

Oracle® Retail Inventory Planning
Optimization Cloud Service-Demand
Forecasting / Inventory Planning
Optimization Cloud Service-Lifecycle
Allocation and Replenishment
Implementation Guide



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Oracle Retail Inventory Planning Optimization Cloud Service-Demand Forecasting / Inventory Planning Optimization Cloud Service-Lifecycle Allocation and Replenishment Implementation Guide, Release 24.1.101.0

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Preface

This document provides critical information about the processing and operating details of Oracle Retail Inventory Planning Optimization Cloud Service-Demand Forecasting/ Inventory Planning Optimization Cloud Service-Lifecycle Allocation and Replenishment.

Audience

This document is for:

- Systems administration and operations personnel
- Systems analysts
- Integrators and implementors
- Business analysts who need information about Oracle Retail Inventory Planning Optimization Cloud Service-Demand Forecasting/ Inventory Planning Optimization Cloud Service-Lifecycle Allocation and Replenishment processes and interfaces

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1

Introduction

Oracle Retail Inventory Planning Optimization Cloud Service-Demand Forecasting / Inventory Planning Optimization Cloud Service-Lifecycle Allocation and Replenishment (IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment) consists of Demand Forecasting and Lifecycle Allocation and Replenishment modules. These automated solutions enable you to tackle the common problems of forecasting and inventory replenishment with ease.

Demand Forecasting

Oracle Retail Inventory Planning Optimization Cloud Service-Demand Forecasting (IPOCS-Demand Forecasting) provides accurate forecasts that enable retailers to coordinate demand-driven outcomes that deliver connected customer interactions. With a single view of demand, IPOCS-Demand Forecasting 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. IPOCS-Demand Forecasting is a comprehensive solution that maximizes the forecast accuracy for the entire product lifecycle, the ability to adapt to recent trends, seasonality, out-of-stocks and promotions, and reflect the unique demand drivers of each retailer. Today's progressive retail organizations know that store-level demand drives the supply chain. The ability to forecast consumer demand productively and accurately is vital to a retailer's success. The business requirements for consumer responsiveness mandate a forecasting system that more accurately forecasts at the point of sale, handles difficult demand patterns, forecasts promotions and other causal events, processes large numbers of forecasts, and minimizes the cost of human and computer resources. Forecasting drives the business tasks of planning, replenishment, purchasing, and allocation. As forecasts become more accurate, businesses run more efficiently by buying the right inventory at the right time. This ultimately lowers inventory levels, improves safety stock requirements, improves customer service, and increases the company's profitability.

Lifecycle Allocation and Replenishment

Oracle Retail Inventory Planning Optimization Cloud Service-Lifecycle Allocation and Replenishment (IPOCS-Lifecycle Allocation and Replenishment) is an automated allocation and replenishment planning system that constantly monitors inventory conditions and based on these conditions creates point in time replenishment orders or transfers to consumer demand, while considering various constraints. Inventory movement varies from Warehouse to Store, Warehouse to 3rd Party, Customer Order Fulfilment, and Store to Store.

Figure 1-1 Orders and Transfers Overview



Forecasting Challenges and Solutions

A number of challenges affect the ability to forecast demand accurately including:

- [Selecting the Best Forecasting Method](#)
- [Overcoming Data Sparsity Through Escalation and Pooling Levels](#)
- [Forecasting Demand for New Products and Locations](#)
- [Managing Forecasting Results Through Automated Exception Reporting](#)
- [Incorporating the Effects of Promotions and Other Event-Based Challenges on Demand](#)
- [53 Week Calendar](#)

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

IPOCS-Demand Forecasting 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 product's demand based on that of an existing similar product for which you do have a history. The existing item selection can be automatically done by matching item attributes. There is also the option to manually select the item. Forecasts for the new products are copied from one item or can be a combination of multiple items. The level for the new products are copied from Like Item, the seasonal curve, and the promotional effects are from escalation.

Managing Forecasting Results Through Automated Exception Reporting

The IPOCS-Demand Forecasting 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 (RPASCE) 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 are the approval exceptions, where the forecasts are run through business rules to determine if forecasts need review. For the forecasts that need review, a second layer of exceptions is available, to determine the priority in which the review should happen. This is implemented using the rules in the Business Rules Engine. In the exception dashboard profile, a user can filter down to different levels of merchandise/locations to view a hit count and the variance from the desired value of the forecast. She can then go to the Navigation exceptions tiles and launch in a workspace where she can review the exceptions sorted in order of priority as defined by business rules.

In the exception dashboard profile, the user can filter down to different levels of merchandise/locations to view a hit count and the variance from the desired value of the forecast. The user then goes to the Navigation exceptions tiles and launches in a workspace to review the exceptions sorted in order of priority as defined by business rules.

Once in the workspace, the user navigates to flagged positions using the workspace 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.

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 forecasting. IPOCS-Demand Forecasting creates a measure **Week 53 indicator** with the base intersection that is entered by the user in the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment plug-in. This measure has to be loaded by the user.

There is also the **Week 53 options** measure, that indicates how to calculate the forecast value for a week that was flagged as 53rd, or extra week. This measure can be accessed in the Forecast Setup Workbook.

Forecasting Process

The forecasting process represents a next generation approach engineered to provide transparency, responsiveness and accuracy through the application of retail sciences using the scale of our modern Retail Cloud Platform.

- **Transparency** enables analytical processes and end-users to understand and engage with the forecast. This is accomplished by representing the demand model as the decomposition of intuitive components that include base rate of demand, seasonality and causal effects. The forecasting process provides transparency to the final results, individual model components and underlying decisions by the system and end-user.
- **Responsiveness** enables the coordination and simulation of demand-driven outcomes using forecasts that adapt immediately to new information and without a dependency on batch processes. This is accomplished by separating the calculation of the forecast from the analytical processes that determine components within the forecasting model.
- **Accuracy** enables retailers to deliver connected customer interactions while driving efficiencies to increase profits. Maximizing forecast accuracy is paramount to IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment. This is accomplished through the application of best-fit sciences throughout the forecasting process.

The forecast engine powering IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment is the same that powers all solutions in the Retail Science Platform. The separation of the workflow in IPOCS-Demand Forecasting /

IPOCS-Lifecycle Allocation and Replenishment and the forecast engine, allows much more flexibility in evolving the two pieces separately.

Process Summary

Following is a summary of the forecasting process:

1. Prepare Reference Data

The purpose of this step is to prepare reference data for subsequent estimation, pruning and escalation processes. The emphasis in the preparation processes is to treat anomalies in historical data, such as out-of-stock, outliers and promotions, where the objective is to increase reliability of the reference data.

2. Estimated Demand Parameters

The purpose of this step is to estimate all demand parameters and at all possible escalation levels. An escalation level represents a grouping of items and locations for robust parameter estimation to overcome sparsity and sensitivity. Escalation levels can be tied to explicit hierarchy levels (for example, subclass/region) or flexible item/location groupings (for example, optimized analytical clusters). As each demand parameter is estimated, multiple machine learning methods are applied, individually optimized and evaluated for accuracy. The final model can represent the best-fit method or a robust method calculated as an intelligent blending of multiple methods weighted by accuracy.

3. Prune

The purpose of this step is to prune escalation levels that do not pass analytical quality checks. These include data, estimation and correlation quality checks. The result is a candidate pool of high quality parameter estimates for the escalation process.

4. Escalate

The purpose of this step is to select the demand parameter estimate for each component of the forecast model using the candidate pool of escalation levels. The escalation process reflects the optimal balance of richness and reliability.

5. Forecast

The purpose of this step is to calculate the forecast through the application of demand parameter estimates from the analytical processes in conjunction with the known demand drivers and user-overrides. The demand model is completely responsive to changes in demand drivers and updates to the demand model itself (for example, user-defined override). This step also includes support for responsive new-item forecasting, with tailored approaches for new-item scenarios, such as dynamic, repeatable and similar assortments.

Key Features of Lifecycle Allocation and Replenishment

IPOCS-Lifecycle Allocation and Replenishment key features include:

- A pre-defined set of business processes, measures and rules used to support the customer requirements and business process
- Rule-based replenishment parameters management
Assignment of replenishment parameters at item location based on rules
- User parameters focus by exception only Forecast-based location Target Stock (TS) level calculation:

TS can be calculated through different methods, ranging from a simple Fixed Units quantity to more sophisticated methods based on demand volatility and service level, to fit to different product types and demand behaviors throughout the product lifecycle

- Analysis Capabilities

Ability to analyze supply chain performance indicators such as days of stock at any levels of the location/Merchandise hierarchies combined with product or location attributes

- Product Lifecycle Recognition

Lifecycles are used to rule replenishment approach over time based on item lifecycle phase

IPOCS-Lifecycle Allocation and Replenishment: Supported Replenishment

Supported Replenishment (pull) activities include:

- Predict how much stores will sell
- Determine how much inventory stores should carry, such as, store Target Stock (TS) levels
- Predict how much the warehouse will ship to stores
- Distribution of constrained stock
- Determine how much inventory the warehouse should carry
- Generate/Review/Approve orders for all locations

IPOCS-Lifecycle Allocation and Replenishment: Supported Allocation

Supported Allocation (push) activities include:

- Post-distribute goods housed in warehouse to stores (end of life management).
- Manage store to store transfers when supply is limited or for stock re-balancing across stores.

User Experience and Workflow

The user experience is delivered on our experience-inspired RPAS Cloud Edition (RPASCE) user interface (UI). RPASCE provides end-users with a next generation cloud-native UI that is purpose-built to accelerate intent into action for planners and forecasters. This includes interactive and visual dashboards to assess priorities, responsive and flexible workspaces to implement decisions and a coordinated exceptions framework that ties business process all the way from dashboard to cell.

The business process is engineered to maximize the productivity of end-users through exception-driven processes and emphasis on workflow simplification. The day-in-the-life processes begin with dashboard views that enable the end-user to assess the effectiveness and quality of their forecasts and prioritize exceptions. From the dashboards, the end-user is able to contextually launch into the appropriate workspace. For exception-driven processes, the end-user is guided to the point-of-resolution, with visibility to progress and the ability to iteratively work through forecasting priorities throughout the day.

Dashboard Views and Workspaces

Day-in-the-Life Forecasting

The dashboard views and workspaces that support day-in-the-life forecasting workflows are summarized as follows:

- **Forecast Overview Dashboard**

This dashboard leads with Key Performance Indicators (KPIs) that provide macro-level insight into forecasting priorities and the effectiveness of the forecasts in driving demand-driven outcomes. This enables end-users to assess forecasting complexity drivers, such as frequent promotions, and forecasting performance towards business objectives, such as fill rates.

- **Forecast Scorecard Dashboard**

This dashboard provides insight to forecast accuracy (for example, MAPE, Bias) along with clear visibility to system performance and the impact of end-user contributions to the forecasting process. This enables forecast analysts and managers to identify forecast process improvement priorities.

- **Exception Dashboards**

The exception dashboards represent the primary starting point for day-in-the-life processes. The approval and navigation exceptions each have a dedicated dashboards that enables end-users to efficiently drive decisions through focused exception-driven processes. From here, end-users can define the scope of exceptions to be managed through dashboard filters and launch directly to workspace views tailored for resolution. As exceptions are resolved, the dashboard is updated to enable end-users to iteratively work through forecasting priorities.

- **Forecast Review Workspaces**

The forecast approval workspaces represent the primary point of interaction with the demand forecasts. The navigation exceptions and their workspace counterparts allow you to review forecast information guided by priorities that are dynamically implemented in the Business Rule Engine. This is supported by a rich set of decision support metrics and the ability to responsively simulate forecast updates.

Day-in-the-Life Replenishment

The dashboard views and workspaces that support day-in-the-life replenishment workflows are summarized as follows:

- **Overview Dashboard**

This dashboard leads with KPIs that provide macro-level insight into sales and inventory.

- **Exception Dashboards**

The exception dashboards represent the primary starting point for day-in-the-life processes. The replenishment setup and review processes each have a dedicated dashboard that enables end-users to efficiently drive decisions through focused exception-driven processes. From here, end-users are able to define the scope of exceptions to be managed through dashboard filters. As exceptions are resolved, the dashboard is updated to enable end-users to iteratively work through priorities (for example, replenishment setup issues, replenishment watch-list).

Forecast Engine

Not visible to the end user is the forecast engine, and all the tasks happening behind the scenes. The forecast engine produces a single version of forecast that is used in IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment, all Retail Science Platform solutions, as well as planning and merchandising. The batch is split between estimation and forecasting. Estimation consists of the heavy data mining of historical demand to generate the necessary forecast parameters like seasonality, price and promo effects. Following are tasks which comprise the estimation workflow within the Retail Science Platform.

Refer to the *Oracle Retail Science Cloud Services User Guide* for details on the methodology used for forecast generation.

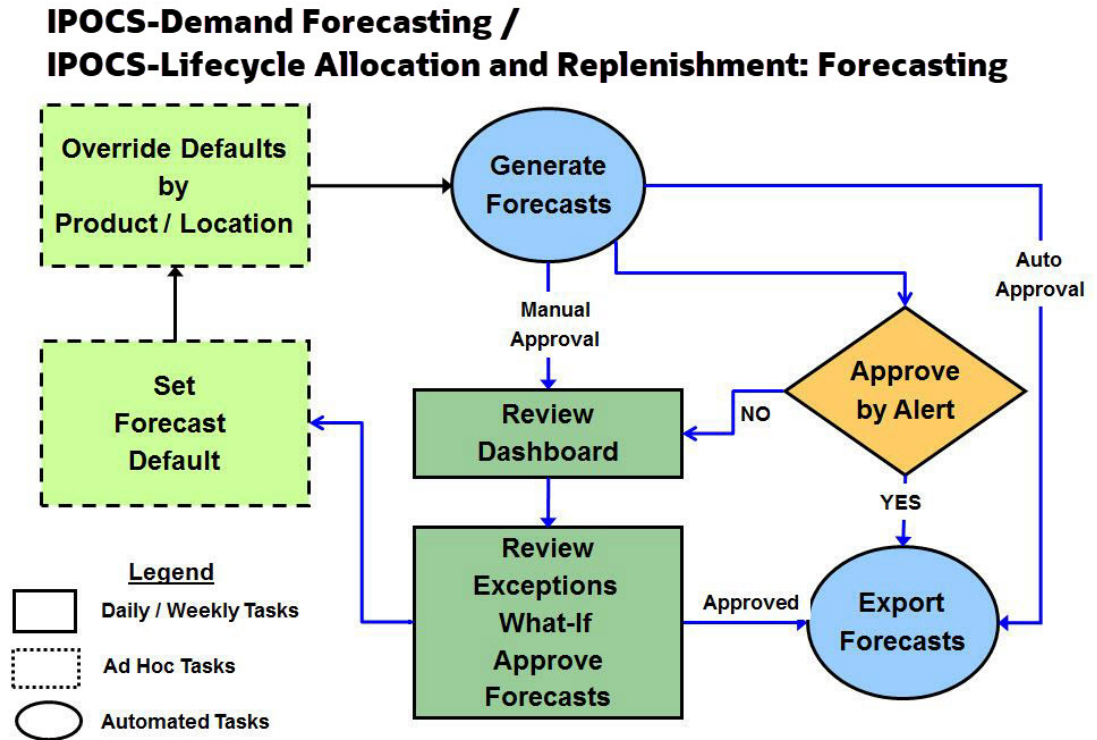
Figure 1-2 IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Estimation



After estimation is run, the forecast parameters are computed, and everything is available to generate the forecast.

The forecast generation is happening in the forecast engine, while all the workflow-related activities are happening in the IPOCS-Demand Forecasting solution.

Figure 1-3 Forecasting in IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment



2

Implementation Considerations

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment is part of the Retail Analytics Platform (RAP) and imports the forecast generated by AI Foundation (AIF). The IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment application is tailored towards the workflow of a Forecast Analyst. Whereas the data scientist would interact with the AIF UI to set low level forecast tuning parameters. The following sections describe the overall implementation flow and whether it is configured on the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment side or AIF side.

The following information must be considered before configuring Inventory Planning Optimization Cloud Service-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment:

- [Configuration Considerations](#)
- [IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Hierarchies](#)
- [IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Input Data](#)
- [Integration](#)
- [User Roles and Securities](#)
- [Internationalization](#)

Configuration Considerations

Before implementing IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment, an implementor should first answer the following questions listed in [Table 2-1](#)

Table 2-1 Configuration Considerations and Applications

Consideration	Applications
Is my forecasted item Long Lifecycle (LLC) or Short Lifecycle (SLC)?	AIF
What is the purpose of my forecast? To drive replenishment, allocation, or others?	
Do I need to enable the Lifecycle module to generate the Allocation and Replenishment plans ? Does the retailer have inventory data ?	
Are there any promotions that impact my forecast? If yes, how can I define the promotions?	AIF
Based on the purpose of my forecasting, which level should the forecast be generated on (sku/stor/week)? How many escalation levels are needed for the forecasting? Which level should the forecast be exported to?	IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment, AIF
What data is available to use for forecasting: rsal, psal, csal, Promotions, or Price?	
What kind of preprocessing is needed: Outage, Outlier, Depromote, or Deseasonalize Smooth?	AIF

Table 2-1 (Cont.) Configuration Considerations and Applications

Consideration	Applications
Do I need the Lifecycle Allocation and Replenishment solution?	
How do I want to handle New Items? Is there any product attribute information?	IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment
Do I want to integrate IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment with other Applications?	IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment, AIF
If I want to use grouping in my escalation levels, how do I group my item/stores?	AIF
Do I need to generate daily forecast, and/or both weekly and daily forecasts?	IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment, AIF
Do I have a foundation system to provide foundation (hierarchy) data?	

Depending on the answers to the previous questions, the implementor can use the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment plug-in to generate IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment configurations. For details about how to generate IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment configuration, refer to [IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Configuration](#). The generated IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment configuration can be customized to satisfy client specific requirement. For details about how to customize IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment configuration, refer to [IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Extensibility](#).

 **Note:**

In order to implement planning applications on RAP, you should ensure their foundation data such as Product and Organization hierarchies, align with RMFCS (Merchandising Systems) so that the foundation and transactional data can be used by all applications in RAP. They can have additional alternate dimensions than available in RMFCS (Merchandising Systems), if it is needed for their planning solution.

Customers can use the flex fields available in RAP Foundation files to interface this additional data. Also, if multiple planning applications like MFPCS, APCS, or IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment reside in the same PDS, then the common hierarchies should have the same dimension names to share the data interfaced from RAP. However additional non-shared dimensions can be present in each application.

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Hierarchies

There are four type of hierarchies in IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment:

- [Standard RPASCE Hierarchies Files](#)
- [User Managed IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Hierarchies](#)
- [Plug-in Generated IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Hierarchies](#)
- [RHS Hierarchies](#)

Standard RPASCE Hierarchies Files

This is the foundation data to build any RPASCE solution. Inventory Planning Optimization Cloud Service-Demand Forecasting Inventory Planning Optimization Cloud Service-Lifecycle Allocation and Replenishment requires the standard three hierarchy files, Calendar, Product, and Location. Additional sets of hierarchy files specific to different solutions may also be needed. The standard hierarchy files for Calendar, Product, Location and Product Attributes need to be loaded into the RI interface. Refer to the *Data Requirements* section in the *Oracle Retail Analytics Platform Implementation Guide*.

Note:

The following format only shows the hierarchy structure used by IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment. The file to be loaded needs to conform to the RI interface. The user provides standard RPASCE hierarchy files.

For information on the hierarchy files, see the following sections:

- [Calendar Hierarchy File \(CLND\)](#)
- [Product Hierarchy File \(PROD\)](#)
- [Location Hierarchy File \(LOC\)](#)
- [Products Attributes Hierarchy File \(PATR\)](#)

Calendar Hierarchy File (CLND)

Name	Label	Hierarchy Type	Parent
DAY	Day	Main	None
WEEK	Week	Main	DAY
MNTH	Month	Main	WEEK
QRTR	Quarter	Main	MNTH

Name	Label	Hierarchy Type	Parent
HALF	Half	Main	QRTR
YEAR	Year	Main	HALF
DOW	DAY OF WEEK	Alternate	DAY
WOYR	Week of Year	Alternate	WEEK

Product Hierarchy File (PROD)

Name	Label	Hierarchy Type	Parent
SKU	Item	Main	None
SKUP	Style/Color	Main	SKU
SKUG	Style	Main	SKUP
SCLS	Sub-Category	Main	SKUG
CLSS	Category	Main	SCLS
DEPT	Department	Main	CLSS
PGRP	Group	Main	DEPT
DVSN	Division	Main	PGRP
CMPP	Company	Main	DVSN
VNDR	Vendor	ALT	SKU

Location Hierarchy File (LOC)

Name	Label	Hierarchy Type	Parent
STOR	Location	Main	None
DSTR	District	Main	STOR
REGN	Region	Main	DSTR
CHNL	Area	Main	REGN
CHAN	Chain	Main	CHNL
COMP	Company	Main	CHAN
SFMT	Store Format	Alternate	STOR
STCL	Store Class	Alternate	STOR
PHWH	Physical Warehouse	Alternate	STOR
STRC	Location Cluster	Alternate	STOR
CHNC	Channel	Alternate	STRC
CCTY	Channel Country	Alternate	CHNC
LOCT	Location Type	Alternate	STOR

 **Note:**

The Store Cluster dimension (STRC) is not used in IPOCS, but is included so as to align with other planning apps (MFPCS, APCS). Currently it is mapped same as the store dimension. It can be customized to bring in clusters from another source field.

Products Attributes Hierarchy File (PATR)

The product attributes hierarchy represents attributes associated with products. These attributes are used to group products within categories.

This hierarchy is intended to capture all product attributes for all product types. The attributes are then assigned to individual products. This assignment is used to calculate similarity scores between items.

The retailer needs to load the Product Attributes into the RI interface. Refer to the *Attribute Files* section of the *Oracle Retail Analytics Platform Implementation Guide*.

In IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment, the Product Attribute hierarchy structure is described in this section.

Name	Label	Hierarchy Type	Aggs
PATV	Prod Attribute Value	Main	None
PATT	Prod Attribute	Main	PATV

The following table describes the fields in this file.

Field	Description
Prod Attribute Value	The various values that an attribute might have. For example, the package type attribute might take the values bag, box, or convenience.
Prod Attribute	The name of a product attribute, such as brand, family type, flavor, grain, package type, size, or temperature.

 **Note:**

In RAP, the product attributes would flow from RI to RDX to PDS. When imported this way into PDS, the product attribute name is concatenated with the product attribute values using '_' to make the product attribute values unique. The Product Attribute name for Supplier (W_PDS_SUPPLIER_D) is used as 'supp' and Brand (W_PDS_BRAND_D) is used as 'brnd'.

User Managed IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Hierarchies

The implementor or retailer can update these IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment hierarchy files. The GA IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment package contains these hierarchy files.

For information on the hierarchy files, see the following sections:

These hierarchies can be classified into two categories:

- Hierarchies that are configured in Retail Science and IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment:
 - [Offer Hierarchy \(OFFH\)](#)
 - [Reward Type Hierarchy \(RDTH\)](#)
 - [Supplier Hierarchy \(SUP\)](#)
- Hierarchies that are configured only in IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment:
 - [Alert Hierarchy \(ALT\)](#)
 - [Business Rule Attribute Hierarchy File \(ATTH\)](#)
 - [Business Rule Hierarchy File \(RULH\)](#)
 - [Condition Hierarchy File \(CONH\)](#)
 - [Constraint Group Hierarchy \(CSG\)](#)
 - [Constraint Object Hierarchy \(CSO\)](#)
 - [Databag Hierarchy \(DTB\)](#)
 - [Lifecycle Program Hierarchy \(LPR\)](#)
 - [List Hierarchy \(LST\)](#)
 - [Rule Hierarchy \(RUL\)](#)

Offer Hierarchy (OFFH)

This hierarchy represents the offer/promo fields. If promo has been enabled in Retail Science this hierarchy will be imported during the batch. Refer to the [RAP Integration](#) for detailed information. If promo is not enabled in Retail Science, then the retailer can upload the GA offer hierarchy file. Note that the offer hierarchy needs to be populated for the Forecast Review workbook to build.

File name: offh.hdr.csv.dat

File format: comma-separated values file

The following table describes the fields in this file.

Name	Label	Hierarchy Type	Parent
offd	Offer	Main	None
prmd	Promo	Main	offd
camd	Campaign	Main	prmd
offa	Offer Alias	ALT	offd
cama	Campaign Alias	ALT	camd

Reward Type Hierarchy (RDTH)

This hierarchy represents the reward type that can be associated per offer. If promo has been enabled in Retail Science this hierarchy will be imported during the batch.

Refer to the [RAP Integration](#) for detailed information. This hierarchy is needed to build the Offer Analysis workbook. This workbook is useful only if promo is enabled.

File name: rdth.hdr.csv.dat

File format: comma-separated values file

The following table describes the fields in this file.

Name	Label	Hierarchy Type	Parent
rdtp	Reward Type	Main	None

Supplier Hierarchy (SUP)

This hierarchy represents the list of suppliers. This hierarchy is imported during the batch. Refer to the [RAP Integration](#) chapter for detailed information.

File name: sup.hdr.csv.dat

File format: comma-separated values file

The following table describes the fields in this file.

Name	Label	Hierarchy Type	Parent
supp	Supplier	Main	None

Example:

```
supp,supp_label
```

```
v1001,Supplier 1
```

```
v1002,Supplier 2
```

```
v1003,Supplier 3
```

Alert Hierarchy (ALT)

Alert hierarchy contains alerts for Inventory Planning Optimization Cloud Service-Lifecycle (IPOCS-Lifecycle). Alerts can be defined during implementation time.

File name: alt.hdr.csv.dat

File format: comma-separated values file

The following table describes the fields in this file.

Name	Label	Hierarchy Type	Parent
altr	Alert	Main	None
altr	Alert Type	Alternate	altr
altr	Alert Priority	Alternate	altr
altr	Alert Class	Alternate	altr
altr	Alert Hierarchy	Alternate	altr

Example:

```
altr,altr_label,altr,altr_label,altp,altp_label,altc,altc_label,alth,alth_label
alert.c01,C01 Permanent,com,Common,3_1,3 Low,filter,Filter,prod-loc,PROD-LOC
alert.c02,C02 Seasonal,com,Common,3_1,3 Low,filter,Filter,prod-loc,PROD-LOC
```

Business Rule Attribute Hierarchy File (ATTH)

This is attribute hierarchy used in the Business Rule Engine functionality. Note that this is different from the PATR (Product Attribute) hierarchy. This hierarchy file is a hybrid between user-loaded attributes and IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA calculated attributes generated by the plug-in. Refer to the [Appendix: IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Business Rule Engine](#) for detailed information on Business Rule Engine.

File name: atth.hdr.csv.dat

File format: comma-separated values file

The following table describes the fields in this file.

Name	Label	Hierarchy Type	Parent
ATTD	Attribute	Main	None
ATDT	Attribute Data Type	Alternate	ATTD
ATSC	Attribute Source	Main	ATTD
ATST	Attribute Source Type	Main	ATSC
ATTP	Attribute Type	Alternate	ATTD

Example:

```
attd,attd_label,atdt,atdt_label,atst,atst_label,attp,attp_label,attp_labelbr
and,Brand,3,String,ldprdatstr01,loaded Product Attribute 01,load,Loaded
Attribute,prod,Product Attribute,reg,Region,3,String,reg,region of location
Hierarchy,hier,Hierarchy Attribute,loc,Location Attribute
```

Business Rule Hierarchy File (RULH)

This hierarchy structure is used to associate Business Rules within a Business Rule Group in the Business Rule Engine functionality. The GA hierarchy file loads five placeholder Business Rules per Rule Group. The implementor can customize this file, based on the maximum number of rules the retailer would like to define per Business Rule Group. Refer to the [Appendix: IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Business Rule Engine](#) for detailed information on Business Rule Engine.

File name: rulh.hdr.csv.dat

File format: comma-separated values file

The following table describes the fields in this file.

Name	Label	Hierarchy Type	Parent
RULD	Business Rule	Main	None
RULG	Business Rule Group	Main	RULD

Example:

```
ruld,ruld_label,rulg,rulg_labelr001,Rule 1,g001,Rule Group 1r002,Rule 2,g001,Rule
Group 1 r003,Rule 3,g001,Rule Group 1 r004,Rule 4,g001,Rule Group 1 r005,Rule
5,g001,Rule Group 1
```

Condition Hierarchy File (CONH)

This is the Condition hierarchy used to organize the strategies (conditions) in defining a business rule. Refer to the [Appendix: IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Business Rule Engine](#) for detailed information on Business Rule Engine.

File name: conh.hdr.csv.dat

File format: comma-separated values file

The following table describes the fields in this file.

Name	Label	Hierarchy Type	Parent
COND	Rule Condition	Main	None

Example:

```
cond,cond_labelcond01, condition 01cond02, condition 02cond03, condition 03cond04,
condition 04
```

Constraint Group Hierarchy (CSG)

Constraint Group Hierarchy is used for the constraint functionality framework.

File name: csg.hdr.csv.dat

File format: comma-separated values file

The following table describes the fields in this file.

Name	Label	Hierarchy Type	Parent
cstg	Constraint Group	Main	None

Example:

```
cstg,cstg_label
```

```
csg.01,Constraint Group 01
```

```
csg.02,Constraint Group 02
```

Constraint Object Hierarchy (CSO)

Constraint Object Hierarchy is used for the constraint functionality framework.

File name: cso.hdr.csv.dat

File format: comma-separated values file

The following table describes the fields in this file.

Name	Label	Hierarchy Type	Parent
csto	Constraint Object	Main	None

Example:

```
csto,csto_label
```

```
csto.0001,C.0001
```

```
csto.0002,C.0002
```

```
csto.0003,C.0003
```

```
csto.0004,C.0004
```

Databag Hierarchy (DTB)

Databag Hierarchy allows the grouping of data for planning in IPOCS-Lifecycle Allocation and Replenishment.

File name: dtb.hdr.csv.dat

File format: comma-separated values file

The following table describes the fields in this file.

Name	Label	Hierarchy Type	Parent
dtbg	Databag	Main	None
dtbp	Databag Partition	Main	dtbg

Example:

```
dtbg,dtbg_label,dtbp,dtbp_label
```

```
dtb.01.01,Fashion.Replenishment.All,dp.01,Databag Partition Fashion 01
```

```
dtb.01.02,Fashion.Replenishment,dp.01,Databag Partition Fashion 01
```

Lifecycle Program Hierarchy (LPR)

Lifecycle Program Hierarchy contains phases of the lifecycle.

File name: lpr.hdr.csv.dat

File format: comma-separated values file

The following table describes the fields in this file.

Name	Label	Hierarchy Type	Parent
lprg	Lifecycle Prog	Main	None

Example:

```
lprg,lprg_label
lprg_id_1,Phase 1
lprg_id_2,Phase 2
lprg_id_3,Phase 3
```

List Hierarchy (LST)

List Hierarchy contains lists for rule conditions.

File name: lst.hdr.csv.dat

File format: comma-separated values file

The following table describes the fields in this file.

Name	Label	Hierarchy Type	Parent
list	List	Main	None

Example:

```
list,list_label
1.01,L.01
1.02,L.02
```

Rule Hierarchy (RUL)

Rule Hierarchy is for the definition of rules of Lifecycle and Replenishment.

File name: rul.hdr.csv.dat

File format: comma-separated values file

The following table describes the fields in this file.

Name	Label	Hierarchy Type	Parent
rull	Rule	Main	None
rulg	Rule Group	Main	rull

Example:

```
rull,rull_label,rulg,rulg_label R.01.01,R.01.01,RG.01,Rule Group Fashion 01
R.01.02,R.01.02,RG.01,Rule Group Fashion 01
```

Batch Generated Hierarchies

The IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment batch generates this hierarchy file using the Location and Supplier hierarchies:

- [Source Location Hierarchy File](#)

Source Location Hierarchy File

This hierarchy file defines the locations that can be a source of a product.

File name: slc.hdr.csv.dat

File format: comma-separated values file

The following table describes the fields in this file.

Name	Label	Hierarchy Type	Parent
SL0L	Source Location Main	Main	None
SL01	Source District	Main	SL0L
SL0G	Source Region	Main	SL01
SL03	Source Channel	Main	SL0G
SL0P	Source Chain	Main	SL03
SL05	Source Company	Main	SL0P
SL11	Source Store	Alternate	SL0L
SL21	Source Class	Alternate	SL0L
SLTY	Source Location Type	Alternate	SL0L

Example:

```
s101,s101_label,s101,s101_label,s10g,s10g_label,s103,s103_label,s10p,s10p_label,s
105,s105_label,s111,s111_label,s121,s121_label,slty,slty_label
1000,New York City,1000,US,1000,North America,1000,The Americas,1000,Bricks &
Mortar,100,JCB Trading Company,4,4,A,A,s,Store
w1001,w1001 Regional Warehouse
1,none,None,none,None,none,None,none,none,1,Retailer
Ltd,none,None,none,None,w,Warehouse
v1001,Supplier
1,supplier,Supplier,supplier,Supplier,supplier,Supplier,supplier,Supplier,100,JCB
Trading Company,supplier,Supplier,supplier,Supplier,v,Supplier
```

Plug-in Generated IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Hierarchies

The IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment plug-in generates this hierarchy files based on the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment configuration:

- [Final Level Hierarchy File](#)

Final Level Hierarchy File

This hierarchy file defines the Business Rule Group Types associated with a Final Level. Refer to the [Appendix: IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Business Rule Engine](#) for detailed information on Business Rule Engine.

File name: flvh.hdr.csv.dat

File format: comma-separated values file

The following table describes the fields in this file.

Name	Label	Hierarchy Type	Parent
RGTP	Business Rule Group Type	Main	None
FLVL	Final Level	Main	RGTP

Example:

```
rgtp,rgtp_label,flvl,flvl_labelaprv01,approve 01,01,01 Weekly Units
Forecastnavi01,navigation 01,01,01 Weekly Units Forecast
```

RHS Hierarchies

The PROR and LOCR internal hierarchies are mirrored hierarchies of the PROD and LOC hierarchies. They are also referred as PROD RHS and LOC RHS. In the RPAS Cloud Edition versions 19.0 and later, PROR and LOCR are considered as virtual hierarchies. Refer to the *Oracle Retail Predictive Application Server Cloud Edition Configuration Tools User Guide* for information on Virtual Hierarchies.

Since these hierarchies are virtual, you do not have to load the hierarchy files. All of the other operations remain the same. You can register measures on PROR and LOCR and include them in workbooks.

Notes about these virtual hierarchies:

- PROR and LOCR hierarchies have been marked as virtual in the GA configuration.
- We cannot define security dimension on a virtual hierarchy or make them translatable.
- Virtual hierarchies cannot have user defined dimensions.
- If a retailer is upgrading from a pre-19.0 IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment version, then IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment will automatically mark them as virtual and conform to the virtual hierarchy requirements.

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Input Data

A detailed data set is required to use the capabilities of IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment to its fullest. Some of the data required is relatively easy to obtain, for example, information about sales. To simplify the data integration, all measure files are configured to be loaded as one measure per file. Each measure's data must be present in a separate file and the file name must be the same as the

measure name with the `.csv.ovr` extension. All files must be in csv format. During the initial domain build, all data files marked as required are needed with historical data to build the domain. Some of the Lifecycle measure data that can be logically grouped together are loaded into the same file.

Measure Name and Intersections

Because many RPASCE measure names and intersections are dynamically generated by IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment plug-in. Tokens are used to represent the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment level names. The labeled intersection were also listed for measure intersection

Table 2-2 lists the Token names.

Table 2-2 Token Names

Token Name	Description
CF	Forecast Final Level Name, such as <i>01</i>
#LLC_frcst_L_#	Forecast final level intersection generated by plug-in based on user specified plug-in input parameters
#LLC_frcstTS_L_#	Forecast final level timeseries intersection = LLC final level intersection – cldn dim generated by plug-in based on user specified plug-in input parameters
#SLS_INTX#	Sales History intersection. This labeled intersection is user defined
#SLSNC_INTX#	Sales History intersection -cldn dim This labeled intersection is user defined
#NIT_ATT_WGT#	Attribute weight intersection, generated by plug-in based on user specified plug-in input parameters
#NIT_SKU_ATT#	Product attribute intersection, generated by plug-in based on user specified plug-in input parameters
#NIT_SKUSTR_INTX#	New Item assignment intersection, generated by plug-in based on user specified plug-in input parameters
#PRESLS_INTX#	Forecast Preprocessing data source input intersection
#LP_POS#	Lowest level in Product hierarchy foe example, SKU
#LP_LOL#	Lowest level in Location hierarchy foe example, stor
#LP_POG#	Product group scope defined in the Lifecycle plugin foe example, class
#LP_LOG#	Location group scope defined in the Lifecycle plugin foe example, regn

Measure Names and Descriptions

Table 2-3 lists the measure names and descriptions. The measure field descriptions include:

Module Used

This field explains which solution is using the file. The possible values can be:

- All

- New Item
- Forecast
- Preprocess
- Inventory Planning Optimization Cloud Service-Lifecycle Allocation and Replenishment (IPOCS-Lifecycle Allocation and Replenishment)

Required or Optional Required

This field means the data is necessary. Optional means that during data load and, if not loaded, certain functionality which uses those measures cannot be used. All administration measures are marked as Optional for data load, since those can be directly set in the Admin workbooks as well.

Load Frequency

This specifies the suggested frequency for the data load. It uses the following values:

- Daily
- Weekly
- Anytime as needed or when the values change in source system; it can be weekly, monthly, quarterly, or yearly

Data Source

This specifies the typical data source to get that measure data:

- RI - Oracle Retail Insights or equivalent Data Warehouse solutions
- Admin - Data can be set by Administrator based on customer data referencing sample data in GA domain.
- IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment or equivalent. Can be readily loaded from RMS or derived from data loaded from RMS.
- ORASE - Oracle Retail Advanced Science. Those are the derived measure files extracted from ORASE integration files.
- RMS - Oracle Retail Merchandising System or equivalent. Can be readily loaded from RMS or derived from data loaded from RMS.
- 3P - Third-party data aggregator such as Nielsen or Symphony IRI.

Load Intersection

Most of the time, the load intersection of the measure is the same as the base intersection of the measure. When the field is empty, the load intersection is the same as base intersection.

Table 2-3 RPASCE Measure Names and Intersections

Measure Name	Measure Description	Base Intersection	Measure Type	Module Used	Required or Optional	Load Frequency	Data Source	Load Intersection
rsal	Regular Sales	#SLS_INTX#	Real	all	Required	Weekly	RMS/RI	#DAYSLS_INTX#

Table 2-3 (Cont.) RPASCE Measure Names and Intersections

Measure Name	Measure Description	Base Intersection	Measure Type	Module Used	Required or Optional	Load Frequency	Data Source	Load Intersection
psal	Promotion Sales	#SLS_INTX#	Real	all	Required	Weekly	RMS/RI	#DAYSLS_INTX#
csal	Clearance Sales	#SLS_INTX#	Real	all	Required	Weekly	RMS/RI	#DAYSLS_INTX#
ldactivefcstitem	Active Forecast Item Indicator	#SLSNC_INTX#	Boolean	all	Optional	Weekly		
prdattT	Product Attribute	#NIT_SKU_ATT#	String	New Item	Optional	Weekly	RMS/RI	
nitdattwgt	Attribute Weight	#NIT_ATT_WGT#	Real	New Item	Optional	Weekly		
nitfcststovr	New Item Forecast Start Date	#NIT_SKUSTR_INTX#	Date	New Item	Optional	Weekly		
nisros	New Item Base Rate of Sales	#NIT_SKUSTR_INTX#	Real	New Item	Optional	Weekly		
likeitemexmask	Like Item Exclusion Mask	#NIT_SKUSTR_INTX#	Boolean	New Item	Optional	Weekly		
LPInBookedU	Input Booked Units	sku_stor	Real	LAR	Optional	Daily	RI	
LPInOnHandU	Input On Hand Units	sku_stor	Real	LAR	Required	Daily	RI	
LPInCustOrdU	Input Cust. Order Units	sku_stor_day	Real	LAR	Optional	Daily	RI	
LPInInitFcstPLWkU ext_initfcst.csv	Initial Buy Plan Week Units (Pre-Season Forecast)	sku_stor_week	Real	LAR	Optional	Daily	IPO/MFP	
LPInInTrnsU	Input In Transit Units	sku_stor_day	Real	LAR	Required	Daily	RI	
LPInOnOrdInU	Input On Order (in) Units	sku_stor_day	Real	LAR	Required	Daily	RI	
LPInOnOrdOutU	Input On Order (out) Units	sku_stor_day	Real	LAR	Optional	Daily	RI	
LPInOTBV otb.csv	OTB value	class_stor	Real	LAR	Optional	Daily	External/AP	

Table 2-3 (Cont.) RPASCE Measure Names and Intersections

Measure Name	Measure Description	Base Intersection	Measure Type	Module Used	Required or Optional	Load Frequency	Data Source	Load Intersection
LPInOTBPriceV otb_price.csv	OTB price	sku_stor	Real	LAR	Optional	Daily	External /AP	
LPInExtAstPLE assortment.csv	Ext. Asst. Prod-Loc	sku_stor	Integer	LAR	Optional	Daily		
LPInExtAstPLE ndDt assortment.csv	Ext. Asst. Prod-Loc End Date	sku_stor	Date	LAR	Optional	Daily	External /AP	
LPInExtAstPLS trDt assortment.csv	Ext. Asst. Prod-Loc Start Date	sku_stor	Date	LAR	Optional	Daily	External /AP	
LPInDspQU	Display Qty Units	sku_stor	Real	LAR	Optional	Daily	RI	
LPInFixTS1U init_alloc.csv	Fixed TS 1 Units	sku_stor	Real	LAR	Optional	Daily	External	
LPInActLocRcp U	Input Actual Loc. Recpt Units	sku_stor_week	Real	LAR	Optional	Daily		
LPInFrcstWkU ext_frcst.csv	Input Week Forecast Units	sku_stor_week	Real	LAR	Optional	Daily		
lppmlfcphsor deri	Lfc. Phase Order	lprg	Integer	LAR	Required			

*LAR is an abbreviation for Lifecycle Allocation and Replenishment

Following is a sample header line for each of the files that are loaded together (if loading flat files):

- assortment.csv.* : sku,stor,LPInextastple,LPInextastplstrdt,LPInextastplenddt

* indicates that the file extension could be either .rpl or .ovr.

Historical Data

It is recommended that you have at least two full years of historical data for long life cycle forecasting and one full year of historical data for short life cycle forecasting.

Loading and Extracting Data

Data is loaded into IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment using the Online Administration Tools, which in turn use standard RPASCE utilities. For more information on loading and extracting data using Online Administration Tools, see the *Oracle Retail Inventory Planning Optimization Cloud Service-Demand*

Forecasting / Inventory Planning Optimization Cloud Service-Lifecycle Allocation and Replenishment Administration Guide

Loading Image Based Data

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment is pre-configured to support the display of images for items and product attributes in the Forecast Review and New Item workbooks. [Table 2-4](#) lists the dimension attribute measures used to load images.

Table 2-4 Labeled Intersections

Measure	Hierarchy	Dimension
skuimage	PROD	sku
skupimage	PROD	skup
skugimage	PROD	skug
skurimage	PROR	skur
skprimage	PROR	skpr
skgrimage	PROR	skgr
patvimage	PATR	patv
pattimage	PATR	patt

The Content Server exposes the client's image files placed into a particular directory as HTTP URLs. The images must be defined in the load file in an xml format. The images are available at:

`http://{content server url}/imgfetch/{sub directory if defined}`

Sample File for skuimage.csv.ovr

The first field represents the SKU ID followed by the required image location. At a minimum, a thumb size image file must be loaded to show in the pivot table. However, both the thumb and full size images can be loaded.

```
10000010,"<image id=""main"" label=""Front View"">\
<url size=""thumb"">http://msp00alq.us.oracle.com:9001/contentserver/imgfetch/sku_10000010_main_thumb.jpg</url>
url></image>"
```

Example File for skuimage.csv.ovr

```
10000010,"<image id=""main"" label=""Front View"">\
<url size=""thumb"">http://msp00alq.us.oracle.com:9001/contentserver/imgfetch/
sku_10000010_main_thumb.jpg</url>
<url size=""full"">http://msp00alq.us.oracle.com:9001/contentserver/imgfetch/
sku_10000010_main_full.jpg</url></image>"
```

Integration

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment is part of the Retail Analytics Platform (RAP). The foundation data needs to be loaded into

the RI data interface. Any hierarchy or data specific for IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment can be loaded via the File Transfer Service (FTS).

User Roles and Securities

To define workbook template security, the system administrator grants individual users, or user groups, access to specific workbook templates. Granting access to workbook templates provides users the ability to create, modify, save, and commit workbooks for the assigned workbook templates. Users are typically assigned to groups based on their user application (or solution) role. Users in the same group can be given access to workbook templates that belong to that group alone. Users can be assigned to more than one group and granted workbook template access without belonging to the user group that typically uses a specific workbook template. Workbook access is either denied, read-only, or full access. Read-only access allows a user to create a workbook for the template, but the user cannot edit any values or commit the workbook. The read-only workbook can be refreshed.

For more information on security, see the *Oracle Retail Predictive Application Server Cloud Edition Administration Guide*. For more information on data security in a cloud environment, see the Hosting Policy documents for the cloud solution.

Internationalization

Internationalization is the process of creating software that can be translated more easily. Changes to the code are not specific to any particular market.

Oracle Retail applications have been internationalized to support multiple languages.

The RPASCE platform supports associated solution extensions and solution templates.

- A solution extension includes a collection of code and generally available configurations. Typically, solution extensions are implemented by a retailer with minimal configuration.
- A solution template does not include code. A solution template is most typically implemented as a retailer configuration.

Oracle Retail releases the translations of the RPASCE server and client, as well as strings from the solution extensions.

Translations of the solution templates are released. All templates have the ability to support multi-byte characters.

For more information on internationalization, see the *Oracle Retail Predictive Application Server Cloud Edition Administration Guide*.

Translations are available for IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment for the following languages:

- English (United States, Great Britain, Canada, Australia)
- Chinese (Simplified)
- Chinese (Traditional)
- Croatian
- Dutch
- French

- German
- Greek
- Hungarian
- Italian
- Japanese
- Korean
- Polish
- Portuguese (Brazilian)
- Russian
- Spanish
- Swedish
- Turkish

 **Note:**

For information about adding languages for the first time or for translation information in general, see the *Oracle Retail Predictive Application Server Cloud Edition Administration*.

3

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Configuration

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment is a forecasting and replenishment solution that uses state-of-the-art modeling techniques to produce high quality forecasts and replenishment plans with minimal human intervention.

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment supports pre-processing, new item/store processing, forecast generation , and lifecycle item replenishment. To obtain good forecast results ,lower inventory, and improve service level, the features need to be configured to work together. IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment is highly configurable and extremely flexible. The preprocessing and forecast generation is handled on the AI Foundation side. The new item, forecast adjustment, forecast approval, and life cycle item replenishment is implemented on the RPASCE side. To streamline IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment implementation and shorten implementation time on RPASCE, several plug-ins are provided to work together with RPASCE Configuration Tools. These plug-ins let users input configuration options through the GUI and automatically generate configuration solutions based on the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA master template and user inputs. The configuration solutions generated by the plug-ins are New Item, and IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment. The plug-ins autogenerate the hierarchies, measures, rules, workbook templates, taskflow and the Dashboard configuration file that are required by IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment to support the forecasting configuration entered in through the plug-in interface:

Table 3-1 Autogenerated Items from Plug-ins

Autogenerated Entity	Description
Hierarchies	The internal hierarchies required by the solution will be generated by the plug-in. Labeled Intersections are autogenerated.
Measures	All measures necessary to support the base solution will be created.
RPASCE Rules	All Rule Sets, Rule Groups, and Rules to support the base solution will be created.
Workbook Templates	All pre-defined workbook templates to support the base solution will be created.
Taskflow	The taskflow will be auto generated based on the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment template and the levels entered in the plug-in.
Dashboard Configuration file	The Dashboard configuration file is auto generated based on the dashboard levels and custom exceptions enter using the plug-in.
Batch Control file	The Batch Control file is auto generated.

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Batch Flow Process

Understanding the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment batch flow process is important before starting IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Configuration:

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment has four major batch processes:

- [IPOCS-Demand Forecasting Pre-forecast Batch](#)
- [IPOCS-Demand Forecasting Post-forecast Batch](#)
- [IPOCS-Lifecycle Allocation and Replenishment Daily Batch](#)
- [IPOCS-Lifecycle Allocation and Replenishment Intra-day Batch](#)

IPOCS-Demand Forecasting Pre-forecast Batch

This batch process should run before running forecast generation in the science engine.

This batch process involves the following steps:

1. Import Hierarchy from RDX
2. Load IPOCS-Demand Forecasting Internal Hierarchy
3. Import data from RDX
4. Load IPOCS-Demand Forecasting specific data
5. Running New Item batch
6. Merge Forecasting parameters
7. Export Forecasting Parameters to RDX

IPOCS-Demand Forecasting Post-forecast Batch

This batch process should run after running forecast generation in the science engine.



Note:

IPOCS-Demand Forecasting provides a mechanism to extend the GA batch process. Refer to [Customizing the IPOCS-Demand Forecasting Batch Process](#).

This batch process include the following steps:

1. Import system forecast from RDX tables
2. Adjust system forecast to generate adjusted forecast
3. Calculate attributes needed for Approval business rule-group

4. Generate approval business rule membership
5. Assign parameter values to sku/store based on approval rule membership
6. Run the approve exceptions.
7. Approval forecast and calculate the mask for unapproved item/store..

Forecasts can be approved in three ways:

- **Manual** - Nothing is approved in the batch process and you must go to the forecast review workbook to approve forecasts.
- **Automatic** - All forecasts are approved by the system. IPOCS-Demand Forecasting has defined several GA approval alerts that are available for the approval process.
- **Approval by Exception** - Approves forecasts based on the user specified approve exception. With no exception, the forecast is approved. With an exception, the forecast is not approved. IPOCS-Demand Forecasting provides four GA approve exceptions: forecast versus recent sales, forecast versus approved forecast, forecast versus last year sales, causal peak. Implementors can choose to disable these approval exceptions in the **My Exception** UI of the Forecast plug-in.

Implementors can also define custom approval exceptions through the IPOCS-Demand Forecasting plug-in to create additional approval exceptions. These exceptions are also produced before approval

8. Calculate eligibility for navigation tier. All item/store with valid forecast and unapproved will participate in navigation grouping.
9. Calculate attributes needed for navigation business rule group
10. Generate navigation business rule membership.
11. Assign navigation tier based on navigation business rule membership.
12. Calculate dashboard statistics
13. Export approved forecast to RDX



Note:

The Forecast Approval process is limited to the approval method selected in the Forecast Setup workbook. However, for any unapproved sku/stor, the batch calculates all enabled alerts. For this reason, the dashboard will include the number of alert hits for all of the enabled alerts from any unapproved sku/stor.

IPOCS-Lifecycle Allocation and Replenishment Daily Batch

This batch should run after IPOCS-Lifecycle Allocation and Replenishment Post-forecast Batch on days when IPOCS-Demand Forecasting Batch is scheduled. On other days it may run independently.

This batch process includes the following steps:

1. Import Hierarchy from RDX
2. Load IPOCS-Demand Forecasting and IPOCS-Lifecycle Allocation and Replenishment Internal Hierarchy

3. Load IPOCS-Lifecycle Allocation and Replenishment Data
4. Init Today
5. Init Attributes
6. Init Rule Groups
7. Calculate Assortments
8. Repl KPIs
9. Network Rules
10. Repl Param Rule
11. Repl Store
12. Repl Warehouse
13. Post Replenishment
14. Run Exports
15. Databags

IPOCS-Lifecycle Allocation and Replenishment Intra-day Batch

This batch process is optional and can be run multiple times within a day.

This process includes the following steps:

1. Calculate Within Day Exports
2. Run Exports

Implementation Process

The IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA configuration can be used out of the box to build the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment domain. The GA configuration has IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment's point of view on how to configure a final level and how to configure business rule engine for approval and navigation.

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment implementors can modify the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA configuration to meet the retailer's business needs. IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment supports two means to achieve this:

- Configuring the solutions using the plug-ins
- Extensibility of the configuration

This section explains how to configure the various solutions using the plug-ins. Extensibility of the configuration is described in [IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Extensibility](#). Although there is a separate plug-in for New Item and IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment solutions, from the Config Tools UI, you only see two plug-in dialogs:

- Forecast Common
- RDF

This simplifies the configuration process for the implementor.

Set Up Common Configuration Details

From the Configuration Tools toolbar, select the Automation menu and then from the Forecast Common option, select **Specify Configuration Details**.

Figure 3-1 Configuration Tools: Forecast Common

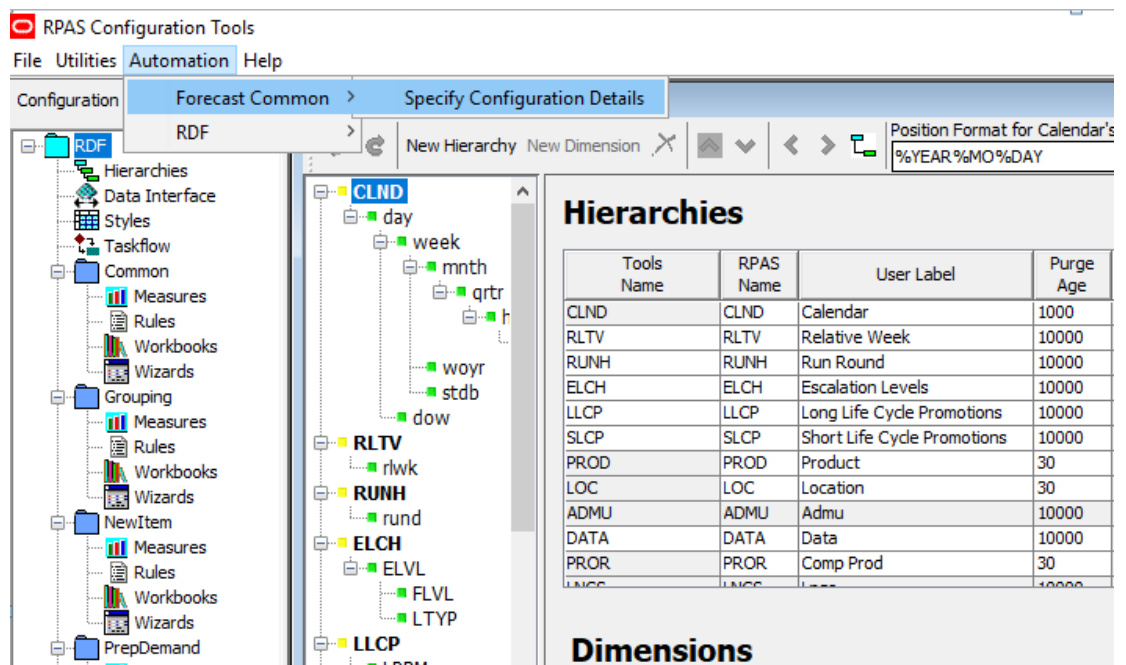
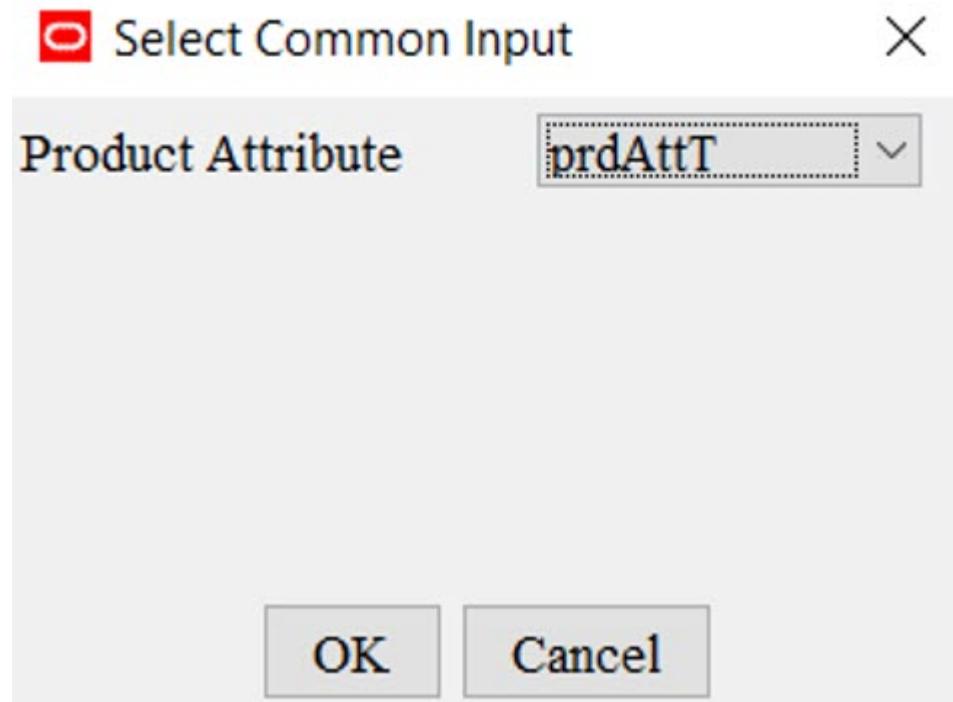


Figure 3-2 Select Common Input



In this step we specify the common input to both New Item and IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment.

The product attribute measure to be used in the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment and New Item solutions has to be specified in the Common Plug-in. The product attribute measure stores the attribute position name and not the attribute label.

Labeled Intersections

The labeled intersections listed in [Table 3-2](#) must be defined before running the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment plug-ins. The plug-in validation will ensure that the required labeled intersections are defined.

Table 3-2 Labeled Intersections

Labeled Intersection	Definition	Description	Measures Defined
SLS_INTX	sku/stor/week	Sales intersection	pos, rsal, psal, csal
DAYSLS_INTX	sku/stor/day	Sales intersection at day (load intersection)	Can be used as load intersection for sales coming in at day level
SLSNC_INTX	sku/stor	Sales intersection without calendar	ldactivefcstitem, flagllc
SKUSTOROFFR_INTX	sku/stor/offd	Offer sales intersection	Offersls

Table 3-2 (Cont.) Labeled Intersections

Labeled Intersection	Definition	Description	Measures Defined
SKUSTORWEEK_INTX	Sku/stor/week	Event calendar	Eventclnd, prcdiscclnd
Condmeasvalintx1	Clss	Condition value measure	Condmeasvalnum1, Condmeasvalstr1, Cconmeasvaldat1
Condmeasvalintx2	Dept/regn	Condition value measure	Condmeasvalnum2, Condmeasvalstr2, Condmeasvaldat2
Condmeasvalintx3	Clss/regn	Condition value measure	Condmeasvalnum3
Condmeasvalintx4	Dept/regn	Condition value measure	Condmeasvalnum4
Condmeasvalintx5	Dept	Condition value measure	Condmeasvalnum5
Condmeasvalintx6	Regn	Condition value measure	Condmeasvalnum6

Labeled Intersection Use Cases

Labeled intersections listed in [Table 3-2](#) can be defined based on the retailers business needs. SLS_INTX is the labeled intersection for the incoming sales measures (pos, rsal, psal, csal).

Common Solutions

Open an IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA configuration to see the common modules. This solution should not be modified by the implementor and are considered as non-touch solutions. This solution defines input/output measures for the whole IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment project. The content created in this module will not be modified by the plug-ins. The measures created in these modules are external measures for the plug-ins, and they will serve as inputs to plug-ins. Although this module are not generated by plug-in, It will be overridden in IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Configuration Automation Script. Any modification by the implementor is ignored.

Common Solution

In IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA, the common solution is used to register measures related to sales, offers and product attribute inputs/outputs to:

- New Item
- IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Solutions



Note:

For the common solution, an implementor can only modify the labeled intersection definition that changes the measure intersection in common.

Set Up the New Item Solution

The New Item module is designed to support the forecast for new item/store. IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment provides three approaches to forecast new item/store:

Forecast Approach	Description
Like Item	<p>The forecast is created based on the forecast of Like Items. The Like Items can be selected manually, and the choices are entered in the User Selected Like Items measure. The task can also be automated if attributes are available. IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment then suggests one Like Item in the system recommended Like Item measure.</p> <p>The forecast for the New Item is given by:</p> $\text{Base demand new item} = \text{base demand like item} * \text{Adjustment Factor}$ <p>The forecast for the New Item is calculated as:</p> $\text{Forecast at time } t = \text{base demand new item} * \text{seasonality at time } t \text{ (coming from escalation level)} * \text{promo and price effects (coming from pooling level)}$
Base Rate of Demand	<p>IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment calculates the escalated base rate of demand. The forecast for the new item is given by:</p> $\text{Forecast at time } t = \text{base rate of demand (coming from escalation level)} * \text{seasonality at time } t \text{ (coming from escalation level)} * \text{promo and price effects (coming from pooling level)}$
User Input	<p>This method is very similar to Base Rate of Demand, with the difference that you have to manually specify a base rate of demand. The forecast is then generated using the same formula as for Base Rate of Demand.</p> $\text{Forecast at time } t = \text{base demand new item} * \text{seasonality at time } t \text{ (coming from escalation level)} * \text{promo and price effects (coming from pooling level)}$

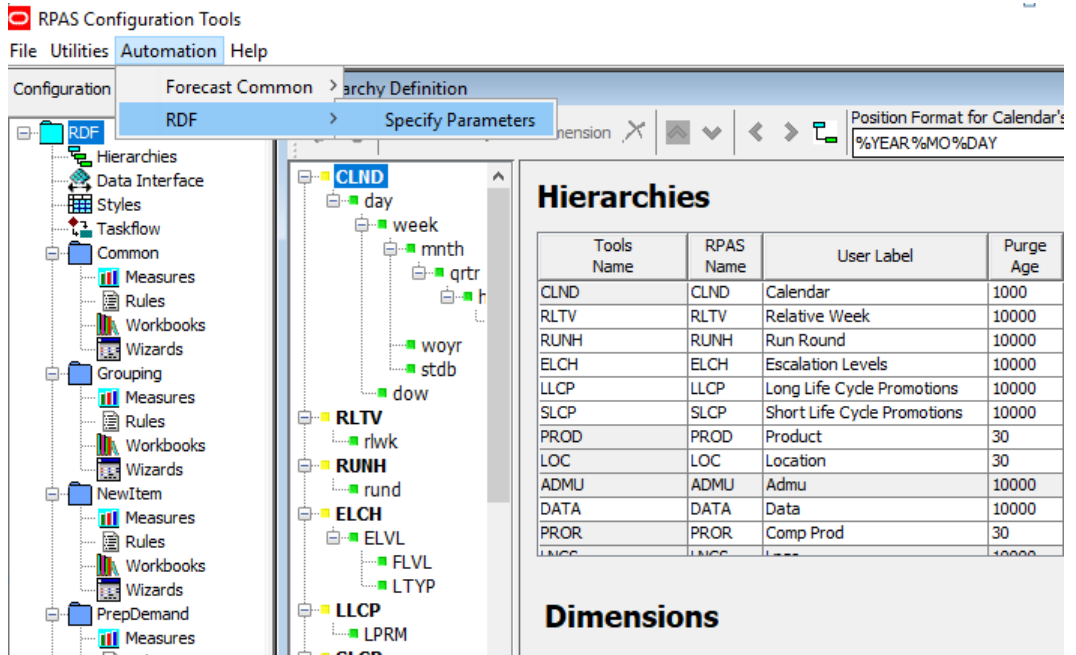
The New Item module provides tools to support the automatic and manual assignment of like item/store to new item/store. If the user can provide product attribute information, the new item can be automatically identified and provided a like item recommendation. If no product attribute information is available, the user has to assign like items manually. New store mapping is always done manually.

Configure New Item Solution

Perform the following steps to generate a New Item solution:

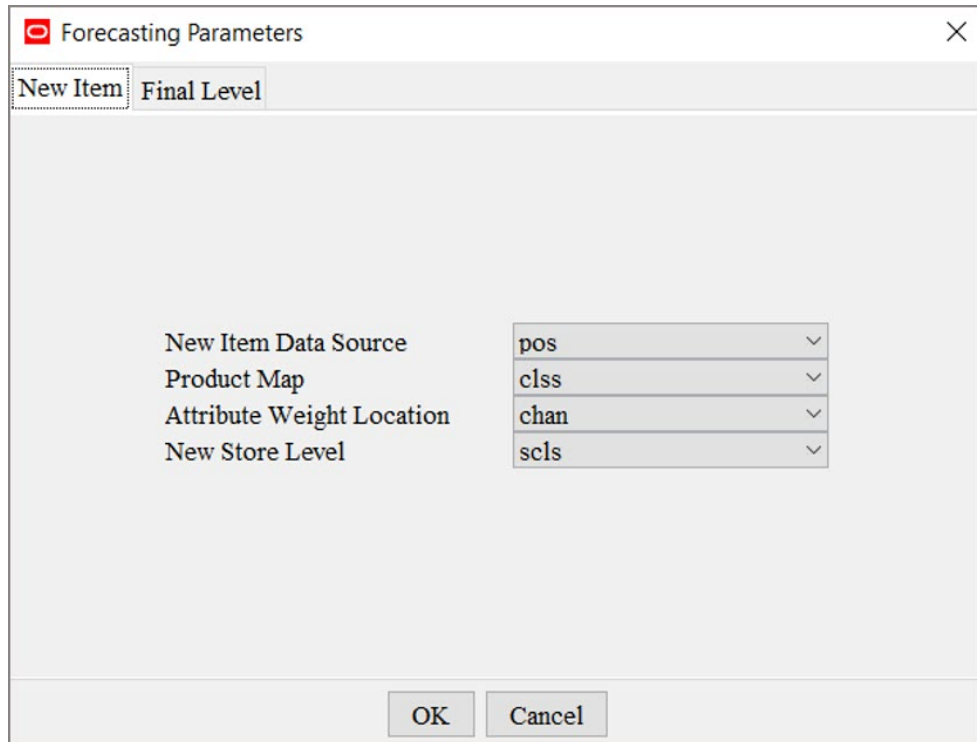
1. From the Configuration Tools toolbar, select the Automation menu and then, from the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment option, select **Specify Parameters**.

Figure 3-3 Configuration Tools: New Item



2. From the Like Item Parameters utility, specify the properties for the New Item plug-in. Refer to [Editing New Item Parameters](#) for details.

Figure 3-4 Like Item Parameters



3. Click **OK** once editing is finished.

Editing New Item Parameters

[Table 3-3](#) lists the New Item parameters available for editing.

Table 3-3 New Item Parameters

Parameter	Description
New Item Data Source	Sales data used to generate forecast for New item/store.
Product Map	This field specifies the range of the like item available to a new item. If the field is populated with clss, it means that only existing items under the same class as the new item are available as like item candidate. The Similarity Score calculation should only be performed between the new item and existing items with in the class.
Attribute Weight Location	Allows you to specify which location level that the attribute weight used in similarity score calculation will be based on. The attribute weight measure intersection is to be on product Map/ attribute-weight-loc/patt. In GA, it is clss/chan/patt.
New Store Level	This field specifies the product level on which like store is assigned to new store. If the field is selected as scls, it means that the like store assignment can be different per subclass.

Configuring the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Solution

In IPOCS-Demand Forecasting, the Demand Model to generate the forecast is:

$$\text{Demand} = \text{Base Demand} * \text{Seasonality} * \text{Promo Effects} * \text{Price Effects}$$

This is the basic model used to forecast short lifecycle and long lifecycle items. However the approach to calculate each of these components might differ.

Forecast information is often required for items at the lowest levels in a hierarchy. Problems can arise when historic sales data for these items is too sparse and too noisy to identify clear selling patterns. In such cases, calculating the seasonality curves and effects at a higher level in the hierarchy based on an escalation path, would generate a reliable forecast. The science UI provides a mechanism to define the final levels and escalation levels; and the associated parameters for each level. The default escalation path is the order in which the escalation levels are used also defined in the science UI. Users can also edit default escalation path, override the escalation path at the final level intersection from the science UI. In the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment plug-in, implementor need to define the final levels. The final levels specified in IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment plug-in must match the final levels defined in the science UI.

The IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment solution can be configured using the final level tab in the RDF plug-in UI:

Table 3-4 IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Plug-in UI Tabs

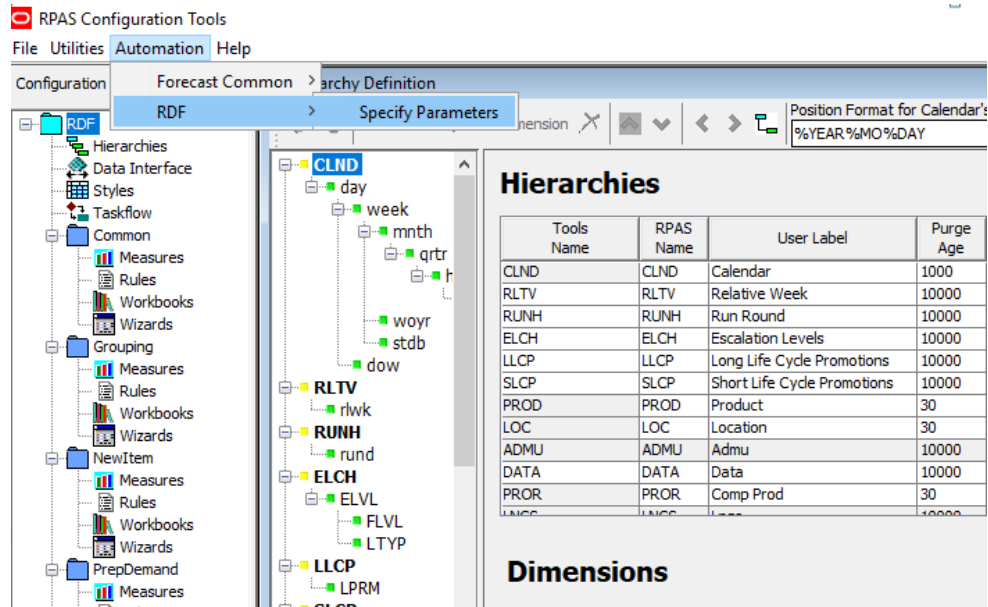
Tabs	Description
Final Level	Define and configure final levels

Generate IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Solutions

Perform the following steps to generate an IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment solution:

1. From the Configuration Tools toolbar, select the Automation menu and then, from the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment option, select **Specify Parameters**. The following steps outline the process for configuring IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment forecast levels.

Figure 3-5 Configuration Tools: IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment



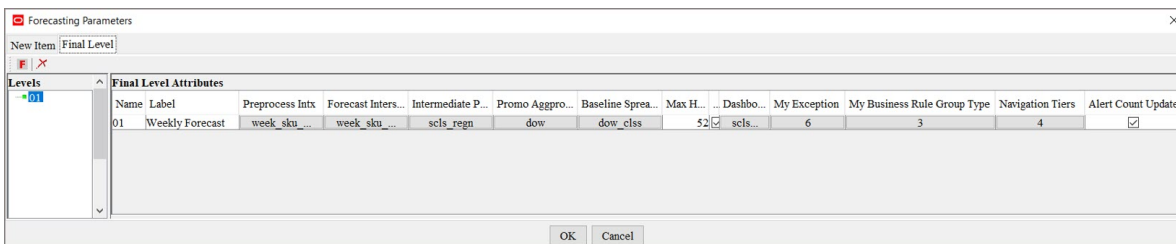
1. Select the final level tab to configure the various parameters for Final Levels.
3. Configure a final forecast level:

From the Forecasting Parameters utility, click the **F** icon. A new final level is added, and it is assigned the next available level number. Specify the properties for the final level. See Editing Forecast Level Parameters for details.

Note:

To remove a final level, select the forecast level and then click the **X** icon. Deleting a final level removes all of its associated parameters.

Figure 3-6 Final Forecast Level



Edit Final Level Forecast Level Parameters

Table 3-5 lists all of the Final Level Forecast Level parameters.

Table 3-5 Final Level Forecast Level Parameters

Final Level Parameters	Description
Level Name	The level name is the system-assigned level number when a forecast level is created. This is a read-only parameter.
Level Label	The level label is the level description that will be viewed by the user once the domain is created. Level labels may not exceed 40 characters. The level labels must be the same as the external name used for forecast level for science UI
Preprocess Intx	The intersection that sales will be preprocessed. If a final level 's forecast intersection is sku/str/week. Its preprocessing intx is also at sku/stor/week. If a final level's forecast intersection is at sku/stor/day, Its preprocessing intx is also at sku/stor/week. Sales history at day is usually too sparse to perform efficient preprocessing.
Forecast Intersection	This defines the level at which forecast will be generated. Usually the final level forecast intersection will be at week. In case of daily causal final level, the effects will be calculated at week level and the forecast will be spread from week to day.
Intermediate Parameter Intx	This define the level at which forecast parameter can be setup. IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment allows parameters to be set up at three level, at default (scalar measure), at intermediate (measure at intermediate parameter intx specified here), at final (measure at forecast intersectuin without calendar).
Dashboard Intersection	This define the lowest level at which forecast and sales statistics can be reviewed in dashboard. implementor need to be very careful with the selection of intersection. If it is too low, dashboard workbook will run into performance issue. If it is too high, user loss visibility to details.
Alert Count Update	This field indicates if the navigation alert in forecast approved should be wiped out if an alerted sku/store 's forecast is approved. Default is true. That means the navigation alerted item/store numbers will be reduced as user reviewed the forecast and approved it.
Max Horizon	Defines the maximum number of weeks of forecast length.
My Exception	This parameter provides a mechanism for the implementor to configure custom approval exceptions and enable/disable GA provided approval exceptions. These exceptions will be used during the batch for Forecast approvals and is also seen in the dashboard exception profile as a separate tile. The implementor can enter the labels for the exception and the secondary measure such as variance measure. Note that the implementor is responsible to configure the rule/rule group (based on the exception definition) to populate the boolean measure (and variance measure) for the My Exception.
My Business Rule Group Type	Configures Rule group types and parameters. Refer to the section, <i>Configure My Business Rule Group Type</i> .
Navigation Tiers	Configures Tiers or Priority to view the workbook alerts in Forecast Review workbook. Refer to the section, <i>Configure Navigation Tiers</i> .

Configure My Exception

This parameter provides a mechanism for the implementor to configure custom approval exceptions and enable or disable GA provided approval exceptions. These exceptions are used during the batch for Forecast approvals and are also seen in the dashboard exception profile as a separate tile. The implementor can enter the labels for the exception and the secondary measure such as variance measure.

Note that the implementor is responsible to configure the rule or rule group (based on the exception definition) to populate the boolean measure (and variance measure) for **My Exception**.

To add or remove custom exception, perform the following steps.

1. Click within a cell of the My Exception table to open a dialog as shown in [Figure 3-7](#). The dialog displays a table with the columns:
 - Label - Displays the exception label name (read only)
 - Exception Metric Label - Displays the exception metric label name (read only)
 - Enable - Allows you to enable or disable GA provided exceptions
2. Click **P** to create additional rows for custom approval exceptions. implementors can enter labels and exception metric labels in the new custom exception. Click **X** to delete the custom exception.

Figure 3-7 Add New Custom Exceptions

My Exception
✕

Enter infos to customize approval exceptions

P

✕

My Exception

Label	Exception Metric Label	Enable
Recent Sales vs Forecast	Recent Sales vs Forecast Variance	<input checked="" type="checkbox"/>
Last Year Sales vs Forecast	Last Year Sales vs Forecast Variance	<input checked="" type="checkbox"/>
Approved Forecast vs Forecast	Approved Forecast vs Forecast Varia...	<input checked="" type="checkbox"/>
Max Sales Peak vs Frcsted Peak	Max Sales Peak vs Frcsted Peak Factor	<input type="checkbox"/>
My Exception1	My Exception Var1	<input checked="" type="checkbox"/>
My exception 2	My Exception Var2	<input checked="" type="checkbox"/>

OK

Cancel

Configure My Business Rule Group Type

Click within a My Business Rule Group Type cell to configure the business rule group types. Business Rule Group Type is a IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment internal dimension that is part of the Final Level Hierarchy. The Final Level hierarchy file is generated by an IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment plug-in. There are two dimensions: rulegroup-type and final level. The dimension, rulegroup-type rolls up to the final level dimension. There are two GA rulegroup types per final level, Approve and Navigation.

You can specify additional custom rulegroup types using the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment plug-in. Each final level can have its own

custom rulegroup type. The Final Level hierarchy data file is generated at domain build/patch time.

The business rule group type table is created with two default rows. The Name and Build-in Parameters are read only. Aprv01 is for approval. It is a rule group type designed for approval process.

The built-in Parameters are:

- Approve method at final
- Alert window at final
- Alert error threshold at final

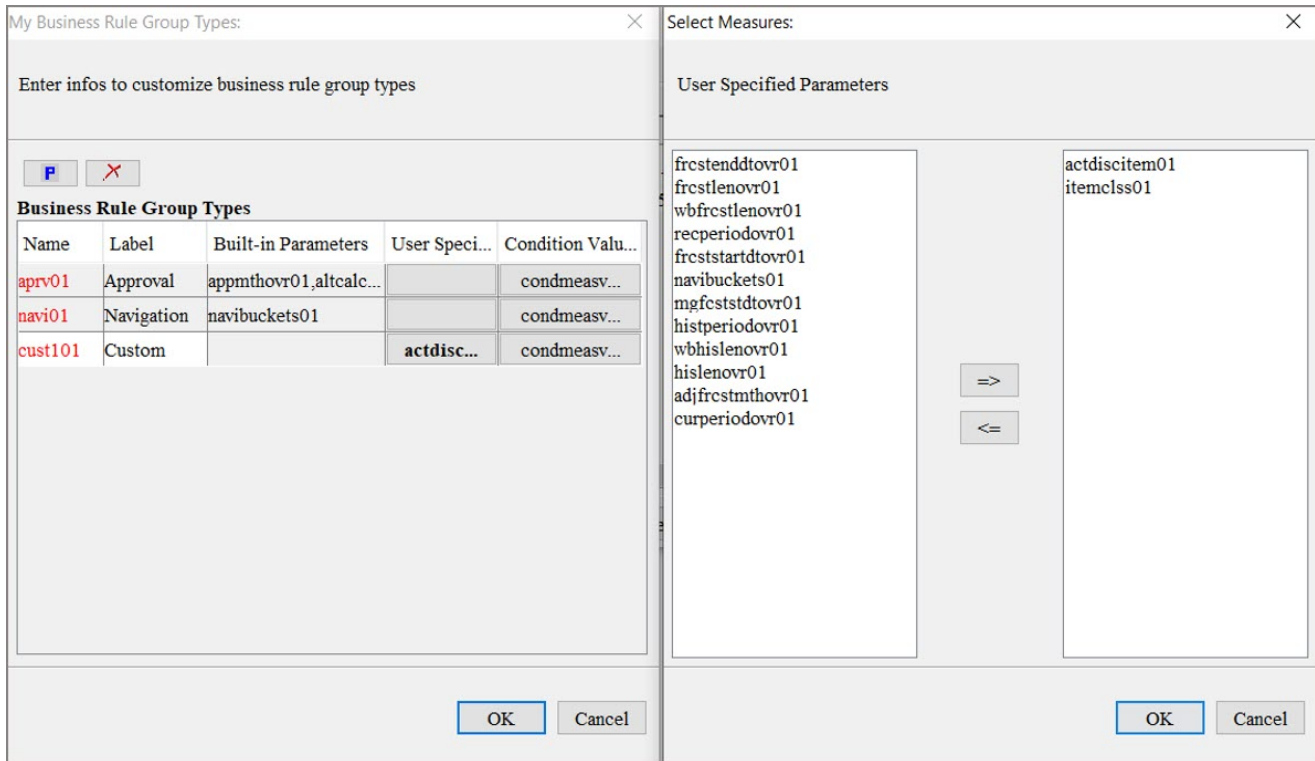
The rule group type, navi01, is designed for tiered navigation in Forecast Review workbook.

Click **P** to add more custom rule group types. The name need to be unique across all final levels and thus it is good practice to append level number at the end. Click **X** to remove custom rule group types.

User specified Parameters per rule group type can be specified by an implementor if additional parameters need to be included. The parameters are associated with business rule group type so that the values for a certain sku/store can be assigned to a set of value for a business rule which the sku/store belongs.

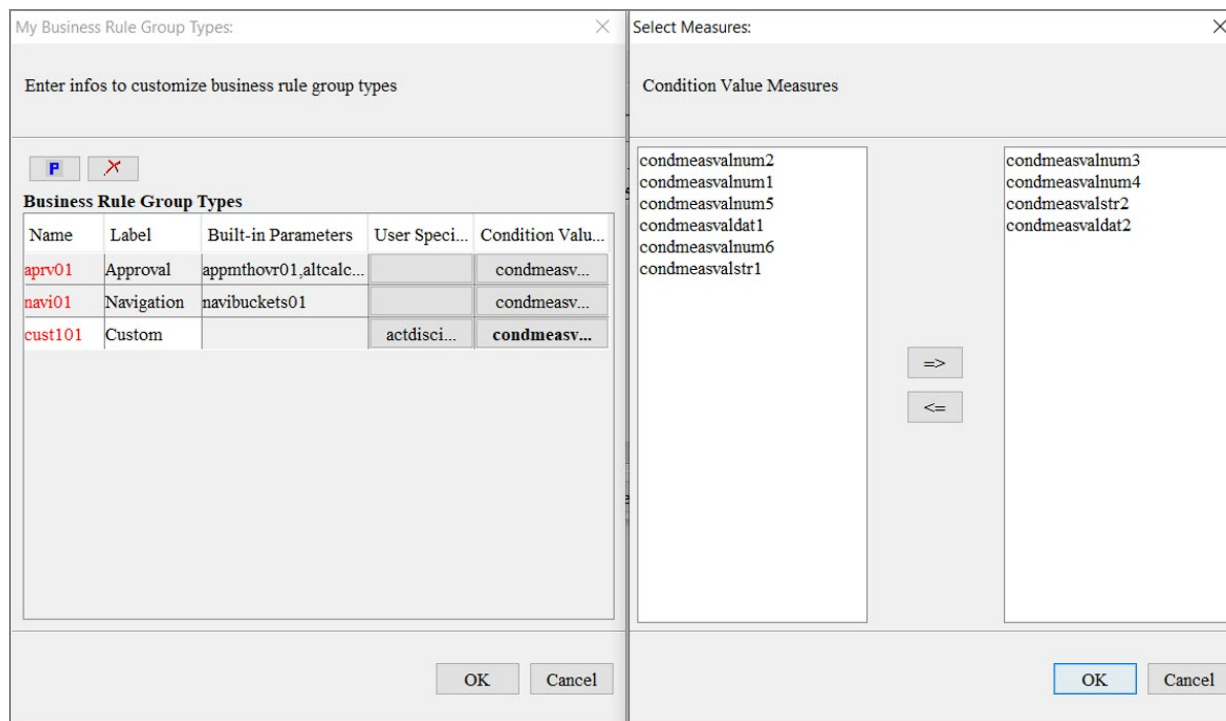
Click within the cell of user specified parameters to open the dialog that allows you to add or remove parameters. The Select Measures box in [Figure 3-8](#) displays all GA parameter measures. Most of these measures are forecasting parameter at final. Any custom measures with intersection = forecast intersection without the **clnd** dimension and have a valid **db** will be available for selection too. For each selected measure, a measure at business rule is created and added to the parameter for <rule group type> worksheet for user input.

Figure 3-8 Select User Specified Parameters



Click within the condition value cell to open the dialog that allows you to select the condition value measures to be used. The measures available for selection are the ten condition measures GA provides and any custom non-boolean measure that have an intersection higher than forecast intersection without the `clnd` dimension and have a valid `db`. The selected measure are used to construct the picklist for condition value (measure) in the Rule Setup workbook.

Figure 3-9 Select Condition Value Measures



Configure Navigation Tiers

Navigation in the Forecast Review workbook is now tiered. You can decide how many tiers and what is the rule to associate a sku/stores to a tier. There is a corresponding workbook alert associated with each tier. By switching between workbook alerts, you can jump between sku/stores with a different priority to be approved.

Click within the navigation-tier cell to display the dialog that allows you to add or delete a tier.

Click **P** to add more tiers. implementors can enter the label of the tier and indicate if a time-phase workbook alert is enabled or disabled.



Click **X** to remove tiers.

For each tier, a workbook alert at prod/loc is created in the Forecast Review workbook. If time-phased is enabled, an additional workbook alert at prod/loc/clnd is created in the Forecast Review workbook.

Figure 3-10 Select Navigation Tiers

Navigation Tiers

Enter infos to customize navigation alerts

Navigation Tiers

Label	Timephase Enabled
1. Must Review	<input checked="" type="checkbox"/>
2. Can Review	<input type="checkbox"/>
3. Wed-Thurs	<input type="checkbox"/>
4. Feeling Bored	<input type="checkbox"/>

OK Cancel

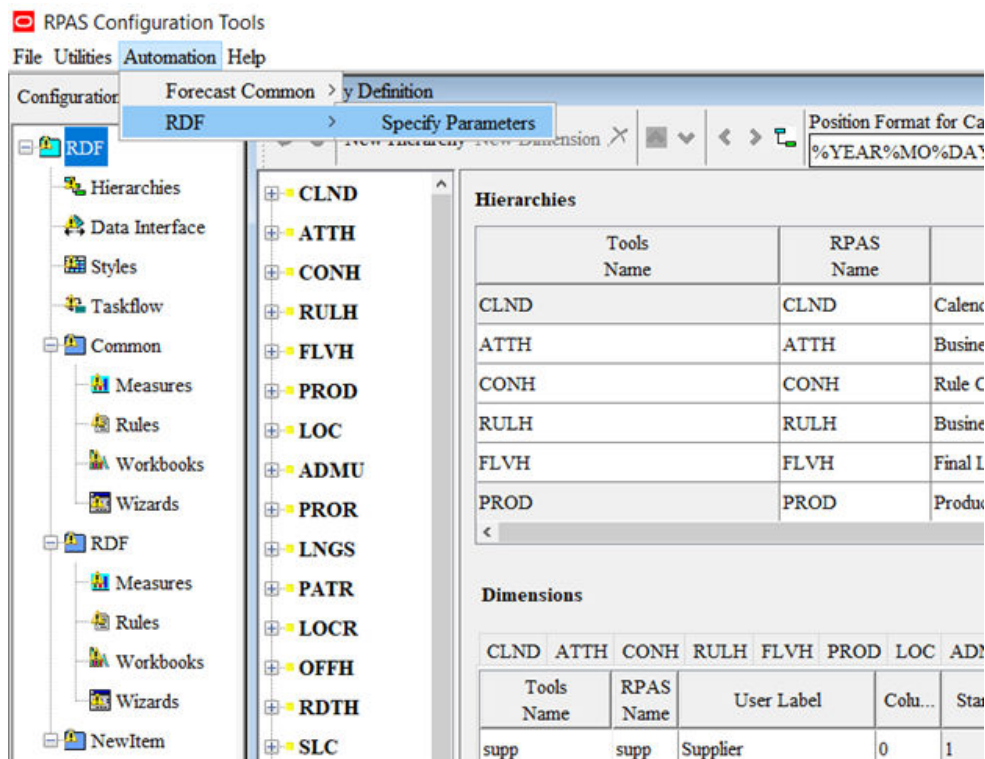
Configuring the IPOCS-Lifecycle Allocation and Replenishment Solution

The following steps outline the process for configuring Inventory Planning Optimization Cloud Service-Lifecycle Allocation and Replenishment (IPOCS-Lifecycle Allocation and Replenishment) solution.

Perform the following steps to generate an IPOCS-Lifecycle Allocation and Replenishment solution:

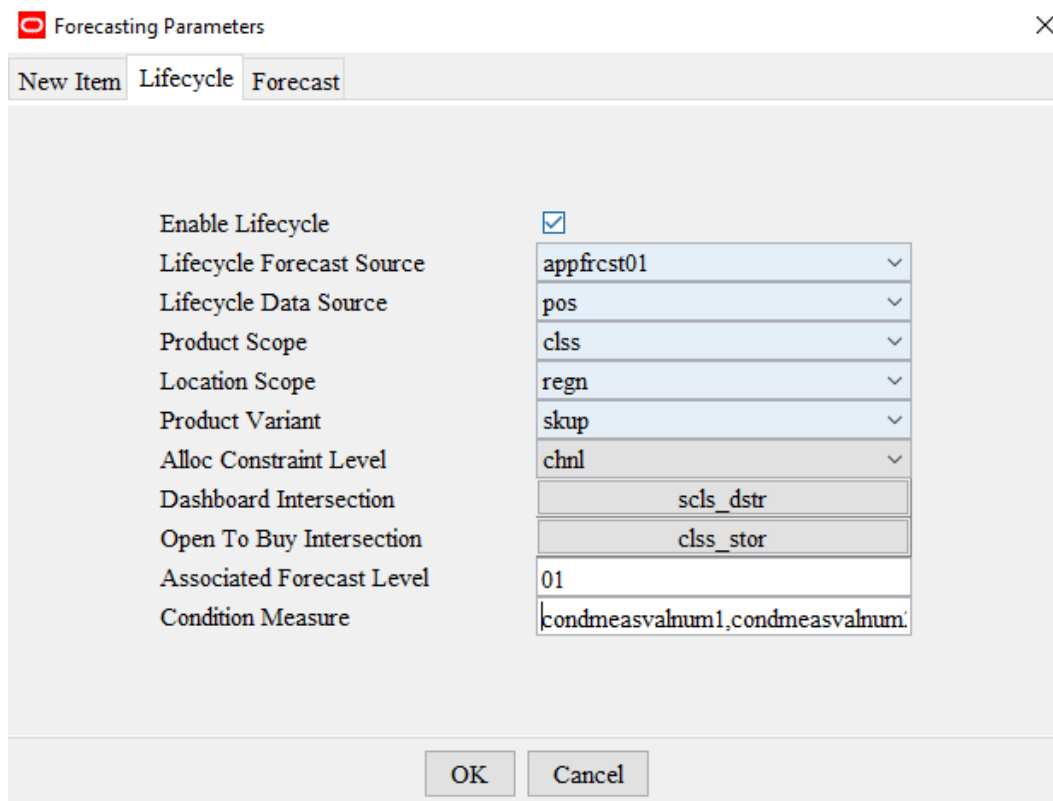
1. From the Configuration Tools toolbar, select the **Automation** menu, and then from the **IPO** option, select **Specify Parameters**.

Figure 3-11 Configuration Tools Toolbar



2. Select the Lifecycle tab to configure the various parameters for -Lifecycle Allocation and Replenishment .

Figure 3-12 Lifecycle Tab — Forecast Parameters



3. Edit the Lifecycle Parameters. Once editing is finished, click **OK**.
The following table lists the Lifecycle parameters available for editing.

Table 3-6 Lifecycle Parameters

Parameter	Description
Enable Lifecycle	Boolean that indicates if the Lifecycle taskflow is visible in the UI and whether the Lifecycle batch is run.
Lifecycle Forecast Source	The measure that holds the forecast feed to Lifecycle (if not specified, by default use appfrcst01).
Lifecycle Data Source	The measure that holds the sale history feed to Lifecycle (by default use pos).
Product Scope	The product dimension to base the product scope on (by default use class).
Location Scope	The location dimension to base the product scope on (by default use region).
Product Variant	The product dimension to base the product variant definition on (by default use skup – sku parent).
Alloc Constraint Level	The location dimension that the allocation constraint is based on (by default use channel).
Dashboard Intersection	The intersection that the Lifecycle worksheets in a dashboard workbook should be based on. (by default use scls_dstr).

Table 3-6 (Cont.) Lifecycle Parameters

Parameter	Description
Open To Buy Intersection	The intersection that the open to buy measure should be based on. (by default use class_stor).
Associated Forecast Level	This is the final level from the demand forecast module associated to the attributes used in the Lifecycle module. Note that the Business Rule Attribute measures are per final level, hence it is important to use the correct set of attribute measures.
Condition Measures	<p>This is a list of condition value measures that can be used in the rule condition setups in the Lifecycle module. Apart from GA condition measures, custom measures can be added too. Remember to load the range measures LPPmDtbCndValRg and LPPmRulCndValRg. LPPmDtbCndValRg is used to populate the Condition Value Measure picklist in the Databag Review, whereas LPPmRulCndValRg is used in the condition measure value drop down in Network and Replenishment Parameters workspace. These files are loaded by the GA batch control process, but the files need to be created by the implementer.</p> <p>Sample file for LPPmDtbCndValRg - File: LPPmDtbCndValRg.csv.ovr dtb.01.01,"condmeasvalnum1(Condition Measure Value numeric 1),condmeasvalnum2(Condition Measure Value numeric 2),condmeasvalstr1(Cn Measure Value String 1)"</p> <p>Sample file for LPPmRulCndValRg- File: LPPmRulCndValRg.csv.ovr r.01.01,"condmeasvalnum1(Condition Measure Value numeric 1),condmeasvalnum2(Condition Measure Value numeric 2),condmeasvalstr1(Cn Measure Value String 1)"</p>

RPASCE Rolling Calendar

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment has enabled an RPASCE Rolling Calendar feature for the Forecast Review workbook templates. Refer to the *Oracle Retail Predictive Application Server Cloud Edition Configuration Tools User Guide* for more details.

In essence this allows us to define a calendar window based on RPAS_TODAY. The main use case for this feature is for auto workbook builds, where in the calendar window advances based on RPAS_TODAY.

Figure 3-13 Rolling Calendar

Forecast Review (01)		Z-Axis	
Approve		Unassigned	
2. Approve Information		Use Custom ...	<input type="checkbox"/>
1. Forecast Results		Custom Wizard	
3. Forecast Results Chart		Standard Wizard	sku,stor,week
4. What-if Parameters		Enable Image ...	<input type="checkbox"/>
5. Preprocess Details		Pre-Range Mask	CLND:wkrange01,PROD:activefcstitem01
Forecast Setup (01)		DPM Like-Ite...	
General		Dim Attr Setup...	
Basic Parameters		Use Rolling C...	<input checked="" type="checkbox"/>
Advanced Parameters		Rolling Calend...	MaxF:"",MinF:minfuture01,MaxP:"",MinP:""
		Login User Only	<input type="checkbox"/>
		Dynamic Dim ...	

Out of the four rolling calendar range measures, only the Minimum Future has been set to the Alert Calculation window. This is set during the forecast batch.

The Minimum Past defaults to 0, which means it is not required to pull in any week prior to TODAY.

The Maximum Past and Maximum Future are also not set and will default to the current Calendar pre-range.

 **Note:**

The rolling calendar feature is not extensible and implementors cannot edit the rolling calendar range measures.

Translation Process in IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment

As part of the domain build or patch process, IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment loads the GA translation files (which includes RPASCE and taskflow files).

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment then loads any custom translations that you may have placed on the OBJECT STORAGE in the INCOMING_FTP_PATH/translation directory.

During the patch, IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment also loads previously uploaded translation files.

For details, refer to the *Internationalization* chapter in the *Oracle Retail Predictive Application Server Cloud Edition Administration Guide*.

 **Note:**

As part of configuration or extensibility, if the implementor changes the labels of the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment level in the plug-in, IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment generates the corresponding English (and non-english_us) translations in the `r_msglabel` measure and loads it.

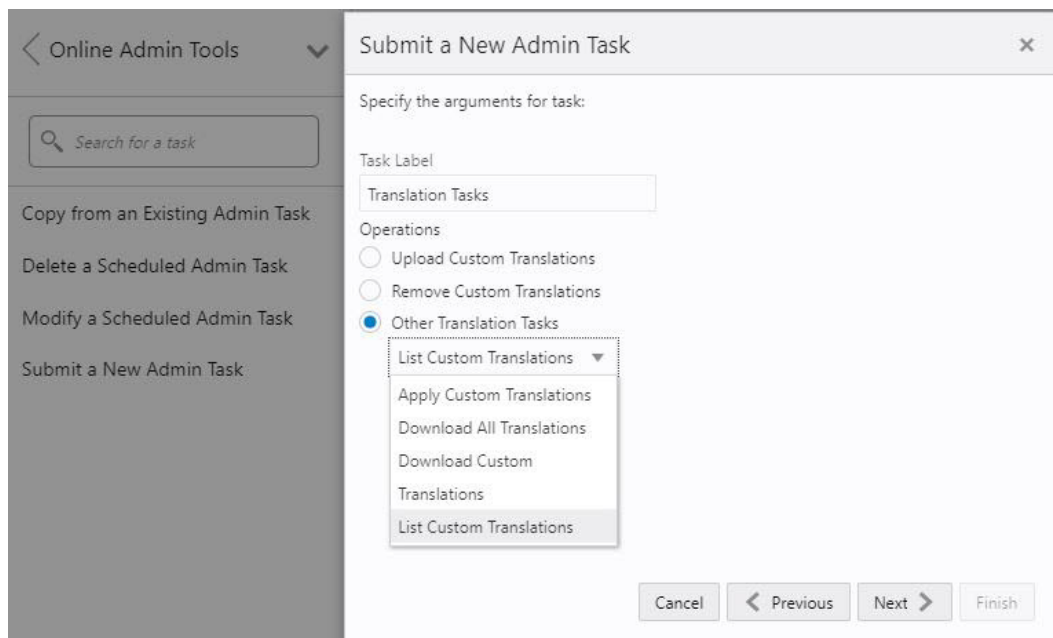
For locale specific translations, it is the implementor's responsibility to upload the correct translation files.

Since the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment level labels are appended to the worksheet labels, the implementor should upload the new labels.

Perform the following steps to access the position names to create the locale specific file:

1. Make sure the browser locale is English - United States
2. From the OAT configure batch task, go to the **Translation Task** and then, **Download All Translations**.
3. The `r_msglabel.csv.ovr` file contains the English labels as updated by the implementor in the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment plug-in.
4. This file can serve as an example to create the locale specific `r_msglabel` file.
5. The locale specific file can contain only the records with the updated labels.
6. Revert the browser language to the original locale.
7. Upload the locale specific `r_msglabel.csv.ovr` file using the **Translation Task** .

Figure 3-14 Translation Tasks



4

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Extensibility

As mentioned in [IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Configuration](#), apart from configuring the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment application through the plug-ins, IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment also supports extensibility of the GA configuration. This chapter describes the rules and restrictions enforced to extend the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA configuration, so as to preserve the customizations in future patch and upgrades.

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment also provides a mechanism for implementors to extend the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Batch process, where in custom rule groups can be executed during the batch process. IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment also supports Dashboard extensibility.

The solutions within the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA configuration can be categorized into:

- Solutions that are extensible.
- Solutions that are not extensible.

The Solutions that cannot be customized are the ones not generated by the plug-in. The non extensible solution is:

- Common

Generally the solutions generated by the plug-in can be customized; however they should follow the rules for extending a solution. The extensible solutions are New Item, RDF, and Lifecycle.

Supported Customization of IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Configuration

The following sections list the customizations that are allowed to the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment configuration. These configuration components can be customized:

- Solution
- Measures
- Rules and Rule groups
- Workbooks and worksheets
- Hierarchy

- Taskflow
- Styles

All the names of custom realized measure, rule set, rule group, rule, workbook, worksheet, and styles should begin with the prefix **c_** or **C_**.

Custom worksheets can only be added into existing IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA workbook tabs for the plug-in generated solutions.

Rules for Customizing Hierarchy

The following hierarchy customizations are allowed to the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment configuration:

- Clients are allowed to add new hierarchy or add new dimension into the existing hierarchy. No dimension can be added to calendar hierarchy that is lower than day. No change can be made to the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment internal hierarchies.
- Clients are allowed to change the label of existing hierarchies or dimensions.
- All the dimension and roll-up order in the product, RHS product, location and RHS location hierarchy must be preserved in the custom configuration.

Rules for Adding Measures

The following rules apply when adding measures to the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment configuration:

- Clients are allowed to add new custom measures into the custom solution and reference them as an external measure in the extensible solutions.
- Clients can also add new custom metric as a major component in the extensible solutions. It is strongly recommended not to mix custom metrics with the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment metrics.
- Custom measures should follow the naming convention and should begin with a 'C_' or 'c_' prefix.
- Only the published GA measures can be used in custom rules and custom workbooks. Only writable GA measures can be used on the left hand side of an rule expression. The read only GA measures can only be used on the right hand side of the rule expression.

Publishing Measures

The published GA measures can be divided into these categories:

- **Read only**—can only be used on the right hand side of the expression
- **Writable**—can be used on both the left hand side and right hand side of the expression
- **RuleGroupOnlyWritable**—a specific measure that can be read/write in the specified rule group
- **Loadable**—measures that can be loaded using OAT and can be present in the custom load batch control file.

- **WorkbookMeasureOverride**—measures whose property can be overridden in the associated workbook
- **ReadableExecutionSet**—list of GA batch control exec set names that can be called from within custom batch control exec file.

The list of published measures can change based on forecast levels in a particular configuration. Therefore it is dynamically generated at each IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment configuration regeneration.

The contents of the list are saved in a file named: `publishedMeasures.properties`.

The file is located under `[config]/plugins`. Before writing custom rules, regenerate your IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment configuration and then open the file to search for published IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment measures.

Custom Measure Characteristics:

- Each line of the file has multiple fields that are | separated.
- The first field is one of the category names previously listed.
- The second field is name of the measure or exec set.
- The third field is the measure label.
- For RuleGroupOnlyWritable, the fourth field is the rule group name.
- For WorkbookMeasureOverride, the fourth field is the name of the workbook in which this measure is allowed to be overridden.

Example 4-1 Sample Custom Measure

```
ReadOnly|PreSeaProf|Seasonal Profile
ReadOnly|activefcstitem01|Active Forecast Items
ReadOnly|activefcstitem07|Active Forecast Items
```

Generally, forecasting parameter overrides such as Forecast Method Override, Custom Exception, Custom Exception Metric, auxiliary inputs to IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment such as Promotion Aggregation Profile, and Grouping Membership were writable because an implementor may set them up through customized rules.

Rules for Adding Custom Rules

The following rules apply when adding custom rules to the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment configuration:

- Custom rule sets, rule groups and rule names should begin with the 'C_' or 'c_' prefix.
- Custom rule groups should not include any GA rules.
- Custom rules can use the published readonly GA measures listed in the `publishedMeasures.properties` file. However, the custom rules cannot modify the value of the read only GA measure. Hence the readonly GA measure cannot appear on the LHS of a custom rule.
- Custom Rules can be added to custom rule group. It can also be added to the plug-in generated GA workbook rulegroups such as load rule group, calc rule group, refresh rule group, commit rule group and custom menu rule. However Custom Rules can not be added to plug-in generated batch rule group.

Rules for Workbooks and Worksheets Extensibility

The following rules apply when adding custom rules to the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment workbooks and worksheets extensibility:

- New Custom workbook and worksheets names should begin with the 'C_' or 'c_' prefix.
- Apart from the Custom Solution, custom workbooks can also be added to the extensible IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA solutions.

Workbook Measure Override Extensibility

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment supports certain GA measures to be overridden in the GA workbook. These measures are listed in the WorkbookMeasureOverride section of the **publishedMeasures.properties** file.

For example:

```
WorkbookMeasureOverride|ppsstdesadjustp01|Std ES Adjustment Flag|PpsAdminP01
```

This indicates that the measure `ppsstdesadjustp01` can be overridden in the `PpsAdminP01` workbook.

The following rules apply to override measure properties:

- Base State and Agg State can be overridden.
- Range property of static picklists can be overridden. Note that options can only be removed; new options cannot be added.

Elapsed Lock Override

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment supports the RPASCE platform feature of Elapsed Lock Override in the following scenarios:

- Custom measures in a workbook can have the Elapsed Lock Override set to true.
- Custom workbooks can have this field set to true for GA measures that are in the Writable list of the published measures.

 **Note:**

If a GA measure has not been enabled as Elapsed Lock Override, the following steps can achieve the same behavior:

1. Make sure the GA measure is writable.
2. Register a custom measure and load it from the GA measure.
3. Set the custom measure as Elapsed Lock Override.
4. Edit the custom measure in the workbook.
5. Commit the custom measure back into the GA measure.

Rules for Adding Custom Real Time Alerts into Existing Workbooks

Perform the following steps when adding custom real time alerts into existing workbooks.

 **Note:**

These steps have to be performed using RPASCE Configuration Tools. Copying, pasting or direct editing of xml files is prohibited.

1. To add custom real time alert into existing workbooks, all measures related to the custom real time alert need to be added to the workbook.
2. Create a style for the custom real time alert in the configuration.
3. Create a custom real time alert in an IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment workbook using the measures and style created from the previous steps.
4. If a real time alert defined in custom solution will be used in a GA workbook, the real time alert measure should be imported as an external measure in the corresponding GA solution.
5. We must ensure that the rule group consistency is maintained while adding any custom rules that might be needed to calculate an alert measure.

The IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment plug-in will preserve a custom real time alert during regeneration

Customize Workbook Pre-range Measure

The pre-range on the PROD hierarchy in the Forecast Review workbook template can be customized by extending the pre-range measure `frprdlocprerng_CF_`. By default this measure is populated by the active forecast items. The measure `frprdlocprerng_CF_` is published as writable. Meaning that it can be populated using a custom rule or by loading the file.

Adding a Custom Solution

A custom solution is a separate solution within the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment configuration. It can be used to accommodate custom workbooks, rules, alerts to do custom reporting, custom logic and threshold alerts by using GA measures (based on the extensible GA measures in [Table 4-1](#)). In addition, measures and alerts defined in the custom solution can be plugged into existing workbooks in GA solution based on the contexts defined. Clients are allowed to create their own custom solutions by following the rules mentioned above. To use a GA measure in custom workbooks, the GA measure should be imported as an external measure in custom solution.

Adding Custom Styles

New styles can be added in the Style Definition window of Configuration Tools. The custom style name should be prefixed with either `c_` or `C_`. Style names that do not adhere to the naming convention will be caught during the configuration validation. Any new style added will be retained during upgrades and patches.

Validating the Customized Configuration

A script, `ra_config_validation.sh`, has been provided to allow the customer or implementor to validate that the customizations conform to the rules outlined above. For details of the script, refer to Configuration Validation.

This script can be run on Windows with the IPOCS-Demand Forecastin / IPOCS-Lifecycle Allocation and Replenishmentg Starter Kit. To do this, the implementor will need to make sure that they have a pristine copy of the GA configuration as well as the custom configuration.

For example, if the GA configuration has been copied to `C:\Oracle\configurations\GA\RDF` and the custom configuration is in `C:\Oracle\configurations\RDF`, then the script can be called from a Cygwin `zsh` shell:

```
$RPAS_HOME/bin/ra_config_validation.sh -n RDF -d /cygdrive/c/Oracle/
configurations -c /cygdrive/c/Oracle/configurations/GA/RDF/RDF.xml
```

Successful Run of the Validation Script

If all the validations pass, it will output the following message:

Example 4-2 Message for Successful Run of Validation Script

```
09:04:47 : INFORMATION : ra_config_validation.sh[0] - ra_config_validation.sh
completed.
09:04:47 : INFORMATION : ra_config_validation.sh[0] - Program completed
successfully.
09:04:47 : INFORMATION : ra_config_validation.sh[0] - Exiting script with code: 0
```

Unsuccessful Run of the Validation Script

If all the validations do not pass, it will output the following message:

 **Note:**

The bold line shows where the details of the validation failure are in the log. (In the actual log, this line is not bold.)

Example 4-3 Message for Unsuccessful Run of Validation Script

```
09:15:12 : INFORMATION : ra_config_validation.sh[0] - For details of validation, look
in '/cygdrive/d/retek/logs/2017-07-18/rdf_config_validation.091506.1/
rdf_config_validation.log'.
09:15:12 : INFORMATION : ra_config_validation.sh[0] - _call executing command
'execplug-inTask.sh RDF:com.retek.labs.rdf.plugin-
in.installer.RDFConfigurationValidation /cygdrive/c/Oracle/configurations/GA/RDF/
RDF.xml /cygdrive/c/Oracle/configurations RDF'
09:15:17 : INFORMATION : ra_config_validation.sh[0] - _call of command 'execplug-
inTask.sh RDF:com.retek.labs.rdf.plugin-in.installer.RDFConfigurationValidation /
cygdrive/c/Oracle/configurations/GA/RDF/RDF.xml /cygdrive/c/Oracle/configurations RDF'
complete
09:15:17 : ERROR : ra_config_validation.sh[0] - Nonzero exit status code.
09:15:17 : INFORMATION : ra_config_validation.sh[0] - Exiting script with code: 9
```

Taskflow Extensibility

The IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Taskflow is extensible. The implementor can customize the taskflow in Configuration tools to add custom taskflow components like activities, tasks, steps, tabs and worksheets. Any custom taskflow component added to GA taskflow component will be retained after plug-in automation. As part of extensibility, IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment provides a mechanism where in, the implementor can hide certain components of the GA configuration and taskflow by editing a property file. The property file is a simple text file named **extend_rdf.properties** and is located inside the plug-in directory of the configuration. A sample file is included in the plug-ins directory of the GA configuration for reference.

For example, `RDF\plug-ins\ extend_rdf.properties`

The format of the file is shown as:

Stage|Component|Action|Value

An example entry is:

Customization | Worksheet | Hide | activity_ni.task_niattmaint.NITREVSht1

Each line consists of four fields separated by the '|' character. The value field can contain a comma separated list of values. Note that the value field should specify the fully qualified name of the taskflow component. Refer to the sample file. Any line that begins with a '#' character is considered a comment line and is ignored.

The names of the Taskflow entities can be found in the `taskflow.xml` file located in the configuration directory.

The various GA configuration components that can be hidden are listed in the following table:

Component	Description
Activity	Hides the specified Taskflow activity. The value field is the taskflow activity name.
Task	Hides the specified Taskflow task. The value field is the taskflow task name.
Step	Hides the specified Taskflow step. The value field is the taskflow step name.
Tab	Hides the specified Taskflow tab. The value field is the taskflow tab name.
Worksheet	Hides the specified worksheet. The value field is the worksheet name.
Realtime Alert	Hides the specified Real Time Alert. The value field is the real time alert name.

Customizing the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Batch Process

This section describes how to customize the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA batch process to meet the business needs of the retailer. Details on the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA batch process are described in the *Oracle Retail Inventory Planning Optimization Administration Guide*. The Configured Batch tasks have the following tasks related to batch control:

- Retrieve Batch Control File – allows the current batch control files to be retrieved for inspection and modification.
- Update Batch Control File – After inspecting the current batch control files, the implementor can edit the batch control files to customize the batch process.

Details on the previous two tasks are described in the *Oracle Retail Inventory Planning Optimization Administration Guide*.

The IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Batch process is based on the RPAS Cloud Edition Batch Framework, which makes use of a set of control files. [Table 4-1](#) lists the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Batch control files that can be customized. For detailed information on the RPASCE Batch Framework, refer to the *Oracle Retail Predictive Application Server Cloud Edition Implementation Guide*.

Table 4-1 Customizable IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Batch Control Files

Control File	Description
batch_exec_list.txt	This is the controller and entry point for all the other services, specifying groups of services to be run in a specific order.
batch_calc_list.txt	This control file groups all the calc services that need to run using mace.
batch_refresh_list.txt	This control file groups all Workbook refresh rule groups
batch_loadmeas_list.txt	This control file groups measures that need to be loaded into domain using the measure load service

Table 4-1 (Cont.) Customizable IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Batch Control Files

Control File	Description
batch_exportmeas_list.txt	This control file groups measures that need to be exported out of the domain using export measure service.
batch_xform_list.txt	This control file handles the transform file service to perform file transformations to support simple integration capabilities.
batch_oat_list.txt	This file lists the configured batch tasks that appear in the OAT drop down list.

Custom Hooks and Boolean Scalar Measures for Flow Control

There are two ways to customize the batch control files:

- [Custom Hooks](#)
- [Boolean Scalar Measures for Flow Control](#)

The custom hooks are an optional batch set executed by GA batch control files. The implementor can define the contents of these batch set in the customized batch control files that can be uploaded. If these hooks are not defined, the batch process skips these hooks, If they are defined, its contents are executed.

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment also defines a list of Boolean Scalar Measures in the domain to control if certain GA defined batch sets can be skipped or not. The following tables list the hooks and Boolean Scalar Measures.

Custom Hooks

Table 4-2 Custom Hooks

Hook	Description
hook_calc_attb_CF_	This hook is executed right after GA attributes exception navifin_CF_ is calculated and before approval business rule group are calculated. If any custom calculated attributes have been set up to be used in approval by implementor. This is the place to insert custom attributes calculations. _CF_ needs to be replaced by a level number.
hook_frcst_adjust_CF_	This hook is provided to add custom forecast adjustment calculations. This hook is before the business rule group related calculation, approval, and navigation logic. _CF_ needs to be replaced by a level number.
hook_frcst_alert_CF_	This hook is provided to merge the user specified parameters associated with approval business rule group before running exceptions. After merging the user specified parameters, the custom approval exceptions and exception metric should be executed. _CF_ needs to be replaced by a level number.

Table 4-2 (Cont.) Custom Hooks

Hook	Description
hook_frcst_approval_CF_	This hook is provided to perform any post-processing to approval forecast after GA approval step. _CF_ needs to be replaced by a level number.
hook_navi_attb_CF_	This hook is provided so that implementor can calculate the custom calculated attributes used in the navigation business rule groups. _CF_ needs to be replaced by a level number.
hook_populate_aprvrulg_eligiblemask_CF_	This hook is for populate rulgeligmask_CF measure using custom logic. This measure is the eligible mask at sku/store/rulegroup. It can be populated with custom logic to calculate eligible items for approval business rule groups. _CF_ needs to be replaced by a level number.
hook_post_export	This hook is after export.
hook_post_forecast	This hook is between forecast and export.
hook_post_preprocess	This hook is after the preprocessing phase and before generating the forecasts.
hook_pre_forecast	This hook is after New Item calculation and before the forecast generation step.
hook_pre_post_data_load	This hook is between GA measure load and post_data_load rule group run.
hook_IPO_COM_DATA_IMP_OBS_D hook_IPO_COM_DATA_IMP_OBS_W hook_IPO_COM_DATA_IMP_RDX_D hook_IPO_COM_DATA_IMP_RDX_W	This hook is for the calling steps using any import of common data interfaces.
hook_IPO_COM_HIER_IMP_OBS_D hook_IPO_COM_HIER_IMP_OBS_W hook_IPO_COM_HIER_IMP_RDX_D hook_IPO_COM_HIER_IMP_RDX_W	This hook is for the calling steps using any import of common hierarchies.
hook_IPO_HIER_IMP_OBS_D hook_IPO_HIER_IMP_OBS_W hook_IPO_HIER_IMP_RDX_D hook_IPO_HIER_IMP_RDX_W	This hook is for the calling steps using any import of application-specific hierarchies.
hook_IPO_INIT_EXP_OBS_D hook_IPO_INIT_EXP_OBS_W hook_IPO_INIT_EXP_RDX_D hook_IPO_INIT_EXP_RDX_W	This hook is for calling steps for initial batch exports.
hook_IPO_POST_BATCH_D hook_IPO_POST_BATCH_W	This hook is for calling steps after the batch has run.
hook_IPO_POST_DATA_IMP_OBS_D hook_IPO_POST_DATA_IMP_OBS_W hook_IPO_POST_DATA_IMP_RDX_D hook_IPO_POST_DATA_IMP_RDX_W	This hook is for the calling steps using any import of application-specific data interfaces after the calc steps.

Table 4-2 (Cont.) Custom Hooks

Hook	Description
hook_IPO_POST_EXP_OBS_D hook_IPO_POST_EXP_OBS_W hook_IPO_POST_EXP_RDX_D hook_IPO_POST_EXP_RDX_W	This hook is for the calling steps using any exports after the batch aggregations.
hook_IPO_PRE_BATCH_D hook_IPO_PRE_BATCH_W	This hook is for calling steps prior to the batch being run.
hook_IPO_PRE_DATA_IMP_OBS_D hook_IPO_PRE_DATA_IMP_OBS_W hook_IPO_PRE_DATA_IMP_RDX_D hook_IPO_PRE_DATA_IMP_RDX_W	This hook is for the calling steps using any import of application-specific data interfaces.
hook_IPO_PRE_EXP_OBS_D hook_IPO_PRE_EXP_OBS_W hook_IPO_PRE_EXP_RDX_D hook_IPO_PRE_EXP_RDX_W	This hook is for calling steps prior to exports.
hook_IPO_WB_BUILD_D hook_IPO_WB_BUILD_W	This hook is for the calling steps specific to workbook refresh or build.

Boolean Scalar Measures for Flow Control

[Table 4-3](#) lists the Boolean Scalar measures.

Table 4-3 Boolean Scalar Measures

Boolean Scalar Measure	Description
appfalrton_CF_	This measure is set by the plug-in only. _CF_ needs to be replaced by level number.
cslpeakalrton_CF_	This measure is set by the plug-in only. _CF_ needs to be replaced by level number.
flysalrton_CF_	This measure is set by the plug-in only. _CF_ needs to be replaced by level number.
fralrton_CF_	This measure is set by the plug-in only. _CF_ needs to be replaced by level number.
runnewitembatch	This measure is defaulted to true. Set it to false if new item is not configured or user would like to skip new item batch for pre-forecast batch.
runfrcst_CF_	This measure is defaulted to true. Set it to false if customer would like to avoid running forecast on certain final level. _CF_ needs to be replaced by level number.
runnewitem_CF_	This measure is defaulted to true. Set it to false if customer would like to avoid incorporate new item forecast on certain final level. _CF_ needs to be replaced by level number.

Table 4-3 (Cont.) Boolean Scalar Measures

Boolean Scalar Measure	Description
runrulgeligga_CF_	This measure is defaulted to false. If enabled, this makes sure that the only forecastable items are handled by the business rule engine. _CF_ needs to be replaced by level number.

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Batch Control File Customization Guidelines

Follow these guidelines for IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Batch Control File customization:

- The file, `batch_oat_list.txt`, is the only batch control file in which customers can overwrite the label for GA set names listed in OAT.
- For all other batch control files, avoid overwriting GA set names. GA batch control files have provided various hooks for the batch process. For additional custom steps, try to put them into the hooks.
- GA batch control files have provided a mechanism to skip certain GA steps using boolean scalar measure that can be set in the domain.
- For a GA hierarchy that is unused in your implementation such as attribute hierarchy, just provide empty hierarchy file. For unused GA measures, no need to provide the data file. RPASCE would be able to skip it if no files were provided.
- Do not remove any GA cInd hierarchy reorder step, this step is very important for proper functioning of IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment.
- For ease of maintenance, all custom batch set name or step names should be prefixed with `c_`

Examples

The following is an example of custom `batch_exec_list.txt`, `batch_calc_list.txt`, `batch_loadmeas_list.txt` and `batch_exportmeas_list.txt`.

In this example, the following modification were added to `batch_weekly` process.

- Hierarchy and measure data file were unpacked.
- Custom measures were loaded after GA measure load.
- Outlier indicator for preprocessing were calculated use custom rules
- Custom approval alerts were run after GA alerts and before approval
- Promotion effects were exported after GA exports

Batch Control Samples

The following sections list samples of batch control processes.

batch_exec_list.txt**Example 4-4 # unpack data file before data load**

```
hook_pre_load | unpack          | rdf_hier.tar.gz hook_pre_load | unpack          |
rdf_meas.tar.gz
```

Example 4-5 # load custom measures after GA hier and measure load

```
hook_pre_post_data_load | measload          | c_weeklyLoad
```

Example 4-6 # calculate outlier indicator used in preprocess using custom rules

```
hook_ppsindicator | calc | c_outlier_calc
```

Example 4-7 # calculate custom approval alerts after GA approval alerts

```
hook_frctst_alert07 | exec | c_calc_cust_alerts
```

Example 4-8 # custom export

```
hook_post_export | measexport | c_export_promoeffects
c_calc_cust_alerts | calc |c_custalert1
c_calc_cust_alerts | calc |c_custalert2
```

batch_calc_list.txt**Example 4-9 #outlier calculation**

```
c_outlier_calc | G | GROUP | c_HBICalcTodayIdx
c_outlier_calc | G | GROUP | c_dataprocess
c_outlier_calc | G | GROUP | c_calc_outlier
```

Example 4-10 #custom approval alerts calculation

```
c_custalert1 | G | GROUP | c_custalert1
c_custalert2 | G | GROUP | c_custalert2
```

batch_loadmeas_list.txt**Example 4-11 # load custom measure**

```
c_weeklyLoad | M | c_ActiveItem
c_weeklyLoad | M | c_DisContinue
```

batch_exportmeas_list.txt**Example 4-12 # export custom measure**

```
c_export_promoeffects|O|promoeffects.csv.dat
c_export_promoeffects|X|storsku_lprm
c_export_promoeffects|F|c_ExportMask
c_export_promoeffects|S|ftp
c_export_promoeffects|M|prmbldeff07
```

Custom Batch Control Validation

The extensible / custom batch control files need to follow the guidelines previously listed so as to future proof the retailer. That means the retailer should receive software updates

without breaking the existing customizations. To ensure that the batch control file guidelines are adhered to, a batch control validation module has been added.

The `ra_config_validation.sh` script has an optional parameter `-b <parent directory of batch control files>` which will validate the batch control files.

Batch control validation rules:

- Apart from the `batch_oat_list.txt`, none of the set names in the other batch control files can be overridden. That is, GA set names cannot be used in custom batch control files.
- None of the custom batch control files can call the GA set names.
- The `batch_calc_list.txt` can only specify custom rule group names. Cannot specify expressions and GA rule group names.
- The `batch_loadmeas.txt_list` can specify measures that are listed in the Loadable or Writable list of the published measures in the `publishedMeasures.properties` file
- The `batch_exportmeas_list.txt` can specify measures that are listed in the Read Only or Writable list of the published measures in the `publishedMeasures.properties` file.
- All custom set names should have a prefix of `c_`.

Note that the batch control validation is called automatically during domain build or patch. It is also called when the batch control files are uploaded using the Upload Batch Control files from OAT.

Dashboard Extensibility

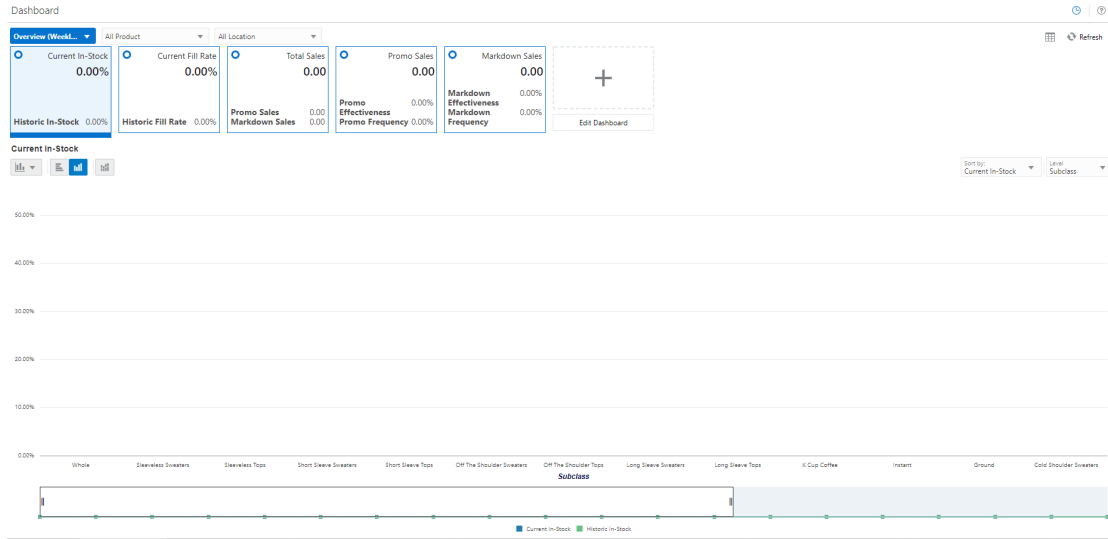
IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment supports Dashboard Extensibility by allowing the Dashboard Settings configuration file to be customized. Refer to the chapter, "Configuring Dashboards in RPASCE" in the *Oracle Retail Predictive Application Server Cloud Edition (RPASCE) Configuration Tools User Guide* for detailed information on Dashboard components.

As part of extensible dashboard, the following are supported:

- Adding custom Metric and Exception profiles.
- Adding a custom tile to GA Metric and Exception profiles.
- Removing GA tiles and profiles.

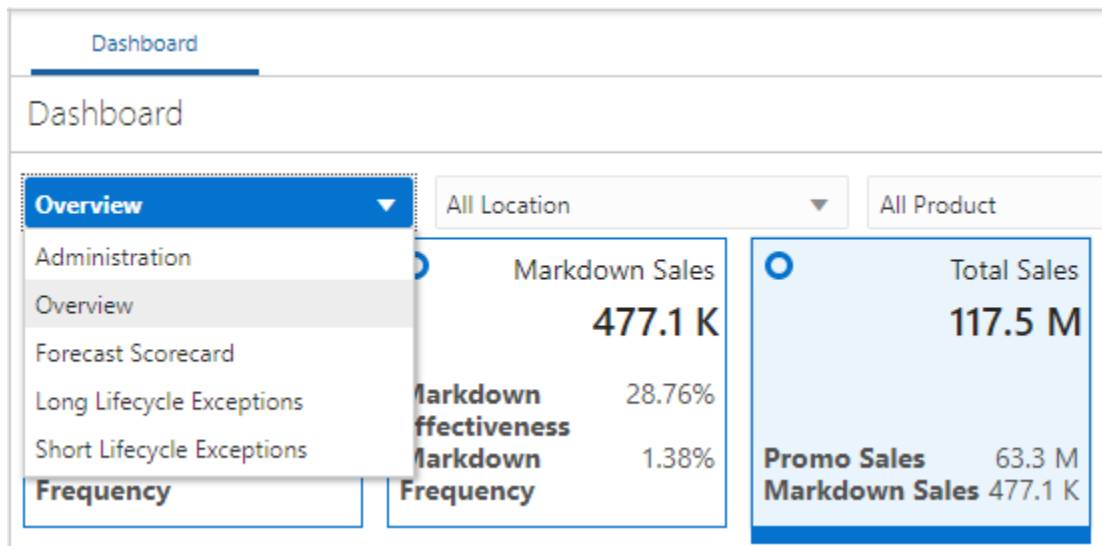
Figure 4-1 shows the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Dashboard as seen in the UI. It consists of two Metric profiles and two Exception profiles.

Figure 4-1 IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Dashboard



In Figure 4-2, the Overview Metric profile is selected and the Total Sales tile is highlighted with two sub-measures: Promo Sales and Markdown Sales.

Figure 4-2 IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Dashboard Selection

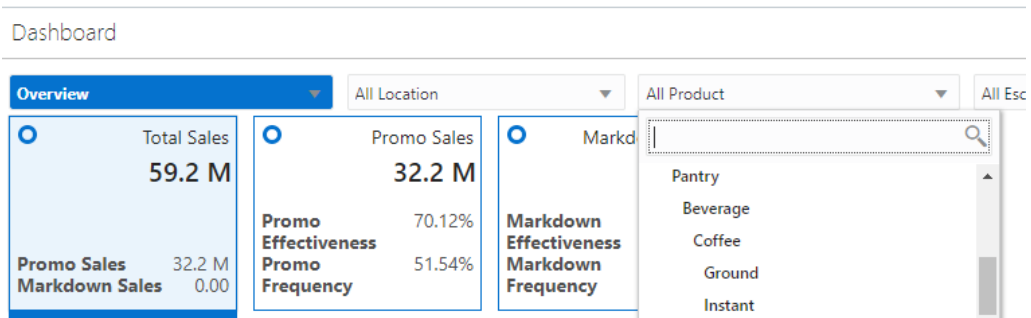


Note that the Exception profiles consist of Exception Tiles, and the Metric Profile consists of metric tiles of the type Comparison Tile. Currently IPOCS-Demand Forecasting does not support the Variance Metric tile.

Dashboard Intersection

The IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA Dashboard workbook is built at the Sub-class, District level which is controlled by the Dashboard Intersection specified in the Common plug-in. Refer to [Configuring the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Solution](#). The Dashboard intersection also defines the level to which we can drill down the Product and Location filters in the Dashboard.

Figure 4-3 Product / Location Filters in the Dashboard



Process to Customize the Dashboard

Dashboard profiles correspond to a worksheet in the Dashboard workbook template in the configuration; and the measures displayed in the tiles are measures present in the worksheet corresponding to that profile. So customizing the dashboard is a three-step process:

1. In the Configuration, add the worksheet, measures, and rules to the Dashboard workbook template.
2. Regenerate the configuration by running the plug-in automation and then validate the configuration by running the `ra_config_validation.sh` script. Refer to the section, [Validating the Customized Configuration](#) for more information.
3. Customize the GA Dashboard Settings file in the Deployment Tool.

Note that the Deployment Tool is a utility within the Configuration Tools. Refer to the section, *Deployment Tool – Dashboard Settings Resource in the Oracle Retail Predictive Application Server Cloud Edition (RPASCE) Configuration Tools User Guide*.

The IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA Dashboard Settings configuration file is located in the configuration:

```
RDF\plugins\dashboardSettings.json
```

Steps to add a custom profile:

1. In the Configuration Tool, add custom worksheet and measures to the worksheet in the dashboard workbook template in the configuration. Also add load/calc rules for the measures.
2. In the Deployment Tool, open the GA Dashboard Settings configuration file.

3. Add the custom profile (Exception or Metric) to the Dashboard Settings configuration file.
4. Save the file in the Deployment Tool.

Steps to add a custom tile:

1. Identify the profile and worksheet to which the custom tiles need to be added.
2. In the Configuration Tool, add the custom measures to the corresponding worksheet. Also add load/calc rules for the measures.
3. In the Deployment Tool, open the GA Dashboard Settings configuration file.
4. Based on whether Exception or Metric profile, add the Exception tile or Comparison Metric Tile.
5. Save the file in the Deployment Tool.

Steps to remove GA tiles and profiles:



Note:

Do not remove the GA measures or worksheet from the Dashboard workbook template in the configuration.

1. In the Deployment Tool, open the GA Dashboard Settings configuration file.
2. Delete the GA profile or tile.
3. Save the file in the Deployment Tool.

Save the Dashboard Settings Configuration file in the same location in the configuration, that is: `RDF\plugins\dashboardSettings.json`. Since this file is stored inside the configuration, whenever the customer uploads the configuration to the `Object Store`, the customized Dashboard Configuration file will be used by the application during the domain build or patch process.

Once the domain is built or patched, if minor changes need to be done to the Dashboard that do not require a configuration change, then RPASCE provides a mechanism to Upload and Retrieve JSON files from the application.

This is supported through the **Configured Batch OAT task -> Manage JSON Files**. Refer to the *Oracle Retail Predictive Application Server Cloud Edition (RPASCE) Administration Guide* for detailed information on the OAT tasks.

Steps to Retrieve/Upload the Dashboard Configuration File:

1. Go to the **Configured Batch OAT task -> Manage JSON Files -> Retrieve option**.
2. The dashboard settings file will be downloaded into the `Object Store` as `RDF_json.tar.gz`
3. Un-tar the file and open it in the Deployment Tools.
4. Edit the file. Note that only minor updates that do not require a configuration change can be made at this time.
5. Save the file and zip it up as `RDF_json.tar.gz` and then upload it to the `Object Store`
6. Then go to the **Configured Batch OAT task -> Manage JSON Files -> Upload option**.

7. Log out and log in to the client.
8. The Dashboard should be updated with the changes

Applying Changes to the Cloud Environment

To implement these changes in the cloud environment, it is necessary to either build a new domain or patch the domain. Refer to the *Install/Patch Domain* chapter in the *Oracle Retail Inventory Planning Optimization Cloud Service-Demand Forecasting / Inventory Planning Optimization Cloud Service-Lifecycle Allocation and Replenishment Administration Guide*.

RAP Integration Interface Extensibility

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment supports the extensibility of `interface.cfg` provided that the guidelines mentioned in the **RAP Integration Interface Extensibility** section of the *Oracle Retail Analytics and Planning Implementation Guide* are followed.

Follow this process to update the `interface.cfg` file:

1. Download the Application interface configuration from OAT
2. Update the `interface.cfg` using the previously listed guidelines.
3. Upload the updated `interface.cfg` to object store and then patch or build the application.

Note:

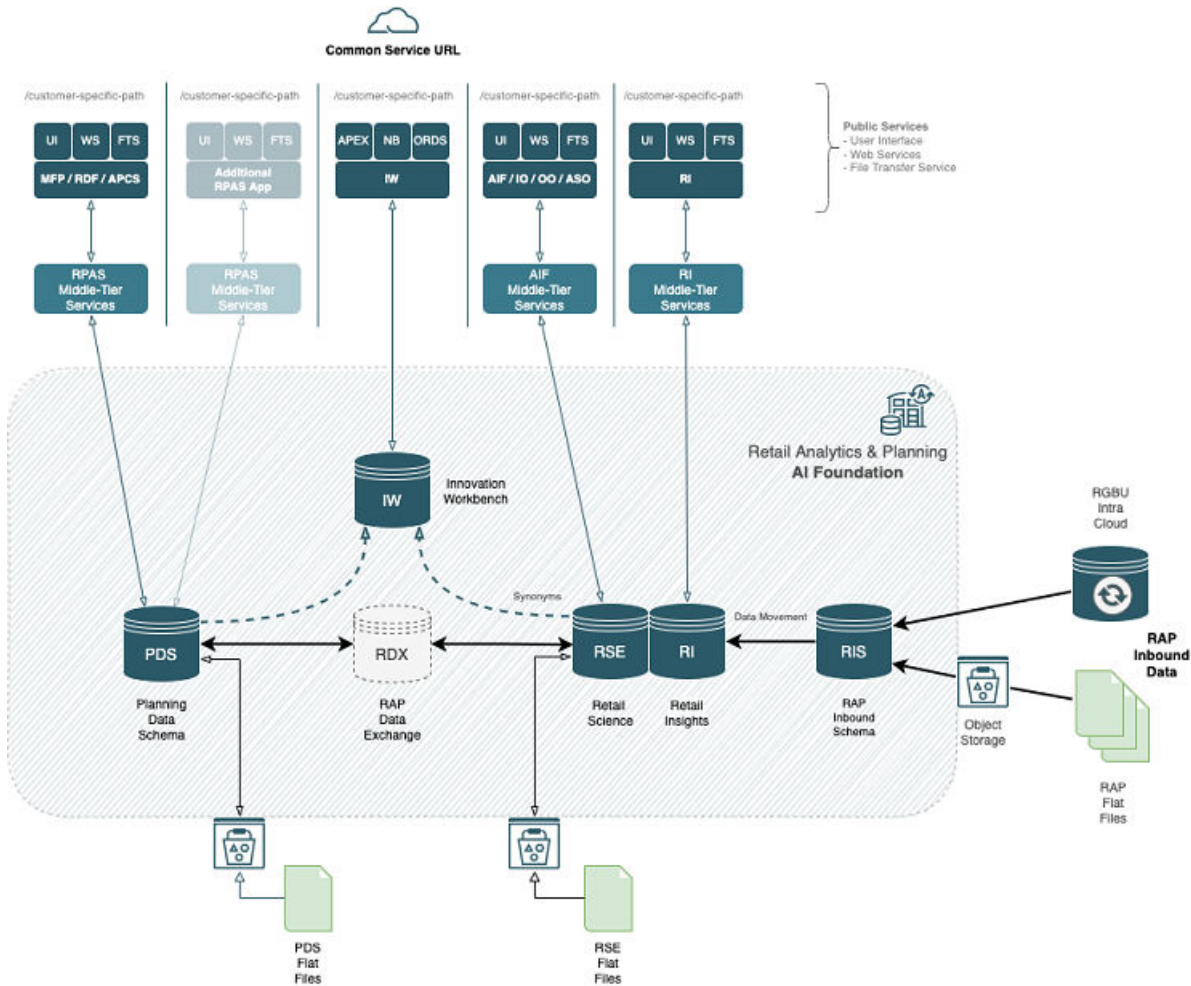
For details about changes to `interface.cfg`, refer to the *Oracle Retail Predictive Application Server Cloud Edition Implementation Guide*.

5

RAP Integration

The Oracle Retail Inventory Planning Optimization Cloud Service-Demand Forecasting / Inventory Planning Optimization Cloud Service-Lifecycle Allocation and Replenishment (IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment) solution is built on top of the Planning Data Store (PDS) and is integrated with Retail Science (RSP) and Retail Insights (RI) with in the Retail Analytical Platform (RAP). All three solutions (RSP, RI, PDS) within RAP can share data using RAP Data Exchange (RDX) using RAP interfaces. IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment gets the foundation data from RI and forecast from RSP through RDX. IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment being an extensible solution, retailers can customize the interface using the `interface.cfg` file to map dimensions and facts from the RAP interface tables. For additional information refer to the *Oracle Retail Predictive Application Server Cloud Edition Implementation Guide*.

Figure 5-1 Retail Analytical Platform (RAP) Integration



Interfaces Available in the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Template

Following is the pre-defined grouping of interfaces available in the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment template version within RAP integration:

- Product Hierarchy from RMFCS using Retail Insights (RI)
- Organization Hierarchy from RMFCS using Retail Insights (RI)
- Calendar Hierarchy from RMFCS using Retail Insights (RI)
- Product Attribute Hierarchy from RMFCS using Retail Insights (RI)
- Supplier Hierarchy from RMFCS using Retail Insights (RI)
- Item Attributes from Retail Insights (RI)
- Sales Data from Retail Insights (RI)
- Pack Assortment from Retail Insights (RI)
- Inventory Data from Retail Insights (RI)
- Replenishment Attributes from Retail Insights (RI)
- Offer Hierarchy from Science (RSP)
- Offer Details from Science (RSP)
- Offer Sales Details from Science (RSP)
- Reward Type Hierarchy from Science (RSP)
- Product Attribute Weight from Science (RSP)
- Forecast Import from Science (RSP)
- Base Demand Import from Science (RSP)
- Approved Base Demand Import from Science (RSP)
- Preprocessed Sales Import from Science (RSP)
- Export Run Type Batch Setting
- Approved Forecast Export
- Forecast Parameters Export
- New Item Parameters Export

Product Hierarchy from RMFCS using Retail Insights (RI)

Table 5-1 lists the interface grouping for Product Hierarchy from RMFCS using Retail Insights (RI).

Table 5-1 Product Hierarchy from RMFCS using Retail Insights (RI)

RDX Table	RDX Field Name	PDS Field Mapping
W_PDS_PRODUCT_D	ITEM	SKU

Table 5-1 (Cont.) Product Hierarchy from RMFCS using Retail Insights (RI)

RDX Table	RDX Field Name	PDS Field Mapping
	ITEM_PARENT_DIFF	SKUP
	ITEM_PARENT	SKUG
	SUBCLASS_ID	SCLS
	CLASS_ID	CLSS
	DEPT	DEPT
	GROUP_NO	PGRP
	DIVISION	DVSN
	COMPANY	CMPP
	SUPPLIER	VNDR
	ITEM_DESC	
	ITEM_PARENT_DIFF_DESC	
	ITEM_PARENT_DESC	
	SUB_NAME	
	CLASS_NAME	
	DEPT_NAME	
	GROUP_NAME	
	DIV_NAME	
	CO_NAME	
	SUP_NAME	
	PACK_FLG (Filter)	PCKFLGVAL

Organization Hierarchy from RMFCS using Retail Insights (RI)

[Table 5-2](#) lists the interface grouping for Organization Hierarchy from RMFCS using Retail Insights (RI).

Table 5-2 Organization Hierarchy from RMFCS using Retail Insights (RI)

RDX Table	RDX Field Name	PDS Field Mapping
W_PDS_ORGANIZATION_D	LOCATION	STOR
	DISTRICT	DSTR
	REGION	REGN
	AREA	CHNL
	CHAIN	CHAN
	COMPANY	COMP
	LOC_TYPE	LOCT
	STORE_FORMAT	SFMT
	STORE_CLASS	STCL

Table 5-2 (Cont.) Organization Hierarchy from RMFCS using Retail Insights (RI)

RDX Table	RDX Field Name	PDS Field Mapping
	LOC_NAME	
	DISTRICT_NAME	
	REGION_NAME	
	AREA_NAME	
	CHAIN_NAME	
	CO_NAME	
	LOC_TYPE_NAME	
	STORE_FORMAT_NAME	
	STORE_CLASS_DESCRIPTION	

Calendar Hierarchy from RMFCS using Retail Insights (RI)

[Table 5-3](#) lists the interface grouping for Calendar Hierarchy from RMFCS using Retail Insights (RI).

Table 5-3 Calendar Hierarchy from RMFCS using Retail Insights (RI)

Interface Name	Interface Field Name	PDS Field Mapping
W_PDS_CALENDAR_D	DAY	DAY
	WEEK	WEEK
	MNTH	MNTH
	QRTR	QRTR
	HALF	HALF
	YEAR	YEAR
	WOYR	WOYR
	DOW	DOW
	DAY_LABEL	
	WEEK_LABEL	
	MNTH_LABEL	
	QRTR_LABEL	
	HALF_LABEL	
	YEAR_LABEL	
	WOYR_LABEL	
	DOW_LABEL	

 **Note:**

The W_PDS_CALENDAR interface is populated from an internal view 'VW_CLND_HIER' from where the labels are added.

Product Attribute Hierarchy from RMFCS using Retail Insights (RI)

Table 5-4 lists the interface grouping for Product Attribute Hierarchy from RMFCS using Retail Insights (RI).

Table 5-4 Product Attribute Hierarchy from RMFCS using Retail Insights (RI)

Interface Name	Interface Field Name	PDS Field Mapping
W_PDS_UDA_D	PROD_ATTR_VALUE	PATV
	PROD_ATTR	PATT
	PROD_ATTR_VALUE_DESC	
	PROD_ATTR_DESC	

 **Note:**

The W_PDS_UDA_D interface is populated from an internal view 'VW_PATR_HIER' where in the attribute hierarchy data is pulled in from the following RDX tables by concatenating all of them as product attributes:

- W_PDS_UDA_D
- W_PDS_DIFF_D
- W_PDS_SUPPLIER_D
- W_PDS_BRAND_D

It also concatenates the product attribute name with the product attribute values using '_' to make the product attribute values unique. The Product Attribute name for Supplier (W_PDS_SUPPLIER_D) is used as 'supp' and Brand (W_PDS_BRAND_D) is used as 'brnd'.

Only Product attributes with UDA_TYPE_CODE as 'LV' from W_PDS_UDA_D are included in the view.

Supplier Hierarchy from RMFCS using Retail Insights (RI)

Table 5-5 lists the interface grouping for Supplier Hierarchy from RMFCS using Retail Insights (RI).

Table 5-5 Interface Grouping for Supplier Hierarchy from RMFCS using Retail Insights (RI)

RDX Table	RDX Field Name	PDS Field Mapping
W_PDS_SUPPLIER_D	SUPPLIER	SUPP
W_PDS_SUPPLIER_D	SUP_NAME	

Item Attributes from Retail Insights (RI)

Table 5-6 lists the interface grouping for Item Attributes from Retail Insights (RI).

Table 5-6 Item Attributes from Retail Insights (RI)

Interface Name	Interface Field Name	PDS Field Mapping
W_PDS_PRODUCT_ATTR_D	ITEM	SKU
	PROD_ATTR	PATT
	PROD_ATTR_VALUE	RDF_PRDATTT



Note:

The W_PDS_PRODUCT_ATTR_D is populated from an internal view 'VW_PATR_DATA' from where the item attribute mapping is pulled in from the RDX table W_PDS_PRODUCT_ATTR_D and SUPPLIER, BRAND_NAME, DIFF_1, DIFF_2, DIFF_3, DIFF_4 fields from W_PDS_PRODUCT_D table.

Sales Data from Retail Insights (RI)

Table 5-7 lists the interface grouping for Sales Data from Retail Insights (RI)

Table 5-7 Sales Data from Retail Insights (RI)

RDX Table	RDX Field Name	PDS Field Mapping
W_PDS_GRS_SLS_IT_LC_WK_A	EOW_DATE	WEEK
	ITEM	SKU
	LOCATION	STOR
	SALES_UNITS	RDF_RSAL
	SLS_TYPE (FILTER)	R
	EOW_DATE	WEEK
	ITEM	SKU
	LOCATION	STOR
	SALES_UNITS	RDF_PSAI
	SLS_TYPE (FILTER)	P

Table 5-7 (Cont.) Sales Data from Retail Insights (RI)

RDX Table	RDX Field Name	PDS Field Mapping
	EOW_DATE	WEEK
	ITEM	SKU
	LOCATION	STOR
	SALES_UNITS	RDF_CSAL
	SLS_TYPE (FILTER)	C

Pack Assortment from Retail Insights (RI)

[Table 5-8](#) lists the interface grouping for Pack Assortment from Retail Insights (RI).

Table 5-8 Pack Assortment from Retail Insights (RI)

RDX Table	RDX Field Name	PDS Field Mapping
W_PDS_PRODUCT_PACK_D	PACK_ITEM	SKU
	COMP_ITEM	SKUR
	PACK_QTY	RDF_LPPMPCKSKUASSU

Inventory Data from Retail Insights (RI)

[Table 5-9](#) lists the interface grouping for Inventory Data from Retail Insights (RI).

Table 5-9 Inventory Data from Retail Insights (RI)

RDX Table	RDX Field Name	PDS Field Mapping
VW_LIP_INV_DATA	DAY_DATE	DAY
	ITEM	SKU
	LOCATION	STOR
	INV_CO_RSV_QTY	RDF_LPINCUSTORDRESU
	INV_CO_BO_RSV_QTY	RDF_LPINCUSTORDBCKU
	INV_ON_ORD_QTY	LPINONORDINU
	INV_IN_TRAN_QTY	LPININTRNSU
	INV_SOH_QTY	LPINONHANDU

Replenishment Attributes from Retail Insights (RI)

[Table 5-10](#) lists the interface grouping for Replenishment Attributes from Retail Insights (RI).

Table 5-10 Replenishment Attributes from Retail Insights (RI)

RDX Table	RDX Field Name	PDS Field Mapping
W_PDS_REPL_ATTR_IT_L C_D	ITEM	SKU
	LOCATION	STOR
	REPL_PRES_STOCK	LPINDSPQU

Offer Hierarchy from Science (RSP)

[Table 5-11](#) lists the interface grouping for Offer Hierarchy from Science (RSP).

Table 5-11 Offer Hierarchy from Science (RSP)

RDX Table	RDX Field Name	PDS Field Mapping
RSE_OFFER_HIER_EXP	OFFER_ID	OFFD
	PROMO_ID	PRMD
	CAMPAIGN_ID	CAMD
	OFFER_ID	OFFA
	CAMPAIGN_ID	CAMA
	OFFER_LABEL	
	PROMO_LABEL	
	CAMPAIGN_LABEL	
	OFFER_ALIAS	
	CAMPAIGN_ALIAS	

Offer Details from Science (RSP)

[Table 5-12](#) lists the interface grouping for Offer Details from Science (RSP).

Table 5-12 Offer Details from Science (RSP)

RDX Table	RDX Field Name	PDS Field Mapping
RSE_OFFER_DTL_EXP	OFFER_ID	OFFD
	OFFER_START_DT	OFFSTARTDT
	OFFER_END_DT	OFFENDDT
	REWARD_TYPE_ID	REWARDTYPE

Offer Sales Details from Science (RSP)

[Table 5-13](#) lists the interface grouping for Offer Sales Details from Science (RSP).

Table 5-13 Offer Sales Details from Science (RSP)

RDX Table	RDX Field Name	PDS Field Mapping
RSE_OFFER_SALES_EXP	PROD_EXT_KEY	SKU
	LOC_EXT_KEY	STOR
	OFFER_ID	OFFD
	OFFER_SALES_QTY	OFFERSLS
	EFFECTIVE_DISCOUNT_PCT	EFFDISCOUNT

Reward Type Hierarchy from Science (RSP)

[Table 5-14](#) lists the interface grouping for Reward Type Hierarchy from Science (RSP).

Table 5-14 Reward Type Hierarchy from Science (RSP)

RDX Table	RDX Field Name	PDS Field Mapping
RSE_REWARD_TYPE_HIER_EXP	REWARD_TYPE_ID	RDTP
	REWARD_TYPE_LABEL	

Product Attribute Weight from Science (RSP)

[Table 5-15](#) lists the interface grouping for Product Attribute Weight from Science (RSP).

Table 5-15 Product Attribute Weight from Science (RSP)

RDX Table	RDX Field Name	PDS Field Mapping
RSE_ATTR_WGT_EXP	PROD_EXT_KEY	CLSS
	LOC_EXT_KEY	CHNL
	PROD_ATTR_GRP_EXT_KEY	PATT
	ATTR_WGT	PATTWGT
	CUSTSEG_EXT_KEY	
	CLS	
	AREA	

Forecast Import from Science (RSP)

[Table 5-16](#) lists the interface grouping for Forecast Import from Science (RSP).

Table 5-16 Forecast Import from Science (RSP)

RDX Table	RDX Field Name	PDS Field Mapping
RSE_FCST_DEMAND_DTL_CAL_EXP	FCST_DATE_FRO M	llc_frcst_CF_:CLND

Table 5-16 (Cont.) Forecast Import from Science (RSP)

RDX Table	RDX Field Name	PDS Field Mapping
	PROD_EXT_KEY	llc_frctst_CF_:PROD
	LOC_EXT_KEY	llc_frctst_CF_:LOC
	BASELINE_FCST_QTY	rdf_sysbaseline_CF_
	DEMAND_FCST_QTY	rdf_sysfrctst_CF_
	EVENT_PEAK_QTY	rdf_syspeak_CF_
	EVENT_CLND	rdf_eventfut_CF_
	PRICE_DISC_PERCENT	rdf_prctdiscfut_CF_
	rdf_rserunid_CF_ (Filter)	RUN_ID
	BASELINE_FCST_QTY (Filter)	

 **Note:**

- **llc_frctst_CF_:CLND** —refers to Calendar dimension of the corresponding forecast level
- **llc_frctst_CF_:PROD** —refers to Product dimension of the corresponding forecast level
- **llc_frctst_CF_:LOC** —refers to Location dimension of the corresponding forecast level

Base Demand Import from Science (RSP)

[Table 5-17](#) lists the interface grouping for Base Demand Import from Science (RSP)

Table 5-17 Base Demand Import from Science (RSP)

RDX Table	RDX Field Name	PDS Field Mapping
RSE_FCST_DEMAND_DTL_EXP	PROD_EXT_KEY	llc_frctstTS_CF_:PROD
	LOC_EXT_KEY	llc_frctstTS_CF_:LOC
	BASE_DEMAND_QTY	rdf_basedemand_CF_
	PRICE_ELASTICITY	rdf_priceelas_CF_
	rdf_rserunid_CF_ (Filter)	RUN_ID
	BASE_DEMAND_QTY (Filter)	

 **Note:**

- **llc_frcstTS_CF_:PROD** —refers to Product dimension of the corresponding forecast level
- **llc_frcstTS_CF_:LOC** —refers to Location dimension of the corresponding forecast level

Approved Base Demand Import from Science (RSP)

Table 5-18 lists the interface grouping for Approved Base Demand Import from Science (RSP).

Table 5-18 Approved Base Demand Import from Science (RSP)

RDX Table	RDX Field Name	PDS Field Mapping
RSE_FCST_APPR_BASE_DMD_EXP	PROD_EXT_KEY	llc_frcstTS_CF_:PROD
	LOC_EXT_KEY	llc_frcstTS_CF_:LOC
	APPR_BASE_DEMAND_QTY	rdf_appchosenlevel_CF_
	rdf_rserunid_CF_ (Filter)	RUN_ID
	APPR_BASE_DEMAND_QTY (Filter)	

 **Note:**

- **llc_frcstTS_CF_:PROD** —refers to Product dimension of the corresponding forecast level
- **llc_frcstTS_CF_:LOC** —refers to Location dimension of the corresponding forecast level

Preprocessed Sales Import from Science (RSP)

Table 5-19 lists the interface grouping for Preprocessed Sales Import from Science (RSP).

Table 5-19 Preprocessed Sales Import from Science (RSP)

RDX Table	RDX Field Name	PDS Field Mapping
RSE_FCST_DEMAND_SRC_EXP	DATE_FROM	llc_frcst_CF_:CLND
	PROD_EXT_KEY	llc_frcst_CF_:PROD
	LOC_EXT_KEY	llc_frcst_CF_:LOC
	STOCKOUT_IND	rdf_outageind_CF_
	LOST_SLS_QTY	rdf_outageadj_CF_

Table 5-19 (Cont.) Preprocessed Sales Import from Science (RSP)

RDX Table	RDX Field Name	PDS Field Mapping
	OUTLIER_IND	rdf_outlierind_CF_
	OUTLIER_SLS_QTY	rdf_outlieradj_CF_
	PROMO_SLS_QTY	rdf_depromoadj_CF_
	CLR_SLS_QTY	rdf_deprice_CF_
	PREPROCESSED_SLS_QTY	rdf_totadjsls_CF_
	rdf_rserunid_CF_ (Filter)	RUN_ID
	PREPROCESSED_SLS_QTY (Filter)	

 **Note:**

- **llc_frctst_CF_:CLND** —refers to Calendar dimension of the corresponding forecast level
- **llc_frctst_CF_:PROD** —refers to Product dimension of the corresponding forecast level
- **llc_frctst_CF_:LOC** —refers to Location dimension of the corresponding forecast level

Export Run Type Batch Setting

Table 5-20 lists the interface grouping for Export Run Type Batch Setting.

Table 5-20 Export Run Type Batch Setting

RDX Table	RDX Field Name	PDS Field Mapping
RDF_RUN_TYPE_PARM_EXP	RDF_RUN_TYPE_KEY	v
	ENABLE_NEW_ITEM	rdf_runnewitem_CF
	ENABLE_FORECAST	rdf_runfrctst_CF_

Approved Forecast Export

Table 5-21 lists the interface grouping for Approved Forecast Export.

Table 5-21 Approved Forecast Export

RDX Table	RDX Field Name	PDS Field Mapping
RDF_APPR_FCST_CAL_EXP		llc_frctst_CF_:CLND

Table 5-21 (Cont.) Approved Forecast Export

RDX Table	RDX Field Name	PDS Field Mapping
	PROD_EXT_KEY	llc_frcst_CF_:PROD
	LOC_EXT_KEY	llc_frcst_CF_:LOC
	BOP_DATE	rdf_bopdate_CF_
	APPR_BASELINE_FCST	rdf_appbaseline_CF_
	APPR_DEMAND_FCST	rdf_appfrcst_CF_
	APPR_CUMINT	rdf_appcumint_CF_
		rdf_exportmask_CF_ (Filter)

 **Note:**

- **llc_frcst_CF_:CLND** —refers to Calendar dimension of the corresponding forecast level
- **llc_frcst_CF_:PROD** —refers to Product dimension of the corresponding forecast level
- **llc_frcst_CF_:LOC** —refers to Location dimension of the corresponding forecast level

Forecast Parameters Export

[Table 5-22](#) exports the basic forecast parameters like Forecast Start Date, Forecast End Date and History length (used to calculate base demand) at the RUN TYPE intersection.

Table 5-22 Forecast Parameters Export: Basic Forecast Parameters

RDX Table	RDX Field Name	PDS Field Mapping
RDF_FCST_PARM_EXP	PROD_EXT_KEY	llc_frcstTS_CF_:PROD
	LOC_EXT_KEY	llc_frcstTS_CF_:LOC
	FCST_HIST_LENGTH	rdf_hislen_CF_
	FCST_START_DATE	rdf_frcststartdt_CF_
	FCST_END_DATE	rdf_frcstenddt_CF_
		rdf_expfcstmaskts_CF_ (Filter)

 **Note:**

- **llc_frcstTS_CF_:PROD** —refers to Product dimension of the corresponding forecast level
- **llc_frcstTS_CF_:LOC** —refers to Location dimension of the corresponding forecast level

Table 5-23 exports the preprocess indicators that could be loaded or calculated through extensibility.

Table 5-23 Forecast Parameters Export: Preprocess Indicators

RDX Table	RDX Field Name	PDS Field Mapping
RDF_FCST_PARM_CAL_EXP		llc_frcst_CF_:CLND
	PROD_EXT_KEY	llc_frcst_CF_:PROD
	LOC_EXT_KEY	llc_frcst_CF_:LOC
	BOP_DATE	rdf_bopdate_CF_
	USER_OVERRIDE	rdf_totadjslsovr_CF_
	PPS_OUTAGE_IND	rdf_outageind_CF_
	PPS_OUTLIER_IND	rdf_outlierind_CF_
		rdf_expparmask_CF_ (Filter)

 **Note:**

- **llc_frcst_CF_:CLND** —refers to Calendar dimension of the corresponding forecast level
- **llc_frcst_CF_:PROD** —refers to Product dimension of the corresponding forecast level
- **llc_frcst_CF_:LOC** —refers to Location dimension of the corresponding forecast level

New Item Parameters Export

Table 5-24 exports the strategy to be applied to generate forecast for new items and new stores. These parameters are applicable for all Run Types that have ENABLE_NEW_ITEM field set to TRUE in the RDF_RUN_TYPE_PARM_EXP table.

Table 5-24 New Item Parameters Export

RDX Table	RDX Field Name	PDS Field Mapping
RDF_NIT_PARM_EXP	PROD_EXT_KEY	NIT_SKUSTR_INTX:PROD

Table 5-24 (Cont.) New Item Parameters Export

RDX Table	RDX Field Name	PDS Field Mapping
	LOC_EXT_KEY	NIT_SKUSTR_INTX:LOC
	NIT_SKUSTR_INTX:PROD	PROD_HIER_LEVEL
	NIT_SKUSTR_INTX:LOC	LOC_HIER_LEVEL
	NIT_SUB_METHOD	rdf_fcpsubm
	NIT_ROS_USER_IN	rdf_fcpros
	NIT_LIKE_ITEM	rdf_nitapplkitm1
	NIT_LIKE_STOR	rdf_nstapplkstr1
	ADJUSTMENT_FACTOR	rdf_fcpadj
		rdf_fcpsubm (Filter)

A

Appendix: New Item Configuration Guide

This appendix describes how IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment performs the batch process for New Items and alternative implementation approaches for the New Item module.

New Item Batch Tasks

New Item batch performs the following tasks:

1. Identify the current New Item/stores that will turn into existing items. This identification is based on the approve substitution method, sales history start date and time series duration. If a New Item/store is going to turn into an existing item/store, its approved Like Item/like stores, approved substitution method, and other settings will be automatically wiped out.
2. Automatically identify New Item/stores in the system based on the user loaded New Item forecast start date
3. Calculate eligible Like Items for the auto-identified New Item/store. The eligible criteria is based on the previous approved base demand, existing items's sales history pattern, active forecast item, and if the existing item is under the same user specified level as the New Item. The Like Item eligibility criteria also includes a Like item exclusion mask that can be customized based on business needs. The user specified level is an input in New Item plug-in. The sale history used in the eligible like item calculation can also be specified in New Item plug-in.
4. Calculates the similarity score between the New Item and eligible Like Items based on product attribute information and provides three Like Item recommendations per the New Item/store that is based on the similarity score rankings.
5. Automatically approves system recommended Like Items, substitution methods, and parameters if user specified.

For details about New Item substitution methods and settings, refer to the *Oracle Retail Inventory Planning Optimization Cloud Service-Demand Forecasting User Guide* and *Oracle Retail Inventory Planning Optimization Cloud Service-Lifecycle Allocation and Replenishment User Guide*.

New Item Forecast Approaches

In IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment, New Item forecasting is implemented differently from previous versions. A baseline forecast for the New Item is generated based on the seasonal curve level. The seasonal curve for the New Item is produced through seasonality escalation like other existing items. The level for the New Item can be produced based on settings in new item module.

Implementation Options

In a normal IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment implementation, there are four possible approaches to setting up the New Item module.

First Approach

Ignore

The customer does not plan to use it and chooses to simply ignore the New Item. For this approach New Items need to be set up for the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment plug-ins to run successfully. Do the following to ignore using the New Item:

1. Leave all the GA New Item plug-in inputs unchanged.
2. Use the GA prod attribute hierarchy file for the domain build.
3. After the domain build, open the Batch Flow Management workbook and set up the boolean switches related to the New Item as follows:
 - a. Set `runnewitembatch` to false
 - b. Set `runnewitem_CF_` to false
 - c. Commit the workbook changes

Second Approach

Use New Item to Manually Set Up New Item Forecasting Parameters

The customer does not have any attribute information, but would like to use New Item to manually set up New Item Forecast Parameters such as Like Item, Like Store, Substitute Method, user provided Base Demand, and so on. The New Item batch is still necessary to run in this case, because the first step of New Item batch is necessary to automatically turn off New Item/New Store functionality once a New Item/Store matures. However, the Attribute Maintenance workbook will not be able to be created because there is no valid attribute information.

For this approach, the implementor need to set up the New Item using the following steps:

1. Go over the following New Item plug-in inputs one by one:
 - New Item data source
The intersection of the specified measure decides the level where the New Item and New Store will be set up. The sales history from this measure will be used to decide if a new item/store is matured.
 - Product Map
Allows the user to specify which level that the New Item and eligible Like Item should be under. A Like Item can only be selected from the items that roll up to the same level.
 - New Store level

Allows users to specify Like Stores for the whole level

2. Use the GA attribute hierarchy file for the domain build.
3. After the domain build, open the Batch Flow Management workbook and set up the boolean switches related to New Item as follows:

 **Note:**

New Item forecasting will generate unpredictable results if the final level intersection's prod and loc dimensions do not match what is configured in the New Item module.

- a. Set `runnewitembatch` to true.
 - b. Set `runnewitem_CF_` to true if the level needs to enable New Item forecasting. The final level forecast intersection must have the same product and location level as the New Item data source measure.
 - c. Set `runnewitem_CF_` to false if the level needs to disable New Item forecasting or the final level intersection 's product and location level were different from the New Item data source measure .
 - d. Commit the workbook changes.
4. Use New Item Maintenance workbook and the New Store Maintenance workbook to set up New Item and New Store settings in the New Item Basic Parameters worksheet of New Item Maintenance Workbook and make sure `nitautoapp` is set to false.
 5. This will turn off `autoapprove` in the New Item batch process. Set `nitdtsdur` (time series duraton) to the user desired value. This control how many sales periods a New Item/store needs to mature. Within the New Item Maintenance Workbook, you can also play with the New Item forecast parameters to review the What-if New Item Forecast.

Third Approach

With Attribute Information, Use New Item to Get Recommended Like Items and Manually Set Up Like Item and Like Stores

The customer has attribute information and would like to use New Item to get recommended like items and manually set up like item and like stores. Full fledged New Item functionality is enabled in this case and data preparation is very important. In this case, the implementor needs to set up the New Item using the following steps:

1. Go over the following New Item plug-in inputs one by one:
 - New Item data source
The intersection of the specified measure decides the level where the New Item and New Store will be set up. The sales history from this measure will be used to calculate eligible like item and decide if a new item/store is matured.
 - Product Map
Allows the user to specify which level that the New Item and eligible Like Item should be under. A Like Item can only be selected from the items that roll up to the same level.

- **Attribute Weight Location**
Allows the user to specify which location level that the attribute weight used in similarity score calculation is based on. The attribute weight measure intersection is to be on product Map/attribute-weight-loc/patt. In GA, it is class/chan/patt.
 - **New Store level**
Allows users to specify Like Stores for the whole level
2. Prepare the following data files for the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment environment build and ongoing data load in the future. Product Attribute hierarchy (PATR), product attribute measure (prdattT) and attribute measure (nitdattwgt) should all come from RI. If they are not available from RI for some reason. They need to be in the following files:

- **PATR.csv.dat**—attribute hierarchy file
- **prdattT.csv.ovr**—product attribute value data file
- **nitdattwgt.csv.ovr**—attribute weight data file (without this data file, there is no similarity score and Like Item recommendation)

The New Item Forecast start date override (nitfcststovr) and user provided New Item Base Rate of Sales (nisros) should be provided by implementor. The following file should be provided if possible:

- **nitfcststovr.csv.ovr**—New Item forecast start date data file (without this data file, there is no New Item identification)
- **nisros.csv.ovr**—user provided New Item base rate of sales data file.

Without proper data, the Attribute Maintenance workbook can not be created in the future.

3. After the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment environment build, open the Batch Flow Management workbook and set up the boolean switches related to New Item as follows:

 **Note:**

New Item forecasting will generate unpredictable results if the final level intersection's prod and loc dimensions do not match what is configured in the New Item module.

- a. Set `runnewitembatch` to true
 - b. Set `runnewitem_CF_` to true if the level needs to enable New Item forecasting. The final level forecast intersection must have the same product and location level as the New Item data source measure.
 - c. Set `runnewitem_CF_` to false if the level needs to disable New Item forecasting or the final level intersection 's product and location level were different from the New Item data source measure
 - d. Commit the workbook changes.
4. Use New Item Maintenance/Management workbook and New Store Maintenance workbook to set up New Item and New Store settings. In the New Item Basic

Parameters worksheet of New Item Maintenance workbook, set up `nitautoapp` to the user desired value. This will enable or disable `autoapprove` in the New Item batch process. Set `nitdtsdur` (time series duration) to the user desired value. This control how many sales periods a New Item needs to mature

5. If the loaded New Item forecast start date and New Item base rate of sales were not available, the following business flow must be performed:
 - a. Load the New Item base rate of sales by loading the customer provided `nizros.csv.ovr` file
 - b. Open the New Item Maintenance workbook to input `nitfcststovr` without running any approve custom menu and then commit the change.
 - c. Run `newitem_batch` to automatically identify New Items and generate system recommended like SKU.
 - d. New Items can be approved automatically in Step 5.c. The user can also create the New Item Maintenance workbook again to manually approve the New Item settings.

Fourth Approach

Bypass New Item Workbooks and Set Up New Item Forecasting through Direct Measure Loading and Calculation

Use this approach when you want to use New Item Forecast, but do not have any attribute information and you do not want to populate New Item parameters manually. You can load information into the New Item Parameter measures directly and avoid using any New Item workbook. It is still necessary to run the New Item batch because the first step of New Item batch automatically turns off New Item functionality once a New Item matures.

For this approach, the implementor needs to set up the New Item using the following steps:

1. Verify the following New Item plug-in inputs one by one:
 - **New Item data source**—the intersection of the specified measure decides the level where the New Item and New Store will be set up.
 - **Product Map**—allows the user to specify which level that the New Item and eligible Like Item should be under. A Like Item can only be selected from the items that roll up to the same level.
 - **New Store level**—allows users to specify Like Stores for the whole level
2. Build the domain using the GA attribute hierarchy file.
3. After the domain build, open the Batch Flow Management workbook and set up the boolean switches related to New Item as follows:

Note:

New Item Forecasting generates unpredictable results if the final level intersection's `prod` and `loc` dimensions do not match with what is configured in the New Item module.

- a. Set `runnewitembatch` to true.

- b. Set `runnewitem_CF_` to true if the level needs to enable New Item forecasting. The final level forecast intersection must have the same product and location level as the New Item data source measure.
 - c. Set `runnewitem_CF_` to false if the level needs to `_disable` the New Item forecasting or the final level intersection 's product and location level were different from the New Item data source measure.
 - d. Commit the workbook changes
4. In the New Item Maintenance Workbook, ensure that `nitautoapp` is set to false to turn off auto approve in the New Item batch process. Set `nitdtsdur` (time series duration) to the user desired value. This controls how many sales periods a New Item needs to mature.
 5. Prepare the custom batch control file that loads settings into measures such as `nisros` (user provided base demand), `nitdtsdur` (time series duration), `nitappsubm` (substitution method), `nitapplkitm1` (like item), `nitappadj` (like Item adjust percentage).

 **Note:**

In the weekly forecast batch, the New Item batch is run before the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment batch forecast. The initial step in New Item batch identifies matured New Items and clears out its substitute method. IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment batch checks the substitution method to decide if an item goes through a normal forecasting process or New Item forecasting.

If an implementor wants to load a substitute method or other new item parameters, it is important to decide when it should be loaded, either before or after the New Item batch runs. If a substitute method is loaded before the New Item batch runs, it may be automatically wiped out depending on how long its sales history is. If a substitute method is loaded after the New Item batch, then the item will be subject to New Item forecasting forever.

Troubleshooting Tips for Common New Item Issues

The following tips will provide troubleshooting solutions to common issues for New Items in IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment.

Issue 1

Issue: The New Item Maintenance Attribute Maintenance Workbook Cannot be Opened Due to an Empty Pre-range Solution

Solution

If you are running into this issue you have by-passed Oracle's new item batch or data loading process.

The New Item Maintenance workbook is pre-ranged by these measures:

- `nitwkrange`
- `nititm2clsr`

The `nitwkrange` measure ranges the CLND hierarchy. The `nititm2clsr` measure ranges the pror hierarchy. The `nitwkrange` measure is calculated in the new item batch, where as the `nititm2clsr` measures are calculated as a post-process after the data load. The Calendar has been pre-ranged to bring in weeks > (TODAY - TS duration). The `nititm2clsr` measure is calculated based on `nititm2itr`. The `nititm2itr` data file is generated by IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment data load process based on product hierarchy and loaded automatically. These logics were implemented through batch control file and OAT.

Users should not encounter any issue if the standard IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment process is followed.

If you encounter this issue after by-passing your domain, make sure that `nititm2itr` and `nititm2clsr` are populated in your domain.

Issue 2

Issue: The New Item Attribute Management Workbook Can Not be Opened Due to an Empty Prerange

Solution

Follow the same solution as for [Issue 1](#).

Issue 4

Issue: You Can Not Generate a Forecast for a New Item Even If There are Valid Like Item and Substitute Method Settings

Solution

The New Item forecast is produced by looking up the seasonal curve through escalation and getting a base rate of sales from the like item/user input/base rate of sales escalation.

If it is not populated, that means there is no seasonal curve for all of the escalation intersections at this particular item/store. An implementor should consider adding a new catch-all escalation level. The other possibility is base demand is zero. You can further looking into the reason by base rate of sales cannot be generated.

Issue 5

Issue: The New Item Forecast is Setup in the New Item Maintenance Workbook, but No Forecast is Generated for the New Item and Base Demand Measures have a Zero Value

Solution

Check the `runnewitem_CF_` measure which is visible in the Batch Flow Management workbook. If the measure is false, set it back to true, commit and rerun the forecast.

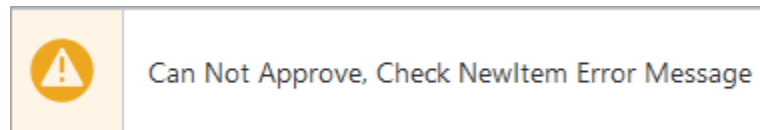
If `runnewitem_CF_` is true, then check the `nitappsubm` substitution method.

If <code>nitappsubm</code> is set to:	Then:
None	No New Item forecast will be generated.
Like Item	At least one valid existing item must be assigned as the Like Item. The Like Item itself must have a forecast. The Like Item assignment measure is: <ul style="list-style-type: none"> • <code>nitapplkitm1</code> The <code>nitappadj</code> (total adjustment percentage) can not be zero.
User Input	The user must provide the base rate of sales for the New Item. The value will be stored in <code>nitappros</code> after the New Item approval process. When the substitute method is user input, then <code>nitappros</code> can not be zero.

Issue 6

Issue: When Trying to Approve Like Item Recommendations, Received this Approve Error Message: *Can Not Approve, Check New Item Error Message*

Figure A-1 Error Message



Solution

This error is due to a problem in your New Item set up. On the worksheet, display show/hide for *select and approve*. For the New Item error message measure, ensure that measure is visible on the worksheet. It will provide additional clues for the issue.

B

Appendix: Business Rule Engine in IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment

Oracle Retail has designed the Business Rule Engine (BRE) to help IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment users set up business strategies to manage parameters used in the forecast approval and navigation processes, as well as the replenishment process. BRE - Demand Forecasting parameters include alert thresholds, alert calculation window, as well as navigation criteria. These parameters can be set up manually in the Forecast Setup workbook at the global, intermediate and final levels (override). With the Business Rule Engine, the parameter values at final level can be dynamically adjusted based on business strategy. No patching of the environment is required.

For example, a business strategy can be to set the alert error threshold to 10% for all item/store combos with average sales larger than 10 units per week. For item/store with average sales less than 10 units per week, the threshold can be relaxed to 20%. This way high sellers have a tighter error threshold because they are more important for the business. IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment users may want to review their forecasts more rigorously. In this approach, the parameter values were assigned to item/stores based on business strategy regardless of their hierarchy positions.

The BRE functionality is also utilized in the IPOCS-Lifecycle Allocation and Replenishment module to set various supply chain and replenishment parameters. Databags in IPOCS-Lifecycle Allocation and Replenishment module, use BRE to range the scope of the replenishment workspaces. The Supply Chain Network and Replenishment Parameters workspace uses the BRE to define rules to set parameters based on the business strategy. The BRE then calculates the right set of parameters down to the product/location level. Note that the attributes used in the Lifecycle module need to be enabled in the Attribute Review workspace and at least one product attribute from the Product Attributes (PATR) hierarchy needs to be enabled.

In this appendix, several components of the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Business Rule Engine are introduced:

- [Hierarchies and Hierarchy Orders](#)
- [Business Rule Attribute](#)
- [How to Set Up Business Strategy for Approval](#)
- [How to Set Up Business Strategy for Navigation](#)
- [How to Use BRE Beyond What Is Available in GA](#)
- [Custom Rule Group Type](#)

Hierarchies and Hierarchy Orders

There are several internal hierarchies involved in the BRE:

Table B-1 Internal Hierarchies

Hierarchy	Module
Business Rule Attribute (ATTH)	Demand Forecasting, Lifecycle Allocation and Replenishment
Rule Condition (CONH)	Demand Forecasting, Lifecycle Allocation and Replenishment
Business Rule (RULH)	Demand Forecasting
RULE (RUL)	Lifecycle Allocation and Replenishment
Databag (DTB)	Lifecycle Allocation and Replenishment
Final Levels (FLVH)	Demand Forecasting

These hierarchies are required to be configured from innermost to outermost in the order previously listed. In IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA config, the hierarchy order is configured properly. Implementors can start from IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA config so that they do not have to configure the hierarchy order themselves. But if they start from other configurations, they need to make sure the hierarchy order is correct.

Business Rule Attribute

The Business Rule Attribute hierarchy in BRE is different from current product attribute or location attribute hierarchy in IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment/MFPCS. It is a combination of product attribute, location attribute and prod/loc attribute. These attributes will be used in BRE to associate different prod/locs to different business strategy. The attribute data types can be string, numeric or date. The attribute values can come from 11 different sources:

1. Attribute from product hierarchy, such as scl, class, dept.
2. Attribute from location hierarchy, such as region, store format
3. Loaded product attribute, such as fabric, color. (This may be a subset of the product attribute hierarchy. implementor should only include product attributes that are to be used in business rule groups)
4. Loaded location attribute, such as store open date. (This may be a subset of the location attribute hierarchy. implementor should only include location attributes that are to be used in business rule groups)
5. Loaded prod/loc attribute, such as lead time
6. Calculated GA product attribute, such as number of stores carrying a sku
7. Calculated GA location attribute, such as number of skus sold in a store.
8. Calculated GA prod/loc attribute, such as historical average sales, historical relative standard deviation of sales.
9. Calculated custom product attribute, defined by implementor
10. Calculated custom location attribute, defined by implementor
11. Calculated custom prod/loc attribute, defined by implementor

Because the attribute value could come from such a diverse sources, it will be very inefficient to keep a centralized measure to store the attribute values. IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment takes a distributed approach on storing the attribute values. The attribute value in 1 and 2 are part of hierarchy and no separate storage is needed.

For each final level, the loaded attributes can be stored in nine measures:

- All measures based on sku/attd (string, numeric, date)
- All measures based on stor/attd (string, numeric, date)
- All measures based on sku/stor/attd (string, numeric, date)

If you want to use the Product Attributes from the PATR hierarchy in the BRE, then include the attribute entry in the `atth.hdr.csv.dat` Business Rule Attribute hierarchy file as shown in the following sample entry:

```
brand,Brand,3,String,ldprdatstr01,loaded Product Attribute 01,load,Loaded
Attribute,prod,Product Attribute
```



Note:

The application automatically populates and loads the `ldprdatstr_CF_` file, when you specify the product attribute in the `atth.hdr.csv.dat` file and it exactly matches the attribute in the PATR hierarchy.

For each final level, the GA calculated attributes can also be stored in the same nine measures as loaded. The GA calculated attributes were stored in different measures from the loaded attributes for performance reason.

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment batch is responsible for populating the GA calculated attributes. If additional calculated attributes are needed, the implementor can write custom rules to calculate them and populate the nine measures per final level that are reserved for custom calculated attributes. In total, 27 measures per final level will be created by IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment for attribute value storage as shown in [Table B-2](#).

These measures can be divided based on data type, measure intersections and how they are populated. IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment special expressions have built in logic to perform attribute value lookup based on business rule attribute hierarchy info and the previously listed measures. (`_CF_` in the table is a token of the final level name)

Table B-2 Measures per Final Level

Measure Name	Data Type	Intersection	Stored Attribute Type
Ldprdatstr_CF_	String	Prod/attribute	loaded
Ldlocattstr_CF_	String	Loc/attribute	loaded
Ldprdlocattstr_CF_	String	Prod/loc/attribute	loaded
Ldprdatnum_CF_	Real	Prod/attribute	loaded
Ldlocattnum_CF_	Real	Loc/attribute	loaded

Table B-2 (Cont.) Measures per Final Level

Measure Name	Data Type	Intersection	Stored Attribute Type
Ldprdlocattnum_CF_	Real	Prod/loc/attribute	loaded
Ldprdattdat_CF_	Date	Prod/attribute	loaded
Ldlocattdat_CF_	Date	Loc/attribute	loaded
Ldprdlocattdat_CF_	Date	Prod/loc/attribute	loaded
clcpdrattstr_CF_	String	Prod/attribute	GA calculated
clclocattstr_CF	String	Loc/attribute	GA calculated
clcpdrlocattstr_CF_	String	Prod/loc/attribute	GA calculated
clcpdrattnum_CF_	Real	Prod/attribute	GA calculated
clclocattnum_CF_	Real	Loc/attribute	GA calculated
clcpdrlocattnum_CF_	Real	Prod/loc/attribute	GA calculated
clcpdrattdat_CF_	Date	Prod/attribute	GA calculated
clclocattdat_CF_	Date	Loc/attribute	GA calculated
clcpdrlocattdat_CF_	Date	Prod/loc/attribute	GA calculated
cscclpdrattstr_CF_	String	Prod/attribute	Custom Calculated
cscclclocattstr_CF_	String	Loc/attribute	Custom Calculated
cscclpdrlocattstr_CF_	String	Prod/loc/attribute	Custom Calculated
cscclpdrattnum_CF_	Real	Prod/attribute	Custom Calculated
cscclclocattnum_CF_	Real	Loc/attribute	Custom Calculated
cscclpdrlocattnum_CF_	Real	Prod/loc/attribute	Custom Calculated
cscclpdrattdat_CF_	Date	Prod/attribute	Custom Calculated
cscclclocattdat_CF_	Date	Loc/attribute	Custom Calculated
cscclpdrlocattdat_CF_	Date	Prod/loc/attribute	Custom Calculated

All attributes from 1 to 5 and from 9 to 11 can be defined by implementor. An implementor can decided what prod/loc dimension and prod/loc attribute to be included in the attribute dimension. The GA calculated attribute are automatically appended to the business rule attribute hierarchy.

Right now, IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment supports the GA calculated attributes listed in:

Table B-3 GA Calculated Attributes

GA calculate Attribute	Label	Intersect ion	Data Type	Stored Measure	Notes
locs4prod_CF_	Number of Locations Carrying Current Product_CF_	Prod/ Attribute	num eric	clcpdrattnum_CF_	<ol style="list-style-type: none"> Aggregate sales from prod/loc/cldn to prod/loc by total. Aggregate the result from Step 1. to prod by popcount

Table B-3 (Cont.) GA Calculated Attributes

GA calculate Attribute	Label	Intersection	Data Type	Stored Measure	Notes
prods4loc_CF_	Number of Products Carried in Current Location_CF_	Loc/Attribute	numeric	clclocatnum_CF_	<ol style="list-style-type: none"> Aggregate sales from prod/loc/clnd to prod/loc by total. Aggregate the result from Step 1. to loc by popcount
recentavgsls_CF_	Recent Average Sales_CF_	Prod/loc/Attribute	numeric	clcprdlocatnum_CF_	Average sales between today-curperiod_CF_ and today-1
histavgsls_CF_	Historic Average Sales_CF_	Prod/loc/Attribute	numeric	clcprdlocatnum_CF_	Average sales between today-histperiod_CF_ and today-1
navifin_CF_	Navigation Variance_CF_	Prod/loc/Attribute	numeric	clcprdlocatnum_CF_	Used in navigation tier. Maximum of all approve alert metric for unapproved prod/location.
histr1std_CF_	Historic Sales Coefficient Of Variation_CF_	Prod/loc/Attribute	numeric	clcprdlocatnum_CF_	The ratio of average sales versus standard deviation of sales between today-histperiod_CF_ and today-1.

Other than GA attributes, the implementor is responsible for creating and maintaining all custom attributes no matter if loaded or calculated.

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment designed the attribute hierarchy to capture this complex information. There are five dimensions: attribute, attribute source, attribute data type, attribute type and attribute category. [Figure B-1](#) displays the dimensions in the attribute hierarchy.

Attribute dimension: Examples are: scls, class, dst, regn, brand, color, size, planned life length, store assortment, recentavgsls01, recentavgsls02.

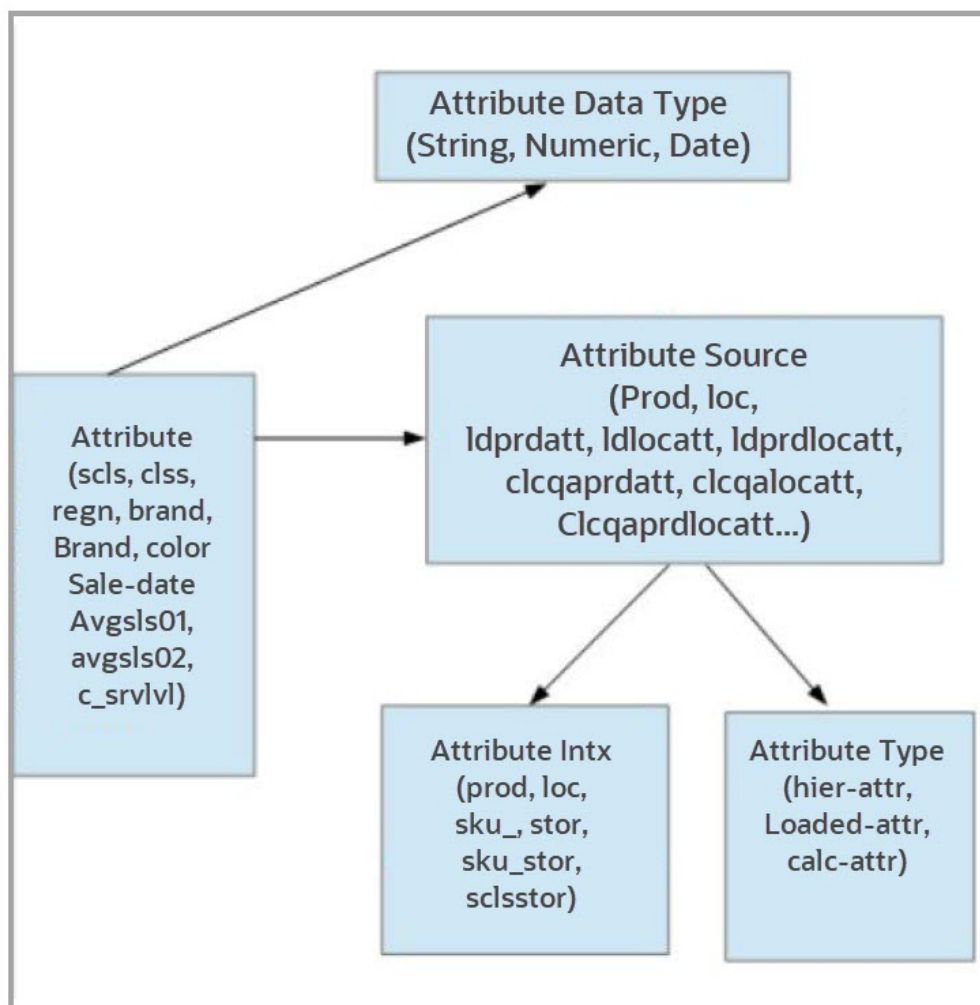
Attribute source dimension: Indicates the source of the attribute values. This can be either from a dimension in the prod hierarchy, a dimension in the location hierarchy, or measures. The position name along this dimensions is either a dimension name or a measure name.

Attribute data type dimension: Indicates the type of values for an attribute. It can be string, numeric or date. Use the value of RPASCE Measure data type.

Attribute type dimension: Indicates if an attribute is a hierarchy attribute, loaded attribute or calculated attribute.

Attribute intx dimension: Indicates the hierarchies/dimensions involved in obtaining the attribute value. These can be prod, loc, or prod/loc.

Figure B-1 Business Rule Attribute Hierarchy



Business Rule Attribute Hierarchy File Example

During domain build/patch, IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment automatically generates a business rule attribute hierarchy file with GA attributes positions appended to the end of the [Example B-1](#).

[Example B-1](#) is an example of the Business Rule Attribute Hierarchy file.

Example B-1 Business Rule Attribute Hierarchy File

```

attd,attd_label,atdt,atdt_label,atssc,atssc_label,atst,atst_label,attp,attp_label
scls,subclass,3,string,scls,subclass of product Hierarchy,hier,Hierarchy
Attribute,prod,Product Attribute
cls,cls,3,string,cls,class of product Hierarchy,hier,Hierarchy
Attribute,prod,Product Attribute
dept,Department,3,string,dept,department of product Hierarchy,hier,Hierarchy
Attributes,prod,Product Attribute
vndr,Vendor,3,string,vndr,vendor of product Hierarchy,hier,Hierarchy
Attribute,prod,Product Attribute
regn,region,3,string,regn,region of location Hierarchy,hier,Hierarchy
  
```

Attribute,loc,Location Attribute
chnl,Area,3,string,chnl,area of location Hierarchy,hier,Hierarchy
Attribute,loc,Location Attribute
sfmt,Store Format,3,string,sfmt,store format of location Hierarchy,hier,Hierarchy
Attribute,loc,Location Attribute
brand,Brand,3,string,ldprdattstr01,loaded Product Attribute 01,load,Loaded
Attribute,prod,Product Attribute
itemstatus,Item Status,3,string,ldprdattstr01,loaded Product Attribute 01,load,Loaded
Attribute,prod,Product Attribute
collar,Collar,3,string,ldprdattstr01,loaded Product Attribute 01,load,Loaded
Attribute,prod,Product Attribute
color,Color,3,string,ldprdattstr01,loaded Product Attribute 01,load,Loaded
Attribute,prod,Product Attribute
fabric,Fabric,3,string,ldprdattstr01,loaded Product Attribute 01,load,Loaded
Attribute,prod,Product Attribute
neckline,Neckline,3,string,ldprdattstr01,loaded Product Attribute 01,load,Loaded
Attribute,prod,Product Attribute
pattern,Pattern,3,string,ldprdattstr01,loaded Product Attribute 01,load,Loaded
Attribute,prod,Product Attribute
storopendt,Store Open Date,4,date,ldlocattdat01,loaded Location Attribute
01,load,Loaded Attribute,loc,Location Attribute
leadtime,Lead time,2,real,ldprlocattnum01,Loaded Product/Location Attribute
01,load,Loaded Attribute,prod/loc,Product/Location Attribute

If there are two final levels in the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment configuration, the business rule attribute hierarchy file will look like [Example B-2](#):

Example B-2 Business Rule Attribute Hierarchy File with Two Final Levels in the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Configuration

attd,attd_label,atdt,atdt_label,atssc,atssc_label,atst,atst_label,attp,attp_label
scls,subclass,3,string,scls,subclass of product Hierarchy,hier,Hierarchy
Attribute,prod,Product Attribute
class,class,3,string,class,class of product Hierarchy,hier,Hierarchy
Attribute,prod,Product Attribute
dept,Department,3,string,dept,department of product Hierarchy,hier,Hierarchy
Attributes,prod,Product Attribute
vndr,Vendor,3,string,vndr,vendor of product Hierarchy,hier,Hierarchy
Attribute,prod,Product Attribute
regn,region,3,string,regn,region of location Hierarchy,hier,Hierarchy
Attribute,loc,Location Attribute
chnl,Area,3,string,chnl,area of location Hierarchy,hier,Hierarchy
Attribute,loc,Location Attribute
sfmt,Store Format,3,string,sfmt,store format of location Hierarchy,hier,Hierarchy
Attribute,loc,Location Attribute
brand,Brand,3,string,ldprdattstr01,loaded Product Attribute 01,load,Loaded
Attribute,prod,Product Attribute
itemstatus,Item Status,3,string,ldprdattstr01,loaded Product Attribute 01,load,Loaded
Attribute,prod,Product Attribute
collar,Collar,3,string,ldprdattstr01,loaded Product Attribute 01,load,Loaded
Attribute,prod,Product Attribute
color,Color,3,string,ldprdattstr01,loaded Product Attribute 01,load,Loaded
Attribute,prod,Product Attribute
fabric,Fabric,3,string,ldprdattstr01,loaded Product Attribute 01,load,Loaded
Attribute,prod,Product Attribute
neckline,Neckline,3,string,ldprdattstr01,loaded Product Attribute 01,load,Loaded
Attribute,prod,Product Attribute
pattern,Pattern,3,string,ldprdattstr01,loaded Product Attribute 01,load,Loaded
Attribute,prod,Product Attribute


```

storopendt,Store Open Date,4,date,ldlocattdat01,loaded Location Attribute
01,load,Loaded Attribute,loc,Location Attribute
leadtime,Lead time,2,real,ldprdlocattnum01,Loaded Product/Location Attribute
01,load,Loaded Attribute,prod/loc,Product/Location Attribute
locs4prod01,Number of Locations Carrying Current Product
01,2,Real,clcprdattnum01,Calculated GA Prod Numeric Attribute 01,gacalc,GA
Calculated Attribute,prod,Product Attribute
prods4loc01,Number of Products Carried in Current Location
01,2,Real,clclocattnum01,Calculated GA Location Numeric Attribute 01,gacalc,GA
Calculated Attribute,loc,Location Attribute
recentavgsls01,Recent Average Sales 01,2,Real,clcprdlocattnum01,Calculated GA
Prod/loc Numeric Attribute 01,gacalc,GA Calculated Attribute,prod/loc,Product/
Location Attribute
histavgsls01,Historic Average Sales 01,2,Real,clcprdlocattnum01,Calculated GA
Prod/loc Numeric Attribute 01,gacalc,GA Calculated Attribute,prod/loc,Product/
Location Attribute
navifin01,Navigation Variance 01,2,Real,clcprdlocattnum01,Calculated GA Prod/loc
Numeric Attribute 01,gacalc,GA Calculated Attribute,prod/loc,Product/Location
Attribute
histr1std01,Historic Sales Coefficient Of Variation
01,2,Real,clcprdlocattnum01,Calculated GA Prod/loc Numeric Attribute
01,gacalc,GA Calculated Attribute,prod/loc,Product/Location Attribute
locs4prod02,Number of Locations Carrying Current Product
02,2,Real,clcprdattnum02,Calculated GA Prod Numeric Attribute 02,gacalc,GA
Calculated Attribute,prod,Product Attribute
prods4loc02,Number of Products Carried in Current Location
02,2,Real,clclocattnum02,Calculated GA Location Numeric Attribute 02,gacalc,GA
Calculated Attribute,loc,Location Attribute
recentavgsls02,Recent Average Sales 02,2,Real,clcprdlocattnum02,Calculated GA
Prod/loc Numeric Attribute 02,gacalc,GA Calculated Attribute,prod/loc,Product/
Location Attribute
histavgsls02,Historic Average Sales 02,2,Real,clcprdlocattnum02,Calculated GA
Prod/loc Numeric Attribute 02,gacalc,GA Calculated Attribute,prod/loc,Product/
Location Attribute
navifin02,Navigation Variance 02,2,Real,clcprdlocattnum02,Calculated GA Prod/loc
Numeric Attribute 02,gacalc,GA Calculated Attribute,prod/loc,Product/Location
Attribute
histr1std02,Historic Sales Coefficient Of Variation
02,2,Real,clcprdlocattnum02,Calculated GA Prod/loc Numeric Attribute
02,gacalc,GA Calculated Attribute,prod/loc,Product/Location Attribute

```

Condition Hierarchy

This hierarchy only has one dimension: condition. It is used to organize the strategies used in defining a business rule. In the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA configuration, there are four available conditions. The implementor can modify the number of positions they want along the condition dimension by changing the condition hierarchy load file.

[Example B-3](#) is an example of the Condition Hierarchy file.

Example B-3 Condition Hierarchy File

```

cond,cond_label,
cond01, condition 01
cond02, condition 02
cond03, condition 03
cond04, condition 04

```

Business Rule Hierarchy

There are two dimensions: rule and rule-group. Rule rolls up to rule group. This hierarchy should have an order that is after the condition hierarchy but before Prod/loc.

This hierarchy is mainly used in the IPOCS-Demand Forecasting module.

[Example B-4](#) is an example of the Business Rule Hierarchy.

Example B-4 Business Rule Hierarchy

```
ruld,ruld_label,rulg,rulg_label
r001,Rule 1,g001,Rule Group 1
r002,Rule 2,g001,Rule Group 1
r003,Rule 3,g001,Rule Group 1
r004,Rule 4,g001,Rule Group 1
r005,Rule 5,g001,Rule Group 1
r006,Rule 6,g002,Rule Group 2
r007,Rule 7,g002,Rule Group 2
r008,Rule 8,g002,Rule Group 2
r009,Rule 9,g002,Rule Group 2
```

Rule Hierarchy (RUL)

This is similar to the RULH hierarchy and is only used in the IPOCS-Lifecycle Allocation and Replenishment module. Following is an example of the RUL hierarchy file:

Example B-5 Rule Hierarchy

```
rull,rull_label,rlgp,rlgp_label
r.01.01,R.01.01,rg.01,Rule Group 01
r.01.02,R.01.02,rg.01,Rule Group 01
r.01.03,R.01.03,rg.01,Rule Group 01
```

Databag Hierarchy (DTB)

Databag Hierarchy allows the grouping of data in IPOCS-Lifecycle Allocation and Replenishment module to define the scope of a user's workspace. Databag Scope workspace sets up the databags and Databag Review workspace defines the conditions for each databag. Following is an example of the DTB hierarchy file:

Example B-6 Databag Hierarchy

```
dtbg,dtbg_label,dtbp,dtbp_label
dtb.01.01,Databag 01.01,dp.01,Databag Partition 01
dtb.01.02,Databag 01.02,dp.01,Databag Partition 01
```

Final Level Hierarchy

This hierarchy file is generated by the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment plug-in instead of being user provided. There are two dimensions: rule group-type and final level. rule group-type rolls up to final level. There are two GA rule group types per final level, approve and navigation. The implementor can specify additional custom rule groups type through the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment plug-in. Each final level can have its own custom rule

group type. The Rule Group-type hierarchy data file will be generated at domain build/patch time.

An example of rule group type hierarchy file generated from a IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment configuration with two final levels:

[Example B-4](#) is an example of the Business Rule Hierarchy.

Example B-7 Rule Group Type Hierarchy File Generated from a IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Configuration with Two Final Levels

```
rgtp,rgtp_label,flvl,flvl_label
apr01,approve 01,01,01 Weekly Units Forecast
navi01,navigation 01,01,01 Weekly Units Forecast
cust101,cust rule group,01,01 Weekly Units Forecast
apr02,approve 02,02,02 Daily Units Forecast
navi02,navigation 02,02,02 Daily Units Forecast
```

How to Set Up Business Strategy for Approval

The rule/rule group dimensions together with condition dimension and rule group type are used to implement business strategies. It is extremely flexible and powerful. The following describes how to set it up using the current IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA configuration as an example.

IPOCS-Demand Forecasting has the following two rule group types built-in per final level:

- **Approval**—Approval is a rule group type for business strategy related to exception parameters used to approve the forecasts.
- **Navigation**—Navigation is a rule group type for business strategy related to navigation in the Forecast Review workbook.

To set up the business strategy for approval, the implementor need to set up rule group and rules using the following steps.

1. Set up rule group to rule group type association.

Open the Business Rule Group Administration workbook. In the [Figure B-2](#), the implementor can assign:

- A rule group type for a generic rule group and enter a rule group description.
In the example, each department, Beverage, men's shoes and Missy have its own rule group for approval and navigation.
- Priority for a rule group.

Priority lower bound and upper bound is meant to assign a range of priority for rules within a rule group. An implementor can assign several rule groups to approval but only set up rules for one of them. In that case, only enable the one rule group that is needed. This helps with performance.

Figure B-2 Rule Group Info View

1. Rule Group Info						
Measure	Rule Group Type	Rule Group Description	Priority Lowerbound	Priority Upperbou...	Enable Rule Group	
Beverage - Approval	Approval	Beverage - Approval	1.00	100.00	<input checked="" type="checkbox"/>	
Beverage - Navigation	Navigation	Beverage - Navigation	1.00	100.00	<input checked="" type="checkbox"/>	
Men's shoes - Approval	Approval	Men's shoes - Approval	201.00	300.00	<input checked="" type="checkbox"/>	
Men's shoes - Navigation	Navigation	Men's shoes - Navigation	201.00	300.00	<input checked="" type="checkbox"/>	
Missy - Approval	Approval	Missy - Approval	301.00	400.00	<input checked="" type="checkbox"/>	
Missy - Navigation	Navigation	Missy - Navigation	301.00	400.00	<input checked="" type="checkbox"/>	
Rule Group 5	Approval		0.00	0.00	<input type="checkbox"/>	
Rule Group 6	Approval		0.00	0.00	<input type="checkbox"/>	

2. Set up active attributes per rule group.

In the [Figure B-3](#), enable active attributes per rule group. In the example, class, high priority item, historic average sales, historic sales coefficient of variance (relative standard deviation) and recent average sales were enabled for the approval rule groups.

Brand was only enabled for Men's shoes and Missy. Brand may be an important attribute for fashion items. High Priority item is used to flag key items in the business. The rest of enabled attributes is more related to sales pattern.

During rule setup and later calculation, only the value of active attributes will be looked up. IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment limits or selects active attributes for certain merchandise to ease the manual selection when you are setting up the rule. Also, having only relevant attributes helps performance.

Figure B-3 2. Rule Group Active Attribute View

2. Rule Group Active Attribute				
Business Rule	Beverage - Approval	Men's shoes - Approval	Missy - Approval	Women's shoes - ...
Brand	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Class	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
HighPriority Item 01	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Historic Average Sales 01	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Historic Sales Coefficient Of	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Recent Average Sales 01	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Region	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Set up rule group scope.

There is one Rule Group Scope view per final level. Since a rule group is assigned to a rule group type in STEP 1 and a rule group type rolls up to a final level, there is a position query on the worksheet to display only the related rule group per worksheet. In the [Figure B-4](#), an implementor can set up the prod/location that a particular rule group is associated with. The rule group scope can be set up at the intermediate parameter

intersection of the final level. In this example, each rule group is only enabled for the department it is associated with. The worksheet base intersection is on **scls/region/rule-group**. It is rolled up to **dept/all-location/rule-group**.

Figure B-4 Rule Group Scope Worksheet

Product	Beverage - Appro...	Beverage - Naviga...	Men's shoes - App...	Men's shoes - Navi...	Missy - Approval	Missy - Navigation	Women's shoes - ...
1310Footwear Women's*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1320Footwear Men's*	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Beverage	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kitchen Appliances	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Missy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4. Create the Business Rule Setup workbook.

There is one Business Rule Setup workbook per final level. During the wizard of the Business Rule Setup, a user is limited to select only one rule group type. A user can only set up business rules for one rule group type within one workbook. Remember the options are Approval and Navigation, as well as any of the custom types that were set up.

Suppose you select the approval in the rule group type wizard which builds the Build Rule Setup workbook for approval. Implementors can set up rule description, rule priority and enable rules on the [Figure B-5](#).

In this example, three business rules are set up for each approval rule group. Each rule corresponds to one business strategy.

The rules are:

- Key item
- High volume
- Low volume

You can define the criteria that associate different item/stores to each rule later. If an item/store is associated with multiple business rules, the rule priority is used to establish the precedence. The rules with lower priority will have higher precedence. The assigned rule priority must be within the range of priority upper bound and priority lower bound set up in the Rule Group Administration workbook.

Figure B-5 1. Rule Enable View

1. Rule Enable							
Measure	Enable	Priority	Start Date	End Date	Rule Description	Rule On/Off	
Business Rule							
▾ Beverage - Approval	<input checked="" type="checkbox"/>		?		?	<input checked="" type="checkbox"/>	
high volume	<input checked="" type="checkbox"/>		2.00		high volume	<input checked="" type="checkbox"/>	
key item	<input checked="" type="checkbox"/>		1.00		key item	<input checked="" type="checkbox"/>	
low volume	<input checked="" type="checkbox"/>		3.00		low volume	<input checked="" type="checkbox"/>	
▾ Missy - Approval	<input checked="" type="checkbox"/>				?	<input checked="" type="checkbox"/>	
high volume	<input checked="" type="checkbox"/>		302.00		high volume	<input checked="" type="checkbox"/>	
key item	<input checked="" type="checkbox"/>		301.00		key item	<input checked="" type="checkbox"/>	
low volume	<input checked="" type="checkbox"/>		303.00		low volume	<input checked="" type="checkbox"/>	

5. Set up the Business Rule Condition in the Figure B-6.

The rule criteria is set up in a measure based on business rule/condition. IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA's condition dimension has four positions. It allows four conditions to be specified for a business rule. Implementors can modify the condition hierarchy file to allow more or less conditions per business rule.

Example 1

In this example, Beverage's Approval rule group has three rules:

- Key item
- High volume
- Low volume

The key item are the item/store with HighPriority Item 01 ==1.

The high volume items are item/store combos satisfying (recent average sales 01 >=200) && (historic average sales 01 >=100). If an item/store satisfying both key item condition and high volume items conditions, it will be associated with both Rules.

The low volume items are (recent average sales 01 <20)

Example 2

The Men's shoes –Approval rule group also has three rules:

- Key item
- High volume
- Low volume

The key items are the item/store combos with (HighPriority Item 01 ==1 && class match 1312Casual).

The high volume items are the item/stores with recent average sales 01 >= condition Measure Value numeric 1

Note how the recent average sales 01 are not compared to a static value to decide high sellers. For maximum flexibility, the values to be compared to are stored in a measure, which can have multiple values.

The low volume items are the item/stores with recent average sales 01 <2

Differences

Beverage and Shoes were items with different sales pattern (grocery versus fashion). They would have different criteria. Condition measure value numeric 1 is IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA provided numeric measure based on class.

Implementors can set the values either through data load or rules. It allows the same condition to be used with different parameter values for items in different class. This conceptually similar to [Example 2](#) regarding high sellers in Men's Shoes.

Condition Value Measures

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA provides 10 condition value measures like Condition measure value numeric 1 out of the box. Six numeric measures, two string measures and two date measures. The implementor can specify which condition value measures can be available for selection per rule group type in the Rule Setup workbook through the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment plug-in. The intersection of these 10 measures can be modified through changing labeled intersection in the configuration. These measures are listed in [Table B-4](#).

Table B-4 Condition Value Measures

Measure Name	Measure Label	Measure Type	Intersection
condmeasvalnum1	Condition Measure Value numeric 1	real	#condmeasvalintx1#
condmeasvalnum2	Condition Measure Value numeric 3	real	#condmeasvalintx2#
condmeasvalnum3	Condition Measure Value numeric 3	real	#condmeasvalintx3#
condmeasvalnum4	Condition Measure Value numeric 4	real	#condmeasvalintx4#
condmeasvalnum5	Condition Measure Value numeric 5	real	#condmeasvalintx5#
condmeasvalnum6	Condition Measure Value numeric 6	real	#condmeasvalintx6#
condmeasvalstr1	Condition Measure Value String 1	string	#condmeasvalintx1#
condmeasvalstr2	Condition Measure Value String 2	string	#condmeasvalintx2#
condmeasvaldat1	Condition Measure Value Date 1	date	#condmeasvalintx1#
condmeasvaldat2	Condition Measure Value Date 2	date	#condmeasvalintx2#

Figure B-6 Rule Condition Set up View

Business Rule	Rule Condition	Between Condition ...	Attribute Selected	Condition ...	Condition Value...	Condition Value (Measure)
Beverage - Approval	condition 01	?	??&??	match	?	
	condition 02		??&??	match	?	
high volume	condition 01	AND	Recent Average Sales 01	>=	200.00	
	condition 02		Historic Average Sales 01	>=	100.00	
key item	condition 01		HighPriority Item 01	=	1.00	
	condition 02				0.00	
low volume	condition 01		Recent Average Sales 01	<	20.00	
	condition 02				0.00	
Men's shoes - Approval	condition 01		??&??	match	?	??&??
	condition 02				0.00	
high volume	condition 01		Recent Average Sales 01	>=	0.00	Condition Measure Value numeric 1
	condition 02				0.00	
key item	condition 01		HighPriority Item 01	=	1.00	
	condition 02				0.00	
low volume	condition 01		Recent Average Sales 01	<	2.00	
	condition 02				0.00	

6. Run the custom menu of validate Rule Setup and Assign Membership.

These actions will assign each item/store to business rules according to the conditions and rule group scope. Tune the conditions until the rule membership results are satisfying.

7. Set up the parameters associated with each business rule.

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA has five parameters associated with the approval rule groups: the approve method and all the GA alert parameters. The GA alert parameters were average sales threshold. Calculation periods, error threshold and causal peak factor. In this example, approval method and error threshold were different by business rule.

The default approval method (defappmth01) can be **Recent Sales versus Forecast**. This is a commonly used approve alert. It is useful for both grocery and fashion.

The manual approve method can be assigned to key items in all approval rule groups. That means user would like to review all key item forecasts before approving them.

For high volume grocery item like beverage, last year sales versus forecast is selected as the approve alert.

For high volume items, lower error threshold is used in the approval alert calculation because higher forecast accuracy is expected from higher volume.

For parameters like approve method, IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment has a three-tier to allow user to specify its value. Default, Intermediate and Final. The default is a scalar measure. The intermediate is specified at subclass/region in IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA. The final is at **sku_stor**. For approval method, the default can be set as Recent Sales versus Forecast. The intermediate level can be left as no override. For item/stores that are associated with key item, will have the approval method at final (appmthovr01) automatically populated with Manual. For beverage item/stores that are associated with high volume, will have the approval method at final (appmthovr01) automatically populated with last year sale versus forecast.

The same applies to error threshold. The error threshold for item/store associated with High volume and low volume rules will be populated automatically with what is set for these parameter in the rule. When running IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment batch, default, intermediate and final parameters

are merged to obtain the parameters fed into approval logic. If an item/store satisfying both key item condition and high volume items conditions, it will be associated with both Rules. When assigning parameters to the item/store, the rule with lowest priority number will take precedence.

Figure B-7 4. Parameters for Approval View

Business Rule	Alert - Average Sales Threshol...	Alert - Calculation Periods at R...	Alert - Error Threshold at Rule	Approval Method at Rule	Alert - Caus...
Business Rule					
▲ Beverage -	-1.00	-1	?	? ▼	-1.00
low volume	-1.00	-1	0.35	No Override ▼	-1.00
high volume	-1.00	-1	0.25	Last Year Sales vs Forecast ▼	-1.00
key item	-1.00	-1	-1.00	Manual ▼	-1.00
▲ Men's shoes -	-1.00	-1	?	? ▼	-1.00
high volume	-1.00	-1	0.25	No Override ▼	-1.00
low volume	-1.00	-1	0.35	No Override ▼	-1.00
key item	-1.00	-1	-1.00	Manual ▼	-1.00
▲ Missy - Approval	-1.00	-1	?	? ▼	-1.00
high volume	-1.00	-1	0.25	No Override ▼	-1.00
low volume	-1.00	-1	0.35	No Override ▼	-1.00
key item	-1.00	-1	-1.00	Manual ▼	-1.00

How to Set Up Business Strategy for Navigation

In the current IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment batch flow, `frcst_post` consists of the following steps:

1. The system forecast is imported from RDX tables,
2. Adjust the system forecast to generate adjusted forecast.
3. Calculate attributes needed for Approval rule-group
4. Generate approval rule membership
5. Assign parameter values to sku/store based on rule membership
6. Run the approve alerts
7. Approval forecast and calculate the mask for unapproved item/store.
8. Calculate eligibility for navigation tier. All item/store with valid forecast and unapproved will participate in navigation grouping.
9. Calculate attributes needed for navigation rule groups
10. Generate navigation rule membership.
11. Assign navigation tier based on navigation rule membership.

From the previous flow, there are two important differences between approval and navigation.

Eligibility

First the item/stores that are eligible to be assigned to approval and navigation rules are very different. All item/stores that have a forecast are eligible to be assigned to approval rules. However, only the unapproved item/stores that have a forecast are eligible to be assigned to navigation rules.

An item/store can be unapproved for two reasons:

- Its approval method is Manual.
- Its approval method is an approve alert and the alert was triggered.

During the initial stages of implementation, the Rule Conditions are typically set up after validating the Forecast in the Forecast Review workspace. The eligible masks required for the rule setup workspace are calculated in the Post Forecast Batch. If the intent is to set up rules prior to the Post Forecast Batch being run, then an implementer either has to load or write custom rules to populate these measures, where `_CF_` is a token for the final level:

- `eligmasknavi_CF_`
- `eligmaskaprvcf_`
- `attpicklistovr`

Attributes

Second the attributes used for approval and navigation rule groups are different. In IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA, the most important attribute used in the navigation rule group is the navigation variance.

The navigation variance is a GA calculated attribute. When calculating the approval alerts, we flag item/stores that were violated the approval business rule. For instance, an item/store is set to be approved using the forecast versus recent sales rule.

The threshold is 10%, meaning that a deviation of less than 10% is acceptable and the item/store is approved. However, the deviation is 15% - which becomes the navigation variance, so the item/store will go into the calculation of the navigation tiers. A navigation variance is calculated for every GA alert except for the max Sales Peak versus Frcsted Peak Factor. The reason is that all but this alert has variance calculated as percentage, while this one compares units.

A custom approve exception's variance is also included in the calculation.

To set up business rules for navigation perform the following steps.



Note:

Steps 1-3 are the same as in [How to Set Up Business Strategy for Approval](#) and different for Steps 4-7.

1. Same as [How to Set Up Business Strategy for Approval Step 1](#).
2. Same as [How to Set Up Business Strategy for Approval Step 2](#).
3. Same as [How to Set Up Business Strategy for Approval Step 3](#).
4. Create the Business Rule Setup workbook.

Select navigation in the rule group type wizard to build the Rule Setup workbook for navigation. Implementors can set up rule description, rule priority and enable rules on the [Figure B-8](#).

In this example, four business rules are set up for each navigation rule group. Each rule corresponds to one navigation tier. The number of navigation tier is defined in IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment plug-in input.

The rules are:

- Urgent
- Required
- Optional
- Informational

You can define the criteria that associate different item/stores to each rule later. If an item/store is associated with multiple business rules, the rule priority is used to establish the precedence. The rules with lower priority number will have higher precedence. The assigned rule priority must be within the range of priority upper bound and priority lower bound set up in the Rule Group Administration workbook.

Figure B-8 1. Rule Enable View

1. Rule Enable							
Measure (Default) [edit]							
Business Rule [edit]							
Measure	Enable	Priority	Start Date	End Date	Rule Description	Rule On/Off	
Business Rule							
▲ Beverage - Navigation	<input checked="" type="checkbox"/>	?			?	<input checked="" type="checkbox"/>	
1. Urgent	<input checked="" type="checkbox"/>	1.00			1. Urgent	<input checked="" type="checkbox"/>	
2. Required	<input checked="" type="checkbox"/>	2.00			2. Required	<input checked="" type="checkbox"/>	
3. Optional	<input checked="" type="checkbox"/>	3.00			3. Optional	<input checked="" type="checkbox"/>	
4. Informational	<input checked="" type="checkbox"/>	4.00			4. Informational	<input checked="" type="checkbox"/>	
Rule 45	<input type="checkbox"/>	0.00				<input type="checkbox"/>	
▲ Men's shoes - Navigation	<input checked="" type="checkbox"/>	?			?	<input checked="" type="checkbox"/>	
1. Urgent	<input checked="" type="checkbox"/>	201.00			1. Urgent	<input checked="" type="checkbox"/>	
2. Required	<input checked="" type="checkbox"/>	202.00			2. Required	<input checked="" type="checkbox"/>	
3. Optional	<input checked="" type="checkbox"/>	203.00			3. Optional	<input checked="" type="checkbox"/>	
4. Informational	<input checked="" type="checkbox"/>	204.00			4. Informational	<input checked="" type="checkbox"/>	
Rule 55	<input type="checkbox"/>	0.00				<input type="checkbox"/>	

5. Set up the business rule condition in the [Figure B-9](#).

The rule criteria is set up in a measure based on business rule/condition. IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment implementors can define the number of navigation tier and their labels through the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment plug-in.

Figure B-9 2. Rule Condition Set up Worksheet

2. Rule Condition Setup							
Measure (unsaved) [edit]							
Business Rule [edit] Rule Condition [edit]							
Business Rule	Rule Condition	Measure	Between Conditio...	Attribute Selected	Condition Operator	Condition Value (n...	Cc
▲ Beverage - Navigation	condition 01		▼	??!&??	match	?	
1. Urgent	condition 01		▼	HighPriority Item 01	==	1.00	
2. Required	condition 01		▼	Navigation Variance 01	>=	0.45	
3. Optional	condition 01		▼	Navigation Variance 01	>=	0.35	
4. Informational	condition 01		▼	Navigation Variance 01	>	0.00	
▲ Men's shoes - Navigation	condition 01		▼	??!&??	match	?	
1. Urgent	condition 01		▼	HighPriority Item 01	==	1.00	
2. Required	condition 01		▼	Navigation Variance 01	>=	0.45	
3. Optional	condition 01		▼	Navigation Variance 01	>=	0.35	
4. Informational	condition 01		▼	Navigation Variance 01	>	0.00	

Example

In this example, Beverage's navigation rule group has four rules.

- a. **Urgent** is defined as HighPriority Item 01 ==1
Urgent is for the most important item/store. Their approval method is manual, they must be reviewed and manually approved.
 - b. **Required** is defined as Navigation Variance 01 >= 0.45
Required is for the item/stores with highest variance between forecast and recent sales. They are more important to be reviewed than the ones with lower variance.
 - c. **Optional** is defined as Navigation Variance 01 >= 0.35
Required is for the item/stores with variance between 0.45 and 0.35. They are less urgent to be reviewed than Required
 - d. **Informational** is defined as Navigation Variance 01 > 0
Informational is for all the item/stores with variance between 0.35 and 0. They have lowest priority to be reviewed.
6. Run custom menus to validate Rule Setup and Assign Membership. These actions will assign each item/store to every business rule according to the conditions and rule group scope. Tune the conditions until the rule membership results are satisfying.
 7. Set up the parameters associated with each business rule. IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA has **Navigation Bucket** as the only one parameter associated with the navigation rule groups.

The pick list for Navigation Bucket measure is created by IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment plug-in based on user inputted number of navigation tier and tier labels. Just assign the right navigation tier to the right rule. Commit the workbook.

Figure B-10 4. Parameters for Navigation

Measure	Navigation Bucket...
Business Rule	
▲ Beverage - Navigation	? ▼
1. Urgent	1. Urgent ▼
2. Required	2. Required ▼
3. Optional	3. Optional ▼
4. Informational	4. Informational ▼
▲ Men's shoes - Navigation	? ▼

During IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment batch, the Navigation Bucket's value will be assigned to the item/stores based on navigation rule membership and rule priority. The navigation buckets at sku/store are stored in a measure named `navibuckets01`.

The Forecast Review workbook has built in logic to create workbook alerts using `navibuckets01`. One workbook alert is created for each navigation tier. These workbook alerts are guiding users to review and approve item/stores in order of their importance, as well as by how much they have violated the approval business rules.

How to Use BRE Beyond What Is Available in GA

So far we have described about what IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA provides with the rule engine. It is fairly straightforward for implementors to add new business rule attributes and add their own business rule definitions for approval or navigation.

Suppose an implementor is perfectly happy with using IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment's default, intermediate and final setting of approve method and alert parameters and would want to totally bypass the rule based assignment for all or most of their items. The following needs to be set up:

1. Set `runrulgeligga_CF_` to false. This will disable the GA generation of eligible mask for approve rule memberships (`rulgeligmask_CF_`).
2. Implement `hook_populate_aprvrulg_eligiblemask_CF_` as a custom batch step to set `rulgeligmask_CF_` to what the implementor desired.

Suppose an implementor would like to configure different navigation rules using custom calculation of navigation variance and custom attributes. The implementor can implement the `hook_navi_attb_CF_` as a custom batch step.

Custom Rule Group Type

Implementors should perform the following steps to add a custom rule group type.

1. In the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment plug-in, from the final level attributes table, click within the business rule group type cell. A dialog displays a business rule group type table.

Click **P** to add a new Business Rule Group Type.

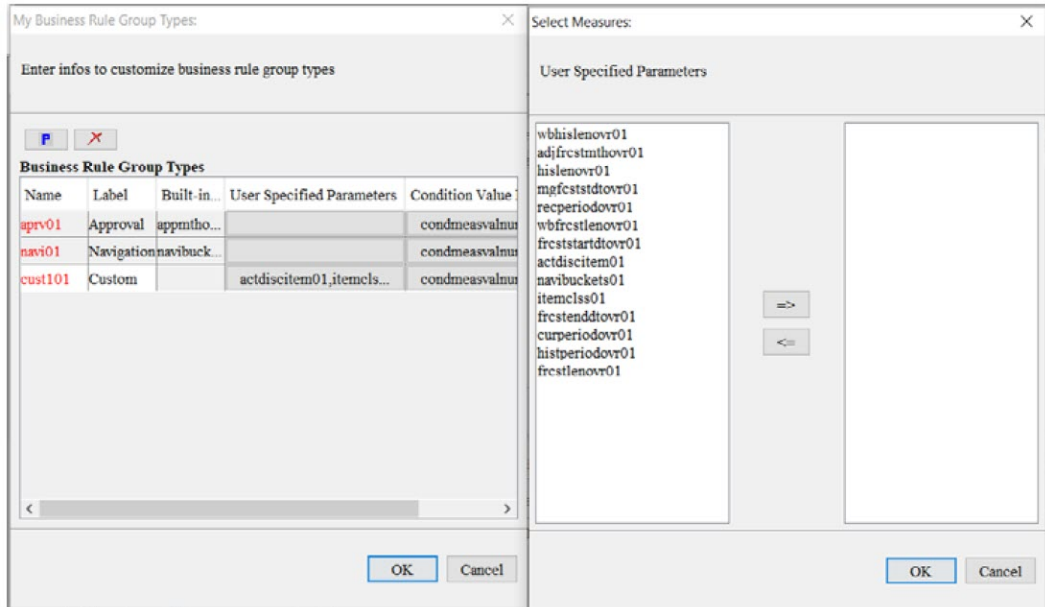
Type in a Rule Group Type Name and Label. The name is used as position name along Rule Group Type dimension so make sure it satisfies RPASCE requirement for position names. The name need to be unique among all rule group type position names.

2. Assign parameters associated with the rule group type by clicking on the cell of user specified parameters. Another dialog allows implementors to add or remove parameters.

The Select Measures box in the [Figure B-11](#) displays all GA parameter measures. Most of these measures were forecasting parameter at final. Any custom measure with intersection = forecast intersection without `c1nd` dimension and have a valid `db` is available for selection too. For each selected measure, a measure at the

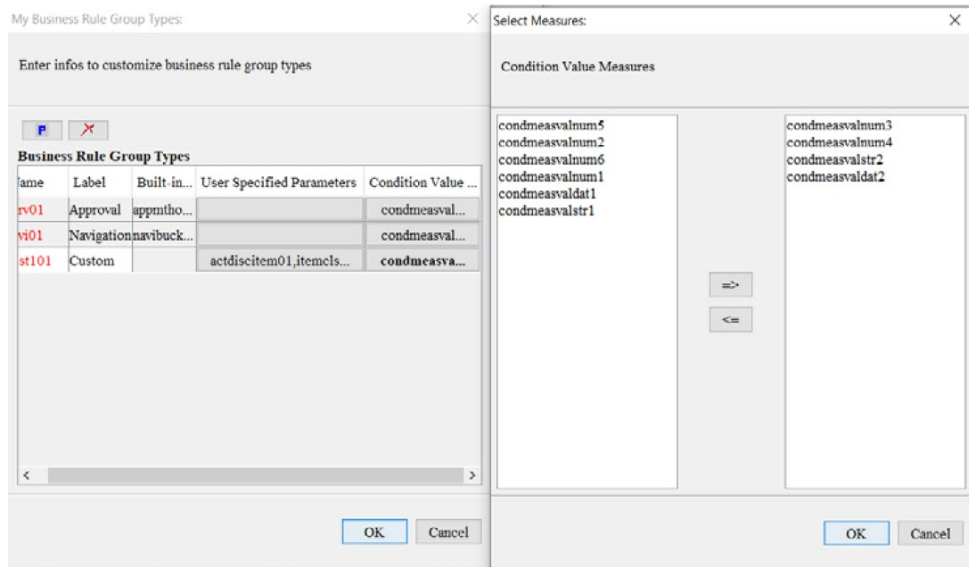
business rule is created and added to the parameter for <rule group type> worksheet for user input.

Figure B-11 My Business Rule Group Type View



3. Click within the condition value cell to open the dialog that lets you select the condition value measures to be used. The measures available for selection are the ten condition measures GA provides and any custom non-boolean measure that have intersection higher than forecast intersection without c1nd dimension and have a valid db. The selected measures are used to construct the picklist for condition value (measure) in the Rule Setup workbook.

Figure B-12 Condition Value Measures



C

Appendix: IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Scheduling in JOS/POM

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment provides a default job schedule with a detailed list of jobs with pre-defined dependencies with RI and RSP schedules in RAP integration. The customer can easily customize their batch process by controlling the batch control files without changing the batch schedule. Each batch job in IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment is connected to hooks in the batch control files that can be changed by customers. The IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment job flow only contains daily and weekly jobs. Jobs scheduled daily are scheduled to run every day and jobs scheduled to run weekly are scheduled to run only on Sunday by default.

[Table C-1](#) shows the list of jobs in IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Schedule. Most jobs are pre-configured for the IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment GA version. The rest of the jobs are placeholder jobs to allow changes to the schedule of the jobs or to add more jobs by changing the batch control file. Each IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment job calls the same set names in the batch control file without `_JOB` in the name, which in turn allows it to call respective `*hook_ jobs`, so even if it is not linked to a batch set. The batch can be controlled without changing the job flow by adding or changing the hooks.

For more details about the implementation of JOS/POM, see the *Oracle Retail Predictive Application Server Cloud Edition Implementation Guide*. For more details about how to use JOS/POM to schedule and maintain the job flows, see the *Oracle Retail JOS/POM User Guide*.

Table C-1 List of Jobs in IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Schedule

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Job Name	Description/Comments	Daily/ Weekly	GA Configuration
IPO_INIT_EXP_START_JOB	Dummy Job to specify the start of initial batch exports.	Daily	
IPO_INIT_EXP_RDX_D_JOB	To schedule any daily data exports to RAP integration before the calc cycle.	Daily	
IPO_INIT_EXP_OBS_D_JOB	To schedule any daily data exports to Object Storage before the calc cycle.	Daily	
IPO_INIT_EXP_RDX_W_JOB	To schedule any weekly data exports to RAP integration before the calc cycle.	Weekly	

Table C-1 (Cont.) List of Jobs in IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Schedule

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Job Name	Description/Comments	Daily/ Weekly	GA Configuration
IPO_INIT_EXP_OBS_W_JOB	To schedule any weekly data exports to Object Storage before the calc cycle.	Weekly	
IPO_INIT_EXP_END_JOB	Dummy job to specify the end of initial batch exports.	Daily	
IPO_COM_HIER_IMP_START_JOB	Dummy job to specify the start of a common hierarchies import.	Daily	
IPO_COM_HIER_IMP_RDX_D_JOB	To schedule any daily common hierarchy imports from RAP integration.	Daily	
IPO_COM_HIER_IMP_OBS_D_JOB	To schedule any daily common hierarchy imports from Object Storage.	Daily	
IPO_COM_HIER_IMP_RDX_W_JOB	To schedule any weekly common hierarchy imports from RAP integration.	Weekly	Imports common hierarchies from RI.
IPO_COM_HIER_IMP_OBS_W_JOB	To schedule any weekly common hierarchy imports from Object Storage.	Weekly	Loads common hierarchy files from Object Storage, if uploaded.
IPO_COM_HIER_IMP_END_JOB	Dummy Job, to specify the end of a common hierarchies import.	Daily	
IPO_COM_DATA_IMP_START_JOB	Dummy job to specify the start of common data imports.	Daily	
IPO_COM_DATA_IMP_RDX_D_JOB	To schedule any daily common data imports from RAP integration.	Daily	
IPO_COM_DATA_IMP_OBS_D_JOB	To schedule any daily common data imports from Object Storage.	Daily	
IPO_COM_DATA_IMP_RDX_W_JOB	To schedule any weekly common data imports from RAP integration.	Weekly	Imports data files from RI.
IPO_COM_DATA_IMP_OBS_W_JOB	To schedule any weekly common data imports from Object Storage.	Weekly	Loads data files from Object Storage.
IPO_COM_DATA_IMP_END_JOB	Dummy job to specify the end of common data imports.	Daily	
IPO_HIER_IMP_START_JOB	Dummy job to specify the start of application-specific hierarchies import.	Daily	
IPO_HIER_IMP_RDX_D_JOB	To schedule any daily application-specific hierarchy imports from RAP integration.	Daily	
IPO_HIER_IMP_OBS_D_JOB	To schedule any daily application-specific hierarchy imports from Object Storage.	Daily	

Table C-1 (Cont.) List of Jobs in IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Schedule

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Job Name	Description/Comments	Daily/ Weekly	GA Configuration
IPO_HIER_IMP_RDX_W_JOB	To schedule any weekly application-specific hierarchy imports from RAP integration.	Weekly	Imports application-specific hierarchies from RI or RSP.
IPO_HIER_IMP_OBS_W_JOB	To schedule any weekly application-specific hierarchy imports from Object Storage.	Weekly	Load any Application specific hierarchies from Object Storage.
IPO_HIER_IMP_END_JOB	Dummy job to specify the end of application-specific hierarchies import.	Daily	
IPO_PRE_DATA_IMP_START_JOB	Dummy job to specify the start of application-specific data imports before the calc cycle.	Daily	
IPO_PRE_DATA_IMP_RDX_D_JOB	To schedule any daily application-specific data imports from RAP integration before the calc cycle.	Daily	
IPO_PRE_DATA_IMP_OBS_D_JOB	To schedule any daily application-specific data imports from Object Storage before the calc cycle.	Daily	
IPO_PRE_DATA_IMP_RDX_W_JOB	To schedule any weekly application-specific data imports from RAP integration before the calc cycle.	Weekly	Imports application-specific data from RI or RSP.
IPO_PRE_DATA_IMP_OBS_W_JOB	To schedule any weekly application-specific data imports from Object Storage before the calc cycle.	Weekly	Load any application specific data from Object Store.
IPO_PRE_DATA_IMP_END_JOB	Dummy Job to specify the end of application-specific data imports before the calc cycle.	Daily	
IPO_PRE_BATCH_START_JOB	Dummy job to specify the start of the Pre Forecast Batch.	Daily	
IPO_PRE_BATCH_D_JOB	To schedule any daily Pre Forecast batch jobs.	Daily	
IPO_PRE_BATCH_W_JOB	To schedule any weekly Pre Forecast batch jobs.	Weekly	Runs Weekly Pre Forecast batch jobs.
IPO_PRE_BATCH_END_JOB	Dummy job to specify the end of the Pre Forecast batch jobs.	Daily	
IPO_PRE_EXP_START_JOB	Dummy job to specify the start of the Export Forecast Parameters Batch.	Daily	
IPO_PRE_EXP_RDX_D_JOB	To schedule any daily exports of forecast parameters to RAP integration.	Daily	
IPO_PRE_EXP_OBS_D_JOB	To schedule any daily exports of forecast parameters to object store.	Daily	

Table C-1 (Cont.) List of Jobs in IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Schedule

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Job Name	Description/Comments	Daily/ Weekly	GA Configuration
IPO_PRE_EXP_RDX_W_JOB	To schedule any weekly exports of forecast parameters to RAP integration.	Weekly	Runs weekly export of forecast parameters to RAP integration.
IPO_PRE_EXP_OBS_W_JOB	To schedule any weekly exports of forecast parameters to object store.	Weekly	
IPO_PRE_EXP_END_JOB	Dummy job to specify the end of the Export Forecast Parameters Batch.	Daily	
IPO_EGRS_EXP_START_JOB	IPO Egress Exports Start Job	Daily	
IPO_EGRS_EXP_RDX_D_JOB	IPO Egress Exports to RDX Daily Job	Daily	
IPO_EGRS_EXP_RDX_W_JOB	IPO Egress Exports to RDX Weekly Job	Weekly	
IPO_EGRS_EXP_END_JOB	IPO Egress Exports End Job	Daily	
IPO_POST_DATA_IMP_START_JOB	Dummy job to specify the start of application-specific data imports from RAP integration.	Daily	
IPO_POST_DATA_IMP_RDX_D_JOB	To schedule any daily application-specific data imports from RAP integration after the calc cycle.	Daily	
IPO_POST_DATA_IMP_OBS_D_JOB	To schedule any daily application-specific data imports from Object Storage after the calc cycle.	Daily	
IPO_POST_DATA_IMP_RDX_W_JOB	To schedule any weekly application-specific data imports from RAP integration after the calc cycle.	Weekly	
IPO_POST_DATA_IMP_OBS_W_JOB	To schedule any weekly application-specific data imports from Object Storage after the calc cycle.	Weekly	
IPO_POST_DATA_IMP_END_JOB	Dummy Job, to specify the end of application-specific data imports after the calc cycle.	Daily	
IPO_POST_BATCH_START_JOB	Dummy Job, to specify the start of Post Forecast batch job.	Daily	
IPO_POST_BATCH_D_JOB	To schedule the daily Post Forecast batch job.	Daily	
IPO_POST_BATCH_W_JOB	To schedule the weekly Post Forecast batch job.	Weekly	
IPO_POST_BATCH_END_JOB	Dummy Job, to specify the end of Post Forecast batch job.	Daily	
IPO_LIFECYCLE_BATCH_START_JOB	IPO Lifecycle Batch Start Job	Daily	
IPO_LIFECYCLE_BATCH_D_JOB	IPO Lifecycle Batch Daily Job	Daily	

Table C-1 (Cont.) List of Jobs in IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Schedule

IPOCS-Demand Forecasting / IPOCS-Lifecycle Allocation and Replenishment Job Name	Description/Comments	Daily/ Weekly	GA Configuration
IPO_LIFECYCLE_BATCH_W_JOB	IPO Lifecycle Batch Weekly Job	Weekly	
IPO_LIFECYCLE_BATCH_END_JOB	IPO Lifecycle Batch End Job	Daily	
IPO_LIFECYCLE_BATCH_ID_1_JOB	IPO Lifecycle Batch Intra-Day 1 Job	Daily	
IPO_LIFECYCLE_BATCH_ID_2_JOB	IPO Lifecycle Batch Intra-Day 2 Job	Daily	
IPO_POST_EXP_START_JOB	Dummy Job to specify the start of post forecast batch exports.	Daily	
IPO_POST_EXP_RDX_D_JOB	To schedule any daily data exports to RAP integration after the calc cycle.	Daily	
IPO_POST_EXP_OBS_D_JOB	To schedule any daily data exports to Object Storage after the calc cycle.	Daily	
IPO_POST_EXP_RDX_W_JOB	To schedule any weekly data export to RAP integration after the calc cycle.	Weekly	
IPO_POST_EXP_OBS_W_JOB	To schedule any weekly data exports to Object Storage after the calc cycle.	Weekly	
IPO_POST_EXP_END_JOB	Dummy job to specify the end of post forecast batch exports.	Daily	
IPO_WB_BUILD_START_JOB	Dummy job to specify the start of workbook build/refresh jobs.	Daily	
IPO_WB_BUILD_D_JOB	To schedule any workbook build/refresh steps daily.	Daily	
IPO_WB_BUILD_W_JOB	To schedule any workbook build/refresh steps weekly.	Weekly	
IPO_WB_BUILD_END_JOB	Dummy job to specify the end of workbook build/refresh jobs.	Daily	
IPO_ADHOC_XX_JOB	To schedule any adhoc jobs with the batch execution set name as a parameter. XX varies from 01 to 10.	Adhoc	
IPO_STATS_START_JOB	Dummy job to specify start of Offer metric server job.	Weekly	
IPO_STATS_OFFER_W_JOB	Server level job to get Offer metric status.	Weekly	
IPO_STATS_END_JOB IPO	Dummy job to specify end of Offer metric server job.	Weekly	