

# Oracle® Retail Advanced Inventory Planning

Release Notes

Release 13.1.3

August 2010

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This document highlights the major changes for Release 13.1.3 of Oracle Retail Advanced Inventory Planning (AIP).

## Overview

Oracle Retail Advanced Inventory Planning is a suite of modules designed to manage the supply chains of large retailers at the supplier, warehouse, store, and e-commerce levels. The system couples time-phased replenishment and allocation algorithms to produce an actionable receipt plan over time. This plan is based on demand forecasts, replenishment parameters, and inventory availability at the numerous supply points within the supply chain.

The user interacts with the AIP system through a number of modules:

- Store Replenishment Planning (SRP) Workbooks are used to maintain the replenishment characteristics for stores. These workbooks allow the user to analyze system output and perform what-if style analysis when replenishment parameters are changed.
- Warehouse Replenishment Planning (WRP) Workbooks are used to maintain the replenishment characteristics for warehouses. These workbooks allow the user to analyze system output and perform what-if style analysis when replenishment parameters are changed.
- Data Management is used to maintain the supply chain and network flow information. Sourcing links, lead times, and other data are managed in this module.
- Using the receipt plan, Order Management formally prepares those orders that need to be fulfilled. This preparation includes the assignment of an order number.

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**Note:** AIP Java/Oracle, AIP on Oracle, and AIP Oracle are often used interchangeably to refer to those parts of AIP that access the Oracle relational database. This includes the Data Management and Order Management GUI components and a host of UNIX shell scripts and PL/SQL modules.

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## AIP Within the Oracle Retail Suite

AIP is one of several integrated applications within the Oracle Retail Suite. The suite allows a retailer to manage its supply chain from demand forecasting to the generation of orders, which can then be shared with collaborative planning partners.

Viewed at a high level, the process across the Oracle Retail Suites takes the following form:

1. Oracle Retail Demand Forecasting (RDF) provides a forecast of consumer demand. This data is made available to AIP.
2. The AIP batch run produces an actionable receipt plan using replenishment parameters maintained inside AIP. Hierarchy and inventory data are provided by a merchandising system such as Oracle Retail Merchandising System (RMS).
3. The receipt plan is then sent to the Order Management module within AIP, where those orders that need to be fulfilled are formally prepared for execution. This preparation includes the assignment of an order number.
4. Order Management then submits the appropriate orders to the merchandising system, where purchase orders and transfers are communicated to other systems. These orders are returned to AIP in subsequent batch runs as on-order or in-transit quantities.
5. Sales forecasts and order plans can then be shared at the appropriate level with suppliers by using a collaborative planning, forecasting, and replenishment (CPFR) product, so that trading partners can prepare for the forthcoming orders.

## AIP Versions and Corresponding RPAS Versions

The following table provides a history of AIP since the 13.0 release. The table lists each version of AIP together with the version of the RPAS foundation to which it is tied. For more information on compatibility and integration with RPAS, refer to the section, "Compatibility and Hardware Requirements" in the *Oracle Retail Advanced Inventory Planning Installation Guide*.

Date	Version Category	AIP Version	RPAS Version
June 9, 2008	Full Release	13.0	12.1.2.21
August 15, 2008	Patch Update (AIX, HP-UX)	13.0.1 Patch	13.0.1.2
August 22, 2008	Full Release (Solaris)	13.0.1	13.0.1.2
October 31, 2008	Patch Update (AIX)	13.0.1.1	13.0.1.11
December 19, 2008	Patch Update (AIX)	13.0.2	13.0.2.1
August 7, 2009	Full Release (Solaris, OEL, AIX, HP-UX)	13.1.1	13.0.4

<b>Date</b>	<b>Version Category</b>	<b>AIP Version</b>	<b>RPAS Version</b>
March 31, 2010	Full Release and Patch Update (AIX 5.3, AIX 6.1, HP-UX 11.31, OEL 5.2, Solaris 10)	13.1.2	13.1.2.3
August 31, 2010	Patch Update (AIX 5.3, AIX 6.1, HP-UX 11.31, Linux 5.2, Solaris 10)	13.1.3	13.1.2.19

## Hardware and Software Requirements

See the *Oracle Retail Advanced Inventory Planning Installation Guide* for information about the following:

- Hardware and software requirements
- Oracle Retail application software compatibility information

## Functional Enhancements

AIP 13.1.3 includes the following functional enhancements.

### Smoothing

Every warehouse has a limitation on inbound capacity due to the number of truck slots, and the time and labor that is required to unload a truck. Smoothing in the scaling module attempts to address the scenario where the inbound warehouse capacity can be broken down by a grouping of SKUs, usually originating from the same supplier.

Setting a warehouse capacity within a scaling group limits the total scaling group orders into a warehouse on a particular day. To accomplish this, delivery days which have orders in excess of the capacity must be pared down; not by simply decreasing orders but rather by pushing the orders forward to earlier delivery days. Pushing the orders causes a domino or waterfall effect as they are pushed one Available to Plan (ATP) day at a time until enough days are encountered that can absorb the excess receipts. The waterfall method is intended to help ensure that a small number of items are not pushed out many days or weeks making them excessively overstocked.

The capacities can only be enforced if there are days able to absorb the excess. Therefore this process is most successful when the retailer's warehouse inbound plan has peak times with proportionally large or sustained valleys.

The smoothing push of orders on days exceeding the capacity is a precursor to supplier minimum scaling and container scaling. By performing the push first, more days are likely to have already met any supplier minimum. Additionally, it ensures that containers are only built and scaled once. The downstream processes must not allow the warehouse maximum capacity to be broken when attempting to scale.

## Partial Pallet Rounding in Scaling

When partial pallet rounding is on any partial pallet order, quantity is treated as a full pallet when determining the available pallet capacity for smoothing and scaling. The order quantity does not change, rather scaling and smoothing rounds up the item's partial pallet when summing across items. This prevents items of partial pallets from being combined onto the same pallet when summing the pallets.

## Scaling Visibility /Pre-scaled Order Quantity

The Order Maintenance screen and the Scaling Group Order Review screen both display a new column that shows the original order quantity from the replenishment engine. The original order quantity shown is before smoothing and scaling are performed which allows the user to compare the scaled order quantity to the original quantity.

## Dynamic Replenishment Method

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**Note:** An update to the *Oracle Retail Advanced Inventory Planning Store Replenishment Planning User Guide* is in progress with the information below.

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The Dynamic Replenishment Method for Stores is significantly improved. Specifically, the definition of safety stock for stores has changed. As detailed in the *Oracle Retail Advanced Inventory Planning Store Replenishment Planning User Guide*, the method continues to calculate an Acceptable Unit Loss (AUL) for the Review Time and then determines a Safety Stock based upon the use of a lookup table using the derived AUL value.

Both the calculation of the AUL and the determination of the subsequent safety stock value make use of the Standard Deviation over Review Time. It is the calculation of Standard Deviation over Review Time that has been heavily modified.

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**Note:** The calculation of Standard Deviation over Review Time for Stores replace the previously documented calculations in the *Oracle Retail Advanced Inventory Planning Store Replenishment Planning User Guide*.

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## Calculation of Standard Deviation over Review Time for Stores

The calculation of Standard Deviation over Review Time for stores has been enhanced to account for the seasonality of an item. Previously, the calculation assumed Standard Deviation over Review Time was a constant for a given item/store. However, the safety stock may need to be higher in periods when the item is selling more and conversely lower in periods when the item is not in season.

A store Forecast Demand Index (FDI) has been made available to correct for such cases. The FDI is calculated as the forecast over the review time divided by the average demand for the same review time. The seasonal component of FDI comes from the fact that the forecast includes seasonality information, while the average demand is a baseline demand.

The average demand for the review time is determined by calculating an Average Daily Demand (ADD) and then multiplying by the length of the review time. The ADD is calculated by summing up the actual sales for a user-specified number of days and dividing by the number of days specified.

FDI can be calculated in AIP or can be interfaced from external sources. A Forecast Demand Index Calculation Indicator determines whether AIP calculates the value or uses the interfaced value. The measure containing the interfaced value is defaulted to 1, so that the absence of an interfaced value leaves the rest of the calculation intact, although devoid of seasonal impact.

The final calculation of Standard Deviation over Review Time for stores depends upon which of the Daily Store Forecast Standard Deviation (DSFSD) or Weekly Store Forecast Standard Deviation (WSFSD) external feeds are provided.

Store Calculation Expressions	
Standard Deviation over Review Time	$\sigma_{RT}$
Average Daily Demand Period (specified by the user)	ADDP
Actual Sales for the store for the specified day.	AS
Daily Store Forecast Standard Deviation	DSFSD
Weekly Store Forecast Standard Deviation.	WSFSD
Number of days in the Review Time.	RT
Store Forecast Demand Index for the ATP day.	$FDI_{ATP}$

Store Calculations	Formula
If Store Forecast Demand Index (FDI) Calculation Indicator is true.	$FDI_{ATP} = \frac{\sum_{i=BRT}^{ERT} Dmd(i)}{RT \times ADD}$
If Store Forecast Demand Index (FDI) Calculation Indicator is not true.	$FDI_{ATP} = \text{Loaded value for the SKU/Location/ATP day}$
Average Daily Demand (ADD)	$ADD = \frac{\sum_{i=today-ADDP}^{today-1} AS(i)}{ADDP}$

Store Calculations	Formula
Standard Deviation over Review Time if Daily Store Forecast Standard Deviation (DSFSD) is provided.	$\sigma_{RT} = DSFSD \times FDI_{ATP} \times \sqrt{RT}$
Standard Deviation over Review Time if Weekly Store Forecast Standard Deviation (WSFSD) is provided.	$\sigma_{RT} = \frac{WSFSD}{\sqrt{7}} \times FDI_{ATP} \times \sqrt{RT}$

## Fixed Issues/Defects

The following table contains issues or defects that have been fixed for the current release.

Defect Number	Fixed Issue/Defect
9301685	Corrected the calculation of Stock Cover Days in the SRP Evaluation and SRP Interactive Evaluation workbooks.
9306280	Supplier hierarchy descriptions in the AIP Oracle tables and code increased to accommodate full 40 characters.
9310195	The on-order and in-transit feeds, along with the Expected Receipts, now display zero in the workbook for non-active SKU/Store combos.
9321241	The Out of Stock Alert generates if the alert masks are turned off for previous days and turned on for today.
9351518	RMS-AIP Transformation schema and code changed to accommodate pack quantities of four characters by changing PACK_QUANTITY field from int8 to int16.
9384770	The IpPSCDV measure is now registered at the SKUG/DSTK/day level as opposed to SKPS/DSTK/day level. Also, because this is only displayed in the workbook, the db has been removed for this measure too.  The calculation of IpPSCDV now ensures that when aggregating the measure from SKPS to SKUG that non populated values are not factored into the average. In the workbook, there is still an aggregation method of average for the measure so that zero days are factored in when rolling up the time dimension. Note that as designed, zeros are factored in if rolling up SKUG to a higher level.
9436564	The WRP Sales Forecast Alert and WRP Sales Forecast Alert - What If measures now populates when the WRP Sales Forecast Detailed Alert measure is loaded from RDF.
9436587	Reconciliation no longer considers stores as valid destinations during stockless push processing when a SKU is subject to a SKU Cap
9436616	SRP Overstock alert should not limit cover days to the fixed period. The number of days the inventory covers is calculated until the stock runs out or the end of the planning horizon is reached.

<b>Defect Number</b>	<b>Fixed Issue/Defect</b>
9438429	According to AIP's logic, "today" is included in the number of planning horizon days. Thus, the included days in the planning horizon are from today through today+plnhzn-1. The day of today+plnhzn represents the first day outside of the planning horizon. Store Ordering Packsize is calculating correctly as are the other DM binaries.  The code is now corrected so that the BuildStoreSchedule.cpp no longer sets up plannable days that include the first day outside of the planning horizon.
9459152	The warehouse_feedback.sh script now clears the re-planned URP measure prior to executing batch the next day.
9467400	Updated the generateReconfigPartDimXml.ksh script to correctly handles the new subclass, class and department that partially match the names of the existing positions.
9469462	Corrected the iteration logic that is used when calculating High Planned Orders Alert to match the destinations to their corresponding SKUs.
9475894	Streamlined the calculation of Stock Cover Days so that it performs better.
9487221	The Overstock Alert no longer triggers for only today. This restriction is removed.
9548879	Changed export of Warehouse Receipt to Availability Lead Time from AIP-Oracle to AIP-RPAS from delta to compressed future refreshed to allow the user to end Receipt-to-Availability Lead-Time (RALT) for a SKU pack size-destination combination.
9554866	The Sales Week measure is removed from the workbooks because the information is redundant. The user can determine the Sales Week by referring to the specific week position displayed in the workbook.
9912649	The projected inventory calculation in the workbook no longer includes SPQs from vendors.
9943058	The replenishment net inventory calculation now clears prior to the daily AIP batch run.
9937435	The fixed period calculation is now correct when SPQs are involved.

## Known Issues

The following table contains issues that have been identified for the current release.

<b>Defect Number</b>	<b>Known Issue/Defect</b>
6932301	When an order, which is already in transit, is partially cancelled in AIP via the Order Management screen, the message fails to cancel the order quantity in RMS with EXCEED_MAX_QTY failure message.
8287906	In Order Management, for orders with an outstanding quantity greater than the in-transit quantity, double-clicking the outstanding quantity changes the value even if no edit is made.
8574264	In Order Management, when a user moves the order quantity back to the original location with its new delivery date, the resultant message travelling through RIB to RMS raises the exception ORD_LOC_EXIST at RMS.

<b>Defect Number</b>	<b>Known Issue/Defect</b>
8727390	When a PO is re-routed while some quantity is in transit, the quantity received at old location is not updated in the non_contents_order or store_order table against that order.
9440442	For certain exception measures, AIP Oracle only sends information over to AIP RPAS once it is created, regardless of whether this information exists within the planning horizon or not. For example if a Placement Schedule exception is created in AIP Oracle somewhere in the future beyond a SKU's planning horizon, it is sent to AIP RPAS and loaded, however extendExpr deletes this information. AIP Oracle never sends it again.
9440451	While running cron_import.sh, if the on supply off supply data import fails for any specific reason, a wrong error message displays on the logs.
9440549	Three automation procedures in the RETL_LOAD package can produce different results if they run on different servers. In these cases there may be more than one right answer, and the system selects the first available.
9440480	After executing cron_import, harmless warning messages are present on the hierarchy supplier import logs.
9440551	AIP batch halts with an error if had.txt and intv.txt do not exist when these files are supposed to be optional. The <i>Oracle Retail Advanced Inventory Planning Implementation Guide</i> contains a workaround to this issue at domain build time. Clients are instructed to touch had.txt and intv.txt when building their production domain. See the section on "Insert External System Data into the AIP RPAS Domain."
9440568	Initial values entered in Set Pallet and Set Order to text fields are retained when unchecked.
9440630	Pull forward working incorrectly when there are two delivery dates from same release date.
9440651	WRP Overstock alert should not limit days of stock cover to those days in the fixed period.
9440671	Some PO update messages from Order Management are not published from AIP to RMS.
9440652	Based the RIB Bypass module, AIP batch has the capability of executing the import of orders and the release of orders based on order type and destination type. However, the po_tsf_export.sh script still inefficiently operates on both the queue tables.
9440609	Missing Data Alert binary calculates dm1_msgdat "Missing Data" measure based on 1-day old data in dm1_prdalwsts_t "Product Allowable Status Temp" measure.
9440599	A more helpful error message displays when there are no BCS positions to allocate new BCS entries.
9523746	The High Projected Low Stock Alert should use Net Inventory (which includes Planned Receipts in the period) instead of Projected Inventory.
9623749	The measure, sr0_curinvinit, when going through 'process_inventory_data.sh', is getting multiple records for a sku/str due to multiple pack-sizes in the rms_formal_pack.dat. When loaded into AIP, the last record for a multiple in the input file is the one that eventually overwrites any previous record loaded, thus, the inventory data is incorrect.
9861477	No rounding should be performed when choosing to display in cases.
9903390	Load_non_rms_files.sh should not error if there are other files in the forecast directory with names that partially match the measure file name.

<b>Defect Number</b>	<b>Known Issue/Defect</b>
9903396	Projected Out of Stock Alert should never be able to trigger on the off supply date.
9903402	A value of -1 should be allowed for the Daily Forecast Length measure.

## **Related Documentation**

For more information, see the following documents in the Oracle Retail Advanced Inventory Planning 13.1.3 documentation set:

- *Oracle Retail Advanced Inventory Planning Installation Guide*
- *Oracle Retail Advanced Inventory Planning User Guide*
- *Oracle Retail Advanced Inventory Planning Implementation Guide*
- *Oracle Retail Advanced Inventory Planning Operations Guide*
- *Oracle Retail Advanced Inventory Planning Data Management Online Help*
- *Oracle Retail Advanced Inventory Planning Data Management User Guide*
- *Oracle Retail Advanced Inventory Planning Order Management Online Help*
- *Oracle Retail Advanced Inventory Planning Order Management User Guide*
- *Oracle Retail Advanced Inventory Planning Data Model Volume 1: Oracle Data Model*
- *Oracle Retail Advanced Inventory Planning Data Model Volume 2: Measure Reference Guide*

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