no actions.
- **Edit:** Users associated with the role are allowed to see all secured information in a workflow.
- **View:** Users associated with the role are allowed to see all secured information in a workflow, but not make any changes to the data in the workflow.
- **Approve:** Users associated with the role are allowed to change the status of a workflow to Approved.
- **Submit:** Users associated with the role are allowed to change the status of a workflow from Worksheet to Submitted.
- **Emergency:** Users associated with the role are granted special access that goes beyond normal day-to-day access functionality. They can thus bypass normal delays in processing.

Using named permissions and actions, RSM provides a requesting application (RPM in this case) with the application access information it needs to determine what security is enforced for each functional area within the application.

## Data Level Security

This allows applications to limit users' access to information based on hierarchy (merchandise and location) permissions. Applications either provide the details of these types up front with SQL scripts or dynamically by implementing an RSM interface and exposing it to the RSM service. RSM does not understand application specific data (for example, RSM does not know the difference between departments and locations). To RSM, the data is a tag (for example, department) and a specific value (for example, 1000). This information is passed back to calling applications, and it is the applications responsibility to apply the data level permissions appropriately.

Once application and data level security parameters are defined in RSM, they still need to be associated to users based upon their business roles. To facilitate this process RSM allows a system administrator to create security roles which application and data level security can be associated with. These roles can then be associated with users which causes the users to inherit the security permissions associated with their security role. When a user logs onto RPM, the user is authorized to use the business functionality and data associated with their role. The following diagram illustrates this concept.



## System Options

All of the system options listed below may be viewed and edited through RPM UI.

### Allow Complex Promotions

System Option name: RPM\_SYSTEM\_OPTIONS.COMPLEX\_PROMO\_ALLOWED\_IND

When checked, this field is restricted or disabled in the UI. This system option defines whether complex promotions can be created and maintained. If the indicator is checked or set to Yes, then all promotion types are available. If the indicator is set to unchecked or set to No, then only simple item and simple hierarchy type promotions can be defined, and threshold and multi-buy should not appear in the promotions dialog

#### Business Example

This system option would be beneficial for those clients who choose to utilize only simple promotions. When indicator is unchecked, only promotion component type, Simple, appears to the user. If checked, all promotion component types exist.

Valid values: 0 - No (unchecked); 1 - Yes (checked)

Default value: 1 - Yes (checked)

### Allow ItemList Explode

This system option gives the user the option to select whether the item list should be exploded to the item level or left at item list level.

Valid values are:

Y – Yes (checked). Two options are provided in the Item Level field: Item List and Item (when Item Type = Item List)

N – No (unchecked). Item Level could only be Item List (when Item Type = Item List)

The default value is N (unchecked).

## Apply Promotion Change Type First

System Option name: RPM\_SYSTEM\_OPTIONS.PROMO\_APPLY\_ORDER

When RPM is installed and system options are saved, this field is restricted or disabled. This system-level indicator is used to assist in the determination of appropriate application order for promotions and components. It is used when higher-level rules and indicators cannot determine which promotion or component should be applied before another and only used for the following scenarios:

- None of the components involved have a Fixed Price change type.
- Both of the components or promotions have the same ordering indicator setting (either primary or both secondary) and one component has a change type of % Off and one has a change type of Amount Off. The system level indicator determines, across the company, whether promotion components with a Change Type of % Off or Amount Off should be applied first in relation to the other Change Type. This indicator is used only for determining application order between components with these two change types, as components with other change types are governed by other rules.

### Business Example

If two promotions each have two components, and one of the promotions has two components with the preferred change type of Amount Off, and the other promotion only has one component with the preferred change type of Amount Off, the promotion with two components with the preferred type of Amount Off is applied first.

The user makes a setting at the system level to specify whether percent off components are applied before Amount Off components or vice versa. This is a setting that can be changed over time and applied to situations at the time of component approval. However, it can only be updated when there are not any approved or active promotions in the system. If there are any approved or active promotions, this indicator is disabled. In the event a change is made to this system option setting, the change in ordering is not applied to existing situations where multiple components are already approved. It is applied only when new components are approved.

Valid values: % off; Amount off

Default value: Amount off

## Clear/Promotion Overlaps

System Option name:

RPM\_SYSTEM\_OPTIONS.CLEARANCE\_PROMO\_OVERLAP\_IND

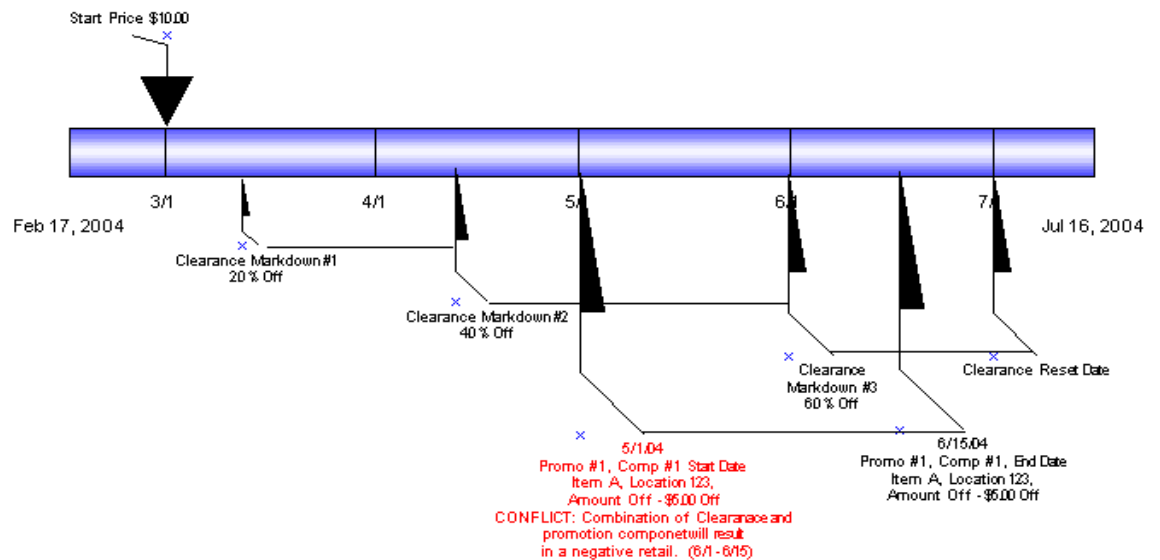
When checked, this field is restricted or disabled in the UI. This system option defines whether or not an item/location can be on clearance and promotion at the same time. If the clearance/promotion overlap indicator is checked (or set to Yes), the discount of the promotion is applied to the clearance retail of the items on clearance, not the regular price.

If the promotion change type is set to Fixed Price, the item can only have the fixed price assigned that is lower than the clearance retail. If the clearance change takes place during the promotion, the promotional markdown decreases when the clearance goes into effect.

If the clearance/promotion overlap indicator is unchecked or No, clearance price changes cannot be submitted or approved where the effective date of the first markdown falls on or after the start date or on or before the end date of an approved promotion, hence the clearance items cannot be promoted until the clearance resets. When this indicator is set to No, promotions cannot be submitted or approved where the item/locations currently exist on an active clearance or if the promotion start and end dates conflict with a pending approved clearance.

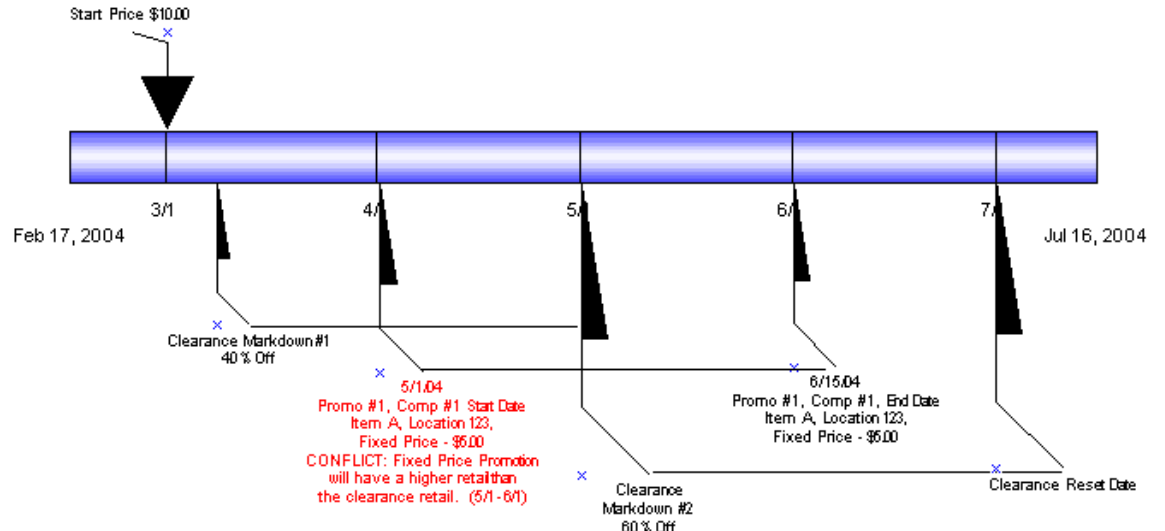
### Business Examples

The clearance/promotion overlap indicator is set to Yes. The user attempts to submit a promotion component that results in the retail being negative, this fails conflict checking processes. The approved clearance exists for the same item/location as the promotion, therefore when both the clearance and the promotion component being submitted are applied; the retail is less than \$0.00 at some date and cause a conflict. This example illustrates that even with clearance/promotion overlap system capabilities, conflicts can be encountered.

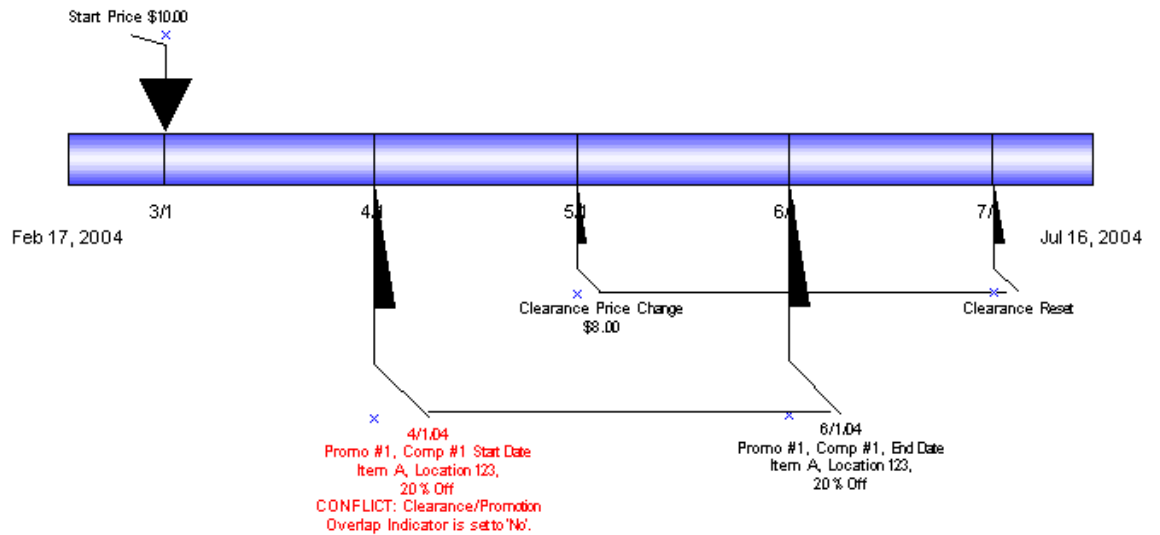


Clearance/promotion overlap indicator is set to Yes. The user attempts to submit a Fixed Price promotion component with an Apply to Type of Clearance and Regular that results in a promotional retail higher than the clearance retail at some date. Approved Clearance exists for the item/location with a lower Clearance retail than the Fixed Price Promotional retail of the component being submitted.





Clearance/promotion overlap indicator is set to No. The user attempts to submit a promotion component with an Apply to Type of Clearance and Regular that overlaps dates with an existing approved Clearance for the same item/location fails Conflict Checking.



Valid values: 0 - No (unchecked); 1 - Yes (checked)

Default value: 1 - Yes (checked)

## Cost Calculation Method

System Option name: RPM\_SYSTEM\_OPTIONS .COST\_CALCULATION\_METHOD

The cost calculation indicator contains a drop down with these options: Average Location Cost and Highest Location Cost When zones are represented in a price event. This value is used to determine the cost for a zone. The cost is held at location level; therefore, either the highest cost across the locations in the zone or the average (non-zero) cost should be used.

### Business Example

In RPM, the cost calculation method system option is set to Average Location Cost.

A price change is created at the zone level; there are five locations at a cost of 10.00 for four locations and 12.00 for the fifth location. The cost in the price change apply block UI is illustrated as an average cost or an average of the five locations and is totaled from the FUTURE\_COST table in RPM.

Valid values: 0 - Average Location Cost; 1 - Highest Location Cost

Default value: 0 - Average Location Cost

## Default Out of Stock Days

System Option name: RPM\_SYSTEM\_OPTIONS .DEFAULT\_OUT\_OF\_STOCK\_DAYS

This system option defines the number of days that should be added to an item clearance effective date in order to calculate the out of stock date. This default is only applied to generate the out of stock date when the clearance is first created. Existing out of stock values are used for subsequent markdowns.

### Business Example

The default out of stock system option is set to 30. A user creates a department zone level clearance. The VDATE is 1/1/11; the effective date is 1/3/11. The out of stock field defaults to 2/2/11.

Valid values: 1-999

Default value: 120

## Default Reset Date

System Option name: RPM\_SYSTEM\_OPTIONS .DEFAULT\_RESET\_DATE

This system option defines whether a reset date should be defaulted when a clearance is created. When system option is set to No or unchecked, the reset date is NULL or blank in the create clearance dialogue. However, the user can still manually enter a reset date. When the system option is set to Yes or checked, the reset date is defaulted to one day greater than the out of stock date, the user can edit or delete the defaulted date. Reset date defaults one date per item/location.

**Business Example**

The default out of stock system option is set to 30 and default reset date system option is checked. A user creates a department zone level clearance. The VDATE is 1/1/11; the effective date is 1/3/11. The reset defaults the date to one day greater than the out of stock date (2/1/11).

Valid value: 1

Default value: NULL

**Display and/or Condition**

System Option name: RPM\_SYSTEM\_OPTIONS.DISPLAY\_OR\_CONDITION

In the multi-buy promotion type, the user is able to use and/or selections in the buy and get lists. For example, buy a sandwich or a wrap and chips and get a pop for 50 cents off or a cookie for \$1.00 off. The option to select the OR condition is controlled by the DISPLAY\_OR\_CONDITION system option. If system option is checked, the system displays the and/or conditions in the UI. The system defaults to AND. If system option is unchecked, it displays only the AND condition in the multi-buy promotions UI.

**Business Example**

A multi-buy promotion is setup for the below scenario. In order to allow the OR condition the Display AND/OR Condition system option should be checked or Yes to add the OR condition to the multi-buy conjunction dropdown.

Buy a sandwich or a wrap and chips and get a pop for 50 cents off or a cookie for \$1.00 off. The user would set up the above example in the following manner:

- Buy List 1(sandwich) OR Buy List 2(wrap) AND Buy List 3(chips) for ->
- Reward 1 (.50 cents off) OR Reward 2(cookie 1.00 off)

Valid values: 0 - No (unchecked); 1 - Yes (checked)

Default value: NULL

**Display Conflicts Only**

System Option name: RPM\_SYSTEM\_OPTIONS.DISPLAY\_CONFLICTS

When this checkbox is selected, only conflicts appear on the conflict review screen. The CONFLICT\_HISTORY\_DAYS\_BEFORE and CONFLICT\_HISTORY\_DAYS\_AFTER system options are dependent on the user's selection of the Display Conflicts system option. If the Display Conflicts system option is not checked, the # Days Event Displayed before VDATE (effective date) and # Days Event Displayed after VDATE is enabled, and the user must specify values. If the system is checked, the # Days Event Displayed before VDATE (effective date) and # Days Event Displayed after VDATE is disabled.

Valid values: 0 - No (unchecked); 1 - Yes (checked)

Default value: Yes (checked)

**Days Event Displayed before VDATE**

System Option: RPM\_SYSTEM\_OPTIONS.CONFLICT\_HISTORY\_DAYS\_BEFORE

This option defines the number of days before an effective date that a pricing event appears in the conflict review window. It enables only when the Display Conflicts Only indicator is not checked.

Valid values: 0 - No (unchecked); 1 - Yes (checked)

Default value: NULL

**Days Event Displayed after VDATE**

System Option: RPM\_SYSTEM\_OPTIONS.CONFLICT\_HISTORY\_DAYS\_AFTER

This option defines the number of days after an effective date that a pricing event appears in the conflict review window. It enables only when the Display Conflicts Only indicator is not checked.

Valid values: 0 - No (unchecked); 1 - Yes (checked)

Default value: NULL

**Display Full Price Change/Clearance Column Detail**

System Option name: RPM\_SYSTEM\_OPTIONS.FULL\_PC\_COL\_DETAIL

This option limits the data that is displayed in the price change/clearance detail maintenance form. When the user applies item/loc discount detail to a price change/clearance the system populates the price change/clearance maintenance tables. Now when the user populates the detail maintenance screen from an Apply action, only a portion of the columns in the table are populated. If the user wants to review the details for the remaining columns, which tend to be the performance intense fields, the user can do so by selecting rows and requesting the additional data.

**Business Example**

The display full price change/clearance column detail indicator is checked. The user creates a price change and applies the record.

Valid values: 0 - No (unchecked); 1 - Yes (checked)

Default value: 0 - No (unchecked)

**Display Full Promotion Column Detail**

System Option name: RPM\_SYSTEM\_OPTIONS.FULL\_PROMO\_COL\_DETAIL

This option limits the data that is displayed in the promotion component detail maintenance form. When the user applies item/loc discount detail to a promotion component the system populates the Promotion Component Detail Maintenance table. Now when the user populates the detail maintenance screen from an Apply action, only a portion of the columns in the table are populated. If the user wants to review the details for the remaining columns, which tend to be the performance intense fields, the user can do so by selecting rows and requesting the additional data.

Valid values: 0 - No (unchecked); 1 - Yes (checked)

Default value: 0 - No (unchecked)

## Dynamic Area Differentials

System Option name: RPM\_SYSTEM\_OPTIONS.DYNAMIC\_AREA\_DIFF\_IND

Within the Area differential pricing strategy, this system option controls the ability to modify a secondary zone retail price after a primary zone has been approved. If the checkbox is checked (Y), the batch program Merchandise Extract creates all records, both primary and secondary areas, in New status. If a proposed retail is not available for the primary area, the secondary records should be calculated using the basis retail of the primary area or competitor retail (whichever is lowest). The worksheet dynamically updates the secondary locations based on changes to the primary location and the user can edit the secondary areas regardless of the status of the primary records. If the checkbox is not checked (N), the batch program Merchandise Extract creates secondary locations in pending status, and the user cannot edit the secondary locations in the worksheet until the primary area has been approved.

This system option is also responsible for controlling the ability to layer competitive strategies onto an Area Differential Strategy. If the option is checked (Y), a competitor can be added to the area differential strategy for the secondary zones; the suggested retail price is the lower price of the two strategies, Area Differential and Competitive. The competitor information setup is not applied in the Price Change dialogue when calculating the proposed retail for a secondary area. The competitor information is use only in the Merchandise Extract batch job and worksheet functionality.

### Business Example

	Zone Group ID	Zone	Rule	%
Primary	1000	1000		
Secondary	1000	2000	Percent Higher	5
Secondary	1000	3000	Percent Lower	5

Note the proposed retails are displayed based on the percent higher or lower for the secondary locations.

Primary	Margin Strategy:	10%
	Item A Cost:	4.55
Secondary	Competitor Strategy:	None
	Pricing Guide:	None

	Item	Zone	Basis Retail	Proposed Retail
Primary	A	1000	4.7	5
Secondary	A	2000	4.8	5.25
Secondary	A	3000	4.9	4.75

Valid values: 0 - No (unchecked); 1 - Yes (checked)

Default value: 0 - No (unchecked)

## Ends in Digits for Zero Decimal Currencies

System Option name: RPM\_SYSTEM\_OPTIONS ZERO\_CURR\_ENDS\_IN\_DECS

When RPM is installed and system options are saved, this field is restricted or disabled. This value is used in the Price Guides dialog when a currency is specified that does not contain digits following the decimal in the format. The number selected determines the number of digit fields that should be available in the Ends In definition area.

Valid value: 0-4

Default value: 0

## Event ID Required

System Option name: RPM\_SYSTEM\_OPTIONS .EVENT\_ID\_REQUIRED

When unchecked, this field is restricted/disabled in the UI, because the restriction cannot be added after promotions have been created. If this value is set to Yes (checked), then when a promotion is created an Event ID MUST be assigned to the promotion and validation occurs in the promotions definition dialog. If the value is set to No (unchecked), promotions not tied to events can be created.

Valid values: 0 - No (unchecked); 1 - Yes (checked)

Default value: 0 - No (unchecked)

## Exact Deal/Funded Promotion Dates

System Option name: RPM\_SYSTEM\_OPTIONS.EXACT\_DEAL\_DATES

When checked, this field name restricted/disabled in the UI. This option defines whether or not the dates of a deal associated with a vendor funded promotion must match exactly. If the indicator is set to Y, then only deals with the same begin and end dates as the promotion component being created appears in the deal LOV in the vendor funded promotions dialog. In the event the indicator becomes selected or checked, it becomes disabled and cannot be modified or unchecked since the restriction cannot be added after promotions and deals have been associated.

### Business Example

If the Exact Deal/Funded Promotion Dates indicator is checked, the user creates a promotion with components start and end dates from 4/1/11 to 4/15/11. Any funding that is created for the component must fall within the promotion component start and end dates.

Valid values: 0 - No (unchecked); 1 - Yes (checked)

Default value: 0 - No (unchecked)

## Filter Price Change/Clearance Results

System Option name: RPM\_SYSTEM\_OPTIONS.FILTER\_PRICE\_CHANGE\_RESULTS  
 This system option determines whether the Maintain Price Change/Clearance screen should go to the intermediate result screens or directly to the Price Change/Clearance Editor screen.

Valid values: 0 - No (unchecked); 1 - Yes (checked)

Default value: Yes (checked)

## Inherit New Zone's Regular Retail

System Option name: RPM\_SYSTEM\_OPTIONS.LOC\_MOVE\_PRICE\_CHANGES

When a location move occurs, users can determine whether or not the moving location should inherit the new zone's retail based on the setting of this system option. When checked, the location inherits the new zones retails, else if unchecked the zone keeps the existing retail as base is today. When the system option specifies that the location automatically gets the new zones regular retail, the following happens for the execution of the location move:

- A location level price change is created with a unique reason code that identifies that the price change was created because of a location move being scheduled. The retail price on this price change is equal to the items basis zone level retail of the new zone, if there is one. If the zone is not part of the primary zone group, there is no zone level retail for the item and a price change is not created. When a price change cannot be created because there is no zone level retail, it is reported to the user. If the current locations retail already equals the zone level retail of the new zone, a price change must be created for location or zone level retail changes during the execution of the location move (see Execution notes).
- This price change has an effective date equal to the execution move date.
- The price change is created and goes through conflict checking. If it passes conflict checking, it is set to Approved. If it fails conflict checking, the price change is created but left in worksheet status. The user is notified that it could not be approved.
- Once the price change is created in approved status, it is reported to the store through the existing RIB message structure only if the new zones retail is different than the locations previous retail.
- The price change can be edited through the UI after the move is executed.
- The price change has a system generated reason code.

Valid values: 0 - No (unchecked); 1 - Yes (checked)

Default value: No (unchecked)

## Location Move Lead Time

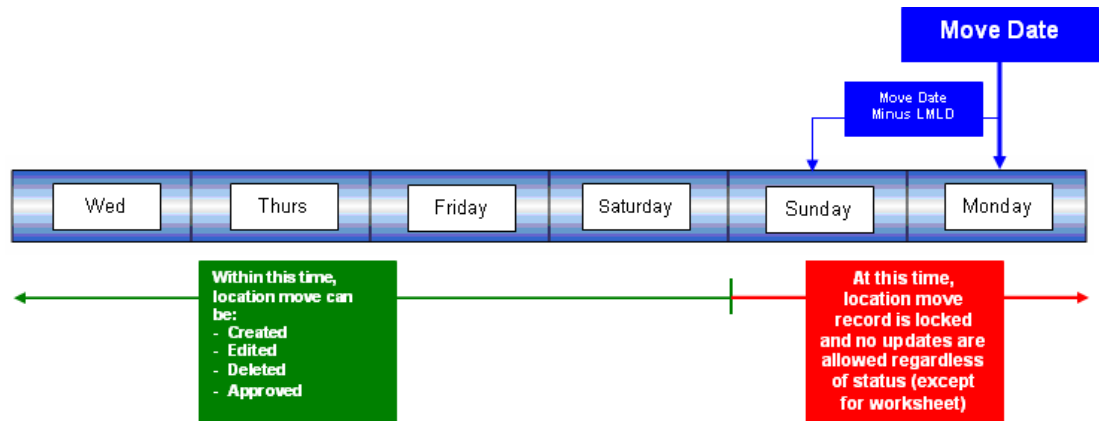
System Option name:

RPM\_SYSTEM\_OPTIONS.LOCATION\_MOVE\_PROCESSING\_DAYS

This field is used to control the number of days from the current date the user is allowed to enter a location move effective date. The minimum value allowed is 1. The earliest effective date that can be selected as the effective date is VDATE + LMLD (Location Move Lead Days). For example, if Location Move Lead Days is set to two days, then the earliest location move effective date that can be set up is two days from today.

### Business Example

If a location move in failed or approved status has a move date that has already passed the VDATE + LMLD (Location Move Lead Days), then the location move record is locked and no updates are allowed. When users try to update an expired location move record, the following error message is issued: “Effective date of scheduled move cannot be less than today plus Location Move Lead Time.” Updates to an expired location move record in any status is not allowed. The following is the illustration of the timeline.



If a location move in worksheet status has a move date that has passed the lockout period (VDATE + LMLD), users get a warning message when trying to edit this record. A warning message is displayed: “Date is out of range.” Users are still able to make changes to this record but a valid new effective date needs to be re-entered before the batch can process it.

Valid values: 1-999

Default value: 1

### Location Move Purge Days

System Option name: RPM\_SYSTEM\_OPTIONS.LOCATION\_MOVE\_PURGE\_DAYS

This system option defines the number of days to wait when purging location move requests. The PurgeLocationMovesBatch program deletes location moves based on their effective date. Location moves are purged regardless of whether they have been executed. Location moves are purged when their effective date is LOCATION\_MOVE\_PURGE\_DAYS days in the past.

### Business Example

If a Location Move Purge Days is set to two days, then the earliest location move effective date that can be deleted is two days in the past from today/ VDATE.

Valid values: 1-999

Default value: 1



## Maximum Number of Buy Lists

System Option name: RPM\_SYSTEM\_OPTIONS.MAX\_BUY\_LISTS

This system option gives the user the flexibility within the multi-buy promotion functionality to control the number of buy or reward lists within 1 promotion component.

### Business Example

The maximum number of buy lists system option is set to 4. Therefore, a multi-buy/meal deal promotion can be set up for 1 component.

- Buy List 1 – Sandwiches
- Buy List 2 – Soda
- Buy List 3 – Chips
- Buy List 4 – Cookies

The addition of Buy list 5- Candy would trigger this message to the user: “The maximum number of Buy lists has been exceeded for a single promotion component. A new list can't be added.”

Valid Value: 1-999

Default value: 4

## Maximum Number of Promotion Component Details

This system option can restrict the promotion component detail user interface to a predetermined limit. The option is named Maximum Number of Promotion Component Details per Promotion Component. Limitations on the number of promotion component details affect any possible way in which a user can create promotion component details. Item lists, parent, parent diff, or transaction-level item/location combinations that are exploded to the item/location level are controlled through the value set for this system option.

The default setting is 500.

## Maximum Number of Overlapping Promotion Component Details

System Option name: RPM\_SYSTEM\_OPTIONS.MAX\_OVRLP\_PROM\_COMP\_DETAIL.  
The maximum number of promotions that can be created per item/location is controlled by a system option. If this existing system option is enabled, the “maximum number of overlapping promotion component details” is enabled--and the number of promotions does not pertain to exclusions, only inclusive promotions. The number of exclusions is not restricted.

### Business Example

If the “maximum number of overlapping promotion component details” is set to six per item/location, the user can create six promotion components under one promotion header. Exclusions do not count toward this maximum number of allowed promotions.

Valid values: 1-999

Default value: 4

## Maximum Number of Reward Lists

System Option name: RPM\_SYSTEM\_OPTIONS.MAX\_REWARD\_LISTS

This system option allows the user to control the number of buy or get lists in the promotion component.

### Business Example

The maximum number of buy lists system option is set to 4. Therefore a multi-buy/meal deal promotion can be setup for 1 component.

- Reward List 1 – Shoes
- Reward List 2 – Shirts
- Reward List 3 – Hats
- Reward List 4 – Gloves

The addition of Reward list 5- Socks would trigger this message to the user: “The maximum number of Reward lists has been exceeded for a single promotion component. A new list can't be added.”

Valid values: 1-999

Default value: 4

## Maximum Search Results – Clearances

System Option name: RPM\_SYSTEM\_OPTIONS.CLEARANCE\_SEARCH\_MAX

The following business example explains what happens if the number of rows for the search criteria exceeds the value entered in the new options.

### Business Example

The Maximum Search Results - Clearances system option is set to 20. A user searches for approved clearances within five departments and returns 80 clearances.RPM returns records only up to that established value and displays the following message:

“The number of records that matched your search criteria is greater than the allowed maximum and therefore not all records have been returned. Please refine your search criteria to narrow the search so that all valid records can be presented.”

The user can then narrow the search criteria down to one or two departments to show all clearances.

Valid values: 1-999

Default value: 300

## Maximum Search Results – Clearance Resets Inquiry

This field is the maximum number of search rows returned for an inquiry of Clearance Resets. If the search limit is reached, a message is displayed to informing users that the rest of their search results will not be displayed.

Valid values: 1-999

Default value: 300

## Maximum Search Results – Price Changes

System Option name: RPM\_SYSTEM\_OPTIONS.PRICE\_CHANGE\_SEARCH\_MAX

This option limits the data that is displayed in the price change list. When the user applies item/loc discount detail to a price change or clearance the system populates the detail table for that price event. If the user applies large item/loc volumes this process had suffered performance issues in the past. Now when the user populates the detail maintenance screen from an Apply action, only a portion of the columns in the table are populated. If the user wants to review the details for the remaining columns, which tend to be the performance intense fields, the user can do so by selecting rows and requesting the additional data. RPM returns records only up to that established value and displays the following message:

### Business Example

The Maximum Search Results – Price Changes system option is set to 20. A user searches for approved price changes within 5 departments and returns 80 price changes. RPM returns records only up to that established value and displays the following message:

“The number of records that matched your search criteria is greater than the allowed maximum and therefore not all records have been returned. Please refine your search criteria to narrow the search so that all valid records can be presented.”

The user can then narrow the search criteria down to one or two departments to show all price changes.

Valid values: 1-999

Default value: 300

## Maximum Search Results – Price Inquiry

System Option name: RPM\_SYSTEM\_OPTIONS.PRICEINQUIRY\_SEARCH\_MAX

In the Price Inquiry screen, the user can search for a price of an item using the following criteria:

- Merchandise Hierarchy
- Item
- Zone Group
- Zone
- Location – warehouse or store
- Date

Based on the criteria entered the by the user, a listing of item/locations together with the specified prices at a given date are displayed. The resulting information is available to the user for export. The system option limits the data that is displayed in the price inquiry search results list. When the Price Inquiry is populated, only a portion of the results are displayed determined by the value set in the Maximum Search Results – Price Inquiry system option. If the user wants to review the details for the remaining columns, which tend to be the performance intense fields, the user can do so by selecting rows and requesting the additional data.

Valid values: 1-999

Default value: 300

## Maximum Worksheet Search Result

System Option name:

RPM\_SYSTEM\_OPTIONS.WORKSHEET\_FILTER\_SEARCH\_MAX

When the user enables the Minimize Worksheet Data Filter screen system option, this system option is enabled and required. Maximum Worksheet Search result is the maximum number of rows displayed, based on the respective search criteria.

Based on the criteria entered by the user, the user is limited to how many item/zone rows are returned when the user performs a search for the worksheet filter functionality.

If the user attempts to bring back too many rows, an error message is issued.

Valid values: 1-999

Default value: null

## Minimize Worksheet Data Filter Screen

System Option name: RPM\_SYSTEM\_OPTIONS.WORKSHEET\_FILTER\_SCREEN

When this system option is enabled, the user is given an optional workflow that includes worksheet data filtering. The user can enter search criteria (listed below) to filter out the items to review.

- Clearance Indicator
- Primary competitor retail change indicator
- Primary competitor alert
- Comp A Alert
- Cost Changes during review period
- New Item Location Indicator
- Item ID
- Parent ID
- Link Code
- New Retail
- Price Change Indicator
- Reviewed (new column)

The user also can choose the Skip Filter option from the worksheet status screen to bypass the filtering. If this system option is disabled, the worksheet filter screen is not accessible.

Valid values: 0 - No (unchecked); 1 - Yes (checked)

Default value: 0 - No (unchecked)

## Multiple Item/Loc Promotions

System Option name: RPM\_SYSTEM\_OPTIONS .MULTI\_ITEM\_LOC\_PROMO\_IND  
When checked, this field is restricted or disabled in the UI. This system option defines whether an item/location can exist on more than one promotion and more than one component within the promotion. If the indicator is set to Yes (checked), an item can have its retail price affected by more than one promotion at a single time in a given location. If the indicator is set to No (unchecked), only one promotion or promotion component can exist at the same time for a given item/location.

Valid values: 0 - No (unchecked); 1 - Yes (checked)

Default value: No (unchecked)

## Number of Past Markup Impact Events Displayed

This field represents the maximum number of past dates with cost or retail changes to be displayed in the Markup Change Date column. This value is used to review cost/retail change history.

Valid values: 1-10 (integer)

Default value: 1

## Number (#) of Days Rejects Held (PC Clear)

System Option name: RPM\_SYSTEM\_OPTIONS REJECT\_HOLD\_DAYS\_PC\_CLEAR

This field defines the number of days after the effective date of a rejected price change or clearance when it should be purged from the system.

Valid values: 1- 999

Default values: 30

## Number (#) of Days Rejects Held (Promo)

System Option name: RPM\_SYSTEM\_OPTIONS REJECT\_HOLD\_DAYS\_PROMO

This field defines the number of days after the end date (or start date for promotions with no end date) of a rejected promotion when it should be purged from the system.

Valid value: 1

Default value: 30

## Open Zone Use

System Option name: RPM\_SYSTEM\_OPTIONS .OPEN\_ZONE\_USE

When checked, this field is restricted or disabled in the UI when checked. It defines whether different Zone Group types can be used in all the pricing dialogs or if the type of the Zone Group limits where it can be used. For example, if set to No (unchecked), then Promotion Zone Groups cannot be used in the clearance and price change dialogs or in the pricing strategies definition. If this option is set to yes, it cannot be changed. Open Zone enables total flexibility in the use of Zone Groups. Default Value. When the indicator is set to Yes, all zone group types can be used throughout the system's functionality. When the indicator is set to No, a Promotion Zone Group cannot be used in

the clearance and price change dialogs or in the pricing strategies definition. In addition, clearance zone groups cannot be used to define the pricing strategies of Margin, Competitive, Relationship, and Area Differential.

**Business Example**

Creating a margin strategy with a zone group defined as promotion or clearance would require the Open Zone Use system option to be checked or set to Yes.

Valid values: 0 - No (unchecked); 1 - Yes (checked)

Default value: No (unchecked)

**Price Change Processing Days**

System Option name:

RPM\_SYSTEM\_OPTIONS.PRICE\_CHANGE\_PROCESSING\_DAYS

This value represents the number of days required between the create date and the effective date. It does not determine the communication processes or timing but simply allows the retailer to ensure that price changes are created with enough advance timing that stores and other process areas can react accordingly. This value is used in the price change and pricing worksheet dialogs. Security permits certain users to violate this timeframe and create same day price changes, or emergency price events. Therefore, zero is not permitted at the system level.

**Business Example**

A user creates a price change effective tomorrow. The Effective Date is the date when the price change goes into effect at the point of sale. This date must be greater than VDATE + the PRICE\_CHANGE\_PROCESSING\_DAYS system option.

Valid values: 1-999

Default value: 1 (day)

**Price Change/Promotion Overlaps**

System Option name:

RPM\_SYSTEM\_OPTIONS.PRICE\_CHANGE\_PROMO\_OVERLAP\_IND

When checked, this field is restricted or disabled in the UI. The field determines whether an item/location can have a price change occur during the middle of an active location. If the indicator is checked (set to Yes), a price change can take effect during a promotion. If the indicator is set to no (unchecked), a price change cannot be approved that would take effect during an approved promotion, and a promotion cannot be approved if its dates overlap an approved price change. If this option is checked, it is recommended that promotion constraints be used to take advantage of the Suggest New Date functionality. If this functionality is not used, overlaps are highlighted in conflict checking and changes would have to be entered again using the correct effective dates.

Valid values: 0 - No (unchecked); 1 - Yes (checked)

Default value: No (unchecked)

## Pricing Strategy Default Effective Day

System Option name: RPM\_SYSTEM\_OPTIONS.DEFAULT\_EFFECTIVE\_DATE

This system options allows the user to select the default day of the week for prices to be effective in the worksheet detail dialogue for the clearance, pricing strategies. Once a specified weekday is chosen during price strategy create, it defaults the effective date in the worksheet detail to the specified day after the review period (plus price change processing days)—ultimately causing the effective date in worksheets to default to the desired day of the week.

### Business Example

Consider the following clearance strategy example.

A client creates a clearance strategy with calendar starting on a Tuesday with a 2-day review period and 26 days between. In this example, it is assumed the batch is executed Monday night. The batch finds calendars that have a review period that starts the next day.

Then the client creates a regular calendar starting on a Thursday with a 2-day review period and 5 days between. The intention is to have all price events effective on the following Saturday after the review period. In this example it is assumed the batch is executed Wednesday night. The batch finds calendars that have a review period that starts the next day.

The users review the clearance worksheet on Tuesday and Wednesday, and the margin worksheet on Thursday and Friday.

The default effective date functionality allows the user to default the effective date to the Saturday after the review for both the clearance and margin strategies. When calculating the effective date for the worksheet detail dialogue, this new functionality works as base does today in that effective date considers price change processing time when calculating a proper default effective date. In this example price change processing days is set to 1, and thus effective date would fall on the next day (Saturday).

### Business Example Rules

- User can select only one day of the week as a default per strategy.
- Pricing Strategy Default Effective Day functionality applies to margin, clearance and competitive strategies only.
- The resulting effective date appearing in the worksheet detail defaults to day of the week after the current review period plus price change processing days.
- Once the system option for the Pricing Strategy Default Effective Day is checked, it is not modifiable.
- If two pricing strategies for the same item/location default to the same effective date, conflicts occur.

Valid values: 0 - No (unchecked); 1 - Yes (checked)

Default value: NULL



## Pricing Strategy Review Period Overlap

System Option name: RPM\_SYSTEM\_OPTIONS.LOC\_MOVE\_PS\_REVIEW\_OVERLAP  
This field indicates whether a location move overlaps the review period of a pricing strategy. When this system option is checked, pricing strategies are allowed with review periods that overlap a location move date. The validation of any worksheet review period is bypassed and a location move can be scheduled else if unchecked validation is not bypassed.

- If the system option indicates that a move cannot be scheduled if there is a worksheet review period that overlaps the move date, and a pricing strategy exists with a calendar that has a review period that overlaps the move date, the move fails.
- If the system option indicates that a move can be scheduled regardless of any worksheet review period, the validation for worksheet review period overlaps are bypassed.

Valid values: 0 - No (unchecked); 1 - Yes (checked)

Default value: No (unchecked)

## Promotion End Date Required

System Option name: RPM\_SYSTEM\_OPTIONS.PROMO\_END\_DATE\_REQUIRED  
When checked, this field is restricted/disabled. If integration with ORPOS is required, this system option requires that an end date be assigned to promotions. It must be checked when integrating with ORPOS.

Valid values: 0 - No (unchecked); 1 - Yes (checked)

Default values: 0 - No (unchecked)

## Promotion History Months

System Option name: RPM\_SYSTEM\_OPTIONS.PROMOTION\_HIST\_MONTHS  
This system option defines the number of months after a promotion is completed that is should be purged. This parameter is also used to purge cancelled promotions.

Valid values: 1- 999

Default value: 6

## Promotion Overlap

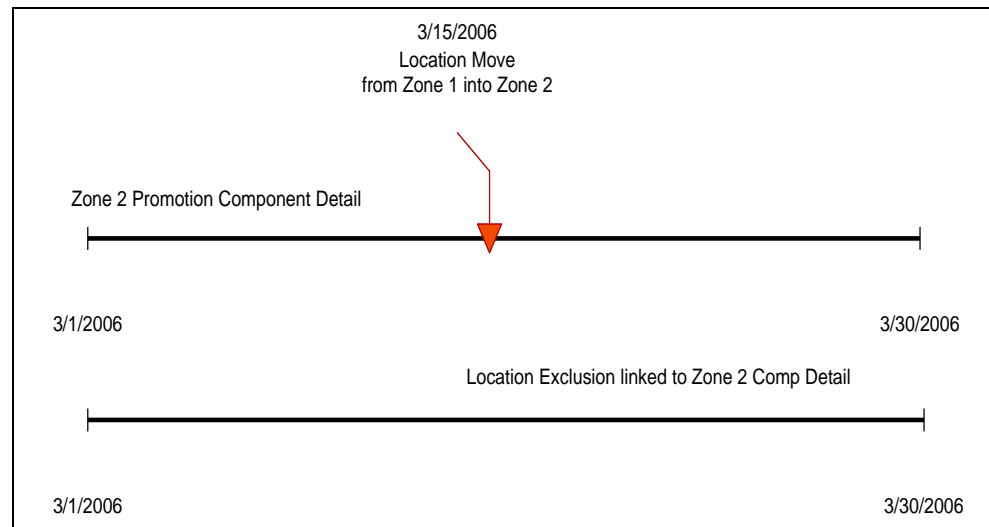
System Option name: RPM\_SYSTEM\_OPTIONS.LOC\_MOVE\_PROM\_OVERLAP  
This field indicates if a promotion overlaps a location move. If checked, the LOC\_MOVE\_PROM\_OVERLAP\_BEHAVIOR system option enables and allows the user to control how the promotion should overlap the location move during scheduling and execution.

### RPM\_SYSTEM\_OPTIONS.LOC\_MOVE\_PROM\_OVERLAP\_BEHAVIOR

This option is within a dropdown box. If selected, it the following combinations are enabled through a combination dropdown list. Only one of the following three options can be selected:

#### Extend old zone's promotion and do no inherit new zones overlapping promotions

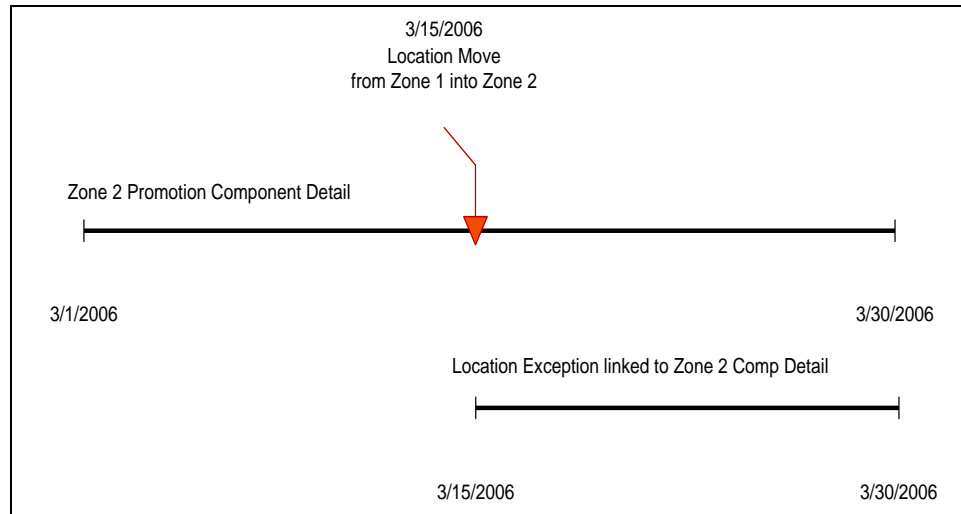
Location keeps running the old zones promotion. Location does not inherit any zone level promotion for the new zone if it overlaps the move date. For Zone level promotions for the new zone (that start before or on the location move date and end after or on the location move date, and where the promotion is currently pending) an exclusion created is for the location that is being moved (where start date = zone promotions start date and end date = the zone promotions end date).



For Zone level promotions for the new zone that start before the location move date and end after or on the location move date and the promotion is currently active, an exclusion is created for the location that is being moved (where start date = current date + 1, and end date = to the zone promotions end date).

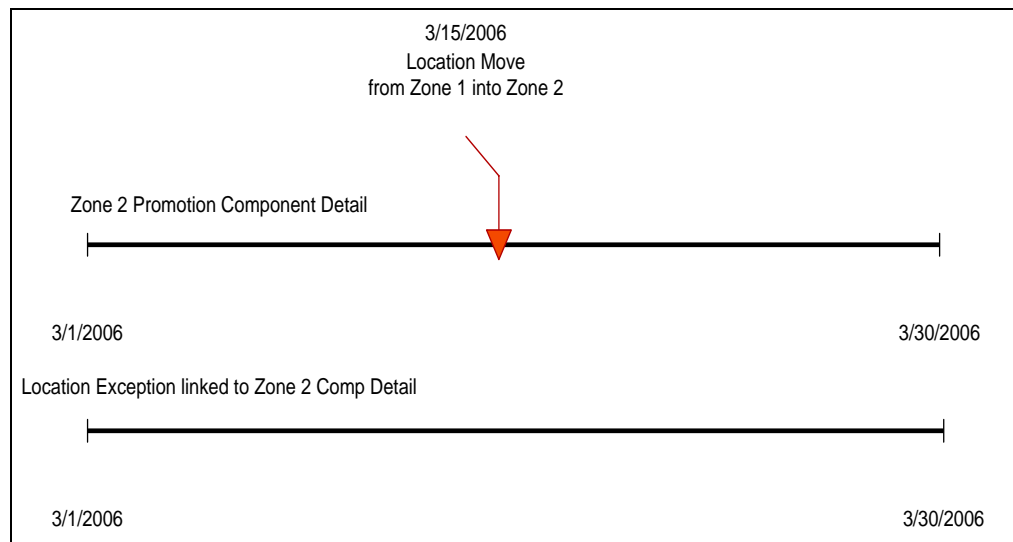
#### End old zone's promotion and inherit new zones overlapping promotions

Promotion ends at the location the evening before the location move date. Location inherits the new zones promotion that overlaps the move date, but the promotion starts only on the location move date. For zone level promotions for the new zone (that start before or on the location move date and end after or on the location move date), an exception is created for the location that is being moved with a start date equal to the move date and an end date equal to the zone promotions components end date.



**Do not start old zone's overlapping promotions and inherit new zones overlapping promotions**

Location does not start the promotion if the zone promotion overlaps the move date. Location inherits the new zones promotion that overlaps the move date and starts the same day the zone level promotion starts or starts the day the move is scheduled if the zone level promotion is already active. For zone level promotions for the new zone (that start before or on the location move date and end on or after the location move date), an exception is created for the location that is being moved (where start date = the zone promotions start date, or current date if the promotion is already active, and end date = the zone promotions components end date).



Valid values: 0 - No (unchecked); 1 - Yes (checked)

Default value: No (unchecked)

## Purge Reset Clearance Months

System Option name: RPM\_SYSTEM\_OPTIONS.CLEARANCE\_HIST\_MONTHS

Expired clearance records must be purged from the system in order to manage the size of the database. The field holds the number of months past a clearance reset date that should be purged. If a clearance is never reset it cannot be purged, as the item/location still exists as a clearance. In addition, any RPM\_FUTURE\_RETAIL records associated with a clearance are not purged until the clearance is reset.

### Business Example

A clearance created prior to the VDATE is completed and now reset. This clearance would be purged with the execution of the clearance purge batch jobs.

A clearance is a candidate for purging if:

- It has completed all markdowns and has been reset.
- It has been cancelled.
- It has been deleted.

Two clearance purge programs are executed together:

- PurgeExpiredExecutedOrApprovedClearancesBatch purges expired executed and/or approved clearances.
- PurgeUnusedAndAbandonedClearancesBatch purges unused and/or abandoned clearances.

Valid values: 1-999

Default value: 1 (month)

## Recognize WH as Locations

System Option name: RPM\_SYSTEM\_OPTIONS.RECOGNIZE\_WH\_AS\_LOCATIONS

When checked, this field is restricted or disabled. This system option controls whether warehouses exist in RPM zones and assigned to regular and clearance price zones. They cannot be assigned to promotion price zones. When the system option is set to Yes, warehouses can be assigned to price zones, pricing strategies, and calendars (if they appear in the Location LOVs). In addition, warehouse inventory are taken into consideration when creating vendor funded markdowns and allows for the revaluation of inventory at a specific warehouse location. When the system option is set to No, warehouses are not available in RPM, and they do not appear in the location LOVs. Stock on hand values is zero and is not calculated for warehouse locations when set to No.

Valid values: 0 - No (unchecked); 1 - Yes (checked)

Default value: Yes (checked)

## Sales Calculation Method

System Option name: RPM\_SYSTEM\_OPTIONS SALES\_CALCULATION\_METHOD

The value specified is used by the merchandise extract to determine how to populate the Projected Sales column on the worksheet used together with Pricing Strategies. The Smoothed Average Calculation, which populates a table in RMS and is used by RPM to show the projected sales of an item for a time period representing a week. The intent of the smoothed average sales calculation is to represent on a weekly sales basis the number sales units sold at regular price and therefore not affected by a promotion or some sales anomaly.

### Business Example

If a pricing manager in RPM wants to see the sales impact of changing the retail price of table salt by .20 per container, the unit sales should be those that occurred when the item was sold at its regular price and assume that the change does not slow demand but increases sales dollars by .20 per unit. The smoothed average value provides this information in lieu of a more accurate forecast.

Clients using RPM who do not have access to an accurate sales forecast or are not able to accurately represent the regular (non-promotional, non-seasonal) sales of an item but need to use the value in RPM to calculate the sales values in the application, can use the value provided by a program that runs in RMS and calculates a representative value for unit sales of an item per week. If the RPM\_IND on SYSTEM\_OPTIONS is set to Y, meaning the client is using RPM with RMS, the IF\_RPM\_SMOOTHED\_AVG table is populated with a sales value in units and a counter value for each item/location combination. The program looks at sales data from Sales Audit and pulls the unit sales values for days when only regular price sales were recorded. If promotional sales were found during the day we assume the unit sales for that day do not represent the typical regular price sales we need in the calculation. The goal is to represent only those sales that occurred at regular price and only on days when no other factors were involved. The sales unit values for days when only regular price sales were recorded are pulled into the calculation.

### Components of the Calculation

- **Average Tolerance Percent** is a value used to determine if a sales amount received falls within a reasonable range to be considered in the calculation. Values that fall outside the range would be considered outliers and are capped at the high or low of the range.
- **Max Counter Value** provides a way to weight the existing sales value on the table against new values received. If the item has a relatively minimal seasonal swing this value can be set higher so the value remains stable and takes many anomalies to move the value. If the item has a relatively strong seasonal swing the counter should be set to a lower number so that the value is more easily moved to reflect a trend or seasonal shift.

These values are defined in RMS on the Department Maintenance (dept) screen in the Max\_Average Counter and Average Tolerance % fields. The values set by the user are store on the DEPS table in RMS and held in the following columns:  
AVG\_TOLERANCE\_PCT, MAX\_AVG\_COUNTER

Valid value: 1

Default value: 1

## **SIM Indicator**

System Option name: RPM\_SYSTEM\_OPTIONS SIM\_IND

This field Indicates whether RPM is interfacing with SIM.

Valid values: 0-4

Default value: 0

## **Skip Conflict Checking During Submit**

This option allows the user to skip the conflict checking process during the price event Submit action. If this system option is checked, RPM does not perform the conflict checking process (and does not show conflicts, if there are any) when the user performs a price event Submit action.

The price event status is switched to "Submit" immediately. If this system option is unchecked, RPM executes the conflict checking process (and shows conflicts found) when the user performs the price event Submit action.

## **Skip Conflict Checking During Complex Promotion Approval**

This option allows the user to skip the conflict checking process during complex promotion (multi-buy and threshold) approval and disapproval. When the user approves or disapproves a multi-buy or threshold promotion, RPM does not update the future retail table and does not perform conflict validation. RPM populates the payload tables, however, so that RPM can communicate the complex promotion to other systems (through RIB or the ORPOS extract, for example).

If this system option is selected, RPM does not perform conflict checking, and does not show any conflicts, when the user approves or disapproves a complex promotion. If this system option is not selected, RPM executes a complete conflict checking process, and shows conflicts found, when the user approves or disapproves a complex promotion.

Choosing this option can dramatically improve the performance of an approval of a large multi-buy or threshold promotion (for example, at department/zone level). You should consider the use of this option carefully, because some functionality is lost with this option. For example:

- For overlapping promotions, an item/location in a complex promotion is not considered when validating overlapping promotion counts.
- For price change promotion overlaps or clearance promotion overlaps, an item/location in a complex promotion is not considered when validating these types of overlapping.
- Complex promotion information is not available in the future retail tables.

Although this system option can be changed from one status to the other in the System Options Edit screen, changing this system option could produce unpredictable results when there are active or pending complex promotions.

## Unique Unit of Measure

This option provides the ability to inform RPM that there is only one unit of measure (UOM) to be used throughout RPM. This is particularly useful to improve performance when a fixed-price price event is created. Previously, when the user created a fixed-price price event without entering a new UOM, RPM validated that all item/locations affected by the price event had a unique UOM. For a very large price event (for example, a promotion at department/zone level), this validation process could cause performance degradation.

For this functionality, there are two system options:

- Unique UOM is used for all items
- Unique UOM to be used for all items

The "Unique UOM is used for all items" system option informs RPM that there is only one UOM in RPM. When this system option is selected, RPM does not perform UOM validation when the user creates a fixed-price price event. If this system option is selected, the user must provide a valid unique UOM to be used throughout RPM as the value of the "Unique UOM to be used for all items" system option. These two system options are set during the RPM installation. For an existing RPM environment, these system options should be updated from the back end by the database administrator.

## Update Item Attributes

System Option name: RPM\_SYSTEM\_OPTIONS\_UPDATE\_ITEM\_ATTRIBUTES

This value is used by the merchandise extract to determine if the attributes listed below should be updated during each extract that occurs during a worksheet review period. If the Update Item Attributes indicator on System Options is set to Yes, then for every existing worksheet that is in New or Update status and is not ending today, the merchandise extract updates the following information on the worksheet. When this option is set to Yes, worksheets become dynamic and update daily for the entire review period. If this option is set to No, worksheets are static.

- **Primary Competitor Retail** is the retail price at the primary competitor's store. This value is stored in the COMP\_PRICE\_HIST table in RMS
- **Primary Competitor Store** is the Competitor Store associated with the Primary Competitor. This value is stored on the COMP\_STORE table in RMS.
- **Primary Competitor Retail Selling UOM** is the primary competitor's retail selling UOM for the item/primary competitor store.
- **Primary Competitor Retail Standard UOM** is the primary competitor's retail UOM for the item/primary competitor store.
- **Primary Competitor Multi-Units** is the the multi-unit value at the primary competitor's store. This value is stored on the COMP\_PRICE\_HIST table in RMS.
- **Primary Competitor Multi-Unit Retail** is the multi-unit retail at the primary competitor's store. This value is stored on the COMP\_PRICE\_HIST table in RMS.
- **Primary Competitor Multi-Unit Selling UOM** is the primary competitor's retail multi-unit UOM for the item/primary competitor store.
- **Primary Competitor Boolean**
- **Competitor A Retail** is the Competitor Store associated to Competitor A. This value is stored on the COMP\_STORE table in RMS.
- **Competitor B Retail** is the Competitor Store associated to Competitor B. This value is stored on the COMP\_STORE table in RMS.

- **Competitor C Retail** is the Competitor Store associated to Competitor C. This value is stored on the COMP\_STORE table in RMS.
- **Competitor D Retail** is the Competitor Store associated to Competitor D. This value is stored on the COMP\_STORE table in RMS.
- **Competitor E Retail** is the Competitor Store associated to Competitor E. This value is stored on the COMP\_STORE table in RMS.
- **Competitor A Store** is the retail price at Competitors A's store. This value is stored on the COMP\_PRICE\_HIST table in RMS.
- **Competitor B Store** is the retail price at Competitors B's store. This value is stored on the COMP\_PRICE\_HIST table in RMS.
- **Competitor C Store** is the retail price at Competitors C's store. This value is stored on the COMP\_PRICE\_HIST table in RMS.
- **Competitor D Store** is the retail price at Competitors D's store. This value is stored on the COMP\_PRICE\_HIST table in RMS.
- **Competitor E Store** is the retail price at Competitors E's store. This value is stored on the COMP\_PRICE\_HIST table in RMS.
- **Pending Cost Change Indicator** indicates whether there is a pending cost change at any of the locations within the zone on today's date or later. The information on the FUTURE\_COST table in RMS is used to determine the value of this indicator.
- **Cost Change Alert** notifies the user if there is a cost change in within the number of days set in the aggregation level details.
- **Current Cost** is the current cost of the item/location (value stored on the FUTURE\_COST table in RMS). If the location is a zone the cost calculation method from the SYSTEM\_OPTIONS table is used.
- **Basis Base Cost** is the cost of the item/supplier/country at the given location. This value is stored on the FUTURE\_COST table in RMS.
- **Reference Warehouse Stock on Hand** is a summary of the current stock on hand for the item from the reference warehouses on the strategy (or in the zone). This value is stored on the ITEM\_LOC\_SOH table in RMS.
- **Reference Warehouse On Order** is a summary of the current on order for the item from the reference warehouses on the strategy (or in the zone). This value is stored on the ORDLOC table in RMS.
- **Location On Order** is a summary of the current on order for the item from the reference stores on the strategy (or in the zone). This value is stored on the ORDLOC table in RMS.
- **Location Inventory** is a summary of the current stock on hand for the item from the stores on the strategy (or in the zone). This value is stored on the ITEM\_LOC\_SOH table in RMS.

Valid values: 0 - No (unchecked); 1 - Yes (checked)

Default value: Yes (checked)



## Zone/Parent Ranging

System Option name: RPM\_SYSTEM\_OPTIONS.ZONE\_RANGING

If a user creates a price change/clearance/promotion at a level higher than tran/loc (tran/zone, parent/zone, parent/loc), RPM ensures there is at least one item/location ranged underneath the event. If there isn't at least one, then the system does not allow the user to create the event. If this system option is not checked, ranging is performed only on price changes/clearances/promotions created at the tran/loc level.

Ranging checks are not performed on events created at any other higher level.

Used when setting up promotions at zone and parent level, it checks that locations and parent items are ranged to zones and locations respectively so that promotions are not set up on items where they are not sold.

Valid Value – 0 - No (unchecked), 1 - Yes (checked)

Default value: 1 - Yes (checked)

## System Defaults

Unless otherwise noted, the following system defaults may be viewed and edited through RPM UI.

### Currency

System Default name: RPM\_SYSTEM\_OPTIONS\_DEF.DEF\_CURRENCY

This system default defines the currency code that should appear in each of the dialogs in the system where the user is required to enter a currency. This is used in the pricing guides and price zone dialogs. The values are selected from RMS CURRENCIES table.

Valid values: Currency value extracted from the CURRENCIES table located in RMS

Default value: USD

### Diff Type

System Default name:

RPM\_SYSTEM\_OPTIONS\_DEF.DEF\_PRICE\_CHANGE\_DIFF\_TYPE

This field holds a value for the desired default item level in the pricing event dialogues.

Valid values and default value are dependent on the Diff Values set up in RMS.

### Ignore Constraints

System Default name:

RPM\_SYSTEM\_OPTIONS\_DEF.DEF\_WKSHT\_PROMO\_CONST\_IND

This system default determines whether constraint checking is defaulted as checked in the worksheet dialogue.

Valid values: 0 - No (unchecked); 1 - Yes (checked)

Default value: Yes (checked)

## Item Level

System Default name:

RPM\_SYSTEM\_OPTIONS\_DEF.DEF\_PRICE\_CHANGE\_ITEM\_LEVEL

This is the default indicator to define the item level displayed when the user enters the price change and clearance dialogs.

Valid values: 0 - Parent; 1- Parent/Diff; 2 – Single Item

Default value: 2 – Single Item.

## Maintain Margin Strategy Method

RPM\_SYSTEM\_OPTIONS\_DEF.DEF\_MAINT\_MARGIN\_METHOD

This field stores the default method type for the Maintain Margin price strategy.

Valid values: M - Market Basket Margin; C - Current Margin

Default value: NULL

## MarkupType

System Default name: RPM\_SYSTEM\_OPTIONS\_DEF.DEF\_MARKUP\_TYPE

The user cannot update this default through RPM; it is owned by the database. The purpose of this default value is to keep ownership of the markup functionality in RPM and not look to RMS for the default values.

If a user navigates to the Zone Structure >Maintain Primary Zone Group, in the Zone Retail Definition UI a user can delete, edit or add dept/primary zone record. If by chance the user deletes a record, the markup type along with the rest of the data is deleted for that dept/primary zone group relationship. The markup type is used to determine the accounting method and proper calculation for the markup percent information in the price change/promotions and clearance dialogue for a specified dept/zone relationship. The calculations use either the cost (retail-cost/cost) or retail (retail-cost/retail) method of accounting. This system options defines a default value for what the method of accounting should be in order to complete the markup calculations if a dept/primary zone record is deleted from the maintain primary zone group UI and not reinstated.

Valid values: 0 – cost; 1 - retail accounting method

Default Value: 1 - retail accounting method

## Pricing Strategy

System Default name: RPM\_SYSTEM\_OPTIONS\_DEF.DEF\_PRICING\_STRATEGY

This field holds a value for the default pricing strategy type that displays when the user creates new pricing strategies.

Valid values: 0 - Area Differential; 1 - Clearance; 2 - Competitive; 3 -Margin

Default value: 2 – Clearance

## Protect Setting

System Default name: RPM\_SYSTEM\_OPTIONS\_DEF\_DEF\_PROTECT\_SETTING

This setting is not available in the RPM UI. It is the default indicator to define if the protect option on pricing strategies is defaulted on or off.

Valid values: Protected; Not Protected

Default value: Protected

System Default name:

## Type

System Default name: RPM\_SYSTEM\_OPTIONS\_DEF.DEF\_PRICE\_CHANGE\_TYPE

This field holds a value for the default price change type displayed when the user is creating either a price change or a promotion.

Valid values: 0 - Change by Percent; 1 - Change by Amount; 2 - Fixed Price

Default value: 1 – Change by Amount

## Implementation Considerations

Carefully consider system options setup & system rules

### Conversion / Configuration Business Processes

- Rationale for determining the Zone Group, Zone and Location groupings may be based on any factors of the retailer's choosing.
- No promotions or pricing events should exist for a Zone prior to deletion.
- If a location is not included in a member of the merchandise hierarchies' Primary Zone Groups, zone price is driven from the merchandise hierarchy member's Primary Zone Group's base zone.
- A Primary Zone Group can be defined for members of each level of the merchandise hierarchy.
- A new store is assigned to a zone in RPM through designation of its Pricing Store at the time of the location's creation.
- An item should never be unique compared to the rest of its merchandise hierarchy level in terms of price zones. A category of items should follow the same zone group, ensuring manageability and accountability within the process.
- It is an assumption that all locations are assigned to a zone group for regular pricing.
- Security control should be considered around zonal maintenance to ensure that restrictions are put in place where necessary.
- Security control around Emergency Price Change functionality should be limited
- The more granular level chosen to manage retail prices (for example, location traits, competitive pricing, demographics) the more complicated it can be. Managing numerous Zones can affect overall profit objectives.

## Internationalization

See Oracle Retail Price Management documentation for information about the languages supported within the application.



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# Oracle Retail Active Retail Intelligence

This chapter is an overview of Oracle Retail Active Retail Intelligence (ARI).

## Exception Reporting

Oracle Retail Active Retail Intelligence (ARI) takes business rules that users are applying to reports in their daily tasks and applies them directly to the retail systems. This allows the correct people within the retail organization to be alerted when the business rule conditions have been met and informs them of what the appropriate actions might be to resolve it. This enables a retailer to apply the best practice to their entire organization by tying actions to information in an intelligent way.

A business example of an exception reporting rule is a rule that looks for orders that are past their ship date but have not been shipped yet. Rather than having an analyst scan a report to identify which orders have been shipped late a rule could be created in ARI to identify these orders for the analyst and the recommended steps to take to resolve the late shipping issue with the vendor.

## Workflow Management

ARI maps out a retailer's business processes and notifies the users responsible for those processes whenever new tasks require attention. ARI also lists the appropriate actions that may be taken to complete these tasks and allows users to take action directly from the screen where they receive the alert.

If the alert is not acted on within an acceptable timeframe, ARI can define an automated action that needs to take place. This can be to raise the priority of the alert or send it to a supervisor or take an automated system action to ensure that single users do not become a bottleneck.

A business example of a workflow management rule is a rule that notifies an inventory manager when orders are ready for approval. This gives the manager instant visibility to all orders that need to be approved for the day rather than requiring the manager to search for orders meeting this requirement. Additional logic can also be added to notify the manager's supervisor when orders awaiting approval are not approved after a pre-determined timeframe.

## Enterprise Process Modification

ARI allows a retailer to modify process within Oracle Retail to more closely match their business processes. This is achieved in most cases without modifying the underlying retail system.

A business example of an Enterprise Process Modification is a client changing its transfer approval process from analysts being able to approve transfers to only managers being able to approve transfers. Rules could be developed in ARI to send alerts to both the analyst and manager when transfers are submitted to educate them on the new business process to help ensure a smooth transition.

## Integration with Other Applications

ARI is a monitoring system that interacts with any applications database. As such it does not use any information from other retailing applications; rather, it monitors the retailing application databases for events defined by a client and notifies the client when said events occur.

The only complication that can result is when a client is making database changes that affect the data mapping for rules already defined in ARI. In this case the rule needs to be changed to reflect the new data mapping.

## ARI Security

ARI provides no special security features or safeguards. Addressing any site-specific security issues involving ARI is the customer's responsibility. Security settings in other applications with which ARI interacts are not overridden or circumvented by ARI. Whereas this is generally desirable, it is a consideration when determining to whom ARI alerts are routed. Sending an alert to a user who does not have the privileges to take the actions necessary to resolve the event may prove frustrating and counter-productive. Users should be educated about this issue so that they avoid forward events that have actions with limited access as well.

At a data level, ARI detection is necessarily done with full access privileges to all data. Individual users with data level security may see different values for some parameters (in particular those involving sums) than the values seen by Active Retail Intelligence. This may cause adverse effects such as a user looking at an event automatically causing it to close because the user's limited data access causes the event to see values that make ARI think the exception is no longer an issue when in fact it still is. For this reason, Oracle urges extreme caution when designing ARI processes that involve users with limited data access. The consequences of missing alerts are great in an exception driven enterprise, so extra care is needed in the technical analysis of how such ARI processes behave.

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## Appendix: Partitioning

This appendix explains how to establish a database partitioning strategy.

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**Note:** Partitioning is required for specific tables. Review this entire section before proceeding with installation.

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Requirements for mandatory and optional partitioning are defined in the Microsoft Excel spreadsheet located in `INSTALL_DIR/ddl/part/RMS_partition_definition.xls`. Since partitioning strategies are complex, this step should be implemented by an experienced individual who has a thorough understanding of partitioning principles and the data to be partitioned.

Use the Microsoft Excel spreadsheet to determine an appropriate partitioning strategy (`INSTALL_DIR/ddl/part/RMS_partition_definition.xls`). The Partition Method column indicates the recommended partitioning options for each table. Refer to the information in this file to modify the DDL for partitioned tables. This can be done by manually changing the file `INSTALL_DIR/ddl/rms12_part.tab` or by implementing the process defined below. This file is used later in the installation process.

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**Note:** See Chapter 18, “Partition Tables and Indexes,” of the Oracle10g Database Concepts Release 2 for details about partitioning concepts.

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**Hash partitions:** To calculate the number of hash partitions and sub-partitions, enter values for the three parameters highlighted in yellow at the top of the RMS worksheet. Altering these values updates the Number of Partitions column for HASH partitioned/sub-partitioned tables. The values in these columns indicate the number of hash partitions/sub-partitions to create.

**Partition Factor:** This value is used to adjust the number of hash partitions. It is based on the number of active items per location and transactions per location/day. If the number of items/location and/or transactions/store/day is low, the value of partition factor should be high. This calculates fewer hash partitions. The typical factor value is from 2 to 4 and; in special cases, it can be 10 or more.

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**Note:** Changing the items/location and transactions/store/day fields on the worksheet does not automatically impact the factor value. They are used as a point of reference only.

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**Sub-Partition Factor:** This value is used to adjust the number of hash sub-partitions. The partition strategy for historical information determines the value of this number. If the number of range partitions is high, the value of sub-partition factor should be high to control the number of sub-partitions. Typically, this value is 2.

**Locations:** The total number of active stores and warehouses.

Range partitions: Determine the purging strategy for all of the tables that are RANGE partitioned. Each partition should have a range of multiple key values. For example, if the strategy were to have data available for one year and to purge it every three months, five partitions would be created. In this case, four three-month partitions and a max value partition to contain all data greater than the defined ranges would result. Refer to the Comments column and update the value in the Number of Partitions column. The value in this column indicates the number of range partitions to create.

List partitions: The DAILY\_ITEM\_FORECAST and ITEM\_FORECAST must be LIST partitioned. If number of partition keys is relatively static, change the value in the Partition Method column to LIST where allowed. This method ensures that each partition key has a separate partition and that none are empty. The Number of Partitions column is automatically updated with the proper number of locations in the event the partition method is changed. The value in this column indicates the number of list partitions to create.

### Step 1: Modify partition\_attributes.cfg

Modify INSTALL\_DIR/dcl/part/partition\_attributes.cfg based on the partitioning strategy defined in RMS\_partition\_definition.xls. Changes to this file should be made only as indicated.

partition\_attributes.cfg file: (file is comma-delimited)

Sample Entry:

```
ITEM_LOC_HIST,EOW_DATE,RANGE,item_loc_hist.eow_date.date,64,LOC,HASH,item_loc_hist  
.loc.number,64,RETEK_DATA
```

Field 1: Table Name - *Do not modify*

Field 2: Partition Key - *Do not modify*

Field 3: Partition Method - Modify based on value in Partition Method column in RMS\_partition\_definition.xls - Valid values are RANGE, LIST, or HASH (case sensitive)

Field 4: Partition Data Definition Filename - *Do not modify - This field is ignored if Partition Method is not RANGE or LIST*

Field 5: Partition Hash Count - Modify based on value in Hash Partitions Calculated column in RMS\_partition\_definition.xls. *This field is ignored if Partition Method is not HASH*

Field 6: Sub-Partition Key - *Do not modify*

Field 7: Sub-Partition Method - Modify based on value in Sub-partition Method column in RMS\_partition\_definition.xls - Valid values are LIST or HASH (case sensitive)

Field 8: Sub-Partition Data Definition Filename - *Do not modify - This field is ignored if Sub-Partition Method is not RANGE or LIST*

Field 9: Sub-Partition Hash Count - Modify based on value in Hash Sub-partitions Calculated column in RMS\_partition\_definition.xls. *This field is ignored if Sub-Partition Method is not HASH*

Field 10: Tablespace Name - *Optional. Default is RETEK\_DATA*



## Step 2: Modify Data Definition Files

Tables partitioned or sub-partitioned by RANGE or LIST have a corresponding data definition file in the `INSTALL_DIR/ddl/part/data_def` directory and should not be removed or renamed. These files are used to define the data boundaries for each partition. Values must be entered in each file based on the data type of the Partition Key column in `RMS_partition_definition.xls`. See the Comments column in this file for additional information. The value in the Number of Partitions column indicates the number of entries to place in the data definition file.

The format of a data definition file name is `<table name>.<partition key column>.<partition key data type>`, (for example, `item_loc_hist.eow_date.date`). When placing data into these files, enter one data partition value per line.

When entering `varchar2` values in a data definition file, do not use quotation marks. When defining date values, use the `DDMMYYYY` format.

`sampletable.action_date.date:`

```
01012004
01012005
```

`sampletable.state varchar2:`

```
Minnesota
Iowa
```

`sampletable.location.number:`

```
1000
2000
```

When using RANGE partitioning, the data definition files use the “value less than” concept. For example, in `sampletable.action_date.date` above, the first partition contains all data less than 01012004. The second partition contains all data greater than or equal to 01012004 and less than 01012005. A third partition, `MAXVALUE`, is automatically created for all data greater than or equal to 01012005.

When using LIST partitioning, the data definition files uses the “value equal to” concept. For example, in `sampletable.state varchar2` above, the first partition contains all data equal to Minnesota. The second partition contains all data equal to Iowa.

### Step 3: Generate DDL for Tables – Run partition.ksh

Execute `INSTALL_DIR/ddl/part/partition.ksh` at the UNIX command prompt. This script reads configuration information from the `partition_attributes.cfg` file and generates the partitioned DDL file `INSTALL_DIR/ddl/rms12_part.tab`. The file is used later during the installation process.

Sample output from `partition.ksh`:

```
<INSTALL_DIR>/ddl/part > ./partition.ksh
#####
# partition.ksh:
# This script will read the partition_attributes.cfg file and any
referenced
# data definition files and generate partitioned DDL.
#####
# The non-partitioned DDL file is ../rms120.tab.
# The partitioned DDL file that will be generated is ../rms120_part.tab.
#####
Checking partition_attributes.cfg for errors
Generating Partitioned DDL for DAILY_DATA
Generating Partitioned DDL for DAILY_ITEM_FORECAST
Generating Partitioned DDL for DAILY_SALES_DISCOUNT
...
partition.ksh has generated the DDL for partitioned tables in the
../rms12_part.tab file.
Completed successfully
```