Oracle® Retail Demand Forecasting

Release Notes

Release 16.0.2

January 2018

Oracle Retail Demand Forecasting (RDF) is a statistical and promotional forecasting solution. It uses state-of-the-art modeling techniques to produce high quality forecasts with minimal human intervention. Forecasts produced by the Demand Forecasting system enhance the retailer's supply chain planning, allocation, and replenishment processes, enabling a profitable and customer-oriented approach to predicting and meeting product demand.

All Oracle Retail Grade and Oracle Retail Curve documentation is included with the RDF documentation. The packaging and delivery of Curve and Grade remains the same.

> **Note:** Because RDF, Curve, and Grade use the Oracle Retail Predictive Application Server (RPAS) platform, Oracle Retail recommends that you review the *Oracle Retail Predictive Application Server Release Notes* for fixed and known issues that may affect RDF.
>
> In addition, RPAS 13.3 and later releases have significant technical enhancements related to hierarchy management (such as integer indexing) that have an effect on the configuration and maintenance of RDF, Curve, and Grade. You must upgrade to key RPAS versions and complete the upgrade process as described in the chapter, "Patch Installation" in the *Oracle Retail Demand Forecasting Installation Guide* before upgrading to a 16.0.2 RDF domain.

Grade Overview

Grade is a clustering tool that provides insight into how various parts of a retailer's operations can be grouped together. Typically, a retailer may cluster stores over item sales to create logical groupings of stores based upon sales of particular products. This provides increased visibility to where products are selling, and it allows the retailer to make more accurate decisions in merchandising. Beyond this traditional use of clusters, Grade is flexible enough to cluster any business measure based on products, locations, time, promotions, customers, or any hierarchy configured in the solution.

Key Grade functionality includes:

- Two methods of creating Grades/Clusters:
- Breakpoints: the sorting of data points into groups based on user-defined indexes
- Clustering, or the BaNG Algorithm: the optimization of data points into clusters based on the user-defined number of clusters

- Group By capabilities: support the segmentation of clusters for more detailed and focused cluster generation
- Clustering statistics: provide insight into the relationship of members within a cluster and how all clusters relate to one another
- Cluster What-if: allows user changes to members assigned to clusters and the review of recalculated clustering statistics

Regardless of the method employed to create clusters, Grade is designed to support the decision-making process necessary to create effective and actionable groupings of data.

Curve Overview

Curve is an optional automated predictive solution that can generate ratio arrays from historical data at user-specified intersections. The profiles generated by Curve can be used for various purposes; for example, they can be used to convert the organization level assortment plans into base level weekly sales forecasts and to generate seasonal forecasts, daily forecasts, or new product forecasts using lifecycle profiles.

Important Steps to Address RMS/RPAS/RDF Integration

This section describes important steps to address the RMS/RPAS/RDF integration.

Change of Class and Subclass Naming

Oracle Retail Merchandising System (RMS) sends hierarchy files to Oracle Retail Demand Forecasting (RDF). RMS ensures that a class is unique to only its department and a subclass is unique to only its own class. In other words, Dept10 and Dept. 20 both can contain Class 100. However, within RPAS, unless class names are unique across the domain, it results in a multi-parent problem. Prior to Release 13.1.2, RDF tried to ensure uniqueness by concatenation of positions as follows:

- RDF Class = RMS Dept + RMS Class
- RDF Subclass = RMS Dept + RMS Class + RMS Subclass

However, this can result in a multi-parent problem. For example:

RMS Department	RMS Class	RPAS/RDF Class
10	110	10110
101	10	10110

In this scenario, Clss10110 rolls into both Dept10 and Dept101. This is not acceptable in any RPAS application.

Resolution

Position names are made unique by adding an underscore. In the previous example, the classes would be named Clss10_110 and Clss101_10. However, when these position names are corrected and new hierarchy files are created, the existing class/subclass name no longer exists. Therefore, if the upgrade process is not specifically followed, any data that was stored at the class or subclass level (such as Clss10110) is erased.

Important: Failure to follow these upgrade instructions could result in data loss.

The following upgrade process needs to be followed only by the customers who:

- Use standard integration between RMS and RPAS based applications (other than AIP).
- Have stored data at class or subclass levels.
- Upgrade from a version prior to 13.0.4.18 to 13.0.4.18 or later. Those customers must apply the Upgrade Process for Class and Subclass Naming. In the future, customers already on 13.0.4.18 or later do not need to use this process again.

Upgrade Process for Class and Subclass Naming

1. Point the environment variable RPAS_HOME to the new RPAS_HOME.
2. Run the script `$RPAS_HOME/rfx/src/rmse_rpas_merchhier.ksh` to generate the `rmse_rpas_merchhier.dat` file. This is how the new position names are generated.
3. Run `repos.ksh` with the `-a n` flag to produce the position rename file and run **renamePositions** without applying the changes. Examine the log file `PRODrename.log` for errors.
4. When ready, run the `repos.ksh` script without the `-a y` flag to apply the changes.

Change of Position Label Widths

Fields lengths for RDF hierarchies were increased to accept wider labels from RMS. These new field lengths are currently not patchable directly in any RPAS domain. Therefore, the following upgrade process must be followed:

Upgrade Process for Field Lengths

All customers using 13.0.4.18 and earlier should perform the following steps every time a new hot fix is applied.

1. Export the following environment variables in the environment before running the upgrade scripts.
   - UPGRADE_HOME: This variable should point to the path of upgrade scripts where `environment.ksh`, `updateschemafiles.ksh`, `updatetoolsconfiguration.ksh`, and other configuration files are present.
   - RDF_DOMAIN_PATH: The path of RDF domain which you are going to patch. The dimension field length of this RDF domain is taken and applied to the configuration and schema files.
   - RDF_SCHEMA_DIR: The RETL RDF schema files directory. This must be the latest release directory, which you use for patching. It points to the SCHEMA files location in the release, which you use for patching the RDF domain.
   - TOOLS_CONFIG_DIR: The Configuration Tools XML files directory. It points to the directory where the `hierarchy.xml` file is present. It must be the latest release directory which you use for patching.
   - UPGRADE_BACKUP_DIR: A backup of SCHEMA and `hierarchy.xml` files is kept in this directory.

2. Set up the following upgrade scripts:
   - The `updateschemafiles.ksh` script updates the dimension field length of schema files to the length as available in the domain.
   - The `updatetoolsconfiguration.ksh` script updates the dimension field length of configuration files to the length as available in the domain.
3. Change the directory to UpgradeScripts directory.

   ```
   $ cd UpgradeScripts
   ```
4. Run `updatetoolsconfiguration.ksh`. This updates the `hierarchy.xml` file.

   ```
   $ ./ updatetoolsconfiguration.ksh
   ```
5. Run `updateschemafiles.ksh`. This updates the RETL RDF schema files.

   ```
   $ ./ updateschemafiles.ksh
   ```

Note: For added visibility for retailers, these instructions are included in both the *Oracle Retail Demand Forecasting Release Notes* and the *Oracle Retail Demand Forecasting Installation Guide*. For more information, see the *Oracle Retail Demand Forecasting Installation Guide.*

Upgrade Note

While not directly related to RDF, the 13.3 Release of Oracle Retail Predictive Application Server (RPAS) has undergone a major change to simplify hierarchy administration. Full details of these changes are outlined in the 13.3 *Oracle Retail Predictive Application Server Release Notes*. Due to these changes, configuration updates have been made to RDF, and you will need to perform additional steps to upgrade your RDF domain, such as setting dimension sizes. The upgrade to RPAS 13.3 or later for this application includes a conversion process in addition to the normal upgrade process. Details are provided in the chapter, "Patch Installation", in the *Oracle Retail Demand Forecasting Installation Guide*.

Upgrading to 16.0.1.2

When upgrading to RDF version 16.0.1.2, if the current version is older than 14.0 and a life cycle profile was configured in Curve, then the domains need to be rebuilt. Patching will not work.

The GA version of CPEM is not upgradeable to version 15.0 from any other previous versions. The two main reasons are the changes in the cannibalization level, and the requirement for item/store level data.

If New Item functionality was implemented in a previous release, it must be updated as follows:

1. Add a new PATR hierarchy in the configuration. Use the PATR hierarchy in the new RDF GA configuration as an Example. The dimensions must be the same.
2. Add a measure in the common solution that is named prdAttT. For the measure properties, use the measure named prdAttT in the RDF GA's common solution as an Example.
3. The value of the attribute measure should be the position name of the PATV dimension.

4. Run the ForecastCommon plugin first and select the prdAttT measure as attribute measure in the ForecastCommon plugin.
5. Regenerate preprocessing, New Item, RDF and Promote solutions.
6. Create patr.csv.dat file and put it under domain's input directory. Use the file, `patr.csv.dat`, from the RDF GA as an Example when creating hierarchy files.
7. Patch the domain with the new configuration. For more details, refer to both the *Oracle Retail Demand Forecasting Implementation Guide* and *Oracle Retail Demand Forecasting Installation Guide*.
8. Create a measure load file for prdattT and load the measure.

Hardware and Software Requirements

See the Oracle Retail Demand Forecasting Installation Guide for information about the following:

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

Noteworthy Defect Fixes

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

Affected Component	Fixed Issue/Defect	Defect Number
Batch	The logic around adjusting time series that are sparsely populated was broken. This issue has been resolved by skipping the adjustments for very sparsely populated time series.	25676830
Plug-ins	The plug-ins should have some version information. This issue has been addressed.	25886304
UI	The applications should show the version information and not the platforms. This issue has been addressed.	25890464
Documentation	The *Oracle Retail Demand Forecasting Installation Guide* was revised with additional information about patching.	26240858
Batch	The Approved Forecast measure is not updated with zero values for two successive forecast generations when the second run has a forecast length shorter than the first run. This issue has been addressed.	26329557
UI	The custom menu for source measure maintenance is not available for the Russian language.	26334867
Batch	Although the outage measure was not a mandatory input to the override method in preprocessing, the adjustment was skipped if outage was not specified. This issue has been resolved by making outage a truly optional input.	26546132
Documentation	The *Oracle Retail Demand Forecasting Implementation Guide* was revised to include necessary details about preprocessing to prevent issues with configuration.	26583305

Affected Component	Fixed Issue/Defect	Defect Number
UI	The RDF plug-ins constrained the product image intersection to be the root of the hierarchy. This issue has been resolved by removing the constraint.	26638255
Batch	The override future only promotion effect type was not applied if the value was equal to the NA value of the measure. This issue has been resolved and the override works for any value.	26970736
Upgrade	The `rdf_upgrade_new_item_store_load.ksh` script is generating an error. This issue has been addressed.	27034232
Batch	If the inputs to preprocessing were invalid, the time series was skipped and the destination measure was not updated. This issue has been addressed by skipping the adjustment logic, but also copying the source measure in the destination measure.	27044048
Calculation	Cloning is generating extremely large values. This has been addressed by changing the measures involved in the calculation of the adjustment ratio from sum of sales to average of sales.	27194232
Batch	When a user selected to update the last week forecast for the approval process, only the approved forecast was updated. This issue has been addressed by also updating the approved system forecast.	27261876

Known Issues

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

Affected Component	Known Issue/Defect	Defect Number
Grade Workbooks	When navigating through the wizard selections for certain Grade workbooks, the selections are being duplicated on screen. The workbooks include Generate Grade Breakpoints and Generate Clusters.	18196485
Translation Files	There may be issues when loading translated strings into RDF.	20923721

Related Documentation

For more information, see the following documents in the Oracle Retail Demand Forecasting Release 16.0.2 documentation set:

- *Oracle Retail Demand Forecasting Implementation Guide*
- *Oracle Retail Demand Forecasting Installation Guide*
- *Oracle Retail Demand Forecasting User Guide for the RPAS Classic Client*
- *Oracle Retail Demand Forecasting User Guide for the RPAS Fusion Client*
- *Oracle Retail Demand Forecasting Release Notes*
- Oracle Retail Predictive Application Server documentation

The following documentation may also be needed when implementing RDF:

- *Oracle Retail Predictive Application Server Batch Script Architecture Implementation Guide*

Supplemental Documentation

The following document is available through My Oracle Support at the following URL:

https://support.oracle.com

Oracle Retail Demand Forecasting 16.0.2 Cumulative Fixed Issues (Note ID 2336479.1)

This document details the fixed issues and defects for all RDF, Curve, and Grade patch releases prior to and including the current release.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

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