

# Oracle® Retail Demand Forecasting

Release Notes

Release 15.0.1

May 2016

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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.

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**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 15.0.1 RDF domain.

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## 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.

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

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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
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**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*.

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## 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 15.0

When upgrading to RDF version 15.0.1, 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.

## 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

## Functional Enhancements

RDF 15.0.1 includes the following functional enhancements.

### Preprocessing Plug-in

A preprocessing plug-in is added, for easier configuration of the preprocessing functionality. For a detailed description of the functionality, refer to the *Oracle Retail Demand Forecasting Implementation Guide*. For installation information, refer to the section, “Upgrade for the Preprocessing Solution”, in the *Oracle Retail Demand Forecasting Installation Guide*.

### New Item Functionality

A New Item plug-in is added, for easier configuration of the attribute-based New Item functionality. It includes additional support for the new items when item attributes are not available. For a detailed description of the plug-in functionality, refer to the *Oracle Retail Demand Forecasting Implementation Guide*. For installation information, refer to the section, “Upgrade for the New Item Solution”, in the *Oracle Retail Demand Forecasting Installation Guide*.

### Scripts

With the introduction of RDF Cloud Service, many of the scripts used in RDF on premise were renamed for consistency and ease of implementation. For additional information, refer to the appendix, “RDF Script Names” in the *Oracle Retail Demand Forecasting Implementation Guide*.

## Documentation Enhancement

RDF 15.0.1 includes the following documentation enhancement.

### Oracle Retail Demand Forecasting Implementation Guide

The scope of the *Oracle Retail Demand Forecasting Implementation Guide* was increased to include both implementation and configuration options. The guide is improved with additional content, details, and examples.

## Noteworthy Defect Fixes

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

Affected Component	Fixed Issue/Defect	Defect Number
Measures	The Calculation Intersection Periodicity measure is no longer relevant and it was removed from the configuration.	22018684
CPEM Domain Build	When building a CPEM domain, the log may contain <code>DimAttrManagerException</code> for the measure <code>canmapsum</code> . This exception can be ignored and the newly built domain can safely be used.	22236816
RDF Domain Upgrade	After removing the dismantled <i>cloning</i> functionality, the RDF plug-in does not completely remove created measures, rules, and workbooks. This results in failure in the domain upgrade process. There is no available workaround and it is recommended to wait until the next hotfix before upgrading to Release 15.0.	22288455
Forecasting	Keep Last Change (total) is not preserving the Adjusted Forecast value in certain situations when running causal forecasting. The issue has been resolved by making sure both adjusted baseline and adjusted peak values are preserved.	22294720, 22159969
Forecasting	Exponential promotions tend to over-forecast for low volume, slow selling items. This issue has been addressed by introducing the option of capping for exponential promotions.	22294840
Curve	Curve is not calculating a profile for a daily seasonal profile final level. Typically, the start index of the profile is less than the end index of the profile, and then Curve works as expected. There are cases, though, when it is valid to have the end index happen before the start index. For instance for relative dimensions like day of week, day of season, and so on. Curve has been fixed to work for all types of calendar dimensions.	22373510
Measures	Removed the measures Fake History Adjustment and User Adjustment from the GA Configuration. In addition to removing the measure definitions, all the rules where the measures were used were cleaned up.	22484773
Forecasting	When using RDF automation to add a final forecast level at <code>day_item_str</code> , an error is displayed. The reason was the 53rd week functionality available in RDF, which is not available at the day level. This issue has been resolved by validating, and disabling the 53 week functionality for a day level, instead of displaying an error.	22513320
Forecasting	Winters Responsive generates unexpected forecast. The increased responsiveness of the method comes at the cost of instability. We recommend using Oracle Winters as the preferred seasonal forecasting method.	22691606
Workbook	Missing sheet with grouping-related thresholds. This issue has been resolved by adding a Threshold Maintenance worksheet to the Grouping Management workbook.	22713823

Affected Component	Fixed Issue/Defect	Defect Number
Scripts	The <code>rdf_auto_gen_config.ksh</code> script does not work properly when the configuration path is relative. This issue has been resolved by converting a relative path to an absolute path.	22827779, 23050450
Calculation	The similarity score calculation for New Items is incorrect. This issue has been resolved.	22976641
Measures	The measures for intermediate results of the preprocessing runs are not included in any worksheet of the Preprocessing workbooks. This issue has been resolved by including the adjustments of each preprocessing run.	23047846
Plug-in	There is no proper validation for an empty source level. This issues has been resolved by issuing a warning if a source level is empty.	23092839
Scripts	RDF scripts have been enabled to accept <code>globaldomainconfig.xml</code> as input.	23101826, 22330517

## Known Issues

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

Affected Component	Known Issue/Defect	Defect Number
Halo	Currently, in Halo batch, the promotion variable ( <code>paggxlcirc</code> ) that calculates the system forecast is from the previous batch. If users change the promotion indicator between the previous batch and Halo batch, then the change does not occur.	17799032
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
Override Option	There is no override option for the approval method in the Forecast Maintenance workbook. A workaround is provided in Bug DB.	19467391
Translation Files	There may be issues when loading translated strings into RDF.	20923721
Installer	The RDF Installer is creating the incorrect domain path in <code>Foundation.xml</code> . In the path, replace <code>rdf</code> with <code>RDF</code> so that the path is <code>.../RDF&lt;/domain-path&gt;</code> .  The path also needs to be updated for <code>CPEM</code> ; replace <code>cpem</code> with <code>CPEM</code> , so that the path is <code>.../CPEM&lt;/domain-path&gt;</code> .	23228539

## Related Documentation

For more information, see the following documents in the Oracle Retail Demand Forecasting Release 15.0.1 documentation set:

- *Oracle Retail Demand Forecasting Implementation Guide*
- *Oracle Retail Demand Forecasting Installation Guide*

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

The following documentation may also be needed when implementing RDF:

- *Oracle Retail Planning 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 15.0.1 Cumulative Fixed Issues (Note ID 2127030.1)**

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

## Supplemental Training on My Oracle Support

The following document is available on the My Oracle Support Web site. Access My Oracle Support at the following URL:

<https://support.oracle.com>

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#### **Value-Added Reseller (VAR) Language**

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