

Oracle® Retail Demand Forecasting Cloud Service

Release Notes

Release 18.0

F16494-04

October 2019

This document introduces Oracle Retail Demand Forecasting Cloud Service 18.0.

RDF Cloud Service Overview

Oracle Retail Demand Forecasting Cloud Service (RDF CS) provides accurate forecasts that enable retailers to coordinate demand-driven outcomes that deliver connected customer interactions. With a single view of demand, RDF CS provides pervasive value across retail processes, including driving optimal strategies in planning, increasing inventory productivity in supply chains, decreasing operational costs and driving customer satisfaction from engagement to sale to fulfillment. RDF CS, is a comprehensive solution that maximizes the forecast accuracy for the entire product lifecycle; with tailored approaches for short and long lifecycle products; the ability to adapt to recent trends, seasonality, out-of-stocks and promotions; and reflect the unique demand drivers of each retailer.

Note: Because RDF uses 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.

Oracle Retail Cloud Services and Business Agility

RDF Cloud Service is hosted in the Oracle Cloud with the security features inherent to Oracle technology and a robust data center classification, providing significant uptime. The Oracle Cloud team is responsible for installing, monitoring, patching, and upgrading retail software.

Included in the service is continuous technical support, access to software feature enhancements, hardware upgrades, and disaster recovery. The Cloud Service model helps to free customer IT resources from the need to perform these tasks, giving retailers greater business agility to respond to changing technologies and to perform more value-added tasks focused on business processes and innovation.

Oracle Retail Software Cloud Service is acquired exclusively through a subscription service (SaaS) model. This shifts funding from a capital investment in software to an operational expense. Subscription-based pricing for retail applications offers flexibility and cost effectiveness.

Client System Requirements

The following technology is supported:

- Operating system:
 - Microsoft Windows 7 or 10

Note: Oracle Retail assumes that the retailer has ensured its Operating System has been patched with all applicable Windows updates.

- Web browsers supported on Microsoft Windows 7 and 10:
 - Mozilla Firefox 60+ ESR
 - Google Chrome 77++
 - Microsoft Edge 44+

Functional Enhancements

RDF 18.0 includes the following functional enhancements.

Selecting the Best Forecasting Method

One challenge to accurate forecasting is the selection of the best model to account for level, trending, seasonal, and spiky demand. Oracle Retail's automatic evaluation of several methods eliminates this complexity. The automated approach can pick the best fit method among a large selection, like Simple Exponential Smoothing, Holt Exponential Smoothing, Additive and Multiplicative Winters Exponential Smoothing, Croston's Intermittent Demand Model, and Seasonal Regression forecasting.

Another approach is to combine the output of the competing methods to create a more robust forecast and minimize the risk of overfitting.

Overcoming Data Sparsity Through Escalation and Pooling Levels

Demand at low levels, such as item/store is usually too noisy to identify clear selling patterns, both for baseline and promotional sales. In such cases, generating a reliable forecast requires analyzing historical data at a higher level (escalation or pooling levels) in the hierarchy in which demand patterns can be consistently detected. The forecasting components estimated at these high levels, like seasonality curves and promotion effects, are combined with low level information, like base demand and trend, to create the low level forecast that is needed to drive the supply chain.

Forecasting Demand for New Products and Locations

RDF CS also forecasts demand for new products and locations for which no sales history exists. There are several options for new products. First, there is the option to go on auto mode, and the user does not have to do anything. Another option is model the new products demand based on that of an existing similar product for which you do have a history. Forecasts for the new products are copied from one item or can be a combination of multiple items.

Managing Forecasting Results Through Automated Exception Reporting

The RDF CS end user is typically responsible for managing the forecast results for thousands of items, at hundreds of stores, across many weeks at a time. The Oracle Retail Predictive Application Server Cloud Edition (RPAS CE) platform provides users with an automated exception reporting process that indicates to you where a forecast value may lie above or below an established threshold, thereby reducing the level of interaction needed from you. The framework for exception management is implemented using multiple features.

First there is the exception dashboard profile, where the user can filter down to desired merchandise/locations to view a hit count and the variance from the desired value of the forecast. Based on that information, the user can launch in a workspace where she can review only the exceptions inside the product and locations space defined in the dashboard filter settings.

Once in the workspace, the user navigates to flagged positions using the workbook alerts which are synchronized with the exception dashboards. When an exception is resolved, the result is committed to the domain, and the dashboard exception count – upon refresh – reflects the change.

Incorporating the Effects of Promotions and Other Event-Based Challenges on Demand

Promotions, non-regular holidays, and other causal events create another significant challenge to accurate forecasting. Promotions such as advertised sales and free gifts with purchase might have a significant impact on a product's sales history, as can fluctuating holidays such as Easter.

The causal forecasting functionality estimates the effects that such events have on demand. The results are used to predict future sales when conditions in the selling environment are similar. This type of advanced forecasting identifies the behavioral relationship of the variable you want to forecast (sales) to both its own past and explanatory variables such as promotion and advertising.

Suppose that your company has a large promotional event during the Back To School season each year. The exact date of Back To School varies from year to year, as a result, the standard time-series forecasting model often has difficulty representing this effect in the seasonal profile. The Promotional Forecasting module allows you to identify the Back To School season in all years of your sales history, and then define the upcoming Back To School date. By doing so, you can causally forecast the Back To School-related demand pattern shift.

Support for Short Lifecycle Merchandise

Short lifecycle items have the unique trait that they sell for a relatively short period of time and then never again. This type of merchandise can be divided as fashion items, and items that have replacements. For fashion items, the demand is modeled based on items that started selling around the same time of year in the past years. For instance, a spring collection for this coming year, is modeled based on a Spring collection that started selling in February in the past year.

The items that replace other items are treated differently. The demand for an item that will start selling is going to be modeled after the demand of the item that it is replacing.

53 Week Calendar

For the majority of retailers, the business is managed using a calendar (364 days organized into 13 week quarters) that periodically includes an extra 53rd week so that the year end stays in about the same time of the year. It is useful to have some control over how this 53rd week will be managed within the forecasting system's time dimension. Management of this issue causes customers the pain, time and cost of configuring their data every few years that this happens.

The problem described has two implications. The first case is when two years – each with 52 weeks – of historical sales are available, and the retailer needs to forecast for the following year, which has 53 weeks. The second case is when one of the years of historical sales has 52 weeks, and the other has 53 weeks.

The correction for the extra week happens as part of generate, in particular when the baseline is written out. This is necessary, such that all additional effects (promo, price change, demand transference) are layered on top of the baseline.

The information RDF needs to handle a 53rd week is the name of the measure that indicates which week is the extra week. The measure is loaded or populated through user input, and it is stored in the Forecast Administration parameter called **Extra Week Indicator Data Source**. On the same view (Advanced Final and Source Level Parameters) there is also the measure **Extra Week Interpret Method** that indicates how to calculate the forecast value for a week that was flagged as 53rd or extra week.

Related Documentation

For more information, see the following documents in the Oracle Retail Demand Forecasting Cloud Service Release 18.0 documentation set:

- *Oracle Retail Demand Forecasting Cloud Service Administration Guide*
- *Oracle Retail Demand Forecasting Cloud Service Implementation Guide*
- *Oracle Retail Demand Forecasting Cloud Service Release Notes*
- *Oracle Retail Demand Forecasting Cloud Service Starter Kit*
- *Oracle Retail Demand Forecasting Cloud Service User Guide*
- Oracle Retail Predictive Application Server Cloud Edition documentation

Supplemental Documentation on My Oracle Support

The following document is available through My Oracle Support using Doc ID 2492295.1. Access My Oracle Support at the following URL:

<https://support.oracle.com>

Oracle Retail Predictive Application Server (RPAS) Cloud for Planning and Optimization / Supply Chain Cloud Services Documents (Doc ID 2492295.1)

The following types of documents are available:

- Release Value Proposition identifies major enhancements, and articulates expected business benefits in an upcoming release.
- Advance Release Notification provides a summary of the enhancements that are planned and defects that are scheduled to be fixed in the specified service patch.
- Release Notes provide a summary of the enhancements and fixed defects in the specified service patch.
- White Papers provide additional information to supplement the official documentation published for the specified releases.

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>.

Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit

<http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit

<http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

Copyright © 2019, Oracle and/or its affiliates. All rights reserved.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, then the following notice is applicable:

U.S. GOVERNMENT END USERS: Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information about content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services unless otherwise set forth in an applicable agreement between you and Oracle. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services, except as set forth in an applicable agreement between you and Oracle.

Value-Added Reseller (VAR) Language

Oracle Retail VAR Applications

The following restrictions and provisions only apply to the programs referred to in this section and licensed to you. You acknowledge that the programs may contain third party software (VAR applications) licensed to Oracle. Depending upon your product and its version number, the VAR applications may include:

(i) the **MicroStrategy** Components developed and licensed by MicroStrategy Services Corporation (MicroStrategy) of McLean, Virginia to Oracle and imbedded in the MicroStrategy for Oracle Retail Data Warehouse and MicroStrategy for Oracle Retail Planning & Optimization applications.

(ii) the **Wavelink** component developed and licensed by Wavelink Corporation (Wavelink) of Kirkland, Washington, to Oracle and imbedded in Oracle Retail Mobile Store Inventory Management.

(iii) the software component known as **Access Via™** licensed by Access Via of Seattle, Washington, and imbedded in Oracle Retail Signs and Oracle Retail Labels and Tags.

(iv) the software component known as **Adobe Flex™** licensed by Adobe Systems Incorporated of San Jose, California, and imbedded in Oracle Retail Promotion Planning & Optimization application.

You acknowledge and confirm that Oracle grants you use of only the object code of the VAR Applications. Oracle will not deliver source code to the VAR Applications to you. Notwithstanding any other term or condition of the agreement and this ordering document, you shall not cause or permit alteration of any VAR Applications. For purposes of this section, "alteration" refers to all alterations, translations, upgrades, enhancements, customizations or modifications of all or any portion of the VAR Applications including all reconfigurations, reassembly or reverse assembly, re-engineering or reverse engineering and recompilations or reverse compilations of the VAR Applications or any derivatives of the VAR Applications. You acknowledge that it shall be a breach of the agreement to utilize the relationship, and/or confidential information of the VAR Applications for purposes of competitive discovery.

The VAR Applications contain trade secrets of Oracle and Oracle's licensors and Customer shall not attempt, cause, or permit the alteration, decompilation, reverse engineering, disassembly or other reduction of the VAR Applications to a human perceivable form. Oracle reserves the right to replace, with functional equivalent software, any of the VAR Applications in future releases of the applicable program.