Oracle® Retail Assortment and Space Optimization

User Guide

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Oracle Retail Assortment and Space Optimization User Guide, Release 14.1

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Preface

This guide describes the Oracle Retail Assortment and Space Optimization user interface. It provides instructions to complete most tasks that can be performed through the user interface.

Audience

This document is intended for retailers and analysts.

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Related Documents

For more information, see the following documents in the Oracle Retail Assortment and Space Optimization documentation set:

- *Oracle Retail Advanced Science Engine Installation Guide*
- *Oracle Retail Advanced Science Engine Release Notes*
- *Oracle Retail Advanced Science Engine Security Guide*
- *Oracle Retail Advanced Science Engine Implementation Guide*

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When you install the application for the first time, you install either a base release (for example, 14.1) or a later patch release (for example, 14.1.1). If you are installing the base release or additional patches, read the documentation for all releases that have occurred since the base release before you begin installation. Documentation for patch releases can contain critical information related to the base release, as well as information about code changes since the base release.

Improved Process for Oracle Retail Documentation Corrections

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http://www.oracle.com/technetwork/documentation/oracle-retail-100266.html

An updated version of the applicable Oracle Retail document is indicated by Oracle part number, as well as print date (month and year). An updated version uses the same part number, with a higher-numbered suffix. For example, part number E123456-02 is an updated version of a document with part number E123456-01.

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http://www.oracle.com/technetwork/documentation/oracle-retail-100266.html

(Data Model documents are not available through Oracle Technology Network. These documents are packaged with released code, or you can obtain them through My Oracle Support.)

Documentation should be available on this Web site within a month after a product release.

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1

Getting Started

Oracle Retail Assortment and Space Optimization (ASO) is used to determine the optimal selection and arrangement of products within stores by optimizing the product assortment and product placement on a virtual planogram. ASO uses information about available space, product dimensions, expected demand, replenishment schedules, merchandising rules, fixture space, and category goals in order to create a virtual planogram that optimizes total performance.

The products and product assortments that are selected for the virtual planograms are the ones that ASO recommends for the finalized assortment. The recommended product level data is used inside Category Management, while the virtual planograms created in ASO are also then available to be used in space planning.

ASO supports real-time data integration with Category Management via the RPAS Hybrid Storage Architecture (HSA).

ASO supports the following fixture types:

- Shelves
- Pegboards
- Freezer chests
- Shelf/pegboard combinations

Optimizations are run at either the Store level or at the Space Cluster level. Space Clusters are ad hoc groups of stores used for optimization. Each space cluster includes stores that are in the same assortment, have the same product list, and have the same current planogram length (or same POG length, height, and depth, if selected). Space clusters are typically a level between assortment cluster and store. ASO creates these groups by splitting stores from an assortment cluster into smaller groups of stores that have the same product list and the same current planogram length.

At a high level, ASO starts with an assortment that is ready for optimization. The assortment is mapped to one or more planograms and one or more optimization runs occur. Approved runs are then available for assortment analysis and can then be finalized and exported.

Installing and Configuring ASO

For information about the installation, configuration, and implementation of ASO, see *Oracle Retail Advanced Science Engine Installation Guide* and *Oracle Retail Advanced Science Engine Implementation Guide*.

Users and Roles

The following four user login roles are available:

- Micro Space Optimization Analyst – main business user responsible for day-to-day micro-space optimization activities
- Category Manager – product-assortment-centric user who is interested in viewing ASO results and in the translation of data between Category Management, Retail Analytics, and ASO
- Administrator – responsible for general system setup and configuration tasks related to the business
- Analytical Super User – responsible for analytical configuration, testing, and model diagnosis

Table 1–1 User Roles and Permissions

Privilege	Data Access	Micro ASO Analyst	Category Manager	Administrator	Analytical Super User
Create new ASO run	All runs	X			X
Modify existing ASO run	Runs they created	X			X
Modify the name and description of an existing ASO run.	Runs they created				
View existing ASO run	All runs	X	X	X	X
Submit or re-submit ASO run	Runs they created	X			X
	Runs they created with technical failures				
	All runs with technical failures	X		X	
Approve ASO runs	Runs they created				
Delete saved ASO runs	Runs they created				
	All runs				
View list of saved ASO runs	All runs				
View mapping of products to POG sets	All assortments				
Modify mapping of products to POG sets	All assortments				
Toggle assortment status between Ready for ASO and POG Mapping Needs Review	All assortments				

Table 1–1 (Cont.) User Roles and Permissions

Privilege	Data Access	Micro ASO Analyst	Category Manager	Administrator	Analytical Super User
View rules for mapping products in POG sets	All assortments				
Modify rules for mapping products to POG sets	All assortments				
Analyze space-optimized assortments	All assortments				
Finalize and export space-optimized assortments	All assortments				
Roll back finalized and exported space-optimized assortments	All assortments				
View list of space-optimized assortments	All assortments				

Table 1–2 User Constraints

Role		Privilege		Object	Status
Users	Cannot	Modify existing ASO run	When	Run is	Running, approved, or finalized
Users	Cannot	Submit or resubmit ASO runs	When	Run is	Running, approved, or finalized
Users	Cannot	Approve ASO runs	Unless	Run is	Complete
Users	Cannot	Delete saved ASO runs	When	Run is	Running, approved, or finalized
Administrator	Cannot	Delete saved ASO runs	When	Run is	Finalized
Users	Cannot	Modify mapping of products in POG sets	Unless	Assortment is	With status of POG Mapping Needs Review
Users	Cannot	Toggle assortment status between Ready for ASO and POG Mapping Needs Review	When	Assortment is	With status of POG Mapping Needs Review and also has mappings with errors (both conditions must be true)
Users	Cannot	Modify rules for mapping products to POG sets	When	Assortment is	Finalized or exported

Logging In

Once ASO is installed, you can access the application using the following URL:

http://<SERVER>:<PORT>/so/faces/oracle/retail/rse/so/fe/view/page/SpaceOptimizationHome.jspx

To access the application standalone, use the following:

http://<SERVER>:<PORT>/so

Overview of the User Interface

The ASO user interface, at a high level, consists of

- Task pane. Located on the left side of the application. Use this to navigate between the four main tabs.
- The four tabs that you use to do the application work: Optimization List (described in Chapter 3, "Optimization List"), Assortment List (described in Chapter 2, "Assortment List"), Execute Space Optimization (described in Chapter 4, "Execute Space Optimization"), and Assortment Mapping (described in Chapter 5, "Assortment Mapping").
- Contextual information. Located on the right side of the application. Use the various tabs to set up runs and to view graphical and tabular data that can help you as you interpret the optimization results. In addition, the tools can be used during the run setup to provide additional information about data involved in the run setup.

Figure 1–1 ASO User Interface

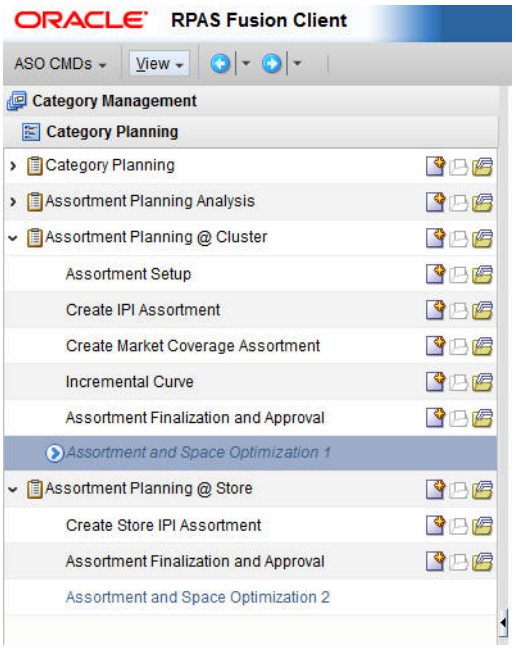
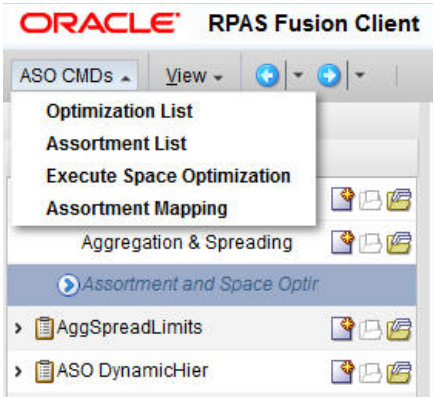


Figure 1–2 shows the command menu to access the four ASO tabs.

Figure 1–2 ASO Command Menu



Icons

The following icons are used in ASO. Certain icons have slightly different definitions, depending on the context.

Table 1–3 Icons

Icon	Icon Description
	Add. Add row.
	Compare to history.
	Copy a run. Add a planogram. On the Assortment Mappings screen, it is used to create a "like" planogram.
	Create. Create a run.
	Detach.
	Delete. Delete a run. Delete planogram.
	Edit. Change status.
	Embedded help.
	Export to Excel. Export all.
	Freeze.
	Go to top.
	Go up.
	Move all items to other list.
	Move selected items to other list.

Table 1–3 (Cont.) Icons

Icon	Icon Description
	Progress indicator. The indicator changes mode when the application is processing data.
	Query by example.
	Re-map.
	Refresh.
	Remove all items from list.
	Remove selected items from list.
	Required.
	Select date.
	Show as top.
	View configuration. View results.
	Wrap.

Buttons

Buttons are used to perform certain actions and for navigation.

Table 1–4 Buttons

Button	Button Description
Action	Provides access to the following actions: Submit, Re-Submit, Validate, Save As, and Approve.
Add All Stores	Within the Add Stores dialog box, used to add all stores instead of a sub-group of stores.
Apply	In Optimization Objectives, used with the Edit Objectives drop-down list.
Back	Used to return to the previous train stop.
Cancel	Used to close a dialog box without making a selection.
Choose Stores	In Optimization Setup, when creating a new run, provides access to a dialog box for adding stores.
Clear Selection	In Assortment Analysis, clears the Selected Runs list.
Details	Radio button that toggles the display between a detailed view and a summary view.
Edit Constraints	In Optimization Objectives, provides access to the Edit Constraints dialog box, which you use to edit settings.
Export	In Assortment Analysis, makes the selected finalized run available for use by other applications.
Finalize	In Assortment Analysis, finalizes the selected run.

Table 1–4 (Cont.) Buttons

Button	Button Description
Next	Moves to the next train stop.
No Template	Clears the template section.
Save	Saves the existing settings.
Summary	Radio button that toggles the display between a detailed view and a summary view.
Table View	Radio button that toggles the display between a table view of the data and a tree view of the data.
Tree View	Radio button that toggles the display between a table view of the data and a tree view of the data.
View Results	In Assortment Analysis, displays results for runs in the Selected Runs list.

Pull-Down Menus

The ASO user interface has three pull-down menus that provide access to a variety of functionality.

The **Format** pull-down menu and the **View** pull-down menu can be used to adjust how the display is organized. For example, you can resize the columns or detach a table from the interface.

The **Actions** pull-down menu provide functionality that you use to manipulate the application data. Some of the following functionality is also provided by the icons described in Table 1–3.

Table 1–5 Actions Pull-Down Menu Functionality

Action Name	Description
Create Run	In Optimization List, takes user to Optimization Setup train stop.
Copy Run	In Optimization List, used to create a duplicate of an existing run.
Delete Run	In Optimization List, used to delete a run.
Export to Excel	Used to export to Excel.
Rollback	In Assortment List, used to revert the status of a run.
Re-Map	In Assortment Mapping, re-maps the planogram to product.
Add Planogram	In Assortment Mapping, provides access to the Select Planogram Nodes dialog box.
Delete Planogram	In Assortment Mapping, used to delete the selected planogram.
Add Row	Add a row to the display.
Mark for Optimization	In Fixture and Product Data, used to select a product for optimization (indicated with a check mark).
View Configuration	In Fixture and Product Data, displays an empty planogram for the selected product.
Compare to History	In Fixture and Product Data, and in Results and Analysis, displays historical planogram that is populated.
Add	In Objectives and Constraints - Product Groups, used to add data.

Table 1–5 (Cont.) Actions Pull-Down Menu Functionality

Action Name	Description
Edit	In Objectives and Constraints - Product Groups, used to edit data.
Delete	In Objectives and Constraints - Product Groups, used to delete data.
View Results	In Assortment Analysis, processes the selected run. Once the processing is complete, the results are displayed in the table.
Export All	In Results and Analysis, used to export all the results.
Create	In Fixture and Product Data,
Change Status	In Assortment Mapping, used to update the status.
Save As	Makes a copy of the run that currently open

Histograms

The stages have associated histograms available on the right-hand side of the display that can help you analyze the data presented in that stage. You can adjust the way the histogram presents the data by changing the number of bins that are used in the display. Once you change the number of bins, click the **Refresh** button to update the display.

Charts

Certain stage have associated charts available on the right-hand side of the display that list data in a tabular format.

Process Train

The process train displays the stages of Execute Space Optimization. The current stage is highlighted. You can also use the **Back** button and the **Next** button to move through the train.

Embedded Help

Embedded help, which you access by clicking the Question Mark icon, provides additional information about the type of details required by certain fields.

Process Indicator

At the top of the user interface, in the right-hand corner, is a process indicator that you can use to monitor the status of a user action such as clicking Next to go to the next stage.

Search

In certain cases, you can customize your search, using advanced search capabilities to specify the search criteria.

Workflow

ASO is used to optimize a category manager's assortment plan by creating optimal planograms. The category manager creates a preliminary assortment and wants to

determine how well that list of products can fit in stores, given the available space, product sizes, and merchandising goals, constraints, and rules. The application creates virtual planograms that organize products onto fixtures in a way that best achieves the optimization objectives. Once the manager finalizes the optimization results, the product level data can be exported for use in planning applications.

Optimization

An optimization can be carried out at one of two location levels: Store or Space Cluster.

In a Store level optimization:

- each store is optimized separately, based on the store's individual data
- one planogram is produced for each store
- store-specific results are produced

In a Space Cluster level optimization:

- every space cluster is optimized separately, based on aggregate store data
- one planogram is produced for each space cluster
- space-cluster-specific results are produced

Space Cluster

A space cluster is an ad hoc group of stores used for optimization. Each space cluster includes stores that are in the same assortment, have the same product list, and have the same current planogram length. Space clusters are typically a level between assortment cluster and store. A fixture configuration can optionally be added to the clustering rules. ASO creates these groups by splitting stores from an assortment cluster into smaller groups of stores that have the same product list, the same current planogram length, and same fixture configuration if activated.

Run Templates

You can pick an existing run that was created for the same POG Set as a template. The system uses the settings for that run and applies them to a new run (which has a new group of products, locations, and data). This allows you to leverage the initial settings from the template run and use them across time, locations, planogram sets, and users.

Validation

Within each stage, you can perform a validation. This provides you with feedback concerning the settings you have configured. Validation can identify conflicts between settings. You see details in the validation report that can help you to resolve any issues. Note that the validation is the same, regardless of which stage you invoke it from.

The conflicts identified by validation include warnings and errors. Warnings occur when constraints can impact or limit the optimization process. Errors prevent the optimization process from producing a solution.

Planogram Mappings

ASO supports various planogram mappings, including the simple case in which a single product category is mapped to a single planogram as well as the case in which a

product category's assortment is mapped to multiple planograms on many locations in a store.

Smart Start Process

If detailed shelving data is not available, a planogram cannot show the complete details about the shelving. In such cases, ASO creates fixtures details using a combination of default values and user selection in order to assign shelves to partial shelf fixture planograms. This process occurs automatically when optimization locations are generated. These fixture configurations are available in the Fixture and Product Data stage.

Fixture Types

ASO works with three types of fixtures: shelves, pegboards, and freezer chests. Freezer chests are not the containers in the frozen food section; rather, they are chests that shoppers reach down into in order to select a product. Planograms can support a mixture of shelves and pegboards.

Virtual Planogram

A virtual planogram (VPOG) is a planogram that is created by ASO and that does not contain images of products, only colored rectangles representing products, with supporting hover text for each product on the virtual planogram. A planogram in ASO is the layout of the product on shelves or pegboards with an underlying fixture assumption (for example, the number of shelves or the overall size).

A user can open multiple virtual planograms simultaneously in order to view images for different clusters or stores within the same run. However, only the first virtual planogram that a user opens can be edited, subject to the run status and the permission rules, until the open virtual planograms are closed. ASO only supports the opening of multiple simultaneous virtual planograms if the user is using the same browser session, browser tab, and ASO login session for the same optimization run. In other words, the user must open the multiple virtual planograms for a single run in a single run screen. All other combinations of browser sessions, browser tabs, and multiple ASO logins to open multiple simultaneous virtual planogram windows are not supported. Although some combinations may work in practice, consistent UI behavior is not guaranteed and data integrity issues may occur.

Planogram Set

Planogram set is an ASO concept that refers to a planogram node (which is the subcategory name) and concatenates it with the planogram season, with a hyphen between.

Assortment Finalization

The Assortment Finalization process handles the assortment summarization of the results at the assortment set level as well as the transformation of placeholder product names and IDs into final products. This process is initiated by the Assortment Planning and Optimization (APO) module of Category Management. ASO and APO use the RPAS Hybrid Storage Architecture (HSA) to exchange data. ASO loads and integrates the Assortment Finalization file with database objects. This triggers the following:

- ASO generates aggregated results for all the exported assortments that have the same assortment set ID.
- The only assortments that are aggregated are the ones that have been exported to APO.
- All other assortments that have the same assortment set ID but that have a status other than exported are disabled so they can no longer be used in optimization or analysis.

2

Assortment List

This chapter describes the use of the Assortment List tab.

Introduction

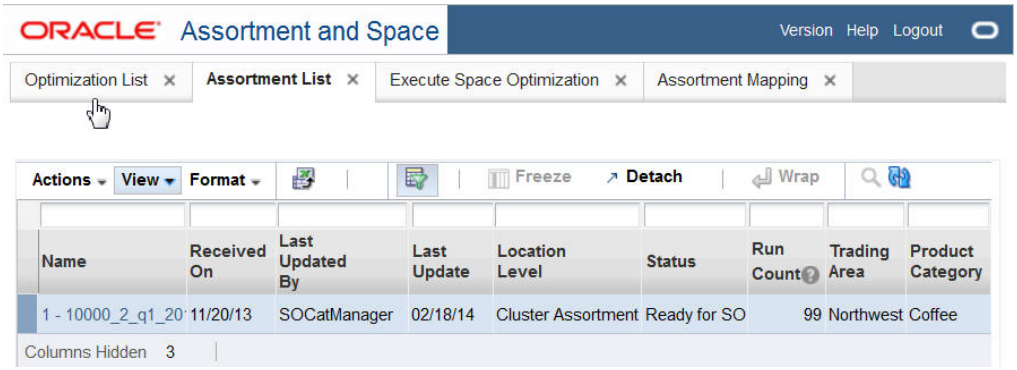
The Assortment List tab has one table that presents a list of all available assortments in ASO. You can use this information to view descriptive information and the status of each of the listed assortments. Use the **Refresh** icon to update the display.

You can also access the Assortment Analysis functionality from the Assortment List tab. You use the Assortment Analysis screen to determine how much of an assortment has or has not been optimized, to analyze the results of the optimizations, and to finalize and export your work.

Assortment List

The Assortment List is shown in Figure 2–1.

Figure 2–1 Assortment List



It contains the following columns.

Table 2–1 Assortment List

Field	Description
Name	The display name for the assortment.
Goal	The goal of the assortment.
Role	The role of the assortment.
Tactic	The tactic of the assortment.

Table 2–1 (Cont.) Assortment List

Field	Description
Received On	The date the assortment was received.
Last Updated By	The user ID of the person who most recently updated the assortment.
Last Update	The date when the assortment was most recently updated.
Location Level	The location level for the assortment (Cluster Assortment, Store Assortment, or Space Cluster). This is the level at which the assortment data is delivered. Products are delivered once for all stores within a cluster (Cluster assortment) or once for every store (Store assortment)
Status	The status of the assortment in terms of space optimization. Values include Finalized, Exported, Ready for SO, and POG mapping needs review. Select any assortment with a status of Finalized or Ready for SO in order to display that assortment in Assortment Analysis.
Run Count	The total number of existing optimization runs (regardless of status) that have occurred, based on a planogram set that is included in the assortment.
Trading Area	The trading area for the assortment.
Product Category	The product category for the assortment.

About Rollbacks

The **Rollback** functionality is available from the **Action** drop-down menu.

If the current status of the assortment is Exported, the status rolls back to Finalized. After the rollback from Exported, the assortment is not available to external application (as it was when it had a status of Exported).

You cannot roll-back any run. If an assortment is in Finalized status, you will not be able to create any new runs based on POG sets within that assortment so you must roll the assortment back to Ready for SO status, create more optimization runs, and finalize again if necessary.

An assortment cannot be part of an assortment set that has been finalized. In such cases, the rollback menu option is disabled.

When you roll back an assortment to Ready for SO, you cannot export it but you can finalize eligible runs that are associated with the assortment that were not finalized before. In addition, once you have rolled the assortment back to Ready for SO, you can create new runs that are based on planogram sets associated with the assortment, something you cannot do when the assortment is in status of Finalized or Exported.

Assortment Analysis

Assortment Analysis is available for an assortment if one or more of the runs associated with that assortment have been approved. Such runs have a status of Approved or Finalized. Category Management users and SO analysts have permission to conduct this analysis. The SO Super User can access this screen as read-only.

The Assortment Analysis screen can be used to:

- determine how much of a specific assortment has not been optimized
- examine the aggregated results of the approved runs for a specific assortment

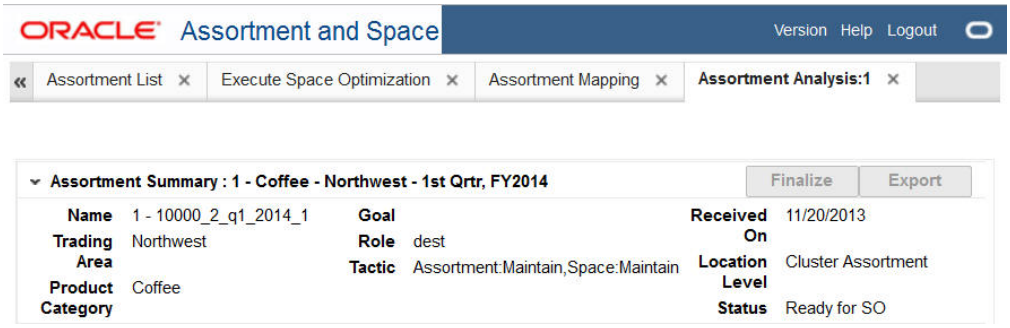
- finalize the optimized results
- export the results

To access Assortment Analysis, select an assortment from the Assortment List that has a status of Ready for SO or Finalized. You see the Assortment Analysis screen. This screen consists of three distinct areas.

Assortment Summary

This section of the Assortment Analysis screen, shown in Figure 2–2, displays a subset of the information contained in the Assortment List. The information describes the assortment you selected.

Figure 2–2 Assortment Summary

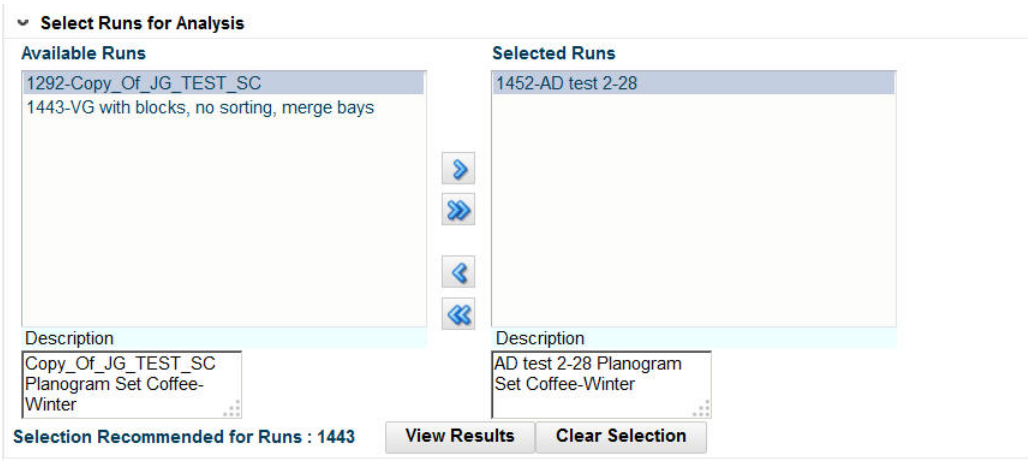


Select Runs for Analysis

This section, shown in Figure 2–3, displays the runs for the assortment you selected. The Available Runs lists all the runs associated with the assortment whose status is Approved or Finalized. Only approved or finalized runs appear here. The Selected Runs lists the runs whose results you are interested in viewing. are interested to be considered to generate the assortment optimization results. Overlaps may exist across selected runs. In that case, results from the most recently approved or finalized run take precedence over other runs with the same sku/store combination.

The Selected Runs list is also used to control which runs become finalized. If you select more than a run that covers the same product/location, you will only see results from the run with the most recent results data.

Figure 2–3 Select Runs for Analysis



To move all runs from the Available Runs list to the Selected Runs list, click the double arrow.

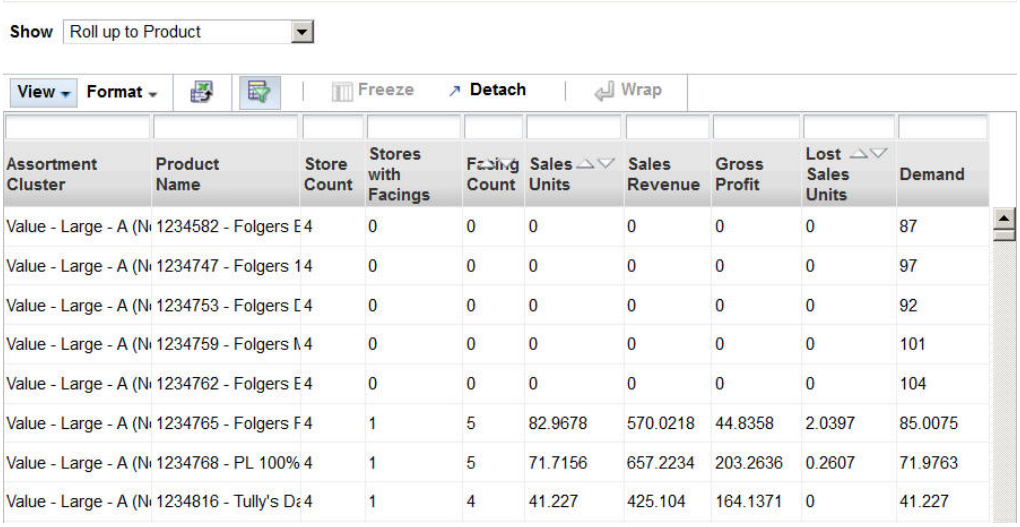
To move a select group of runs from the Available Runs list to the Selected Runs list, highlight the run or runs you want in the Available Runs list and click the single arrow.

To moves runs from the Selected Runs list to the Available Runs list, you should reverse this process.

Run Results

To display the results of a run in the Run Results table, shown in Figure 2–4, highlight the run and click the **View Results** button. (Note that some columns are hidden so that the figure fits on the page.)

Figure 2–4 Run Results



Assortment Cluster	Product Name	Store Count	Stores with Facings	Facing Count	Sales Units	Sales Revenue	Gross Profit	Lost Sales Units	Demand
Value - Large - A (N	1234582 - Folgers E	4	0	0	0	0	0	0	87
Value - Large - A (N	1234747 - Folgers 1	4	0	0	0	0	0	0	97
Value - Large - A (N	1234753 - Folgers D	4	0	0	0	0	0	0	92
Value - Large - A (N	1234759 - Folgers M	4	0	0	0	0	0	0	101
Value - Large - A (N	1234762 - Folgers E	4	0	0	0	0	0	0	104
Value - Large - A (N	1234765 - Folgers F	4	1	5	82.9678	570.0218	44.8358	2.0397	85.0075
Value - Large - A (N	1234768 - PL 100%	4	1	5	71.7156	657.2234	203.2636	0.2607	71.9763
Value - Large - A (N	1234816 - Tully's Da	4	1	4	41.227	425.104	164.1371	0	41.227

By default, the results are displayed for all data. To display the data at different levels of aggregation, use the **Show** drop-down list. You can choose from the following options:

- All data
- Roll up to Assortment Cluster (a single line is displayed for the entire cluster)
- Roll up to Product. Product: Results are displayed at the Assortment Cluster/Product level. You see one line for each product within each cluster.
- Roll up to Planogram Set. Results are displayed at the Assortment Cluster/Product/Planogram Set level. You see one line for each planogram set that a product belongs to within an assortment cluster.

To clear the display, click the **Clear Selection** button. This clears the results from the results table and moves all of the runs in the Selected Runs list back into the Available Runs list (resets the user selection).

Results Table

The Results Table displays the following information at the aggregation level you selected. Note that each aggregation level displays only a subset of the information listed in Table 2–2.

Table 2–2 Results Table

Column Name	Description	Displayed at Aggregation Level
Assortment Cluster	The name that identifies the cluster.	All, Cluster, Product, Planogram Set
Product Code	The code assigned to the product.	All, Product, Planogram Set
Product Name	The name that identifies the product.	All, Product, Planogram Set
Planogram Set	The name that identifies the planogram set. The name is a concatenation of the subcategory name and the season name.	All, Planogram Set
Store Code	The code assigned to the store.	All
Store Name	The name that identifies the store.	All
Run ID	The ID that identifies the specific run. This is useful for assortments with more than one run.	All
Store Count	Tells the user how many stores the data from that row represents.	Product, Planogram Set
Stores with Facings	The number of stores whose facing count is greater than 0 (see Store Count description).	Product, Planogram Set
Facing Count	The facing count.	All, Cluster, Product, Planogram Set
Sales Units	The number of the standard sales category for a product.	All, Cluster, Product, Planogram Set
Sales Revenue	The amount of revenue for the product.	All, Cluster, Product, Planogram Set
Gross Profit	The difference between sales revenue and cost.	All, Cluster, Product, Planogram Set
Lost Sales Units	The lost sales units.	All, Cluster, Product, Planogram Set
Demand	The demand.	All, Cluster, Product, Planogram Set

Finalizing an Assortment

Which runs are finalized is based on which runs are used to generate the results data (the set of unique Run IDs in the View Results table). In order to determine the runs used to generate the data, the most current run for each product/store is determined. For example, when you view the results for All, you may see records that have different Run IDs.

The "Selection Recommended for Runs" should include all runs used to generate the results. A run must be in this list and in the Selected Runs list in order to become finalized when the assortment is finalized.

Once you are satisfied with the results and finalize an assortment, it is available for export to Category Management and Space Planning.

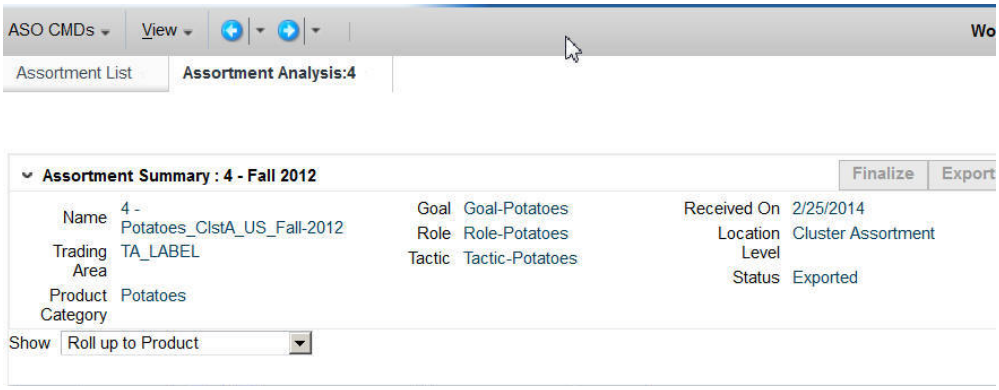
Once an assortment is finalized, the status as displayed in the Assortment List changes to Finalized.

To finalize an assortment, open it in the Assortment Analysis screen, select the runs you want to finalize, and click the Finalize button.

Exporting the Run Results

Once an assortment is finalized, the Export button is enabled and the Finalize button is disabled. Click the **Export** button in order to export the results. Once the assortment is exported, the results of the export are displayed in the Assortment Analysis table, as shown in Figure 2–5, and you can no longer select the runs for analysis. At this point, the Assortment Analysis display consists only of the Summary and the Results. The Select Runs for Analysis section is not displayed.

Figure 2–5 Assortment Analysis After Export



Once an assortment is exported, the status of the run as displayed in the Assortment List changes to Exported. The status is also shown on the Assortment Analysis screen, in the Summary section.

Once the assortment is finalized and exported, it is no longer available in the Select Planogram Set in Execute Space Optimization. See Chapter 4, "Execute Space Optimization" for more information about the Select Planogram Set.

An assortment cannot be part of an assortment set that has been finalized. In such cases, the export button is disabled.

The runs that are finalized may represent a subset of the group of approved runs.

Assortment Analysis Metrics

The metrics displayed in the Assortment Summary list and in the Run Results list can be different. This can occur when there is more than one run as the run results roll-up to Space Cluster or Store (optimization location) and the assortment analysis rolls up to Assortment Cluster.

Specifically, the metrics Units, Sales Revenue, Gross Profit and Lost Sales Units obtained from run results are summarized across all optimization location for all stores. These values match with the assortment analysis rollup to assortment cluster when that run is the only selected. The metrics Facing and Demand actually match but are presented at different levels within the two screens. The run results bottom panel - included products shows those values as an average per store, while the assortment analysis screen shows those values just as the other metrics: across all the stores within the cluster.

3

Optimization List

This chapter describes the use of the Optimization List tab.

Introduction

The Optimization List is the dashboard for the ASO runs. In this tab, you can see a list of all existing runs, along with details that describe each run. The list includes runs created by other users, which you can open in read-only mode. You can create a run, copy a run, open a run, or delete a run.

Optimization List Interface

The optimization list, shown in Figure 3–1, includes the columns described in Table 3–1.

Figure 3–1 Optimization List

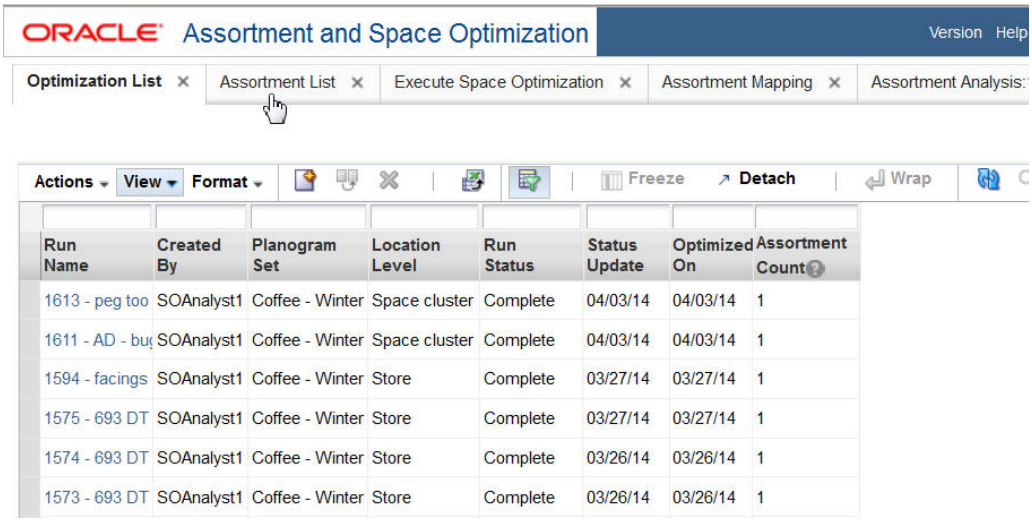


Table 3–1 Optimization List

Field	Description
Run Name	The Run Name is built by concatenating the internal Run ID and the user-provided name.
Created By	The login ID of the user who created the run.

Table 3–1 (Cont.) Optimization List

Field	Description
Planogram Set	A description of the POG set. The name os a concatenation of the subcategory name and the season name.
Location Level	The location level selected for optimization (Store or Space Cluster).
Optimized On	The date when the run was optimized.
Status Update	The date when the status was last updated.
Run Status	The current status of the run. Values include Setup in Progress, Running, Complete, Approved, and Finalized.
Assortment Count	The number of assortments to which the run applies (this is based on how many assortments include the planogram set that is set for the run)
Description	The user-provided description for the run.

Create a Run

To create a new run, click the Create Run icon. You are taken to the Optimization Setup stage in the Execute Space Optimization tab.

In order to create a run, you must have either Micro-space opt analyst permission or analytical super user permission.

Copy a Run

To copy an existing run, highlight that run in the displayed list and click the Copy Run icon. Alternatively, you can also open the run you want to copy and then choose "Save As" from Action menu. You are taken to the Optimization Setup stage in the Execute Space Optimization tab. The fields are populated with copies of all inputs and data. Any existing results are not included. The list of runs is updated with a run that has a new ID; all other fields match the existing run. Only micro space opt analyst and analytical super user can create new runs.

Open a Run

To edit an existing run, highlight that run in the displayed list and click the run ID. Any user can open a run; however, only users with micro space opt analyst or analytical super user permissions can open a run in edit mode. Edit mode is only allowed for runs that a user created and only when the run does not have a status of Running, Approved, or Exported. All other runs are opened in read-only mode.

Delete a Run

Runs can be deleted depending on the status of the run and the permissions a specific user has.

A user with Administrator permissions can delete any run except for one that has a status of Setup in Progress.

Users with micro space opt analyst or analytical super user can delete any runs they have created that do not have a status of Running, Approved, or Exported. They cannot delete runs created by another user.

More than one run can be selected for deletion at the same time.

4

Execute Space Optimization

This chapter provides details about using the Execute Space Optimization tab.

Introduction

The Execute Space Optimization tab provides a series of four stages that you progress through in order to set up, run, and analyze the results of the optimization run:

- Optimization Setup. Used to pick a planogram set, the locations, and the optimization level.
- Fixture and Product Data. Used to view or change fixtures and product merchandise settings.
- Objective and Constraints. Used to view or choose optimizations, objectives, and constraints.
- Results and Analysis. Used to view results and override, approve, or revisit prior steps in order to make changes.

Optimization Setup

The Optimization Setup stage is used to pick a planogram set, the locations, and the optimization level. It is organized into three major sections: the Summary section, the Setup section, and the Review Optimization Locations section.

During this stage, if a planogram does not have detailed shelf information, ASO, using the smart start process, automatically assigns shelves to these partial shelf fixture planograms (PSFP) using configured parameters. These planograms are flagged in the Partial Fixtures column in the Planogram Fixtures tab (see Fixture and Product Data).

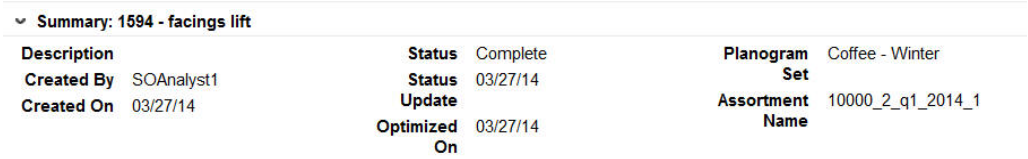
This tab is read-only if the run has been submitted to the system, if the user does not have permission to edit runs, or if the user has permission to edit runs but not create runs.

After you have made your selections, you can go to the next stage by clicking the Next button, submit the run for optimization, or validate the data. Use the **Action** menu to access Submit and Validate. If you submit the run for optimization at this point, the default rules and settings are used.

Summary

The Summary section, shown in Figure 4–1, identifies the run you are configuring. This section is populated once you provide the required information in the Setup section. It contains the fields listed in Table 4–1.

Figure 4–1 Summary



The Summary section is displayed at the top of each tab in the Execute Space Optimization stage.

Table 4–1 Summary Section Fields

Field	Description
Description	The name for the run.
Created By	The user ID of the person who has created the run.
Created On	The date when the run was created.
Status	The status of the run. Values include Setup in Progress, Running, Complete, Approved, and Finalized.
Status Update	The date when the status for the run was last updated.
Optimized On	The date when the run was last submitted for optimization.
Planogram Set	The name of the planogram set, which is selected from the Select Planogram Set dialog box. A planogram set name is a concatenation of the subcategory name and the season name.
Assortment Name	A comma-separated list of all assortments associated with the run.

Setup

The Setup section, shown in Figure 4–2, is used to define and configure the run and provides access to dialog boxes that you use to select the Planogram sets and the optional Template to use for the run. In addition, you identify the Location Level for the run.

Figure 4–2 Setup

Click the **Save** button to save changes to the Name and Description fields. You also use this button to save changes to the planogram set, location level, and template run fields.

Table 4–2 Setup

Field	Description
Name	The name identifying the run. The name must be 80 characters or less and use alphanumeric characters only. It is case sensitive.
Description	A brief description of the run. The value must be 200 characters or less and use alphanumeric characters only.

Table 4–2 (Cont.) Setup

Field	Description
Planogram Set	The field displays the name of the planogram set you select for the run. The name is a concatenation of the subcategory name and the season name. Click the **Pencil** icon to access the Planogram Set dialog box, from which you make a selection.
Template Run	The field displays the name of the template you optionally select to use when creating a new run. Click the **Pencil** icon to access the Template Run dialog box, from which you make a selection.
Location Level	Choose the Location Level for the run from the drop-down list. Values are Space Cluster and Store.

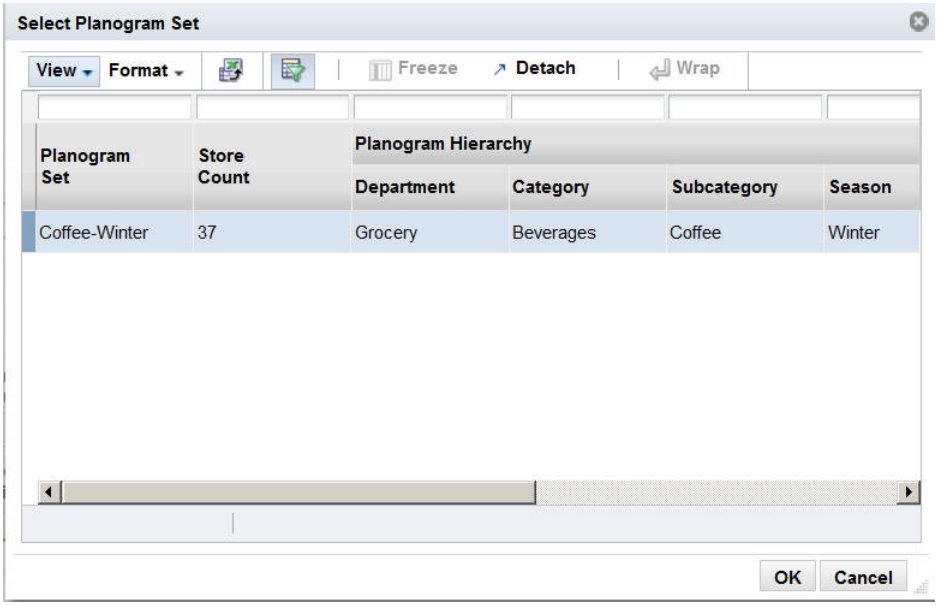
Use Additional POG Attributes

Use this check box to activate or deactivate the use of the POG configuration in the clustering process.

Planogram Set

The Select Planogram Set dialog box, shown in Figure 4–3, which you access by clicking the **Pencil** icon adjacent to Planogram Set, lists all the planograms that are available to you for the run. You can select only one.

Figure 4–3 Select Planogram Set



Highlight the appropriate row and click **OK**. If you change this selection after either selecting stores or building optimization location tables, then you must re-select the stores and the optimization locations for those stores.

Table 4–3 Select Planogram Set

Field	Description
Planogram Set	The display name for the planogram set. The name is a concatenation of the subcategory name and the season name.

Table 4–3 (Cont.) Select Planogram Set

Field	Description
Store Count	The number of stores associated with the planogram set.
Planogram Hierarchy Department	The planogram set belongs within a hierarchy that consists of Department, Category, Subcategory, and Season.
Planogram Hierarchy Category	The planogram set belongs within a hierarchy that consists of Department, Category, Subcategory, and Season.
Planogram Hierarchy Subcategory	The planogram set belongs within a hierarchy that consists of Department, Category, Subcategory, and Season.
Planogram Hierarchy Season	The planogram set belongs within a hierarchy that consists of Department, Category, Subcategory, and Season.
Assortment Details Product Category	A comma-separated list of the assortment IDs that the planogram set applies to.
Assortment Details ID	The external ID of the planogram set.
Assortment Details Name	A comma-separated list of the assortment external IDs that the planogram set applies to.

Template Run

The Select Template Run dialog box, which you access by clicking the **Pencil** icon adjacent to Template Run, lists all the previous runs that are available to you to use as a template in creating a new run. You can select only one. Highlight the appropriate row and click **Save**. The new run you is initialized using values and settings that were used in the template run and apply to the new run. This is optional. You can use the No Template button to clear the template selection.

Table 4–4 Select Template Run

Field	Description
ID	The ID that identifies the run.
Name	The name of the run.
Description	A brief description of the run.
Planogram Set	The planogram set associated with the run.
Created By	The user ID of the person who created the run.
Run Status	The status of the run. Values include Setup in Progress, Running, Complete, Approved, and Finalized.
Status Update	The date when the status for the run was last updated.

Location Level

The location level identifies the level at which the optimization occurs. You select either Space Cluster or Store from the drop-down list. If you change the value of this field after building the optimization locations, then the optimization locations are re-built using the store you selected and at the new location level.

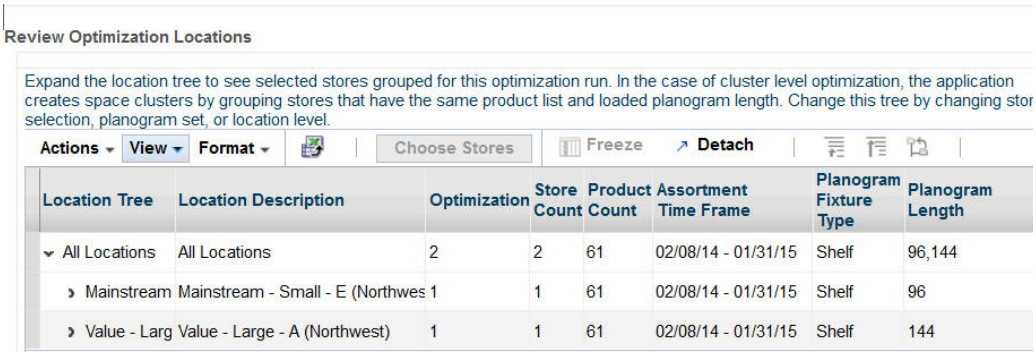
Use Additional POG Attributes

This check box is used to enable space cluster generation based on the additional POG attributes height and depth. If you select this check box and save the changes, the optimization location tables are refreshed based on the new setting.

Review Optimization Locations

The Review Optimization Locations table, shown in Figure 4–4, displays the optimization locations for the optimization.

Figure 4–4 Review Optimization Locations



You can use this table to edit the list of existing locations or add new locations. The locations are listed in a tree structure that shows the hierarchy the optimization locations are part of. If the location level is set to Space Cluster, then the lowest level of the tree is space cluster. If the location level is set to Store, then the lowest level of the tree is store.

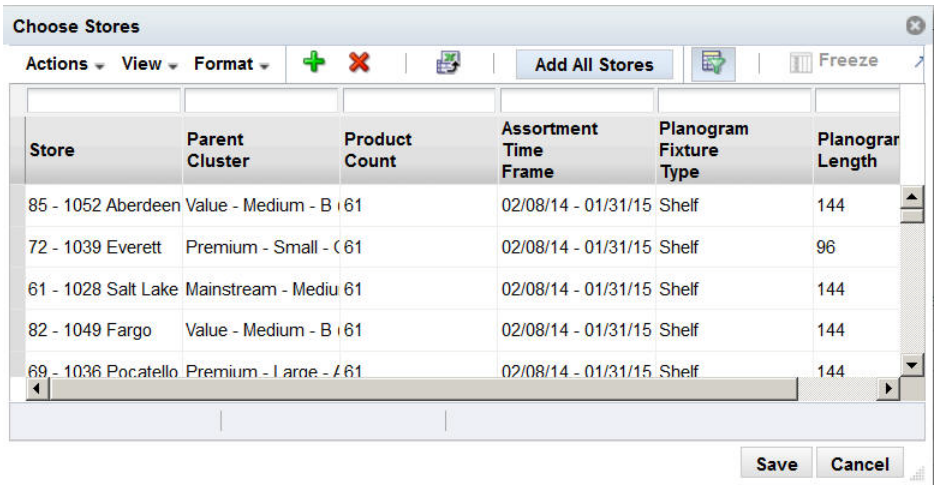
Table 4–5 Review Optimization Locations

Field	Description
Location Tree	Displays the node name in the optimization location hierarchy tree. The lowest level is either space cluster of store.
Location Description	A brief description of the optimization location hierarchy node.
Optimization Locations	The number of optimization locations under the optimization location hierarchy node. The lowest level is always "1"
Store Count	The number of stores in the optimization location hierarchy node. If the location level is store, then it will be "1" for the lowest level.
Product Count	The number of products for the optimization location, based on the associated assortment.
Assortment Time Frame	The start date and end date for which the optimization location's associated assortment is valid, across products.
Planogram Fixture Type	A comma-separated list of unique planogram fixture types that exist for the optimization location hierarchy node.
Planogram Length	A comma-separated list of unique planogram lengths that exist for the optimization location hierarchy node.

Choose Stores

Click the **Choose Stores** button to add locations to the optimization run. The Selected Stores dialog box, shown in Figure 4–5, lists the stores that you have already selected for the optimization locations.

Figure 4–5 Selected Stores



If you have not yet selected any stores, then no stores are listed and the table is blank. This can occur if you have changed the planogram set for the run or in the case of new runs (in which stores have not yet been added).

The Choose Stores dialog box contains the following fields:

Table 4–6 Choose Stores

Field	Description
Store	The identification for the store. It is a concatenation of the store code and the store name.
Parent Cluster	The name of the cluster that the store belongs to.
Product Count	The number of products that the store carries that belong to the assortment associated with the planogram set that you selected.
Assortment Time Frame	The start date and end date during which the assortment associated with the planogram set you selected is valid.
Planogram Fixture Type	A comma-separated list of the unique planogram fixture types available for the associated planogram set's assortment at the store.
Planogram Length	A comma-separated list of the unique planogram lengths available for the associated planogram set's assortment at the store.

You use the Choose Stores dialog box for adding stores and deleting stores. It is enabled once you provide the required information in the Summary section. To add stores, click the **Add** icon in order to access the Adding Stores functionality. To delete stores, highlight one or more stores from the Choose Stores list and click the **Delete** icon. You can also click the **Add All Stores** button in order to add all the stores for which the planogram set you selected applies.

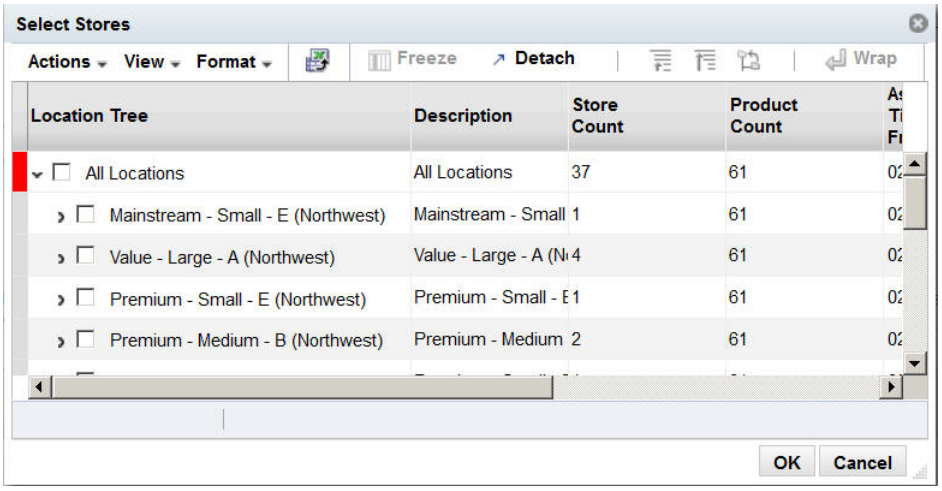
When you click **OK** in the Choose Stores dialog box, the list of selected stores is saved and the optimization locations are built or re-built. As long as the run is in a state in which the optimization locations can be edited, you can update the list and re-build the optimization locations.

When you click **Cancel** in the Choose Store dialog box, all the changes you have made to the list of selected stores are reverted and no changes are made to the optimization locations.

Adding Stores

You add stores through the Select Stores dialog box, which you access by clicking the **Add** icon in the Choose Stores dialog box. The Select Stores dialog box, shown in Figure 4–6, displays a list of stores that can be added to the optimization run, based on the run's Planogram Set value.

Figure 4–6 Location Hierarchy



The Select Stores dialog box contains the following fields:

Table 4–7 Select Stores

Field	Description
Location Tree	The name of the location hierarchy node. If it is the lowest level, it is space cluster or store.
Description	A brief description of the location hierarchy node.
Store Count	The number of stores in the optimization location hierarchy node. If the location level is store, then it will be "1" for the lowest level.
Product Count	The number of products in the location, based on the associated assortment.
Assortment Time Frame	The start date and end date during which the location's associated assortment is valid.
Planogram Fixture Type	A comma-separated list of unique planogram fixture types for the location hierarchy node.
Planogram Length	A comma-separated list of unique planogram lengths for the location hierarchy node.

Contextual Information

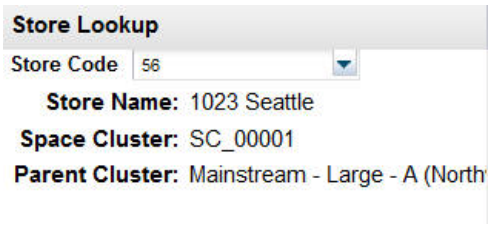
The following information is only available when the optimization locations have been defined.

Store Lookup

You can use Store Lookup, shown in Figure 4–7, to access information about a store. You must provide the store code, either by entering it into the text field provided or by

selecting it from the drop-down list. This list is populated based on the optimization location selected for the run.

Figure 4–7 Store Lookup



Once you select the store, you see the following information:

- Store name
- Optimization location (if location level is Space Cluster)
- Parent cluster

Space Cluster Lookup

You can use the Space Cluster Lookup, shown in Figure 4–8, to see the list of stores associated with a specific space cluster. You must provide the name of the space cluster, either by entering it into the text field provided or be selecting it from the drop-down list. The list is populated based on the optimization location selected for the run.

Figure 4–8 Space Cluster Lookup

Once you select the space cluster, you see a list of the component stores.

Charts

Two charts are provided in which you can see the variation in store counts by optimization location and product counts by optimization location. The charts are populated with data once the optimization location has been configured. Figure 4–9 provides an example of the store count chart.

Figure 4–9 Store Counts

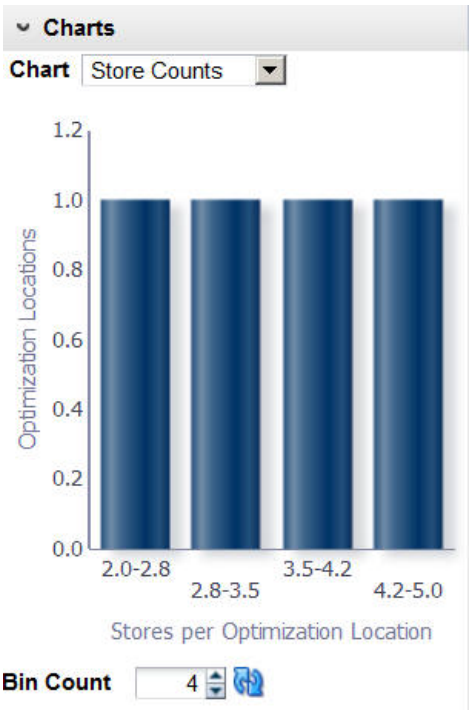
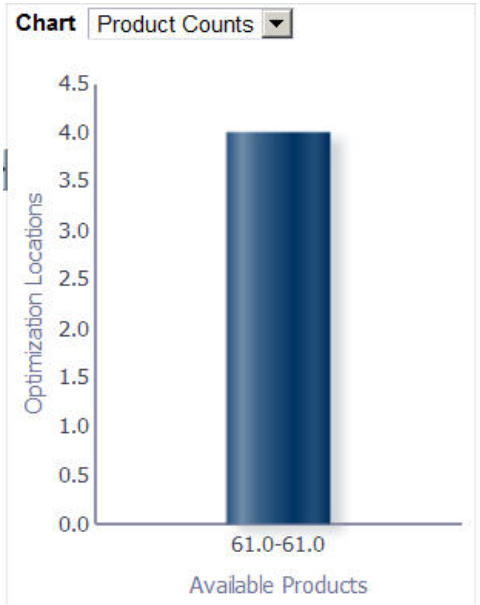


Figure 4–10 Product Counts



Fixture and Product Data

The Fixture and Product Data stage is divided into a Summary section, a Planogram Fixtures tab, and a Product Merchandising Data tab. The Summary section identifies the characteristics of the run. The Planogram Fixtures tab is used to review the available planogram lengths for each optimization location and to update the selected configuration for each available length from a set of configurations for each length.

The Product Merchandising Data tab is used to assign merchandising options to products. These assignments can vary by product or optimization location.

This tab can only be edited by the user who created the run and only before the run has a status of Running, Approved, or Finalized.

Summary

The Summary section, shown in Figure 4–1, identifies the run you are configuring.

Table 4–8 Summary Section Fields

Field	Description
Description	The name for the run.
Created By	The user ID of the person who has created the run.
Created On	The date when the run was created.
Status	The status of the run. Values include Setup in Progress, Running, Complete, Approved, and Finalized.
Status Update	The date when the status for the run was last updated.
Optimized On	The date when the run was last submitted for optimization.
Planogram Set	The name of the planogram set, which is selected from the Select Planogram Set dialog box.
Assortment Name	The name of the assortment associated with the planogram set.

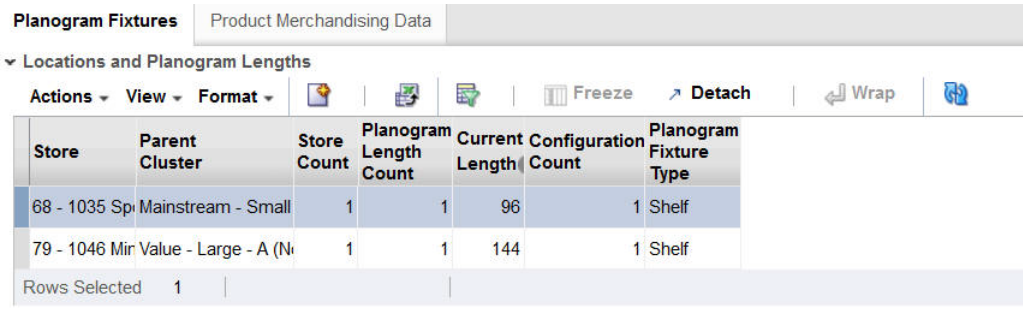
Planogram Fixtures

The Planogram Fixtures tab contains two sections: the Locations and Planogram Lengths table and the Available Configurations table.

Locations and Planogram Lengths

This table, shown in Figure 4–11, displays the run's optimization location and provides metrics about the available planogram configurations for each run.

Figure 4–11 Locations and Planogram Lengths



You can create new lengths, which can be either shorter or longer than the current lengths (subject to validation), and refresh the table display.

Table 4–9 Locations and Planogram Lengths

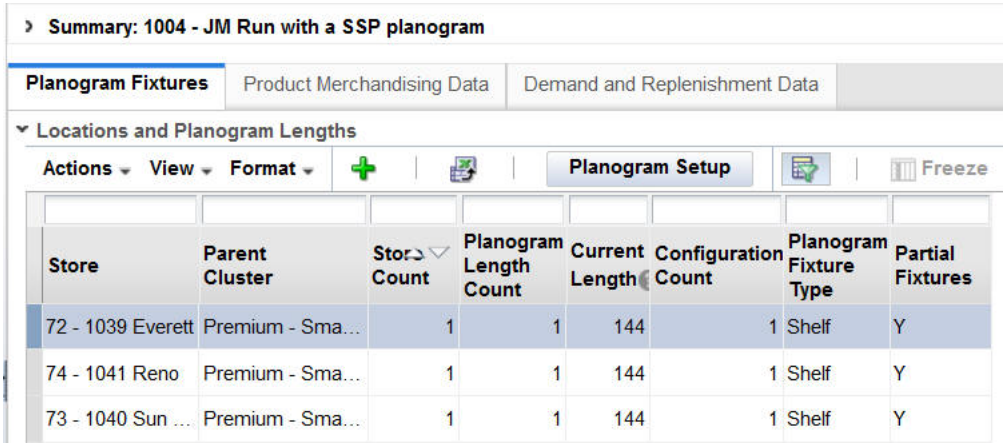
Field	Description
Space Cluster/Store	The name of the space cluster or store.

Table 4–9 (Cont.) Locations and Planogram Lengths

Field	Description
Parent Cluster	The name of the parent cluster of the optimization location.
Store Count	The number of stores in the optimization location.
Current Length	The length of the configuration that is currently ready for optimization.
Planogram Length Count	The number of unique planogram lengths in the optimization location.
Configuration Count	The number of planogram configurations in the optimization location.
Planogram Fixture Type	A comma-separated list of the unique fixture types present across all configurations that are ready for optimization. This list includes fixture types that have been created by the user.
Partial Fixtures	Y indicates that the planogram does not have detailed shelving data and that ASO generated the fixture configuration based on configuration parameters. N indicates that the planogram has complete shelving data.

Planogram Setup

Figure 4–12 Planogram Setup Button



Select **Planogram Setup** to access the Planogram Setup dialog box. This button in enabled after you select at least one optimization location row from the table. The Planogram Setup dialog box contains the parameters used during the smart setup process to generate the Partial Shelf Fixture Planogram (PSFP). You can edit these parameters and rerun this process using this dialog box. These parameters are described in Table 4–10. Note that the allowable minimum and maximum values permitted in this dialog box are configured in the database.

Figure 4–13 Planogram Setup Dialog Box

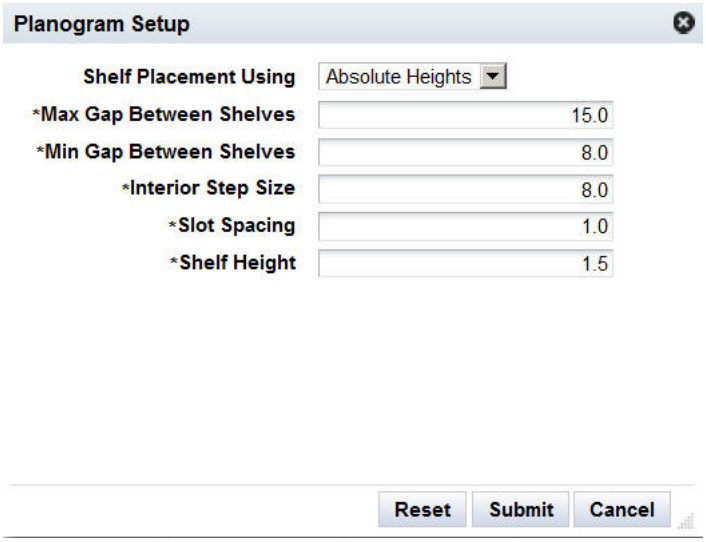


Table 4–10 Planogram Setup Parameters

Field	Description
Shelf Placement Using	This drop-down menu as two options, Height Percentile and Absolute Height. The choice you make between these two options determines the types of values (percentage or numeric) used by some of the parameters and which parameters are displayed.
Max Gap Between Shelves	
Min Gap Between Shelves	
Interior Step Size	
Absolute Min Gap	
Slot Spacing	
Shelf Thickness	

The following buttons are available in this dialog box:

- **Reset** – Use this button to update the values for all the parameters to the configured default values. You must then click **Submit** to rerun the SSP.
- **Submit** – Use this button to rerun the smart start process for the optimization locations you selected, based on the parameter values you entered here. When you click this button, the dialog box closes and the available configurations table is refreshed with the new configurations generated by SSP. The new values that you provided for the parameters are saved at the optimization location level.
- **Cancel** – Use this button to close the dialog box without making any changes.

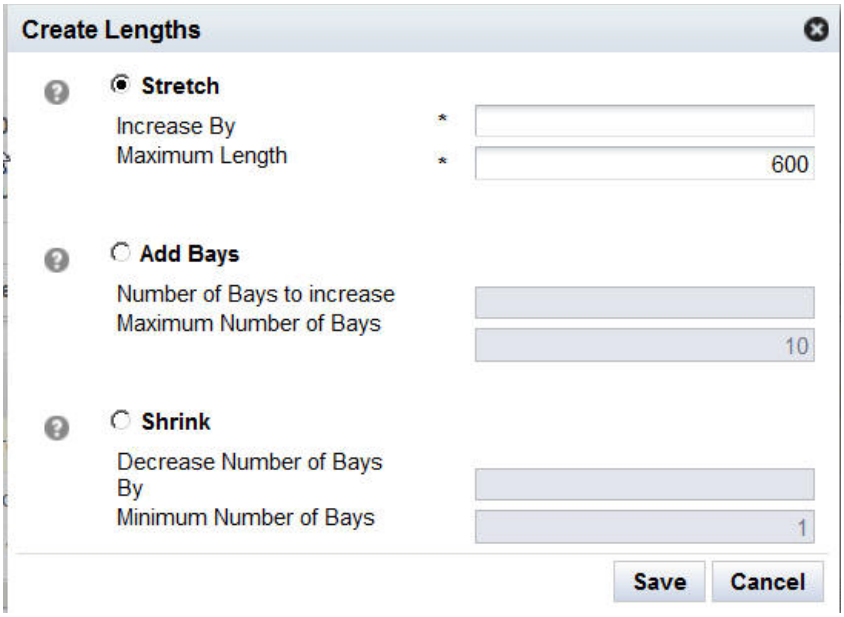
If some of the locations you select do not have partial fixtures, they are not processed by SSP. You will see a message if this occurs.

If some of the locations you select also have overrides that apply, these overrides are also applied. You will see a warning message if this is the case.

Create Lengths

Select **Create** from the Actions menu to access the Create Lengths dialog box, shown in Figure 4–14. You use this to create new planogram configurations for the optimization locations you select. This involves stretching or shrinking a configuration that is marked for optimization. In addition, you can add new bays to the right. If you want to create new lengths for a configuration that has not been marked for optimization, you must mark that configuration for optimization. but it must be a loaded configuration, which can be identified by the fact that the Parent Planogram field is empty or null.

Figure 4–14 Create Lengths



Stretch

To stretch the length, select the **Stretch** radio button. Stretching changes the planogram by adding length to the last bay (including internal objects). It adds as much length as defined within the Increase By field up to the Maximum length.

A new configuration is created that is a copy of the base configuration. The planogram is shrunk by removing the bays from right to left. The length, in generic measurement length units, is adjusted based on the bays that are removed. That copy is then modified based on the values you enter in the following two fields:

Table 4–11 Create Lengths: Stretch

Field	Description
Increase By	Use to specify how much to stretch the base configuration in order to create the new configuration. The value must be less than or equal to the value you enter in the Maximum Length field. The unit of measurement is agnostic.
Maximum Length	Use to specify the maximum length possible for the new configuration. The default value that is displayed is configurable during implementation. You can change the default value, but the new value must be less than or equal to the default.

Add Bays

To add bays, select the **Add Bays** radio button. The add bay process creates a copy of the right-most bay, including the fixtures, shelves, pegs, and freezers. The copy is added after the last existing bay on the right. You determine the number of copies added by entering the appropriate value into the dialog box, as described in Table 4–12.

Table 4–12 Create Lengths: Add Bays

Field	Description
Number of Bays to Increase	Indicates the number of bays to add. Must be an integer value.
Maximum Number of Bays	Indicates the maximum number of bays the new POG is permitted to have. This adds as many bays as indicated in the Number of Bays parameter, as long as the overall bay count for the POG does not exceed the maximum value provided for this parameter. Must be an integer value.

Note that adding bays has the effect of increasing the number of shelves, which in turn changes the count of shelves displayed in the UI. Other metrics may also change.

Shrink

To shrink the length, select the **Shrink** radio button. Shrinking changes length (decrease) by eliminating starting from the last bay as many bays as defined by the Decrease Number of Bays, making sure that at least the minimum number of bays remain.

A new configuration is created that is a copy of the base configuration. The changes are made to the bays (not to the length). The copy is modified based on the values you enter in the following two fields:

Table 4–13 Create Lengths: Shrink

Field	Description
Decrease Number of Bays By	Use to specify, in terms of the number of bays, how much to shrink the base configuration in order to create the new configuration.
Minimum Number of Bays	Use to specify the minimum number of bays for the new configuration. The default value that is displayed is configurable during implementation. You can change the default value, but the new value must be less than or equal to the default.

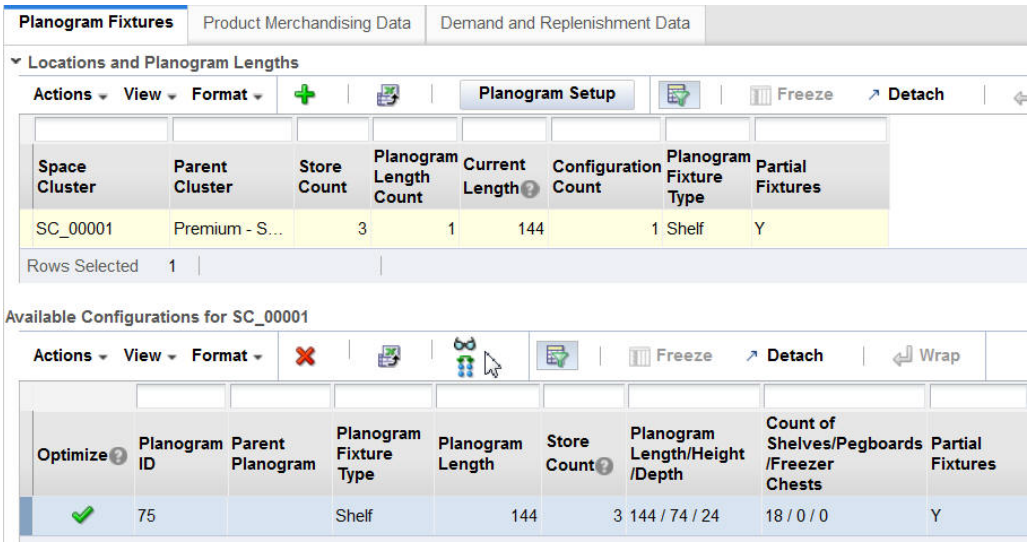
If the values you specify are the same as those for a configuration (same parent planogram and same length), no new configuration is created. If the values you specify do not fall within the defined minimum and maximum values for shrinking or stretching, the new configuration will be defined by the minimum or maximum value instead.

The new configuration is marked for optimization automatically by the system. Other configurations with the same length are un-marked. If the new configuration is actually the same as the existing one, the existing configuration is marked for configuration.

Fixture Overrides

You can make certain modifications to the run-specific POG data that is used in optimization. These modifications include adding, deleting, editing, and moving shelves associated with shelf fixtures as well as restoring prior settings.

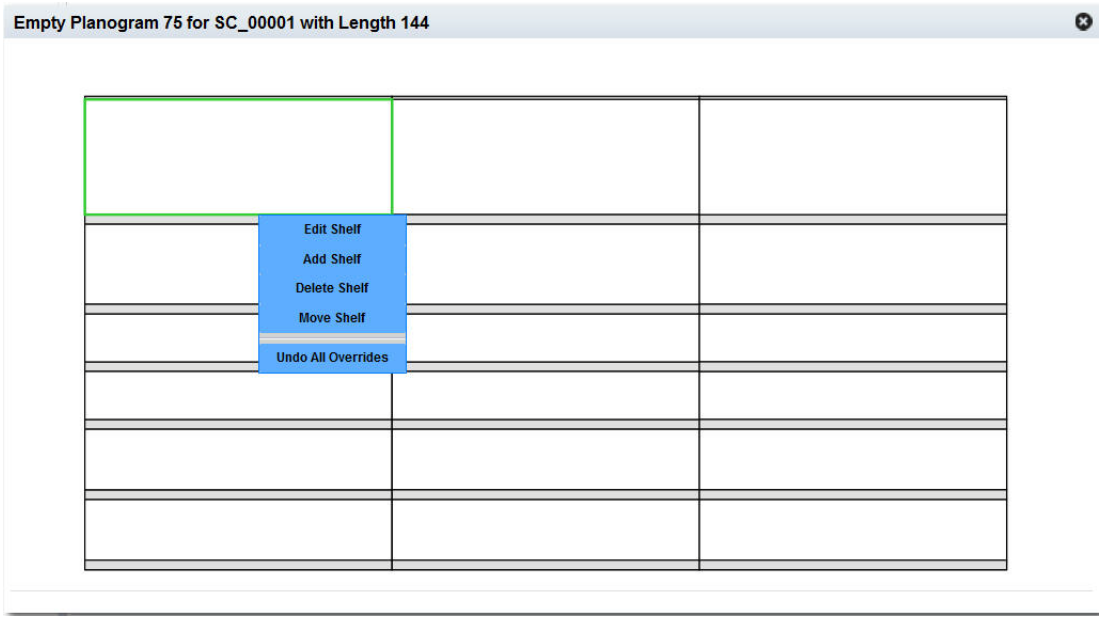
Figure 4–15 Fixture Overrides



Fixture overrides exist at the optimization level. This means that store-level optimization requires store-by-store fixture overrides and cluster level optimization requires cluster-by-cluster fixture overrides.

To make these modifications, highlight the space cluster of interest and click the **Goggle** icon. An empty planogram is displayed. Right-click on a shelf to access the Edit dialog box.

Figure 4–16 Edit Dialog Box for Fixture Overrides



Add

You can add a new shelf to an existing fixture. To do this, select the fixture and then use the right-click menu to access the Add functionality. You see a dialog box the shows defaults. You can change the depth, thickness, and elevation of the new shelf. Note that the new shelf must fit within the existing fixture and it cannot overlap with other shelves.

Delete

You can delete a shelf from an existing fixture. To do this, select the shelf you want to delete and use then use the right-click menu to access the Delete functionality. You will be asked to confirm the deletion.

After you delete the shelf, the space where the shelf existed will no longer show a shelf. If a bottom shelf was deleted, then the shelf and the space up to the next shelf (or top of fixture if no shelves) will be replaced by a grey background.

Edit

You can edit an existing shelf. To do this, click on a shelf and use the right-click menu to access the Edit functionality. You see a dialog box where you can change the depth and the thickness of the shelf.

Move

You can move an existing shelf to a new location. To do this, select the shelf you want to move and use the right-click menu to access the Move functionality. You see a dialog box that you can use to enter a new value for elevation.

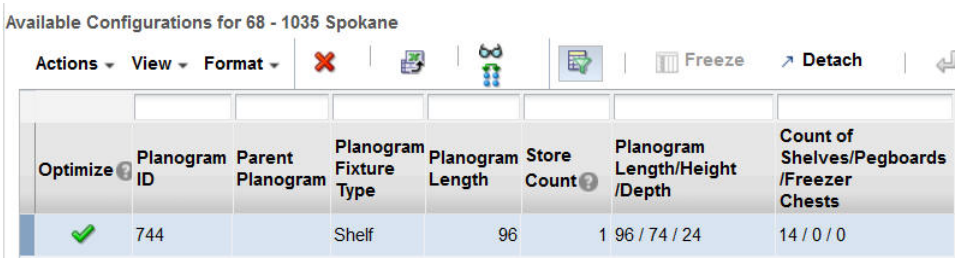
Restore

You can restore a POG to the most recently loaded or updated version of that historical POG, based on the most current data feed updates made to the historical POG configuration. You cannot restore POGs that were created per macro changes. In such cases, you can delete the run and start over with the most recently loaded or updated version of that historical POG.

Available Configurations

This table, shown in Figure 4–17, displays details about the configuration available for the row you select in the Locations and Planogram Lengths table. If you select more than one row, you will see the message "No Data to Display."

Figure 4–17 Available Configurations



The Available Configurations table contains the fields listed in Table 4–14.

Table 4–14 Available Configurations

Field	Description
Optimize	Indicates that the configuration is marked for optimization.
Planogram ID	The ID that identifies the configuration (planogram).
Parent Planogram	The base planogram configuration used to create the new configuration. It is always a loaded configuration. The value is Null for an externally loaded configuration.
Planogram Fixture Type	A comma-separated list of the unique fixture types in the configuration.
Planogram Length	The length of the planogram.
Store Count	The number of stores that use the configuration for this run's assortment.
Planogram Length/Height/Depth	The dimensions of the configuration.
Count of Shelves/Pegboards/Freezer Chests	Count for the number of each type of fixture that exists in the configuration.

You can perform the following actions with respect to the Available Configurations table. You can initiate each action from the Actions menu or in some cases by clicking the appropriate icon.

Mark for Optimization

You must mark a configuration to make it available for optimization. Only marked configurations are displayed in the Results and Analysis tab. Note that only one configuration for a given length can be marked for optimization. If one configuration for a given length is currently marked for optimization, and you select another configuration of the same length, the first configuration is un-marked.

Delete

You can delete any user-created lengths (identified by non-null values in the parent Planogram column) in the table. If you delete a configuration that is marked for optimization, all configuration of that configuration's length will be deleted.

View Configuration

You can view a diagram of the selected configuration by clicking the **View Configuration** icon.

Compare to History

Click the **Compare to History** icon to see a diagram of the historical planogram used for the selected configuration.

Contextual Information

A chart is provided that displays summary data for the planogram lengths that are being used for the optimization. This information can help you understand what the current macro space allocation is and what has been added.

Three series for this chart are available. One series shows the count of current lengths and a second series shows the count of added lengths for a given planogram length. If there are no added lengths, then the chart should only show the current lengths. The count is across all optimization locations. The total count of all current lengths should

be the number of optimization locations. You can also see product heights, charted by percentage or numeric values, and representing the entire run.

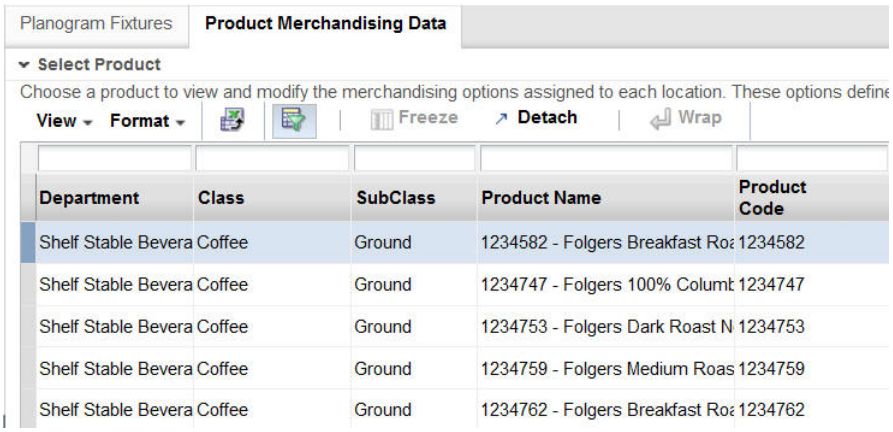
Product Merchandise Data

The Product Merchandise Data tab contains two main sections: The Select Products table and the Merchandising Options table. This stage addresses how products are placed on fixtures.

Select Product

This table, shown in Figure 4–18 lists all available products. Each product is identified by the details of its hierarchy (level 1-3, department, class, and sub-class), as well as product name and product code.

Figure 4–18 Select Product



Merchandising Options

This table, shown in Figure 4–19, displays the merchandising options for all optimization locations for the product you select in the Select Product table. A merchandising option is the combination of fixture type, display style, main orientation, and capping orientation.

Figure 4–19 Merchandising Options

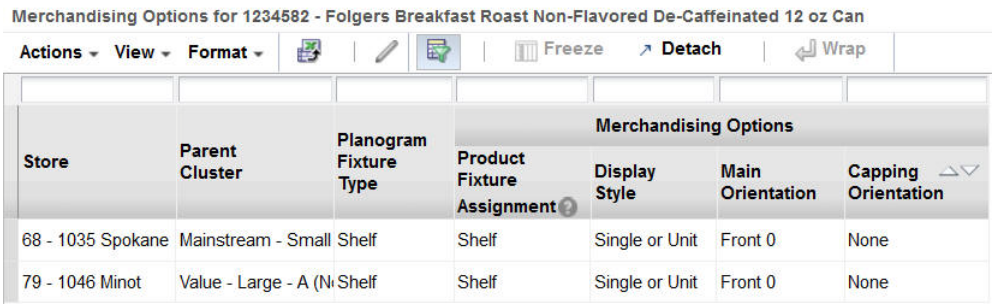


Table 4–15 lists the fields for Merchandising Options.

Table 4–15 Merchandising Options

Field	Description
Space Cluster/Store	Indicates the location level for the product.
Parent Cluster	The name of the parent cluster.
Planogram Fixture Type	A comma-separated list of the unique fixture types in the configuration.
MO: Product Fixture Assignment	The type of fixture.
MO: Display Style	The type of display unit.
MO: Main Orientation	How the product faces the front of the fixture.
MO: Capping Orientation	The orientation for products that are stacked.

You can edit the merchandising options if you have the appropriate permissions.

1. Select a product from the Select Product table.
2. Select one or more optimization locations from the Merchandising Options table.
3. Click the **Edit** icon to access the Edit Merchandising dialog box.
4. You see the possible options for each of the Merchandising Options that are available for the product you selected. For each option you select the Select check box in order to edit that option. The columns you can edit correspond to the columns that are displayed in the table.

Contextual Information

The following three sections providing additional information about product merchandising.

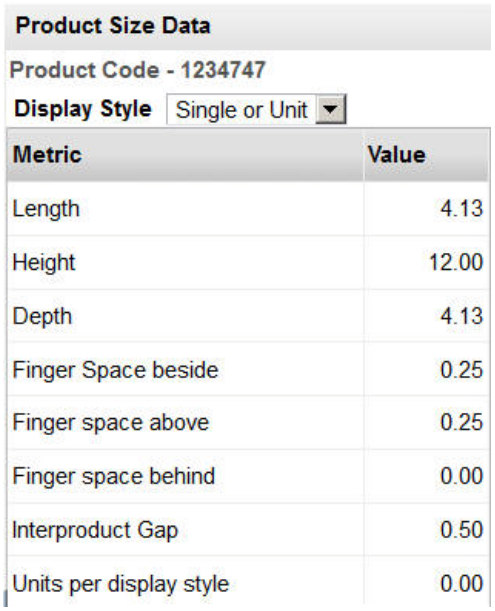
Product Size Data This table, shown in Figure 4–20, displays the sizes of the products for each of the display styles as well as the related spacing data. The data that is displayed depends on the product you select from the Select Product table. The data includes length, height, depth, finger space beside, finger space above, finger space behind, inter-product gap, and units per display style.

Finger space beside refers to the space that is needed by a specific product on the left and right side of each unit.

Finger space above refers to the space that is needed by a specific product between the top of a unit and the bottom of the shelve above it.

Finger space behind refers to the space that is needed by a specific product to the front and to the back of a unit.

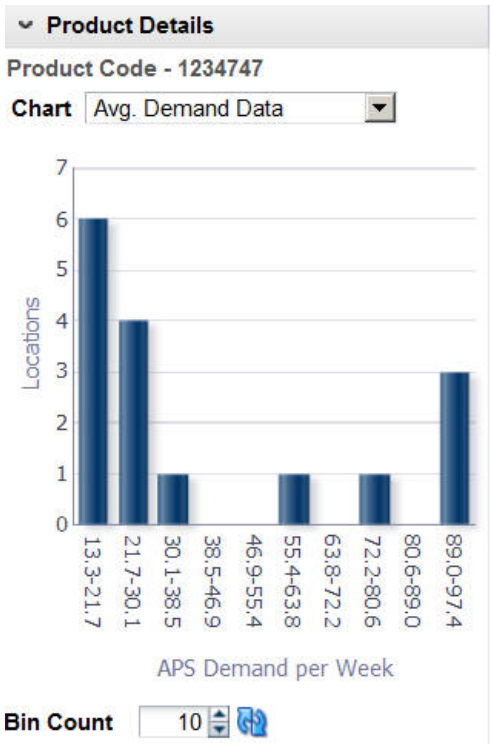
Figure 4–20 Product Size Data



Product Details This table, shown in Figure 4–21, describes the overall demand and replenishment data for the selected product. The data displayed is static and is based on the product you select from the Select Product table.

- Average Demand Data. The size of the histogram bar represents the number of optimization locations.
- Price. The size of the histogram bar represents the number of optimization locations.
- Casepack Size. The size of the bar represents the number of optimization locations.
- Replenishment Frequency. The size of the histogram bar represents the number of optimization locations.

Figure 4–21 Product Details



Location Statistics This table, shown in Figure 4–22, describes the user demand and replenishment data for the selected product and optimization location. You can use this information to help in making decisions at the lowest level. The data includes store count, APS demand, price, case pack size, replenishment frequency, Item Performance Index (IPI) score, and priority. The data displayed is based on the product you select from the Select Product table and the location you select from the Merchandising Options table.

Figure 4–22 Location Statistics

Location Statistics

1234753 / SC_00001

Metric	Value
Store Count	3
APS Demand	35.247
Price	6.8704
Casepack size	6
Replenishment frequency	2
IPI score	1.1774
Priority	Optional

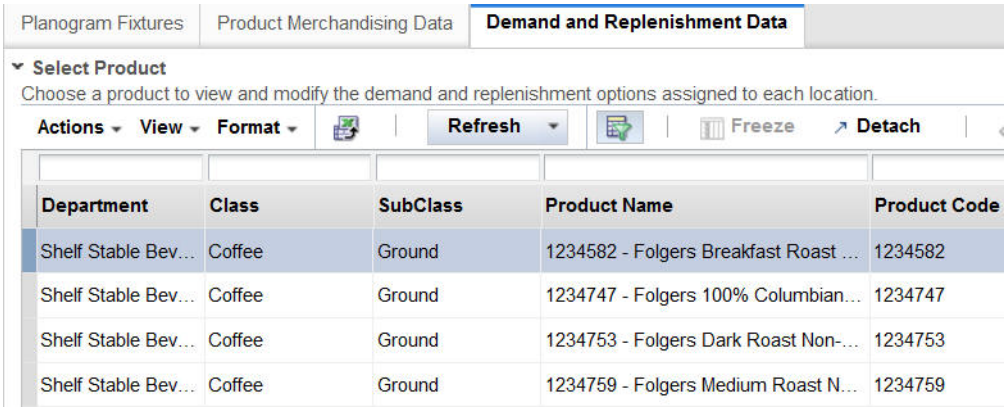
Demand and Replenishment Data

The Demand and Replenishment Data tab lets you refresh the demand and replenishment parameters, make overrides to selected parameters, and understand the replenishment settings and their effects on results. This tab provides a Select Product table that displays all available products and a Demand and Replenishment Options table that displays the replenishment details for the product you select in the list of available products.

Select Product Table

The Select Product table lists the available products and includes the following information about each product: Department, Class, Subclass, Product Name, and Product Code. When you select a specific product from this table, the Demand and Replenishment Options table is populated with the replenishment details for the product you select.

Figure 4–23 Select Product Table



Action Menu

The Action menu provides access to two functions: Demand and Replenishment.

Click **Demand** to refresh all the underlying demand data for all the products in the current run. You see updated data derived from data feeds that occurred after the most recent run was created.

Click **Replenishment** to refresh all the underlying replenishment data for all the products in the current run. This action overrides any changes you have made to replenishment data.

Refresh Button

The Refresh button provides the same functionality as the Action menu.

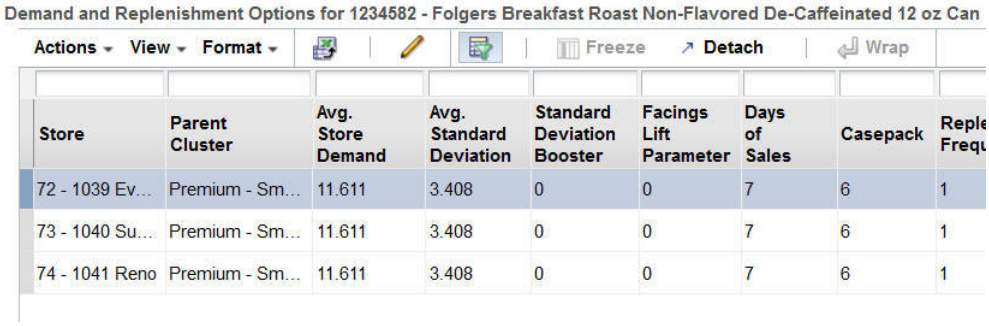
Click **Demand** to refresh all the underlying demand data for all the products in the current run. You see updated data derived from data feeds that occurred after the most recent run was created.

Click **Replenishment** to refresh all the underlying replenishment data for all the products in the current run. This action overrides any changes you have made to replenishment data.

Demand and Replenishment Options Table

The Demand and Replenishment Options table displays one row for each location that carries the product you select in the Select Product table. Each row contains the aggregated data for all the stores in that optimization location.

Figure 4–24 Demand and Replenishment Options



The following information is displayed:

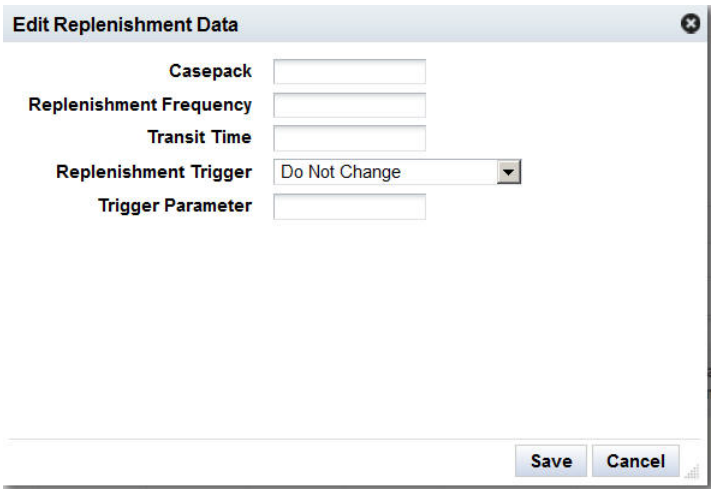
Table 4–16 Demand and Replenishment Options Table

Column Name	Description
Space Cluster	Optimizations are run at the store level or the space cluster level. A space cluster is an ad hoc group of stores with the same assortment cluster, product list, and current planogram length.
Parent Cluster	The name of the cluster that the store belongs to.
Average Store Demand	This is a weekly average.
Average Standard Deviation	A higher value indicates the need for higher safety stock to meet service levels.
Standard Deviation Booster	This is calculated across all stores in the optimization location.
Facings Lift Parameter	The impact of facings on demand.
Days of Sales	The number of days in a week that are available for store sales.
Casepack	This is calculated as a weighted average of store casepacks. It is weighed by total adjusted store demand within an optimization location. The number of units in a case.
Replenishment Frequency	The number of replenishments per shelf per week.
Replenishment Type	DC/Vendor or Backroom.
Transit Time	The number of days an order takes to go from the source location to the shelf.
Replenishment Trigger	Demand-based, target capacity-based, or case pack-based.
Trigger Parameter	Trigger value for replenishment trigger.

Editing the Demand and Replenishment Options Table

To edit the demand and replenishment data in the table, select the row or rows containing the data you want to edit and then click **Edit**. You see the following dialog box.

Figure 4–25 Edit Replenishment Data



You can edit the following fields. If you leave a field blank, then no changes will be made to that value.

Table 4–17 Edit Demand and Replenishment Data

Field Name	Description
Casepack	Value must be greater than zero.
Replenishment Frequency	Value must be greater than zero.
Transit Time	Value must be greater than zero.
Replenishment Trigger	Choose from the following: Do Not Change, Cover Demand, Percent Capacity, Casepack Fit.
Trigger Parameter	Value must be a percentage greater than zero and less than or equal to 100.

Click **Save** when you are finished editing the replenishment data. The data displayed in the Demand and Replenishment Options table is updated. The contextual information is also updated.

Contextual Information

The Product Detail chart illustrates the overall demand and replenishment for the selected product. You can select the type of data to display from the drop-down menu: Average Demand Data, Standard Deviation Booster, Facings Lift Parameter, Days of Sales, Casepack Size, Replenishment Frequency, Replenishment Type, Transit Time, Replenishment Trigger, and Trigger Parameter.

Objective and Constraints

The Objectives and Constraints stage is used to modify or set the constraints (business rules) for an optimization run and to display the settings associated with the run. You specify three types of optimization constraints, product level constraints, product group constraints, and planogram constraints. Even though all constraints are ultimately applied at the optimization location level, You generally set or review the data at higher location levels.

In addition, you also pick an objective for the optimization. The objective defines what metric is used as the goal of the optimization.

Once you are satisfied with all the settings in this stage, you can validate a run or submit the run for optimization. The run closes and the optimization list is displayed. When the status for the run is Complete, you can view the results.

Summary

The Summary view, shown in Figure 4–1, provides identifying information for the optimization run.

Table 4–18 Summary Section Fields

Field	Description
Description	The name for the run.
Created By	The user ID of the person who has created the run.
Created On	The date when the run was created.
Status	The status of the run. Values include Setup in Progress, Running, Complete, Approved, and Finalized.
Status Update	The date when the status for the run was last updated.
Optimized On	The date when the run was last submitted for optimization.
Planogram Set	The name of the planogram set, which is selected from the Select Planogram Set dialog box.
Assortment Name	The name of the assortment associated with the planogram set.

Objectives and Constraints Summary

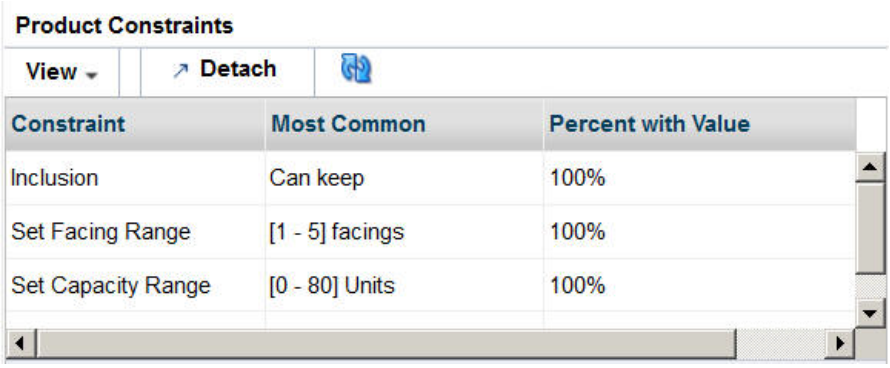
When you select the Summary radio button, you see the following information displayed.

Settings Across All Locations and Products

This section contains four panels that display a summary of the settings.

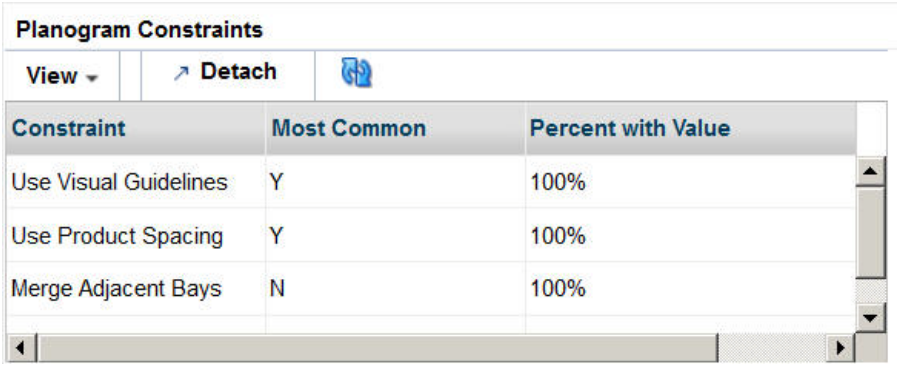
Product Constraints This table, shown in Figure 4–26 lists each product constraint, along with values for the most common value, the percentage with the most common value, and the percentage of optimization locations that have the most common value. The product constraints include Inclusion, Facing Range, Capacity Range, and Elevation Range.

Figure 4–26 Product Constraints



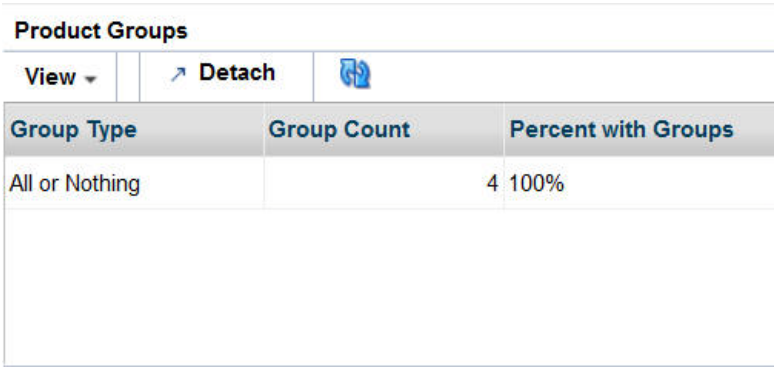
Planogram Constraints This table, shown in Figure 4–27 lists each planogram constraint, along with values for the most common value and the percentage of optimization locations that have the most common value. The planogram constraints include Use Visual Guidelines, Use Product Spacing, Merge Adjacent Bays, and Set Usable Space.

Figure 4–27 Planogram Constraints



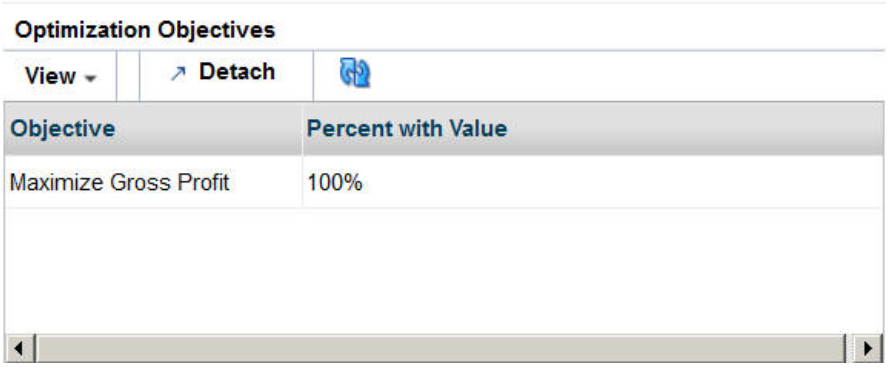
Product Groups This table, shown in Figure 4–28, lists each type of group that is used, along with values for the total number of product group/optimization location combinations for each group and the number and percentage of optimization location that have a group of that type. The product groups include All or Nothing, Match Facings, Same Shelf, and Choose From. This table does not list product groups created at levels above the optimization location even though those product groups may be inherited by the optimization locations.

Figure 4–28 Product Groups



Optimization Objectives This table, shown in Figure 4–29, lists the objective functions that are being used, along with the number and percentage of optimization locations that use each objective function. The objective functions include Maximize Sales Units, Maximize Sales Values, Maximize Margin Value, Maximize Total Sales/On Hand Value, Maximize Sales Units (Weighted), Maximize Sales Value (Weighted), Maximize Margin Value (Weighted), and Maximize Total Sales Value/On Hand Value (Weighted).

Figure 4–29 Optimization Objectives



Select Locations and Products

When you select the Details radio button, this section displays. It consists of two tables: Select Locations and Select Products, shown in Figure 4–30 and Figure 4–31. You must select a row from the location tree and a product row in order to display details about your selections in Objectives and Constraints details section.

The Locations table has three levels. When the first level is selected, the product constraints details across all optimization locations are displayed in the Product Constraints table. When the second level is selected, only the product constraints details for the second level location are displayed. When any optimization location is selected, only the product constraint details for the selected optimization location are displayed. In the same way, the product constrains in the Products table are displayed. So product constraint details are fetched after both the location and the product levels are select, location first and product second.

Figure 4–30 Select Locations

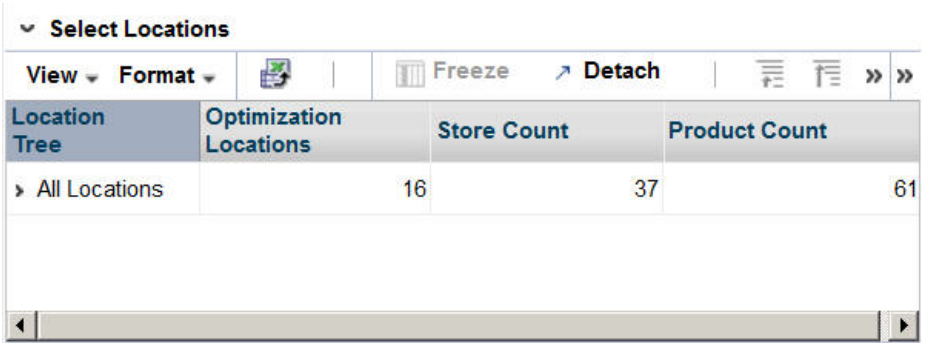
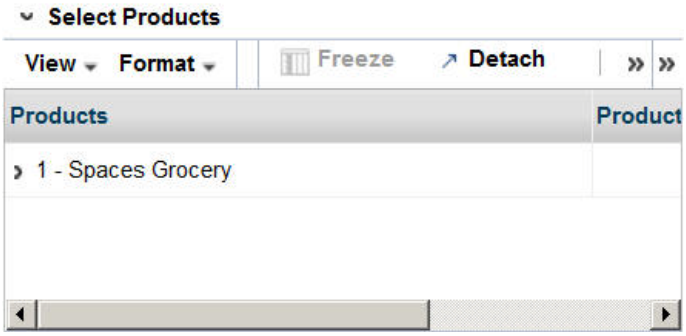


Figure 4–31 Select Products



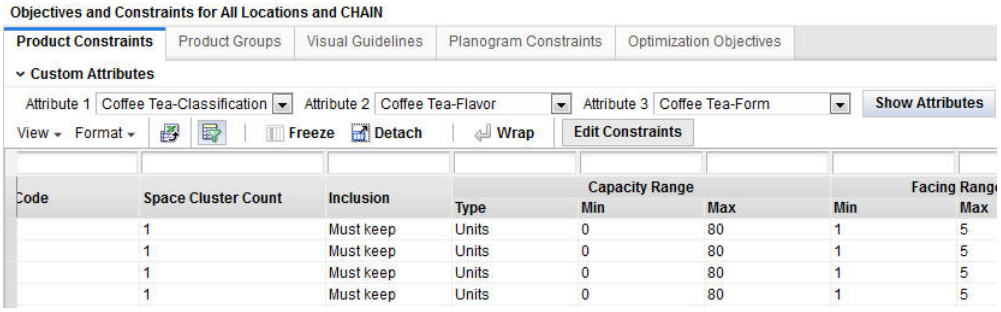
Objectives and Constraints Details

This section is used to specify optimization constraints that define the business rules that determine acceptable virtual planograms. It has five tabs; each tab displays detailed information that you can modify if you created the run.

Product Constraints

The Product Constraints tab is shown in Figure 4–32. It includes Custom Attributes, which allow the user to select up to three attributes associated with the selected category of products. Select the attributes from the drop-down menus and click **Show Attributes** to add the attributes to the Product Constraints table.

Figure 4–32 Product Constraints



For each product, it defines the current product constraints, as listed in Table 4–19.

Table 4–19 Product Constraints

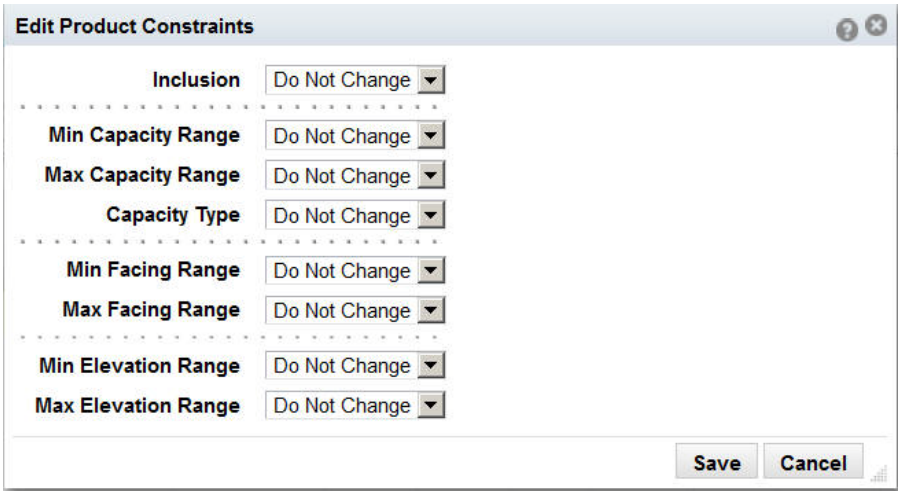
Column	Description
Department	Merchandise/product hierarchy node.
Class	Merchandise/product hierarchy node.
Subclass	Merchandise/product hierarchy node.
Product Name	Product identification.
Product Code	External product code.
Store or Space Cluster Count	Number of stores/space clusters that carry the product.
Inclusion	Supported inclusion values: Must keep (product must not be dropped), Can keep (product can be dropped), and Do not include (product must not be included).

Table 4–19 (Cont.) Product Constraints

Column	Description
Capacity Range	Type, minimum, and maximum value for capacity range.
Facing Range	Minimum and maximum value for facing range.
Elevation Range	Minimum and maximum value for elevation range.

Click the **Edit Constraints** button to access the Edit Product Constraints dialog box, shown in Figure 4–33. After selecting one or more rows, you can edit the constraints if you created the run and if the run has not been submitted.

Figure 4–33 Edit Product Constraints

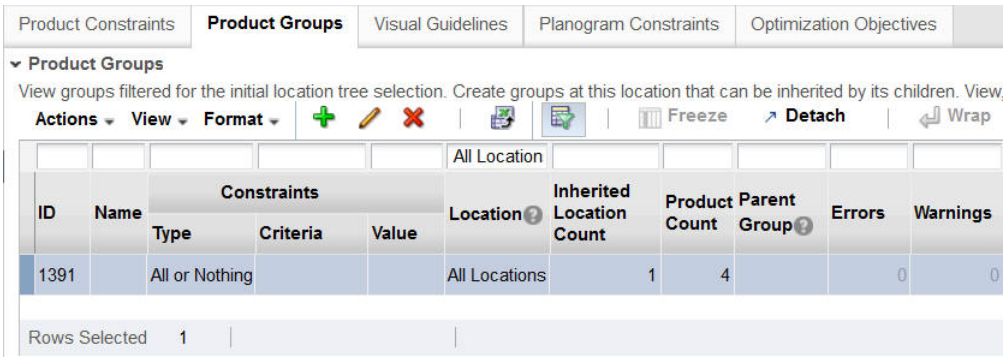


Use the drop-down lists, which contain the valid options for each constraint, to change the settings for any constraints, as appropriate. After you complete your edits, select **Save** from the Action button. The system validates the changes you make and adjusts other settings as necessary. If you enter minimum and maximum values that are inconsistent, you will see an error message and must make changes before you can successfully save your edits.

Product Groups

The Product Groups tab, shown in Figure 4–34, is used to define parent groups, which, when defined at a location node above the optimization location, can be inherited by the optimization locations that are the children of the parent location node.

Figure 4–34 Product Groups



You can add, edit, or delete product groups as well as add products to and delete products from product groups. Inherited groups can also be added or deleted.

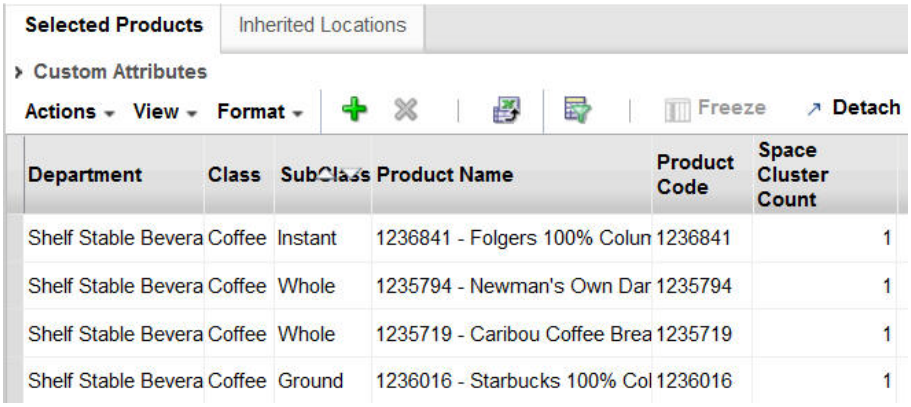
Table 4–20 Product Groups

Column	Description
ID	Unique numerical identification for product group.
Name	Name of product group.
Location	Store or space cluster for product group.
Constraint Type	Values are: All or Nothing, Match Facings, Same Shelf, and Choose From.
Constraint Criteria	If Type is Choose From, values are: At Least, At Most, and Exactly.
Constraint Value	If Type is Choose From, then a numerical value is required here.
Inherited Location Count	If the product group belong to either a Level 1 or Level 2 optimization location, the product group can be copied to or referenced by Level 3 optimization locations. This column shows count of such optimization locations.
Product Count	The number of products in the product group.
Parent Group	If this product group is created by copying or referencing an existing product group of a higher level (1 or 2) then this column shows the ID of parent product group.
Errors	Number of errors for product group.
Warnings	Number of warnings for product group.

Selected Products

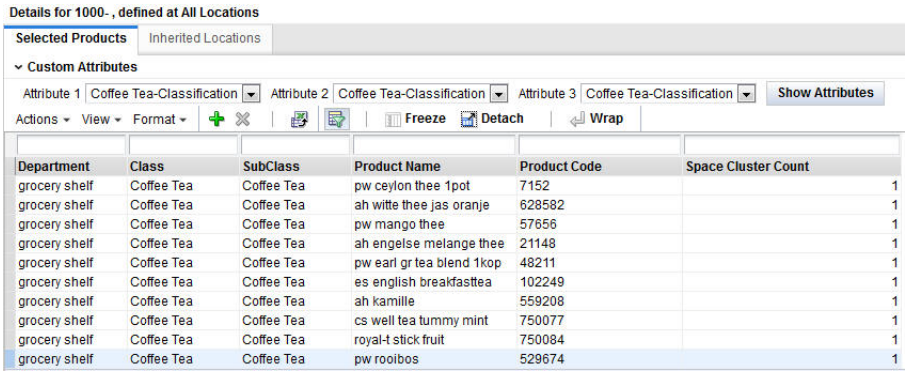
Use this section, shown in Figure 4–35 to add or remove products from a selected product group.

Figure 4–35 Selected Products



You can see and use the product attributes by accessing the Custom Attributes dialog box shown in Figure 4–36 when you are creating product groups. When you make a selection, the Product Groups table is populated.

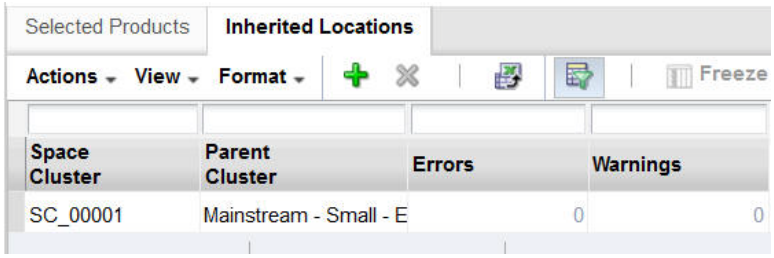
Figure 4–36 Custom Attributes



Inherited Locations

Use this section, shown in Figure 4–37, to add or remove inherited locations.

Figure 4–37 Inherited Locations



Visual Guidelines

Visual Guidelines are used to provide attribute-based vertical and horizontal blocking when placing products on a shelf fixture planogram. You are allowed up to four levels for the blocking criteria. The visual guidelines are created at the optimization location level. Each optimization can have only one visual guideline. The sorting attributes are

defined at the top level and are applied across all of the levels below the top level. You can add, delete, and edit the visual guidelines.

Blocking is defined as horizontal or vertical. Vertical is the default. You can specify primary and secondary blocking criteria. The secondary blocking is optional. If the primary blocking is vertical then the secondary blocking is horizontal; if the primary blocking is horizontal then the secondary blocking is vertical.

Primary and secondary blocking can have up to two attributes each. Each attribute for a specific blocking strategy is defined in the same way, horizontal or vertical. A sequence number is assigned to each attribute value for each blocking level. The sequence numbers determine the order of the blocks. In ascending order, the blocks are positioned from top to bottom (vertical) and left to right (horizontal). When two are blocks are assigned the same sequence number, the blocks are combined (merged).

Example 1:

Primary blocking: Vertical blocking by brand.

Merge blocks: Brand A, Brand B, and Brand C

Additional primary blocking: Vertical blocking by type.

Secondary blocking: Horizontal blocking by size for all vertical blocks.

Example 2:

Primary blocking: Horizontal blocking by size.

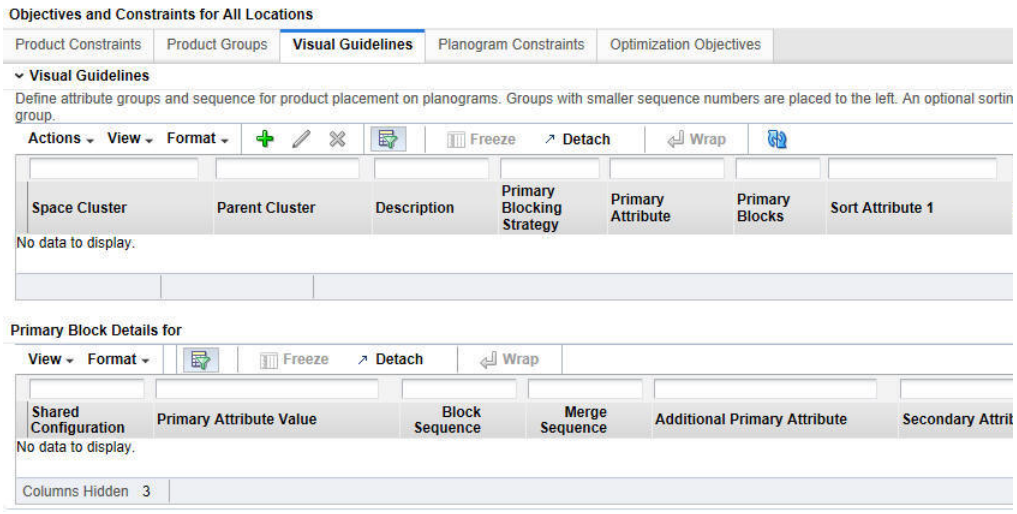
Additional primary blocking: Horizontal blocking by flavor.

Secondary blocking: Vertical blocking by brand for all vertical blocks.

Visual Guidelines Table

The Visual Guidelines table provides information about each visual guidelines row.

Figure 4–38 Visual Guidelines



The columns for this table are described in Table 4–21.

Table 4–21 Visual Guidelines

Column	Description
Space Cluster/Store	The name of the optimization location.
Parent Cluster	The name of the parent cluster for the optimization location.
Description	The name of the visual guideline.
Primary Blocking Strategy	Vertical or horizontal.
Primary Attribute	The product attribute used.
Primary Blocks	The first block used for the configuration
Sort Attribute 1	The attribute you select that is used to determine the product display order.
Sort Attribute 2	The attribute you select that is used to determine the product display order.
Sort Attribute 3	The attribute you select that is used to determine the product display order.

The Primary Block Details table provides additional information.

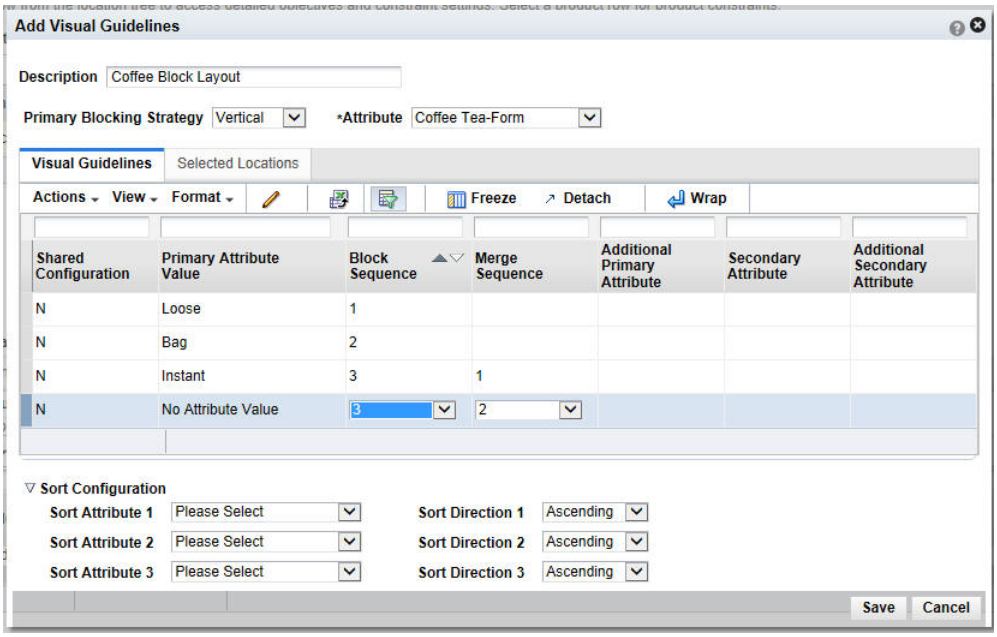
Table 4–22 Primary Block Details

Column	Description
Shared Configuration	Indicate whether or not two attributes share the same configuration.
Primary Attribute Value	Primary attribute.
Block Sequence	Defines the block and the sequence for that block.
Merge Sequence	Blocks with the same merge value are combined.
Additional Primary Attribute	Additional primary attribute.
Secondary Attribute	Secondary attribute.
Additional Secondary Attribute	Additional secondary attribute.

Adding Visual Guidelines

You can add visual guidelines through the Add Visual Guidelines dialog box. You access this by selecting the **Detail** radio button and clicking the **Add** icon.

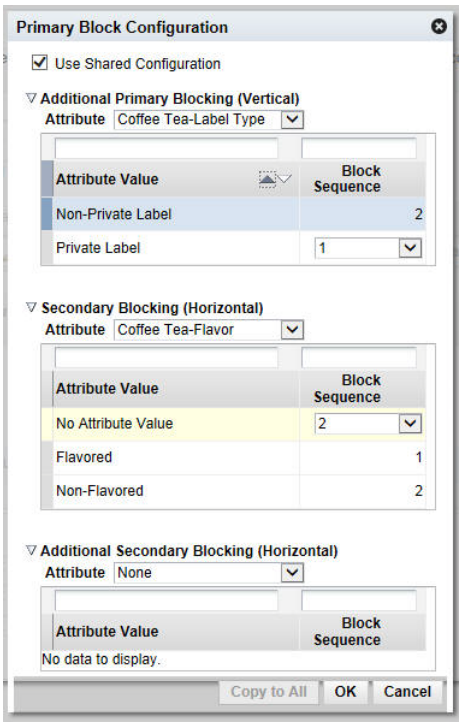
Figure 4–39 Add Visual Guidelines



To add visual guidelines, complete the following steps:

1. Enter the description of the visual guideline in the Description text box.
2. Select the primary blocking strategy - horizontal or vertical - from the Primary Blocking Strategy drop-down list.
3. Select the attribute to use for blocking from the Attribute drop-down list. This populates the table with the attribute values. At this point, the values for all sequences are assigned a default value of 1.
4. Define the attribute sequence number for each attribute by selecting a value from the drop-down list in the Block Sequence column. This defines the block and the sequence for the block. To define merged blocks, assign the same value to each attribute to be merged.
5. Optionally, define the merge sequence value by selecting a value from the drop-down list in the Merge Sequence column. this functionality is only enabled if you have assigned the same sequence number to two of the primary blocks.
6. Define up to three sort attributes and the sort direction, ascending or descending, for each.
7. Choose locations from Selected Locations.
8. Optionally, prior to saving the configuration, you can configure the primary block. To do this, select the attribute value in the table and click the Pencil icon. You see the Primary Block Configuration dialog box.

Figure 4–40 Primary Block Configuration



After the primary blocking strategy and attribute are defined, the primary block can be configured. When primary blocking is vertical, then horizontal blocking is specified for each primary block. When primary blocking is horizontal, then vertical blocking is specified for each primary block.

9. When two attributes have the same sequence number, they share the same configuration. If you change one of the attribute's block sequence numbers to an unassigned number, it still maintains that configuration. If you change the attribute's block sequence number to an assigned number, then it takes the new configuration of the block it joins.

   The Use Shared Configuration check box functions is different ways, depending on the following:

   - When the primary blocking strategy is vertical, the check box is enabled. Check this box if you want all of the primary blocks to share the same secondary and additional blocking. If you do not check this box, then each primary block is configured separately.
   - When the primary blocking strategy is horizontal, the check box is disabled. When two or more attributes share the same sequence number, all the products that have these attributes are combined.

10. To configure Additional Primary Blocking, select the attribute from the drop-down list. The table populates with the attribute values. All sequence numbers default to a value of 1. If you select None for the attribute, then blocking at this level is disabled.

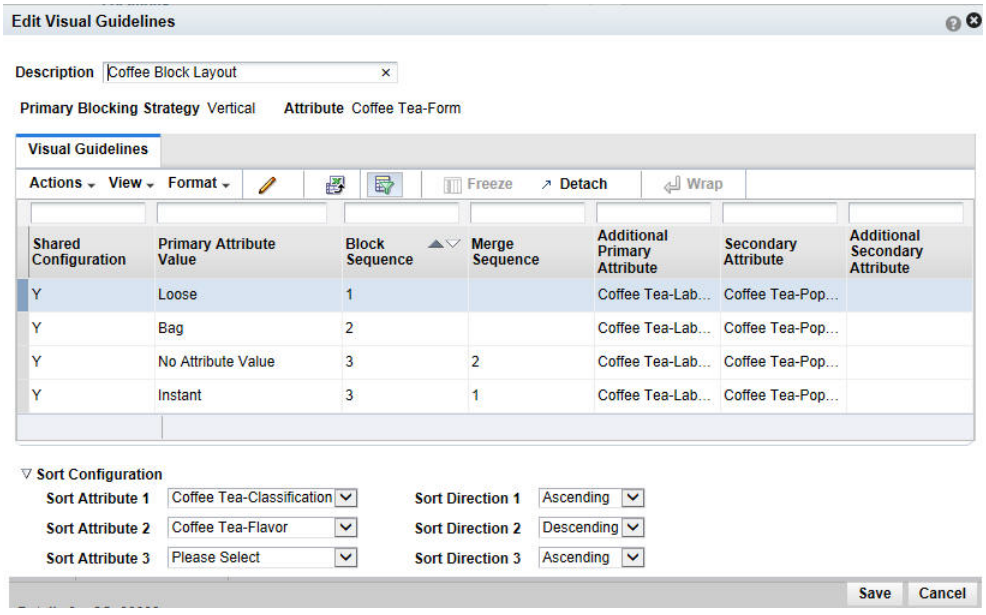
11. Define the attribute sequence for each attribute value by selecting the sequence number from the drop-down list in Block Sequence. If you assign the same sequence number to more than one attribute, then all the products with these attributes are combined.

12. To configure Secondary Blocking, select the attribute from the drop-down list. The table populates with the attribute values. All sequence numbers default to a value of 1. If you select None for the attribute, then blocking at this level is disabled.
13. Define the attribute sequence for each attribute value by selecting the sequence number from the drop-down list in Block Sequence. If you assign the same sequence number to more than one attribute, then all the products with these attributes are combined.
14. You can only configure Additional Secondary Attributes if you have configured Secondary Blocking. To configure Additional Secondary Attributes, select the attribute from the drop-down list. The table populates with the attribute values. All sequence numbers default to a value of 1. If you select None for the attribute, then blocking at this level is disabled.
15. Define the attribute sequence for each attribute value by selecting the sequence number from the drop-down list in Block Sequence. If you assign the same sequence number to more than one attribute, then all the products with these attributes are combined.
16. Click **OK**. The Add Visual Guidelines table is updated with the selected attributes.
17. Click **Save** to save the configuration. This overwrites any existing visual guidelines configuration for the selected location.

Editing Visual Guidelines

You can modify the characteristics of a visual guideline through the Edit Visual Guidelines dialog box. Select a row to indicate which guideline you want to edit and click the **Pencil** icon. You see the Edit Visual Guidelines dialog box.

Figure 4–41 Edit Visual Guidelines

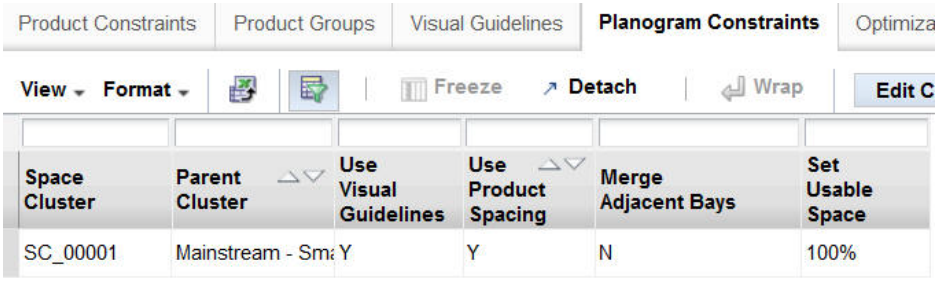


You can modify any values except the Primary Blocking Strategy and the Primary Attributes following same approach you use to create those values. Once you have completed making changes, click **Save** to save your changes and update the Visual Guidelines table. You can click the **Cancel** button to cancel the edits.

Planogram Constraints

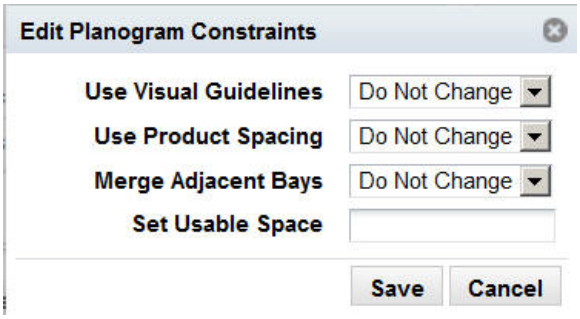
The Planogram Constraints tab, shown in Figure 4–42, displays a list of optimization locations along with values for four constraints: Use Visual Guidelines, Use Product Spacing, Merge Adjacent Bays, and Set Usable Space.

Figure 4–42 Planogram Constraints



You can edit these constraints by selecting the row or rows whose settings you want to change and then click **Edit Constraints**. You see the dialog box shown in Figure 4–43.

Figure 4–43 Edit Planogram Constraints



Use the drop-down menus to select a new setting. For Set Usable Space, you must enter a value between 1% and 100%. Select Do Not Change if you do not want to change a particular constraint. Click **Save** to save your changes.

Table 4–23 Planogram Constraints

Column	Description
Space Cluster/Store	The name of the optimization location.
Parent Cluster	The name of the parent cluster for the optimization location.
Use Visual Guidelines	Indicates whether or not to use visual guidelines. Values are Yes and No.
Use Product Spacing	Indicates whether or not to use product spacing. Values are Yes and No.
Merge Adjacent Bays	Indicates whether or not to merge adjacent bays. Values are Yes and No. The optimization process provides the option of merging adjacent bays.
Set Usable Space	A value between 1 and 100 that indicates the usable space. available to the optimization process. A values less than 100 forces the optimization process to leave some fixture space unused for aesthetic or other reasons.

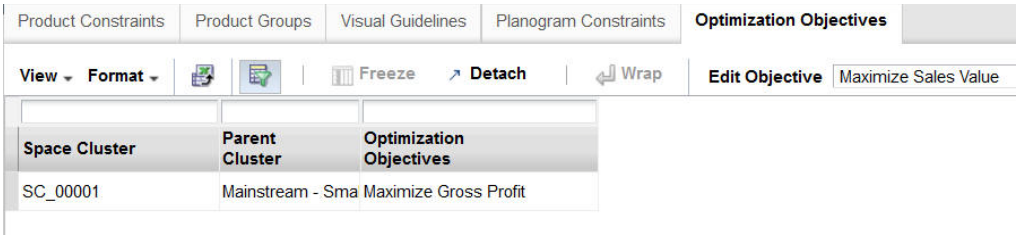
Optimization Objectives

The Optimization Objectives table, shown in Figure 4–44, includes:

- Maximize Sales Units
- Maximize Sales Value
- Maximize Gross Profit
- Maximize Total Sales Value/On Hand Value
- Maximize Sales Units (Weighted)
- Maximize Sales Value (Weighted)
- Maximize Gross Profit (Weighted)
- Maximize total Sales Value/On Hand Value (Weighted)

Weighted objectives are weighed using the IPI values provided by Category Manager.

Figure 4–44 Optimization Objectives



Select one or more rows in order to modify specific objectives using the **Apply** button.

Table 4–24 Optimization Objectives

Field	Description
Space Cluster/Store	The name of the optimization location.
Parent Cluster	The name of the parent cluster of the optimization location.
Optimization Objectives	The name of the current optimization objective.

Contextual Information

Each of the five tabs within the Objectives and Constraints stage have associated contextual information. The information is displayed based on the selections you make in the location hierarchy table.

The Product Constraints information includes:

- Constraint Values, which displays a list of the constraints and associated metrics
- Constraint Charts, which provide a summary for each constraint
- Product Details

Product Groups information includes:

- Product Group Summary, which displays counts for the group types
- Product Lookup, which shows, for a given product, the associated group ID, group name, and group type

Visual Guidelines information includes:

- Visual Guidelines Summary, which includes an Attributes histogram for each attribute, and Attributes Group histogram
- Attributes Lookup, which provides details about product counts for individual attributes
- Visual Guidelines Detail, which analyzes attribute values and product counts by sequence number

Planogram Constraints information includes:

- Constraint Charts, which provide summaries for each constraint
- Planogram Space, which can help you understand the relationship between the available space and the set of products.

Optimization Objectives information includes:

- Optimization Objectives
- Product Details, which includes details for IPI values, price, and margin percentage

Results and Analysis

After the optimization run is complete, the results are displayed in the Results and Analysis stage. You can see summary performance data and view planograms for the optimization runs. In this stage, you can make a limited number of overrides to the table view or the planogram view. Substantive changes require that you re-configure settings and complete another optimization run.

The results are displayed in two tables. The upper table displays the total optimized performance. The data is summed for all the stores in a space cluster. You can access the virtual planogram by clicking the **View Planogram** icon. The lower table displays detailed results with product-level data. The data you see is the average for store numbers, not totals for space clusters.

You can drop products from the lower table for one or more locations; these dropped products are listed in a table.

Alerts are also provided, along with supporting metrics.

Actions To Take

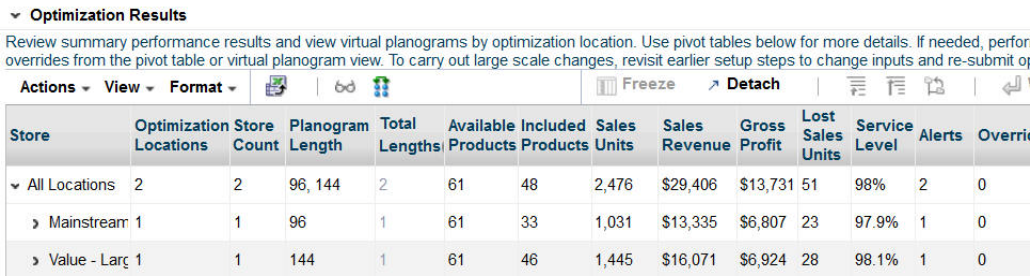
From the Results and Analysis stage, you can:

- Revisit earlier stages in order to make changes to various settings and then re-submit the optimization. You can also validate a run in order to look for constraints that produce errors or warnings. See Validation for more details.
- Copy and save the run using the Save As functionality in the Action menu. Use the copy to make changes and then compare the results.
- Approve the run and make it available for assortment analysis.
- Leave the run in the optimization list without taking any actions. You cannot delete the run; you must be in Optimization List in order to delete a run.

Optimization Results

The Optimization Results table is shown in Figure 4–45.

Figure 4–45 Optimization Results



You can toggle between a tree view and a table view to examine the results. The tree view displays the results hierarchically. The results are either a sum of lower level values, an average of lower level values, or a distinct count.

Table 4–25 Optimization Results

Field	Description
Space Cluster/Store	The name of the optimization location: Store or Space Cluster.
Optimization Locations	The number of optimization locations.
Store Count	The number of distinct stores for a given level.
Planogram Length	A comma-separated list of selected planogram lengths
Total Lengths	The total count of planogram lengths for which the optimization was run. If more than one total is displayed, you can click the number to access a popup window. You can modify selected planogram lengths for the specified optimization location.
Available Products	A count of the available products for a given space cluster level.
Included Products	A count of the included products in an assortment for a given space cluster level.
Sales Units	The value for sales units in the optimization results. This value is aggregated at higher levels by summing the values for the lower levels.
Sales Value	The value for sales. This value is aggregated at higher levels by summing the values for the lower levels.
Margin Value	The value for margin. This value is aggregated at higher levels by summing the values for the lower levels.
Lost Sales Units	The value for lost sales units. This value is aggregated at higher levels by summing the values for the lower levels.
Service Level	The value for the service level. The value is aggregated at higher levels by averaging the values for the lower levels.
Alerts	The number of alerts. This value is aggregated at higher levels by summing the values for the lower levels.
Overrides	The number of user overrides. This value is aggregated at higher levels by summing the values for the lower levels.

Included Products

The Included Products table lists metrics at various levels of aggregation. You can select specific products from the table and click the **Delete** button in order to remove them from the results. You see a list of the products you want to delete and are prompted to confirm the action.

Dropped Products

The Dropped Products table, shown in Figure 4–46, lists all the products that have been dropped per optimization process rules including but not limited to user override action or if the Inclusion Product constraint is set to Do Not Include.

Figure 4–46 Dropped Products

		Demand	Demand Transferred
› Value - Large - A (Northwest)	› 1236841 - 1236841 - Folgers 100% Columbian Non-Flavored Regular - Caffeinated 12 oz Jar	109	0
	› 1234759 - 1234759 - Folgers Medium Roast Non-Flavored Regular - Caffeinated 12 oz Can	101	0

Alerts

The Alerts table, in Figure 4–47, shows the metrics provided for alerts.

Figure 4–47 Alerts

		Used Space Percent	Dropped Products Percent	Dropped Products Count	Service Level Value	Service Level Units
› Mainstream - Small - E (Northwest)	Dropped Percent, Dropped Count	96.7%	45.9%	28	1	1

The Used Space Percent can help you see if there is too much open space.

The Dropped Products Percent and Dropped Products Count can help you see if too many products were eliminated from an assortment.

The Service Level Value and Service Level Units can help you understand stockout levels.

You can configure the following parameters to control the thresholds for the alerts.

Table 4–26 Alerts Parameters

Parameter Name	Description
ALRT_LESS_THAN_PCT_USED_SPACE	An alert will be triggered if the run optimization results use less space than the value specified by this global parameter.
ALRT_LESS_THAN_SERVICE_LEVEL_AMT	An alert will be triggered if the run optimization results have a sales service level lower than he value specified by this global parameter.

Table 4–26 (Cont.) Alerts Parameters

Parameter Name	Description
ALRT_LESS_THAN_SERVICE_LEVEL_QTY	An alert will be triggered if the run optimization results have a quantity service level lower than he value specified by this global parameter.
ALRT_MORE_THAN_CNT_PRODUCT_DROPPED	An alert will be triggered if the run optimization results dropped more products than he value specified by this global parameter.
ALRT_MORE_THAN_PCT_PRODUCT_DROPPED	An alert will be triggered if the run optimization results dropped a percentage of product higher than he value specified by this global parameter.

Contextual Information

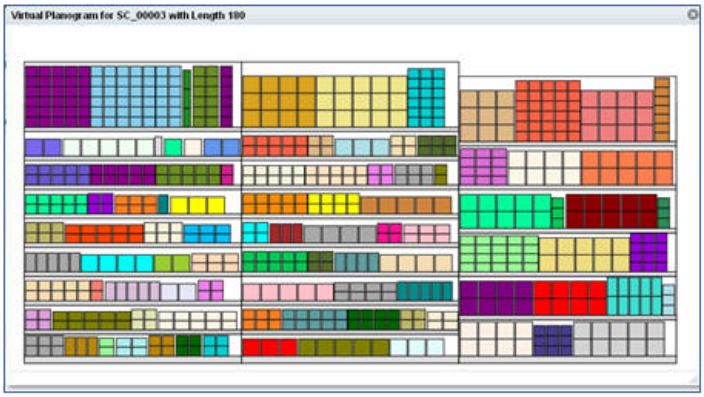
The Results and Analysis stage provides summary information about sales units, sales value, service level, and included products.

- Results Summary
- Inclusion Summary

Planograms

When you click the View Results icon, you see a pop-up window displaying a planogram your run. Depending on your permissions, you can edit the planogram.

Figure 4–48 Planogram



Selection View

Left-click a facing to highlight it.

Fixture Details

When you mouse over a fixture, the following information is displayed: fixture type, length, depth, and elevation.

Product Details

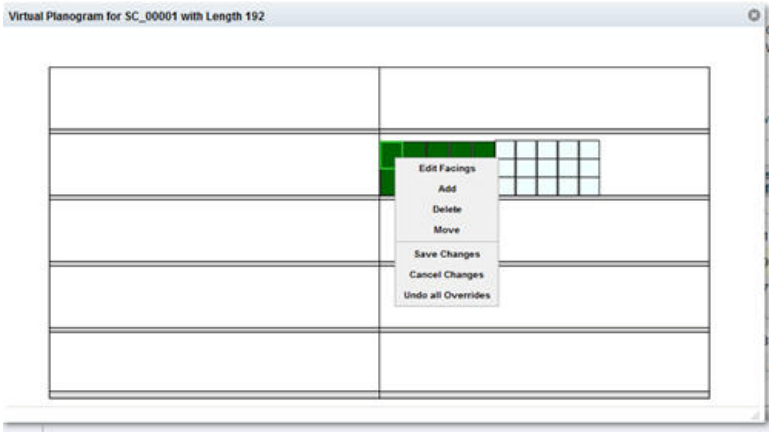
When you mouse over a product, the following information is displayed: product name, product code, facing count, facing ID, display style, main orientation,

dimensions, stacking option, and elevation. When applicable, visual guideline information such as definition, attribute value, and sorting attribute data is shown.

Actions

When you right-click a facing to select it, you have access to the following actions: editing facings, add, delete, move, save changes, cancel changes, and undo all changes.

Figure 4–49 Virtual Planogram with Action Menu



Edit Facings When you select this action, you can change the facing quantity.

Delete Use this action to delete a product. Deleted products can be added back using the Add Products action.

Add When you select this action, you see a list of product codes for dropped products from which to choose. The product you select is restored to its original position and with the same number of facings as when it was dropped.

Move If you move a product on a shelf, it moves to the 0 location on the shelf. For a facing move, the product is moved to the first available shelf location after the last product facing.

Save The save action commits changes to the database.

Cancel The cancel action rolls back any changes.

Undo Overrides This action restores the planogram to the original results. If you close the application without saving changes, the next time you log in, you are prompted to save the changes.

Historic Planograms

Click the **Compare to History** button to view a historical planogram. Such planograms cannot be modified.

Validation

You can validate your constraint settings within each stage of Execute Space Optimization by using the Validate option in the Action menu. Validation lets you identify problems with potential data or constraints prior to initiating a complete

optimization run. The Validate functionality is enabled after you create a run, provide it with a name, and populate it with a POG set and a group of stores or clusters. The Validate functionality is disabled for a run once it has a status of Finalized or Approved.

The validation process provides you with a quick way to determine if an optimization problem has any obvious incorrect parameters before you submit a run and request an optimization result. The process is not designed to find all possible errors or warnings, as some infeasible scenarios are only identifiable by the optimization process itself. However, the validation does provide you with the opportunity to find potential issues, and to then navigate back to Fixture and Product Data or Objective and Constraints stage in order to address the setup issues. This can help you avoid submitting a run for optimization and then discover that changes are required.

Validation identifies:

- Errors. Identifies constraints that will prevent an optimization from completing successfully. You must correct all errors before you execute the run.
- Warnings. Identifies constraints that you may want to review and possibly change.

Figure 4–50 Summary with Error

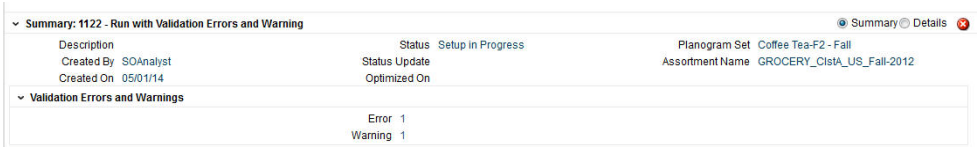
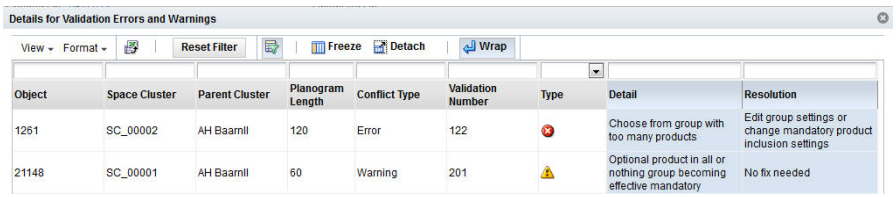


Figure 4–51 Summary with Warning

Figure 4–52 Error Details



Details About Errors and Warnings

If the validation you request finds errors or warnings, you will see error icon in the Summary area of the stage you are in. Some validation checks only apply to shelf fixtures while others (121, 122, 132, 201, 202 and 236) apply to both shelves and pegboards. To view the details, expand the Validation Errors and Warning section below the Summary section. Click each link in order to display the Details for Validation Errors and Warnings dialog box, which contains information explaining the error or warning that can help you address the problem.

Warnings

Warning are informational and indicate that optional items will be handled according to the constraints you set. Here is a list of possible warnings and suggested optional actions to address the warnings.

Table 4–27 Warnings and Suggested Actions

Alert #	Warning Description	Suggested Optional Action
201	Optional product in all or nothing group becoming effective mandatory.	No fix needed.
202	Optional choose from product becoming effective mandatory.	No fix needed.
209	Optional product becoming effective drop.	No fix needed.
211	Optional product too wide.	Reduce the minimum number of facings or change the elevation or orientation.
212	Optional product too tall.	Change the elevation or orientation.
213	Optional product lacks shelf.	Change the elevation.
232	No common set of shelves.	Edit the group settings or elevation ranges.
236	No common facing value	Edit the group settings or facing ranges.

Correcting Errors

Once you have made corrections to the errors, you must run Validate again in order to make sure that all the errors have been corrected. Here is a list of possible errors and recommended corrections.

Table 4–28 Errors and Recommended Solutions

Alert #	Error Description	Recommended Solution
101	Mandatory product too wide.	Reduce minimum number of facings, change product orientation, or make the product optional.
102	Mandatory product too tall.	Change the product orientation or make the product optional.
103	Mandatory product lacks shelf.	Change the elevation setting or make the product optional.
106	Mandatory products combined width too wide for shelf.	Reduce the minimum facings or make some of the products optional.
107	Mandatory products combined area too large for pegboard.	Reduce the minimum facings or make some of the products optional.
121	Choose from group lacking products.	Edit the group settings or add products.
122	Choose from group with too many products.	Edit the group settings or change the mandatory product inclusion settings.
127	Same shelf group lacks shelf.	Edit group settings or change the mandatory product elevation settings.
128	Same shelf group is too wide.	Edit the group settings or change the mandatory product elevation or inclusion settings.

Table 4–28 (Cont.) Errors and Recommended Solutions

Alert #	Error Description	Recommended Solution
129	Same shelf group is too tall.	Edit the group settings or change the mandatory product elevation or inclusion settings.
132	Match facing group without match.	Edit the group settings or change the mandatory product inclusion settings.
TBD	Optional product conflict.	Remove the product from multiple groups or edit the group settings.

Once all errors are corrected, you can submit the optimization run.

5

Assortment Mapping

This chapter provides information about the Assortment Mapping tab.

Introduction

The Assortment Mapping tab is used to view and edit the results of the automated mapping between assortments and planograms that the system performs.

Assortment Mapping Interface

The Assortment Mapping interface is divided into two sections. The Select Assortment table lists all assortments with a status of either Ready for SO or POG Mapping Needs Review. When you first access this screen, it is pre-filtered to show only POG Mapping Needs Review assortments, with the QBE field for the Status column already filled in. To see the Ready for SO assortments, you must clear this field and click **Enter** to trigger the update.

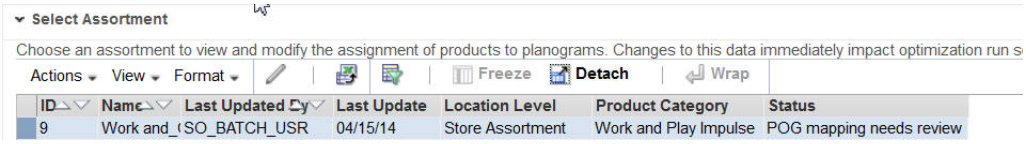
The Assortment to Planogram Mapping table displays the planogram mappings for each combination of location and product in a given assortment. You must have the appropriate permissions to edit the assortments.

Use the **Save** Button to save and validate any edits you make. This updates the mappings and refreshes the mapping table display. You must save your changes to one assortment before editing another assortment.

Select Assortment

The Select Assortment table, shown in Figure 5–1, displays a list of the assortments that require mapping. These assortments have a status of either Ready for SO or POG Mapping Needs Review. Use this list to select an assortment to edit.

Figure 5–1 Select Assortment



When you select an assortment to edit and click the **Edit** button, you see the Edit Status dialog box. You can toggle the status of the assortment between Ready for SO and POG Mapping Needs Review by using the radio buttons. These radio buttons are disabled if errors exist in the assortment mapping table.

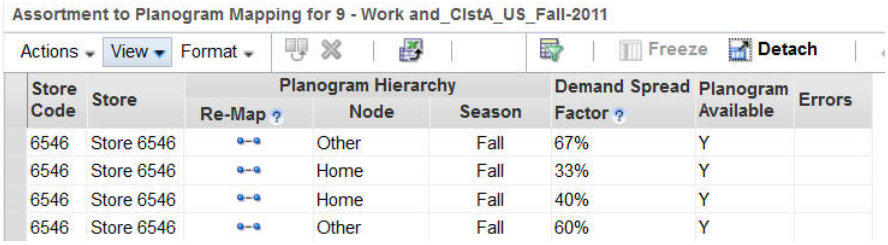
Table 5–1 Select Assortment

Field	Description
ID	The ID of the assortment.
Name	The name of the assortment.
Last Updated By	The user ID of the person who last updated the assortment.
Last Update	The date when the assortment was last updated.
Location Level	The location level for the assortment (Store Cluster or Cluster Assortment).
Product Category	The product category for the assortment.
Status	The status of the assortment.

Assortment to Planogram Mapping

Once you select an assortment from the Select Assortment table, you see the components of that assortment (Figure 5–2). You can add a planogram mapping, delete a mapping, change the planogram node for the mapping (re-mapping), or edit the demand spread factor for the mapping.

Figure 5–2 Assortment to Planogram Mapping



Adding Planogram

Use the Add Planogram button to add a planogram mapping row that is similar to the mapping row you select. This action copies all the data from the original row with the exception of Node, Season, Demand Spread Factor, Store Count, Stores with Planograms, and Errors. You are presented with a dialog box in which you specify the planogram node. If you cancel out of the dialog box without selecting a node, the row you are adding is removed.

Deleting

Use the Delete button to delete a mapping. If you try to delete the only mapping for a specific combination of location and product, you will see an error message.

Re-Mapping

Use the Re-map button to change the planogram node (displayed in the Node column) for the mapping. You see the Select Planogram Node dialog box. When you change this value, three other changes occur. The value for the planogram season (displayed in the Season column) is changed to the first available season for the node. The value for the demand spread factor is changed to 100%. The values for Store Count and Stores with Planograms are both changed to zero.

You cannot select a node that results in a duplicate mapping for a specific combination of location and product when the duplicate mapping is defined as a mapping that has the same location, product, and planogram node (regardless of planogram season).

Editing the Demand Spread Factor

You can edit the demand spread factor within the Assortment to Planogram Mapping table. You must enter a number between 1% and 100%. For a set of mappings for the same combination of location and product, the total of the demand spread factors for the mappings cannot be greater than 100%. If the number exceeds this, you will see an error message after you click **Save** (which validates your edits).

Tables for Stores and Clusters

The Assortment to Planogram Mapping tables for Stores and for Clusters are slightly different. The following two tables describe each table.

Table 5–2 Assortment to Planogram Mapping for Stores

Field	Description
Store Code	The store code.
Store	The name of the store.
Assortment Cluster	The name of the assortment cluster.
Product Code	The product code.
Product Name	The name of the product.
Planogram Hierarchy - Re-map	The button you use to select a new planogram node for the mapping.
Planogram Hierarchy - Node	The planogram node, which is the sub-category level of the assortment product hierarchy that the mapping applies to.
Planogram Hierarchy - Season	The season that the mapping applies to.
Demand Spread Factor	The amount of demand that should be allocated to the mapping (within a specific combination of location, product, node, and season.
Planogram Available	Y = planogram is available for a specific combination of location, product, planogram node, and planogram season. N = not available.
Errors	The errors that occur during mapping.

Table 5–3 Assortment to Planogram Mapping for Clusters

Field	Description
Assortment Cluster	The name of the assortment cluster.
Product Name	The name of the product.
Demand Spread Factor	The amount of demand that should be allocated to the mapping (within a specific combination of location, product, node, and season.
Planogram Hierarchy - Re-map	The button you use to select a new planogram node for the mapping.
Planogram Hierarchy - Node	The planogram node, which is the sub-category level of the assortment product hierarchy that the mapping applies to.
Planogram Hierarchy - Season	The season the mapping applies to.

Table 5–3 (Cont.) Assortment to Planogram Mapping for Clusters

Field	Description
Store Count	The number of stores in the assortment cluster. This value is zero for mappings that are edited.
Stores With Planograms	The number of stores in the assortment cluster that have planograms for the selected planogram set, based on the planogram data that has been loaded. This value is zero for mappings that are edited.
Errors	The errors that occur during mapping.
Product Code	The product code.

Mapping Errors

Three errors are identified by the mapping process.

- Total demand spread factor (DSF) out of range. Action: The value must not exceed a 100% the DSF within the mapping. Results must be adjusted to stay between 1% and 100%.
- Unmapped product. Action: There is no mapping information for a product. Add the mapping information and manually map the product or remove the product from the assortment feed.
- Unmapped store. Action: There is no POG available for the store. Add store information to the POG feed, remove the store from the assortment, or update the mapping information to map the assortment against a different POG Set with information for the store.

Glossary

Assortment Cluster

Store cluster definitions that are used in Category Manager, which are defined at the product category level.

Bay

A physical unit of fixtures in which the configuration is the same from left to right. A fixture configuration can change across bays but not within a bay. Retailers often lay out POGs on a discrete number of bays. So bays can be considered a unit of macro space like linear ft/cm.

Capping

Products are stacked with units of different orientation. The bottom unit is in the main orientation, and the units above use a capping orientation. This applies only to shelves. Only simple capping is supported by ASO.

Current/Historical POG Assortment

The list of products from a specific POG that is imported from a third party POG tool. This assortment is POG-specific; the stores that received this POG have this assortment. A master list for a POG set can be created by finding the union of all products that are on the POGs in the set.

Display Style, Display Style Type

This provides the discrete unit of display for a given product. Display style types include single/unit, tray, case, and pallet. Display style types can also describe peg vs. shelf. These are set up in MSM.

For a given product, one or more display styles is established in MSM. Each one has its own set of size and spacing data, as well as a number of total units. For example, a specific SKU may have two display styles: single/unit and tray. Unit then corresponds to a single unit of the product. Tray is then 12 units. The number of units per tray depends on the product.

Note that MSM uses the term unit for a single unit display. In order to describe the number of units, ASO uses the term single/unit instead.

Empty Planogram

An empty POG is a POG skeleton. The bays and fixtures are defined but no products have been placed on the fixtures.

Facing

A facing is the smallest unit of micro space that is allocated to a product. On a shelf, facings are counted horizontally. In other words, it is the number of units across. On a pegboard or a freezer, facings are the number of total units that the customer can see when looking at the fixture.

Finalized Assortment

This is the final approved assortment.

Finger Space Above

The product-specific space that is required between the top of a product's facings and the bottom of the shelf above. This accounts for the space required to remove the product from the fixture. When available, the specified space is added to the top of the top unit in the product's facings in the *z* direction. This applies to pegboards, freezer chests, and shelves. In MSM, this is also called finger space above.

Finger Space Behind

The product-specific space that is required on the front and back of units of a product. When available, the specified space is added on either side of the unit in the *y* direction; half of the quantity goes on the front and half of the quantity goes on the back. This applies to shelves only. In MSM, this is called a gap in the *y* direction.

Finger Space Beside

The product-specific space that is required on the left side and right side of units of a product. When available, the specified space is added on either side of the product's facings; half of the quantity goes on either side in the *x* direction. For example, if there are two facings of product A with finger space beside equal to 1 inch, then horizontally it looks as follows: one-half inch, product A, one-half inch, one-half inch, product A, one-half inch. This applies to pegboards, freezer chests, and shelves. In MSM, this quantity is called a gap in the *x* direction.

Fixture

A fixture is defined as equipment such as a set of shelves, a pegboard, or a freezer chest. A single shelf is not a fixture, nor is a single peg a fixture.

Fixture Configuration

This provides details about the dimensions of shelving (that is, the number of shelves and the height, width, and depth of each one), freezer chests (that is, the height, width, and depth) or pegboard (in this case, the height, width, and depth equal the peg length, which may also have peg hole spacing details).

Fixture Type

This is the attribute that defines what kind of fixture is in a POG: shelf, pegboard, or freezer chest.

Inter Product Gap

The product-specific space that is required to separate adjacent products on a shelf. This accounts for space that holds product dividers. When available, the specified space is added to the left and right of the entire block of a product; half of the quantity goes on either side of the run of that product in the *x* direction. For example, if there are two facings of product A with inter product gap equal to 1 inch, then horizontally it looks as follows: one-half inch, product A, product A, one-half inch. This applies to pegboards, freezer chests, and shelves. In MSM, this is called finger space beside.

Item Performance Index (IPI)

This is a value generated by Category Manager that provides indication of the relative importance of products within an assortment. A value of 1 means the product is average, a value of 1.3 means it is 130% of average, and a value of 0.5 means it is 50% of average. ASO uses these values optionally as attributes or weights in the optimization objective function.

Mandatory Items

These are items from the preliminary assortment that ASO cannot drop.

Optimization Level

This is the location level for micro optimization runs and is set for a specific optimization run. The options are cluster or store.

Optimization Location

This is a specific location node defined for optimization. It can be a store or a store cluster.

Order Point (OP) and Order Up to Level (OUTL)

These are proxies for the replenishment triggers and are used in the inventory and sales model. These values are not directly input from client feeds, but are calculated from input data.

Orientation, Legal Orientation, Default Orientation

This describes how a product's package faces the front of the fixture. The orientation has two pieces of information, the part of the package that is to the front (front, back, top, bottom, left, right) and how it is rotated in degrees (0, 90, 180, 270), for a total of 24 possible orientations. How a product is oriented determines how much space it takes in the *x*,*y*,*z* directions on a fixture.

Legal orientations are all orientations that can be used for the product.

The default orientation is the legal orientation that is normally used for the product.

Planogram (POG)

The layout of product on shelves or pegboards, which has an underlying fixture assumption (for example, number of shelves or overall size).

A third-party POG typically includes a visual depiction of the product layout with images. For ASO, POGs are the underlying data and not the pictures.

Planogram (POG) set

Current and historical POGs in the same POG category or subcategory and with the same seasonal attribute.

Preliminary Category Manager Assortment

A product list created in Category Manager by product category, this varies by assortment cluster. The preliminary assortment is a list of products that are eligible for ASO. A preliminary assortment has a master list that is the union of all of the cluster-specific preliminary assortments.

Preliminary assortments from Category Manager are forward looking and can include new products or new product and store assignments.

POG Sub-Category, POG Category, POG Department

These are levels on the POG hierarchy, and are used to organize POGs. For example, the leaf to root path in the POG hierarchy is Grocery -> Crisps and Snacks -> Crackers.

Product Stacking Height Limit

This defines a product-specific limit on how high a given product can be stacked or nested in the *y* direction on any shelf. This applies only to shelves.

Season/Seasonal Attribute

This refers to a specific year-independent time period for a Category Manager assortment and a POG set. Examples include spring, holiday, back to school, and year-round.

Smart Start Process

The Smart Start Process (SSP) is a back-end process that assigns shelves to a Partial Shelf Fixture Planogram (PSFP), based on a combination of default values, user selections, and algorithms. SSP supports one or more algorithms that add shelves to PSFPs only. SSP does not perform fixture optimization.

Space Optimized Assortment

This is the product list after ASO has dropped products because of limited space. This varies by optimization location in ASO.

Stacking/Nesting, Nesting Height

Multiple units of a product can be stacked on top of one another in the *y* direction on a specific facing on a shelf. When the units are stacked, the total height equals the number of units x the height of a single unit. Nesting is defined as stacked units that fit inside each other so that the total height is less than the number of units x the height of a single unit. The nesting height is the incremental space that the nested units require. The total height of a facing with nested units is determined as follows: total height equals the height of a single unit + the number of nested units x the nesting height. This applies only to shelves.

Top Shelf Stacking Height Limit

This defines the limit on how high products can be stacked or nested on the top shelf in the *y* direction. This is not required for intermediate shelves in a fixture because of the physical limit created by the shelf above. This applies only to shelves.

Units of Measure and Currency

This document will use "ft/cm" when talking about units of space, and will use "value" when talking about currency

Virtual Planogram (VPOG)

This refers to a POG that was created by ASO; it does not contain product images.