Oracle® Retail Advanced Inventory Planning

Release Notes

Release 14.0

December 2013

This document highlights the major changes for Release 14.0 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.

> **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.

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 Retail Predictive Application Server (RPAS) foundation to which it is tied.

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
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
October 29, 2010	Full Release (AIX 5.3, AIX 6.1, HP-UX 11.31, OEL 5.3, Solaris 10)	13.2	13.2

Date	Version Category	AIP Version	RPAS Version
January 31, 2011	Hot Fix (AIX 5.3, AIX 6.1, HP-UX 11.31, OEL 5.3, Solaris 10)	13.2.0.2	13.2.1
July 8, 2011	Full Release (AIX 5.3, AIX 6.1, HP-UX 11.31, OEL 5.3, Solaris 10)	13.2.2	13.2.2.9
November 4, 2011	Patch Update (AIX 6.1, HP-UX 11.31, OEL 5.5, Solaris 10)	13.2.3	13.2.3
April 13, 2012	Patch Update (AIX 6.1, HP-UX 11.31, OEL 5.5, Solaris 10)	13.2.4	13.3
May 3, 2012	Full Release (AIX 6.1, HP-UX 11.31, OEL 5.5, Solaris 10)	13.3	13.3
December 21, 2012	Full Release (AIX 6.1, HP-UX 11.31, OEL 5.8, Solaris 10)	13.4	13.4.0.1
August 23, 2013	Patch Update (AIX 6.1, HP-UX 11.31, OEL 5.8, Solaris 10)	13.4.1	13.4.1
December 14, 2013	Full Release (AIX 6.1,7.1,HP-UX 11.31, OEL 6.3, Solaris 11)	14.0	14.0

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

Technical Enhancements

AIP 14.0 includes the following technical enhancements.

Lead Time Calculation

Previously computed in RPAS batch, the calculation for delivery lead time at both warehouse and store locations has been moved to AIP Oracle. The output of this calculation includes both the primary and secondary lead time measures. A new PL/SQL package has been created to facilitate the calculation of this data.

A new export process exports the lead time data from AIP Oracle to AIP RPAS. This enhancement also reduces the overall amount of data transferred from AIP Oracle to AIP RPAS, since the input files for calculating lead time are no longer needed in AIP RPAS.

Database Upgrade

Users now have the ability to upgrade the database directly from 13.2.3 to the current version without having to upgrade to each of the respective intermediate releases first.

Release 14.0 no longer uses the tablespaces RETEK_DATA and RETEK_INDEX tablespaces. They should be renamed to RETAIL_DATA and RETAIL_INDEX. It is absolutely essential that a complete backup has been taken prior to performing this task.

For information, see the *Oracle Retail Advanced Inventory Planning Installation Guide*

This change is noted in the Noteworthy Defect Fixes.

AIP Batch Steps

The order in which the AIP batch steps are processed has been changed due to change in process for the Lead Time Calculation on AIP Oracle.

JAVA Upgrade

AIP Oracle Online is upgraded to work with JRE7U45.

Functional Enhancements

AIP 14.0 includes the following functional enhancements.

Cross-docking

Within AIP, cross-docking describes the movement of a discrete quantity of inventory between an original source and a final destination through one or more intermediate locations. The original source can be a vendor or a warehouse and the final destination must always be a warehouse or store. The intermediate locations are always warehouses.

The physical movement of inventory involves it passing through each node in the path between the original source and the final destination. However, from an AIP planning perspective the original source (and not one of the intermediate locations) is considered the source of the final destination (allowing for the fact that warehouses can have multiple sources). Therefore, to the replenishment engine, it views the inventory as moving directly from the original source to the final destination which results in the need for a cross-dock schedule between the original source and the final destination.

At the end of the batch process prior to release, the single inventory movement between original source and final destination is broken up into the individual movements required to physically move the inventory through the supply chain.

Pre-allocation

Pre-allocation is the process which links inbound receipts to outbound shipments at a single level of the supply chain. The usual assumption is that any arriving inventory that is not allocated to an outbound shipment is put away in the warehouse for a pre-determined length of time known as an allocation window.

However, there are business scenarios where all inbound inventory must be allocated regardless of whether or not it exceeds the need from downstream destinations. For

situations such as these, a new setting known as the Pre-allocation must consume flag has been introduced. Setting this flag to True indicates that stock must not sit at the warehouse longer than a certain number of days known as the pre-allocation staging window, which is anchored on a delivery date.

AIP Dashboard for Fusion Client

The AIP Dashboard is a new usability feature for the RPAS Fusion Client as a way to view AIP receipt plan data that is relevant to the user without having to build a workbook. The AIP Dashboard displays on the home page of the Fusion Client and is composed of five distinct sections including three tabs for filtering the viewable products, locations, and orders, a table, and its related graph for viewing the measure data.

With the AIP Dashboard, users can:

- Choose which products and locations are shown in the dashboard components
- Select which measures are to be displayed in the table and graph from a list of common warehouse and store receipt plan measures
- Change the timeline over which this data is viewed
- Build a workbook based on the data displayed in the dashboard without having to step through the wizard pages that would normally be required

Selections made in the AIP Dashboard will be saved per user.

Commerce Anywhere

AIP has enhanced its facilitation of Commerce Anywhere through supporting multiple demand fulfillment mechanisms such as brick and mortar stores, kiosks, websites, catalogs, and others.

To enable this AIP supports non-stockholding—or virtual—stores. Defining the non-brick-and-mortar locations as non-stockholding stores allows these alternative channels to have many of the same item tracking attributes as any other store. These include price, promotions, sales transactions, and inventory tracking. Sales transactions are logged against non-stockholding stores for the purposes of financial accounting, reporting and demand forecasting, but these locations do not physically hold inventory.

Back Order quantity represents a quantity of inventory which has been purchased by customers but which is not immediately available at the fulfillment location. To support Commerce Anywhere, AIP also considers Back Order quantities as additional store or warehouse demand.

No Safety Stock Replenishment

A new replenishment method called No Safety Stock aids replenishment of stockless warehouses, non-stockholding stores, or any business case desiring replenishment without safety stock.

Activity Taskflow for the Fusion Client

The activity taskflow is a pane available to users logged into the Fusion Client that guides them through the creation and views of the AIP workbooks.To support usability, the default taskflow has been reconfigured to better suit a user's business

workflow. The default taskflow remains configurable within the RPAS Configuration Tools.

Workbook Measure Profiles

This release introduces several new AIP measure profiles that can be displayed in the workbooks within the RPAS Fusion Client. These profiles allow users to more conveniently view measures that are pertinent to specific situations while hiding those that are not applicable. For example, individual profiles have been created to show measures relevant to each of the respective replenishment methods available within AIP in a specific worksheet without including all those measures that would not apply to the given scenario.

Network Replenishment Workbook

The Network Replenishment workbook combines worksheets containing warehouse-specific replenishment data with those containing store-specific replenishment data into one workbook. This allows users to view a more complete picture of the replenishment plan within a supply chain without having to switch between workbooks. The user is also able to perform What-if analysis on the replenishment plan by changing various replenishment parameters.

Store Rounding Configuration

In the past, store rounding calculations have allowed for a store order to be rounded below the quantity required to satisfy sales. For this release, AIP has implemented a configuration switch that, when set, would always round a store order up to the next whole case in the event that rounding down would compromise sales.

Aesthetic Stock Minimum Cap

The calculation of the Receive Up To Level (the ideal inventory level when an order is generated) has been amended to address concerns in situations where there is a minimum aesthetic stock requirement. The aesthetic stock minimum ensures that the level of inventory in stores is at least enough to look aesthetically pleasing on display.

Historically, there was only the option to add aesthetic stock to demand – a situation that resulted in too much inventory being carried. An option is now available to the user where the larger value between the aesthetic stock and demand is considered in the Receive Up To Level calculation.

This enhancement effectively caps the amount of stock that is sent into a store above the needed demand. This ensures that even when demand is low, the store still has enough of the product on their shelves to look aesthetically pleasing without becoming overstocked.

Integration Enhancements

AIP 14.0 includes the following integration enhancements.

Non-stockholding Stores

As part of Commerce Anywhere, AIP accepts a feed of non-stockholding stores from RMS. These locations, also known as virtual stores, are for non-brick-and-mortar

locations such as kiosks or websites that cannot hold stock but are included in AIP supply chain replenishment.

Back Order Quantity

As part of Commerce Anywhere, AIP now accepts a feed of store and warehouse back order quantities from RMS. Back Order Quantity represents a quantity of inventory which has been purchased by customers and is not immediately available at the fulfillment location.

Warehouse On Order, In Transit, and Allocations In The Well Loaded by Transaction ID

As part of Pre-allocation, AIP now requires that a transaction ID is included from these files received from RMS:

- Warehouse on Order
- In Transit
- Allocations in the Well

Documentation Enhancement

AIP 14.0 includes the following documentation enhancement.

Security Guide

This new guide addresses AIP's product security features, including its physical deployment diagram. Additional topics include securing the database for AIP, database security considerations, WebLogic server considerations, and setting up keystores.

Noteworthy Defect Fixes

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

Affected Component	Fixed Issue/Defect	Defect Number
AIP Data Management	Receiving error indicating object type department is invalid when trying to view departments in Data Management.	15851968
AIP Online	Data Management and Order Management are modified to use JNLP launch instead of APPLET/OBJECT tags.	16583298
AIP Oracle - Database	Tablespace name prefix is changing from RETEK_ to RETAIL_.	16529691
AIP Oracle Batch - BSA	The buffer size limit included in the Batch Scripting Architecture (BSA) script is causing an overflow error when running container scaling on large dataset.	17277950

Affected Component	Fixed Issue/Defect	Defect Number
AIP Oracle Batch - Export	Delivery-day Demand Percentage (DDP) exception values are correctly populated in online windows, but are rejected when exported to RPAS.	16984872
AIP Oracle Batch - External Loads	Error received in online window when attempting to view an Order Group that was loaded externally.	16922890
AIP Oracle Batch - Purging	Delivery-day Demand Percentage (DDP) default values are being incorrectly purged every Saturday.	16984557
AIP Oracle Batch - Scaling	Post_scale script does not clean-up data files after running.	16275105
AIP Oracle Batch - Scaling	AIP Online Batch failed with unique constraint violation during scale ordering.	16629067
AIP Oracle Batch - Scaling	Error creating pull list for supplier minimum scaling.	16770307
AIP Oracle Data Management	User cannot enter an underscore character in the class field of AIP online windows.	16170259
AIP Oracle Data Management	Unable to change receiving calendar pattern for both store and warehouse from Data Management.	16914921
AIP Oracle Order Management	Unable to edit the total quantity in the Order Maintenance window.	17510218
AIP Oracle Order Management	Unable to release order from Order Maintenance window.	17596697
AIP RPAS Installer	Upgrade to AIP 13.4 or above will fail if a customer attempts to upgrade from AIP 13.2.3 without upgrading to AIP 13.3 first.	17636532
AIP RPAS Workbooks	Error encountered when attempting to build workbook after user selects fewer days in wizard than length of planning horizon.	16363461
AIP RPAS Workbooks	User should not be able to choose a blank value in a dropdown picklist for replenishment measures in workbooks.	16808750
AIP RPAS Workbooks	Allocations in the Well measure is not populated in the Network Throughput Plan workbook.	17458518
AIP RPAS Workbooks	Projected Outbound Plan in Cases measure is not populated in the Network Throughput Plan workbook.	17458627
AIP RPAS Workbooks	Rule groups for SRP Evaluation workbook and SRP Interactive Evaluation workbook are using a ranged stores measure before it is populated.	17538267
Batch Scripting Architecture	BSA scripts fail when using typeset -i on Sun Solaris 11.	17262883
RPAS Batch	Delivery-day Demand Percentage (DDP) is not correctly populated in batch when a location has an expected receipt on a day that is not an ATP day.	16103482
RPAS Batch	Replenishment batch process fails when the N/A value of the Prioritize External Demand measure is set to False in a workbook.	16835007

Affected Component	Fixed Issue/Defect	Defect Number
RPAS Batch	Total Forecast Demand measure is incorrectly calculating when taking into account external demand.	16955230
RPAS Batch	Warehouse Met Demand measure is calculated on the incorrect day with regards to the external demand.	17451727
RPAS Batch - Alerts	Performance issue with running scripts for SRP alerts.	16437682
RPAS Batch - Alerts	WRP Overstock Alert not triggered due to ignoring days with zero demand in cover days calculation.	16879622
RPAS Batch - Alerts	Inbound Day On Day Change alert is triggered incorrectly in certain scenarios.	16955956
RPAS Batch - Alerts	Day On Day Change alerts not triggering in certain scenarios.	17362254
RPAS Batch - Inventory Capping	AIP Store Receipt Plan is not being generated when using Inventory Capping.	14773695
RPAS Batch - Inventory Capping	Exception level intersection of SKU_Store added to Inventory Capping.	16678630
RPAS Batch - Inventory Capping	Adding the SKU_Store exception level for inventory capping caused an error when attempting to build workbooks after setting the cap.	17402111
RPAS Batch - Purging	Measure for the warehouse orderable unit still shows the SKU pack-size that has been purged from the hierarchy.	16529054
RPAS Batch - Rounding	Store Round to Minimum Sales Stock Flag is not rounding up by an order multiple.	16686925
RPAS Batch - Rounding	Rounding Threshold is not accepting the default value of 1.	16686994
RPAS Data Management Batch	Unexpected cell type batch error encountered when running Data Management batch.	16203458

Known Issues

The following table contains known issues for the current release.

Known Issue/Defect	Defect Number
Due to a defect in RPAS Fusion client, there is a known issue when multiple users access the AIP Dashboard with different locales. Users will see the first locale used irrespective of their locale settings. Use the workaround instructions to delete all of the external ViewControllerBundle*.properties files. **Workaround Instructions** Follow these workaround instructions for defect 17707591. To delete all of the external ViewControllerBundle*.properties files: 1. Go to `<fusion_config>/functionalmodulebundles/aip`. 2. Save a backup of the View folder `cp -r view view_bak`. 3. Delete all files from the View folder. 4. Restart the application server with the Fusion Client and AIP Dashboard running. Users should now be able to view AIP Dashboard in different locales without any issues.	17707591
In AIP Online, some of the foreign language translations are too long for the current fields and are being truncated. This is occurring for different fields depending upon the language it is translated into.	15986091
In pre-allocation, some constrained receipt plans may not be added after iterating through the allocation periods. Constrained receipt plans that may be missed occur in one of the three following scenarios. Missed constrained receipt plans may exist when they: ■ Are in the shared availability period before the first allocation period ■ Are in between allocation periods if the staging window is set ■ Occur after the final allocation period has ended	17607515

Known Issue/Defect	Defect Number

When upgrading from a previous version of AIP to AIP 14.0, there may still be issues with some of the registered measures even if the patch has been successfully applied and the domain upgraded. The issue with these measures is that the suffix array is not updated properly during the upgrade process. Any measure which previously had an aggregation method that was not HYBRID and was changed to HYBRID experiences this issue.
 	
The measures known to be experiencing this issue are:
ipcpcopinvi, ipcpcopinvcv, ipcpcopinvncv, ipcpcopinvni, ipexprcpv, ipdmdo, sr0_hstrcppln, sr0_hstss, ipldsshstv, ipprjinvv, ipprsprjinvv, ipopinvcv, ipopinvncv, ipplnrcpo, ipprsplnrcpo, iprcpptv, iprcputlv, ipssv, sr0_exprcp, sr0_dmd, sr0_hstss_ld_, sr0_pckdmd, sr0_pckrp, sr0_pckrutl, sr0_pckss, sr0_prjinv, sr0_rcppln, sr0_ss_, ipttldmdo, ipttldmdcv, ipordmdo, ipdmdrtv, iporplnrcpo, iporttldmdo, iporttldmdw, wr1_rp_rll, wr1_prjinv, ipttlfstdmdcv, ipfwplninvcv, idstrprjinvv, idstrexprcpv, idstrttlplnrcpv, idstrdmdv.
 	
Workaround Instructions
 	
Note: Ensure that a complete backup has been taken prior to performing this task.
 	
For each of the measures affected, follow these workaround instructions for defect 17853395.
 	
1. For the current measure, find the measure intersection by running the following command in the command line:
 	
`printMeasure -d [global domain path] -m [current measure] -specs | grep baseint | awk '{print $2}'`
 	
2. Find the sfx array for the current measure by running the following command in the command line:
 	
`ls [global domain path]/data/*/[current measure]sfx*`
 	
Note: If no result was found from the command, skip to Step 4.
 	
3. If the sfx array was found in Step 2, run the following command in the command line:
 	
`$RPAS_HOME/bin/.private/populateArray -array $(ls [global domain path]/data/*/[current measure]sfx* | sed 's|.ary||' | sed 's|\.db/|\.|') -set aggint1:i[current measure's intersection],aggmethod:hybrid,aggint2:none,history:current -value 1 -type numeric`
 	
4. Repeat Steps 2 and 3 with each local domain path substituted for the global domain path.
 	
5. Repeat Steps 1 through 4 for each individual measure affected.
	17853395

Related Documents

For more information, see the following documents in the Oracle Retail Advanced Inventory Planning Release 14.0 documentation set:

- *Oracle Retail Advanced Inventory Planning Administration Guide*
- *Oracle Retail Advanced Inventory Planning Data Management Online Help*
- *Oracle Retail Advanced Inventory Planning Data Management User Guide*
- *Oracle Retail Advanced Inventory Planning Data Model Volume 1—Oracle Database Data Model*
- *Oracle Retail Advanced Inventory Planning Data Model Volume 2—Measure Reference Guide*
- *Oracle Retail Advanced Inventory Planning Implementation Guide*
- *Oracle Retail Advanced Inventory Planning Installation Guide*
- *Oracle Retail Advanced Inventory Planning Operations Guide*
- *Oracle Retail Advanced Inventory Planning Order Management Online Help*
- *Oracle Retail Advanced Inventory Planning Order Management User Guide*
- *Oracle Retail Advanced Inventory Planning Security Guide*
- *Oracle Retail Advanced Inventory Planning Store and Warehouse Replenishment Planning Online Help*
- *Oracle Retail Advanced Inventory Planning Store and Warehouse Replenishment Planning User Guide for the RPAS Fusion Client*

The following documentation may also be needed when implementing AIP:

- Oracle Retail Planning Batch Script Architecture (BSA) Implementation Guide
- Oracle Retail Integration Bus (RIB) documentation, based on type of deployment
- Oracle Retail Extract Transform and Load (RETL) documentation
- Oracle Retail Predictive Application Server (RPAS) documentation

My Oracle Support Documents

These Oracle Retail Advanced Inventory Planning Release 14.0 documents are available on My Oracle Support:

- *Oracle Advanced Inventory Planning Calculations for Store and Warehouse Replenishment Planning*
- *Oracle Retail Commerce Anywhere Functional Solution Guide*
- *Oracle Retail Commerce Anywhere Technical Integration*